Implementation of the CoreTrustSeal

The CoreTrustSeal board hereby confirms that the Trusted Digital repository Roper Center for Public Opinion Research complies with the guidelines version 2017-2019 set by the CoreTrustSeal Board.
The afore-mentioned repository has therefore acquired the CoreTrustSeal of 2016 on February 7, 2018.

The Trusted Digital repository is allowed to place an image of the CoreTrustSeal logo corresponding to the guidelines version date on their website. This image must link to this file which is hosted on the CoreTrustSeal website.

Yours sincerely,

The CoreTrustSeal Board

Assessment Information

Guidelines Version:	2017-2019 | November 10, 2016
Guidelines Information Booklet:	CTS Requirements 2017-2019
All Guidelines Documentation:	Documentation
Repository:	Roper Center for Public Opinion Research
Seal Acquiry Date:	Feb. 07, 2018

For the latest version of the awarded
CoreTrustSeal for this repository:

https://www.coretrustseal.org/why-certification/certified-repositories/

Previously Acquired Seals:

Seal date: April 24, 2015
Guidelines version: 2014-2017 \| July 19, 2013

This repository is owned by: **Roper Center for Public Opinion Research**

USA

T +1 6072558129
E roper-data@cornell.edu
W http://www.ropercenter.cornell.edu/

Assessment

0. Context

Applicant Entry

Self-assessment statement:

Domain or subject-based repository/ Library/Museum/Archives

The Roper Center for Public Opinion Research is a sustainable domain repository that has been reliably managing and providing access to public opinion data since 1947. The Center, a Delaware non-profit 501(c)(3) corporation, is home to public opinion surveys conducted in the United States and approximately 100 other countries; a searchable online database of over 675,000 individual questions asked in U.S. surveys between 1935 to the present; and 23,000 complete state, U.S., and international datasets. Since 2015, the Center has been hosted by Cornell University, which is contracted by the Board of Directors to manage Center operations.

Repository's Designated Community.

Roper Center has over 280 member institutions and serves a diverse community of users. Roper Center member institutions include academic institutions from high schools to doctoral-granting universities; non-profit organizations, including foundations, advocacy organizations and think-tanks; commercial research firms; government organizations; media; and others. Our community of users includes faculty, students, librarians, and non-academic researchers in the quantitative social sciences, as well as journalists, policy-makers and policy-influencers interested in public opinion.

Users access the Roper Center's data collection online through a search portal that facilitates discovery. Each year, users download more than 100,000 data and documentation files from the website, and users view more than 469,000 questions from the iPOLL database.

Level of Curation.

Current Level: Enhanced curation. The repository is in the implementation phase for Data Curation.

After the Roper Center receives a Submission Information Package (SIP), data and all accompanying material are assessed with regard to content, structure, and format. The data are enhanced with metadata documenting methodological information, intellectual property, subject content, and essential data information. This information is captured, maintained, and stored in the descriptive metadata that is included in each Archival Information Package (AIP). Some metadata is entered by data processors; other pieces of metadata are detected by the system automatically, such as file size and format, then verified by processors. Changes made to the data during processing include removal of variables that risk respondent confidentiality and in some cases recoding or labeling to improve usability. Documentation is compiled to provide users with the information necessary to use and understand the data. (https://ropercenter.cornell.edu/about-the-center/data-curation/) (https://ropercenter.cornell.edu/wp-content/uploads/2015/01/complete-workflow.png)

Outsource Partners.

The Roper Center for Public Opinion Research is administratively housed in the Research Division of Cornell University. The Roper Center is aligned with the Cornell Institute for Social and Economic Research, strategically sharing resources in IT and providing mutual support and expertise for data operations. The CISER Director serves on the Roper Board of Directors as an ex-officio member and also serves the Roper Center as a formal advsior. As one of the oldest university-based social science data archives in the United States, CISER has demonstrated its commitment to the long-term preservation and access of data for scientific research. The fundamental purpose of CISER's Data Archive is to select, preserve and make available for use primary and secondary data, documentation and metadata, in discipline recognized digital formats that remain suitable for research in perpetuity. The data preservation and storage policy is guided by a variety of community-driven standards, (e.g. Open Archival Information Systems (OAIS) reference model, Trusted Repositories Audit and Certification (TRAC), Data Seal of Approval (DSA), Data Documentation Initiative (DDI)), that represent an international body of knowledge and expertise pertaining to various issues within digital preservation.

The Roper Center also receives support from Cornell's IT department. Cornell's Central IT Office provides system back-up through the EZ-Backup offsite storage facility in New York City. Cornell Central IT also provides essential technical support including security testing, upgrade assistance, and database management. Administrative support is provided by multiple Cornell departments, including human resources, purchasing, travel, printing, and other services.

In addition, Roper Center benefits from input and expertise from across the Cornell community, including a group of faculty affiliates, members of the library staff, student workers, including graduate students, and designated Cornell representatives on the Board of Directors.

Other Relevant Information

The Roper Center is a core resource in the field of public opinion research. The Center maintains a partial list of scholarly articles that cite the data in the archive (https://ropercenter.cornell.edu/roper-center-bibliography/). Google Scholar shows over 130 articles referencing Roper Center since 2015. In addition, every year Roper Center data are used in a multiple media stories by major outlets including the *New York Times*, *Washington Post*, and National Public Radio.

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments:

1. Mission/Scope

Minimum Required Statement of Compliance:

0. N/A: Not Applicable.

Applicant Entry

Statement of Compliance:

4. Implemented: This guideline has been fully implemented for the needs of our repository.

Self-assessment statement:

Implemented: This guideline has been fully implemented for the needs of our repository

The Roper Center's mission is to collect, preserve, and disseminate public opinion data; to serve as a resource to help improve the practice of survey research; and to broaden the understanding of public opinion through the informed use of survey data in the United States and abroad. The Center is committed to assuring The Center's data producers and user base that the largest collection of polling and survey interview data in the world will be preserved and made accessible for the long-term. The Roper Center's mission statement is released under the authority of the Roper Center Board of Directors (Roper Center: About the Center http://www.ropercenter.cornell.edu/about-the-center/ accessed 8/8/2017) (Roper Center Board of Directors https://ropercenter.cornell.edu/about-the-center/board-of-directors/ accessed 8/8/2017). The Roper Center's commitment to data preservation is formalized in the Center's Digital Preservation Policy (Roper Center Digital Preservation Policy, http://www.ropercenter.cornell.edu/digital-preservation-policy/ accessed 8/8/2017) and implemented throughout data processing procedures Roper Center Data Curation-Processing http://www.ropercenter.cornell.edu/about-the-center/data-curation/#processing accessed 8/8/2017 and through the Center's participation in national digital preservation consortia, including the Data Preservation Alliance for the Social Sciences (Data-PASS) (Data-PASS website, About Data-PASS http://www.data-pass.org/about.jsp#partners, accessed 8/8/2017)and the National Digital Stewardship Alliance (National Digital Stewardship Alliance Members http://ndsa.org/members-list/ accessed 8/8/2017).

The Roper Center promotes its mission, collection, and services to many communities in a variety of ways. Staff participate in exhibits and presentations at conferences and professional association meetings like the American Association for Public Opinion Research (AAPOR) Annual Conference and the Annual Meeting of the International Association for Social Science Information and Technology (IASSIST). The Center also produces publications for academic, trade, and general audiences (Roper Center Issue Briefs: http://www.ropercenter.cornell.edu/issue-briefs/ accessed 8/8/2017), (Roper Center Infographics http://www.ropercenter.cornell.edu/category/data-bites/infographics/ accessed 8/8/2017).

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments:

2. Licenses

Minimum Required Statement of Compliance:

0. N/A: Not Applicable.

Applicant Entry

Statement of Compliance:

4. Implemented: This guideline has been fully implemented for the needs of our repository.

Self-assessment statement:

Ongoing data providers sign a data provider agreement letter (Roper Center Sample Data Provider Agreement https://ropercenter.cornell.edu/wp-content/uploads/2014/12/Roper-Center-Data-Provider-Agreement-sample.pdf accessed 8/8/2017) that outlines the ongoing relationship between the organization and the Roper Center and gives the Roper Center the rights to archive and disseminate the data. Data deposit forms (Roper Center Data Deposit Form https://ropercenter.cornell.edu/wp-content/uploads/2015/04/DataDepositForm.pdf accessed 8/8/2017) are provided to these organizations to be included with data submissions and are also used by those organizations or individuals making single, individual submissions. Paper and digital versions of both of these agreements are maintained.

Member institutions of the Roper Center are required to sign a membership agreement that describes their rights and obligations, including information regarding distribution to third parties (Roper Center Membership Agreement http://www.ropercenter.cornell.edu/membership-agreement/ accessed 8/8/2017). The Roper Center maintains paper and digital copies of these agreements and tracks member agreements in an internal database. In addition to institutional agreements, individual users at our member institutions are required to agree to terms and conditions of use (Roper Center Terms and Conditions https://ropercenter.cornell.edu/terms-and-conditions/ accessed 8/8/2017) in order to download datasets from our website. Users who purchase individual datasets without membership are also required to sign a terms and conditions agreement before receiving purchased datasets.

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments:

3. Continuity of access

Minimum Required Statement of Compliance:

0. N/A: Not Applicable.

Applicant Entry

Statement of Compliance:

4. Implemented: This guideline has been fully implemented for the needs of our repository.

Self-assessment statement:

The Roper Center is hosted by Cornell University, which is contracted by the Roper Board of Directors to manage the operations of the Center. It is anticipated that the Roper Center for Public Opinion Research will remain at Cornell University for the foreseeable future. However, having recently conducted the successful migration of Roper Center operations from the University of Connecticut to Cornell University, the Board of Directors and Center staff are acutely aware of the importance of ensuring that strategic decisions made today are done so with both current and future contexts in mind.

Under the terms of the current agreement between the Roper Center for Public Opinion Research and Cornell University, business operations will remain at Cornell University through at least November 7, 2020, thus defining the near-term plan for continuity of access.

Strategic planning and broad-based goals developed for the Center while at Cornell University focus on the needs of Roper Inc., in all of its potential iterations and must ultimately support the long-term mission of preserving and disseminating public opinion data. Decisions are made with due consideration for their long-term effects. This is especially true with respect to IT infrastructure as it relates to maintaining the archive and preserving the data within it. For example archival metadata and administrative data, such as staff access information, are segregated in the database. The Center is also in the planning phase for the regular output of index files in ASCII or UTF-8 text formats for long-term preservation of essential archival metadata. These files would ensure that the digital archive remains independently searchable in the event the supporting software is no longer available.

All intellectual property developed at Cornell University in relation to Center operations is owned by Roper, Inc. Ongoing support documentation is recorded to assist future administrators in replicating the form and function of the archive and the public interface.

As a member of Data-PASS and the National Digital Stewardship Alliance, the Roper Center demonstrates its commitment to preserving its collection through succession planning. If an event occurs which necessitates a transfer of responsibility for managing Roper Center holdings, the collection would be preserved by these partner organizations. (Data-PASS Articles of Collaboration-10. Transfer Protocols: http://www.icpsr.umich.edu/files/DATAPASS/pdf/collaboration.pdf accessed 8/8/2017). The Roper Center's Digital Preservation Policy ensures that any actions necessary to ensure the long-term usability of

acquired data are incorporated throughout the curatorial workflow.(Roper Center Digital Preservation Policy, http://www.ropercenter.cornell.edu/digital-preservation-policy/ accessed 8/8/2017) Further, aligning with the Data Documentation Initiative (DDI) and Open Archival Information System (OAIS) positions the archive to be easily adopted by partner organizations. (DDI https://www.ddialliance.org/ accessed 8/9/2017), (Roper Center Data Curation https://ropercenter.cornell.edu/about-the-center/data-curation/ accessed 8/8/2017)

Roper Inc., is a 501(c)3 non-profit organization under the guidance and supervision of a long-standing, professionally advanced and diverse Board of Directors (Roper Center: Board of Directors https://ropercenter.cornell.edu/about-the-center/board-of-directors/ accessed 8/8/2017). As part of the drafting of the relocation agreement between Cornell University and Roper Inc. in November of 2015, the following items were identified as essential to ensuring the Center's ability to adapt to long-term changes in circumstances. Vital provisions of the Roper Center/Cornell relationship include, but are not limited to:

Personnel

- Immediate appointment of key personnel

- Complete build-out of staff with the appropriate level of skills and abilities

- Development of training schedules and identification of gaps and procedures to rectify, if required

Space and infrastructure

- Immediate provision of hosting infrastructure, providing uninterrupted user access

- Immediate provision of secure and redundant data backup systems

- Ample and reasonably comfortable work environments that sustain morale and output

Fiduciary

- Cash and capital expenditure (building retrofit, furniture, relocation) considerations

- Adequate and controlled financial processing procedures for both staff compensation (salary and benefits) and revenue and expense tracking and reporting

- Separate accounts for compensation and interdepartmental costs (Cornell) and direct billing for external services (external organization)

- Board and host institution accounts to be managed separately wherever possible

- Grant acquisition support, fund management and administrative support systems (recommended, not required)

- Maintenance of Roper Inc.'s non-taxable status

- Retention of professional bookkeeping services by Roper Inc. for Board fund(s) tracking and reporting, and for federal tax preparation

- Retention of a Certified Public Accounting firm by Roper Inc.to conduct the annual audit

These provisions, as well as others, will be addressed in the case of any subsequent relocations or transfers, as will many of the steps taken during the 2014-2015 migration from the University of Connecticut to Cornell University. Macro-level phases of this process included the creation of a relocation search committee consisting of members of the Board of Directors, a formal call for proposals, a thorough review of a number of viable host institutions, and a series of negotiations after a suitable host was selected. Based on the applicant pool from 2014-2015, Roper Inc. is confident that continuity of access is achievable long-term.

If an event occurs which necessitates a transfer of responsibility for managing Roper Center holdings, the Center has taken reasonable steps to ensure that the collection would be preserved by partner organizations (Data-PASS Articles of Collaboration-10. Transfer Protocols: http://www.icpsr.umich.edu/files/DATAPASS/pdf/collaboration.pdf accessed 8/8/2017).

Roper is in the process of completing a Cornell C-COOP Continuity Plan, which includes identification of essential services, stakeholders, applications, facilities, records and resources, and planning for business continuity and disaster management. Completion of the C-COOP is expected in Fall 2017.

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments:

4. Confidentiality/Ethics

Minimum Required Statement of Compliance:

> 0. N/A: Not Applicable.

Applicant Entry

Statement of Compliance:

> 4. Implemented: This guideline has been fully implemented for the needs of our repository.

Self-assessment statement:

> Data producers are required to remove all information directly identifying research subjects before depositing Submission Information Packages (SIPs). They are requested to complete a Data Deposit Form, which specifically gives the Roper Center permission to modify, transform or remove any information that could be used in the identification of those research subjects (Roper Center Data Deposit Form https://ropercenter.cornell.edu/wp-content/uploads/2015/04/DataDepositForm.pdf accessed 8/8/2017). All SIPs are moved to permanent storage upon arrival, and only staff with specific security permissions has access to them. During the processing lifecycle, Roper Center staff will review all materials to ensure the protection of research subjects (Roper Center Data Curation-Processing http://www.ropercenter.cornell.edu/about-the-center/data-curation/#processing accessed 8/8/2017). During this review, staff specifically trained in disclosure methods will use reasonable efforts to identify any item(s) that may directly or indirectly compromise the confidentiality of a research subject. When an item(s) is identified, staff will employ the following practices: de-identification, statistical disclosure control, and/or usage restriction (Data Preservation Alliance for the Social Sciences (Data-PASS) Confidentiality Policies http://www.data-pass.org/sites/default/files/confidentiality.pdf accessed 8/8/2017). The Center's Digital Preservation Policy states that the Center cannot guarantee that such efforts will be 100% effective, and disclaims all warranties, expressed or implied, with respect to the protection of respondent confidentiality Policy (Roper Center Digital Preservation Policy, http://www.ropercenter.cornell.edu/digital-preservation-policy/ accessed 8/8/2017). These item(s) and all disclosure practices employed are logged and stored within permanent storage. Archival Information Packages (AIPs) and Dissemination Information Packages (DIPs) are stored in separate areas in accordance with our security procedures.

> The Roper Center has restricted-use studies within its collection. These studies require special permission for researcher access. Researchers must complete an application detailing their research objectives, specific use cases of these restricted variables, time period of their use, and a data protection plan (Roper Center Exit Poll Application https://ropercenter.cornell.edu/wp-content/uploads/2014/11/ExitPollApplication2017.pdf accessed8/8/2017), (Roper Center Restricted Use Data for the Social Capital Community Benchmark Survey, https://ropercenter.cornell.edu/wp-content/uploads/2015/04/Confidentiality-Agreement-Seguaro1.pdf accessed 8/8/2017). Applications are reviewed by the Executive Director of the Roper Center, and access to restricted studies is only given to approved applications.

> The Roper Center provides access to its holdings through memberships. Each membership institution is required to complete a contract detailing the responsibilities of each party and that must be signed by a duly authorized institutional official (Roper Center Membership Agreement http://www.ropercenter.cornell.edu/membership-agreement/ accessed 8/8/2017). Individual users must also agree to a standard Terms and Conditions contract to access all individual-level data or analysis services through the Roper Center website (Roper Center Terms and

Conditions https://ropercenter.cornell.edu/terms-and-conditions/ accessed 8/8/2017). These agreements, both institutional and individual, describe the practices and techniques used to ensure the confidentiality of research subjects. In the case of occasional purchase of access to a single dataset, the purchaser is also required to sign the terms and conditions of use.

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments:

5. Organizational infrastructure

Minimum Required Statement of Compliance:

0. N/A: Not Applicable.

Applicant Entry

Statement of Compliance:

4. Implemented: This guideline has been fully implemented for the needs of our repository.

Self-assessment statement:

HOST INSTITUTION

Cornell University, a privately endowed, Ivy League university and the land-grant university for New York State, is the host institution for the Roper Center for Public Opinion Research. Cornell's mission is to discover, preserve, and disseminate knowledge; produce creative work; and promote a culture of broad inquiry throughout and beyond the Cornell community. Cornell also aims, through public service, to enhance the lives and livelihoods of our students, the people of New York, and others around the world. The distinct focus on the research, cross-disciplinary collaboration, and the social sciences at Cornell make it an ideal location for long-term sustainability of the archive at the Roper Center (Cornell University Mission http://www.cornell.edu/about/mission.cfm accessed 8/8/2017).

Roper Center resides administratively within the Research Division at Cornell. The Research Division enables and advances the university's research priorities as well as research activities of Cornell colleges, schools, and research centers, laboratories and institutes. The Cornell Institute for Social and Economic Research (CISER) is one such institute and was founded in 1981 with a mission to anticipate and support the evolving computational and data needs of Cornell social scientists and economists throughout the entire research process and data life cycle. (About CISER https://ciser.cornell.edu/About_CISER.shtml accessed 8/8/2017) Technology infrastructures at CISER are mirrored at Roper Center.

Roper Inc. was established as the official non-profit which operates under the direction of a Board of Directors. Roper Inc. contracts with Cornell University to manage the day-to-day operations of the Center, subject to the general oversight of the Board. The operations staff work across numerous departments and institutions across the Cornell campus, to establish collaborations with professors and faculty affiliates, contract for services such as cyber security and backup protections, or to co-host conferences and events. Currently housed across five professional offices and a large collaborative work space for the Center, the facilities made available to the Center by the Research Division at Cornell are more than adequate.

FUNDING

The Roper Center is intended to operate on a self-sustaining financial basis, requiring little to no long-term assistance from Cornell University. While financial transactions are administratively housed within Cornell's Division of Financial Affairs financial accounting system and abide by the same controls and policies, parallel financial systems are tracking receivables, and monthly and annual income and expense reporting is shared with the Board of Directors and its bookkeeping service provider.

Externally audited financials and three and five-year financial projections present a solid case for long-term sustainability based on sensible membership growth and cost containment. Currently, annual income is derived almost entirely from the support of individual member organizations who pay a service subscription fee. With over 280 members in academic and non-academic or "affiliate" categories (government, non-profit, individuals, media, etc.), the outlook for continued operation of the Center up to and beyond 5 years is positive (Roper Center List of Members https://ropercenter.cornell.edu/list-of-members/ accessed 8/8/2017).

Additionally, grant and other sponsored projects will increasingly become a focus at the Center moving forward. Securing funding that will strengthen the archive and promote the Center to new membership prospects will act to increase revenue expectations, as well as offset project-related costs.

STAFFING & TRAINING

The staff consists of individuals who have a deep understanding of the social science data lifecycle. The staff are broken into three teams: Administration, Technology, and Data and Archiving. The Center maintains 10 FTE positions, as well as part-time appointments for select individuals and student staff, and will occasionally support strategic projects with supplemental contract agents. This staffing structure is comparable to archives similar in structure, breadth and depth, and is appropriate for the operations currently taking place.

Administration

Executive Director, Board and Cornell reporting
Associate Director, Business Administration

CISER Director, IT, archive and administrative support

Technology

Software Engineer, Technical lead on the database infrastructure
Applications Programmer, Primary coder and analyst
Systems Administrator, Systems, networking, hardware and software

CISER IT Director, Advisor, IT projects

Archive and Data Operations

Dir. Data Operations & Data Communications, Metadata planning, archival operations, data ingest and systems liaison
iPOLL Acquisitions Manager, Development and expansion of iPOLL, maintaining data quality
Data Manager (1-2), Data provider relations, ingest of data, quality checks, protection of respondent privacy
Data Processors (2-3), Ingest of data, protection of respondent privacy, and quality checks

Graduate Students (2), Roper Center Public Opinion Fellows, Higher level processing and file conversion
Undergraduate Students (10), Research Assistants, iPOLL ingest, various other tasks related to processing

(Roper Center Staff, https://ropercenter.cornell.edu/about-the-center/staff/ accessed 8/8/2017), (Roper Center Student Staff https://ropercenter.cornell.edu/about-the-center/staff/ accessed 8/8/2017), (Roper Center Graduate Student Fellows https://ropercenter.cornell.edu/about-the-center/staff/roper-center-graduate-fellows/ accessed 8/8/2017)

Training is required of all employees of the Roper Center. In additional to the wide variety of high-caliber trainings and educational assets offered to employees of Cornell University through the CU Learn program, members of the staff attend many professional conferences (domestic and international), trainings, and workshops to develop both personally and professionally.

Professional mentoring, coaching and general networking is encouraged for those in leadership positions and is encouraged daily through the support provided by members of the Board of Directors, senior management, and across affiliations, associations, committees, and through professional conference attendance and participation at AAPOR, IASSIST, APSA, ACRL/ALA, ASA, Data-PASS, and NADDI/EDDI.

EXTENDED PROFESSIONAL NETWORK

The Roper Center is deeply connected to the data archives community through professional affiliations, memberships, and strategic partnerships, particularly with those organizations listed above. Data preservation partnerships and metadata harvesting are considered to be integral to the mission and vision of the Center. The Roper Center works collaboratively with organizations that provide continuity in data preservation, including The Data Preservation Alliance for the Social Sciences (Data-PASS) and the National Digital Stewardship Alliance ((Data-PASS Articles of Collaboration-10. Transfer
Protocols: http://www.icpsr.umich.edu/files/DATAPASS/pdf/collaboration.pdf accessed 8/8/2017),
(http://ndsa.org/members-list). Metadata harvesting and/or sharing is a supported practice in partnership with data repository search portals such as Dataverse (Roper Harvested
Dataverse https://dataverse.harvard.edu/dataverse/roper accessed 8/8/2017).

Metadata at the Center are structured using the Data Documentation Initiative (DDI)'s controlled vocabularies group and built on Lifecycle standard, version 3.2. (DDI Lifecycle
3.2 http://www.ddialliance.org/Specification/DDI-Lifecycle/3.2/ accessed 8/8/2017). After 20 years of facilitation, DDI has established itself as a leader in describing and documenting data intended for digital preservation, and will continue to evolve to meet the needs of members of the social science research community.

Roper Center's processing and preservation practices are based on the reference model for an Open Archival Information System (OAIS), designed to ensure that the largest collection of polling data in the world will be preserved and made accessible for the long-term, withstanding the impacts of changing technologies and user communities, and including support for new media and data formats. (Roper Center Data
Curation https://ropercenter.cornell.edu/about-the-center/data-curation/ accessed 8/8/2017)

In addition, the Board of Directors for the Roper Center consistently serve to position the Center at the forefront in their respective fields, including public opinion research, political science, communications, market research, higher education, and repositories and archiving (Roper Center Board of
Directors https://ropercenter.cornell.edu/about-the-center/board-of-directors/ accessed 8/8/2017). New members of

the Board are nominated by the Nominating Committee and voted on by the full Board. Members are selected to represent leaders in public opinion research across the commericial, academic, and nonprofit sectors, as well as to provide additional expertise in important areas like data archiving or law. Board members serve overlapping three-year terms, with no limit on renewals. The Board in managed by a Chair, Vice Chair and Secretary/Treasurer, and a number of committees engage in activities in support of the Center. The full Board meets twice a year, while committees meet as necessary.

At the June 2017 meeting of the Roper Board, the Center was encouraged to develop a plan for an Archival Advisory Committee. This planning is now underway. This Committee will be drawn from leading figures in data archiving, digital preservation, and data librarianship, and will provide regular guidance to the Center for ongoing development of technology and archival procedures.

The Center is a member of the Data Preservation Alliance for the Social Sciences (Data-PASS). Center staff are deeply involved with professional organizations related to its mission, regularly attending and presenting at conferences, serving on committees and otherwise contributing to these communities. These organizations include the International Association for Social Science Information Services and Technology (IASSIST), the Data Documentation Initiative (DDI) Alliance, American Association for Public Opinion Research (AAPOR), Population Association of America (PAA), Educause, Security Professionals Conference, Social Science History Association (SSHA), and the American Political Science Association (APSA).

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments:

6. Expert guidance

Minimum Required Statement of Compliance:

0. N/A: Not Applicable.

Applicant Entry

Statement of Compliance:

4. Implemented: This guideline has been fully implemented for the needs of our repository.

Self-assessment statement:

The Roper Center's Board of Directors serves a central role in advising on survey research best practices, determining policies, and supporting staff efforts to improve the archive (Roper Center Board of Directors https://ropercenter.cornell.edu/about-the-center/board-of-directors/ accessed 8/8/2017). The Board meets twice a year, but key members of the Board provide regular guidance to staff via phone calls and email over the course of the year. In particular, members of the Archiving and Technology Committee provide essential guidance for archive planning. The Committee consults regularly with the data archive team through email, phone calls, and in-person meetings. Member of the Board are nominated by the Nominating Committee and voted on by the full Board. Most Board members are drawn from the top ranks of leaders in polling research representing the commercial, academic, and non-profit sectors, while additional Board members are chosen to provide needed expertise in specific areas, like data archives or law.

At the June 2017 meeting of the Roper Board, the Center was encouraged to develop a plan for an Archival Advisory Committee. This planning is now underway. This Committee will be drawn from leading figures in data archiving, digital preservation, and data librarianship, and will provide regular guidance to the Center for ongoing development of technology and archival procedures.

The staff also actively seeks advice and guidance from the larger data archives community through participation in conference events, listserv discussions, and other means. Direct conversations with key leaders in data archiving regularly provide the Center with helpful guidance, particularly members of the DDI Alliance and IASSIST.

Jeremy Iverson and Dan Smith, partners at the Colectica and developers of DDI-compliant data archival systems, have been hired as consultants on Roper Center's technological development projects (Colectica Custom Development http://www.colectica.com/services/custom-development accessed 8/8/2017).

In addition, Roper benefits from input and expertise from across the Cornell community, including a group of faculty affiliates who provide the Center with expert user feedback and expertise in their broad-ranging fields of research. (Roper Center Faculty Affiliates https://ropercenter.cornell.edu/about-the-center/cornell-faculty-affiliates/ accessed 8/8/2017) Cornell Central IT also provides essential technical support including security testing, upgrade assistance, accessiblity testing, and database management. The Center also relies upon the advice and expertise of members of the library staff, student

workers, including graduate students, and designated Cornell representatives on the Board of Directors.

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments:

7. Data integrity and authenticity

Minimum Required Statement of Compliance:

0. N/A: Not Applicable.

Applicant Entry

Statement of Compliance:

4. Implemented: This guideline has been fully implemented for the needs of our repository.

Self-assessment statement:

The Roper Center generates MD5 Checksums on all files in archival storage upon ingest. Checksums are stored as part of the metadata for the archived file from which they are generated. The integrity of data and metadata can be verified at any time by scanning the archive and generating new MD5 Checksums and comparing them against the values in the database. The guarantee of data integrity can also be provided to the end user upon the downloading of data files. After a download is completed, a user can use any available tool to generate an MD5 Checksum for the downloaded file, and verify its integrity by comparing it to the expected checksum of the file.

The Roper Center has implemented a version control protocol based at the study level. Each Submission Information Package (SIP) at ingest is moved into archival storage and is assigned a baseline level version designation. Any modifications to an existing file and/or files created during a processing event will constitute an incremental version number increase. These processing events may include file migration, normalization, digitization of analog materials, corrections, and/or any value-added metadata/file modifications. Each study level version is stored in archival storage (Roper Detailed Data Processing Diagram https://ropercenter.cornell.edu/wp-content/uploads/2014/12/RoperDataProcessing_v2.png accessed 8/11/2017). The Roper Center provides web access only to the most recent study version and its associated files through RoperExpress (Roper Center RoperExpress https://ropercenter.cornell.edu/roperexpress/ accessed 8/9/2017), (Roper Center Version Control https://ropercenter.cornell.edu/versioncontrol/ accessed 8/9/2017).

Every change that is made to the metadata by a data processor is tracked using JaVers object auditing. A Git version control system manages versioning at the file level. Provenance information, including depositor, affiliation, method of data transfer, and other items, is collected as metadata associated with the files.

Currently, the Roper Center accepts data only from approved data providers with whom the Center has ongoing or individual agreements. The Center is in the process of developing a data submission portal which ongoing data providers can use to submit data files. Only approved data providers will be given accounts on this system, adding another layer of security for submissions.

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments:

8. Appraisal

Minimum Required Statement of Compliance:

0. N/A: Not Applicable.

Applicant Entry

Statement of Compliance:

4. Implemented: This guideline has been fully implemented for the needs of our repository.

Self-assessment statement:

Criteria for acquisitions of data are delinated in the Acquisitions Policy. The Acquisitions, Standards and Processing Committee of the Roper Center Board of Directors evaluates new methodologies and recommends changes to the Acquisition Policy to be approved by the full Board. The Roper Center's Acquisition Policy defines accepted sampling design and data collection methodologies allowed for submission, as well as minimum disclosure requirements, and provides guidance in prioritization of collection development. (Roper Center Acquisition Policy https://ropercenter.cornell.edu/acquisition-policy/ accessed 8/9/2017).

Currently, the Roper Center accepts public opinion survey research data based on probability-based sampling procedures on sample sizes of a minimum of 500. Exceptions to the sample size and probability sampling requirements are made in a few cases, such as important historical collections or studies of comparative populations conducted in conjunction with an acquisition-criteria-compliant public opinion survey. Submissions must also meet minimum disclosure requirements as outlined by the American Association for Public Opinion Research (AAPOR) Disclosure Standard http://www.aapor.org/Standards-Ethics/AAPOR-Code-of-Ethics/Survey-Disclosure-Checklist/Disclosure-Standards.aspx access 8/9/2017). Roper Center prioritizes collection first of U.S. national polls, followed by US state-level polls, then non-U.S. polls. Roper Center collects both individual-level datasets and marginal/topline data and reports. Collections must be of current value or potential historical interest and salient to the Center's mission to facilitate research on public opinion; surveys conducted purely for marketing purposes are not accepted. The Roper Center monitors national and state-level public opinion polls in the U.S. in order to maintain a list of possible acquisitions; outreach is conducted regularly to organizaitons that conduct acquisition-policy-compliant polls to encourge archiving. In addition, Roper Center users sometimes alert the Center to possible public opinion surveys of interest to the research community.

Once data has been received, compliance with acquisition policy is verified by data processors within the dataset ingest system as part of the submission review. Their appraisal is saved in the system for both accepted and rejected submissions (https://ropercenter.cornell.edu/wp-content/uploads/2014/12/RoperDataProcessing_v2.png). The Center requires that any Submission Information Package (SIP) contain the documentation necessary for ensuring required disclosure standards are met for deposited data, e.g., a methodology report, questionnaires, and interviewer instructions (Roper Center Data Deposit Form https://ropercenter.cornell.edu/wp-content/uploads/2015/04/DataDepositForm.pdf accessed 8/8/2017). The ingest process mandates a minimal completion of necessary metadata regarding methodology, sponsorship, and other critical information before the study can be assigned to the catalog. Submissions which include insufficient information are put on hold and attempts made to secure complete information from the data provider. The Center is also at the implementation stage of providing a new data portal for submissions by approved data providers. This portal will required completion of fields related to essential information for assessing quality and understanding data and will indicate which fields are mandatory for compliance with AAPOR transparency standards (AAPOR

Disclosure
Standards http://www.aapor.org/Standards-Ethics/AAPOR-Code-of-Ethics/Survey-Disclosure-Checklist/Disclosure-Standards.aspx acces
8/9/2017).

Data producers are provided a full list of recommended data formats on the Center's website (Roper Center
Deposit Data https://ropercenter.cornell.edu/polls/deposit-data/ accessed 8/9/2017) and on the Data Deposit Form
(Roper Center Data Deposit
Form https://ropercenter.cornell.edu/wp-content/uploads/2015/04/DataDepositForm.pdf accessed 8/8/2017) and
Data Portal (in development). The Center's preferred data formats include ASCII, PASW/SPSS, SAS, and/or
STATA.

In the rare instance of a submission in a non-preferred format, the data provider is first contacted to determine if
the data can be made submitted in a preferred format. The Roper Center does acquire data formats outside of its
preferred list on occasion in accordance with the Center's Acquisition Policy (Roper Center Acquisition
Policy https://ropercenter.cornell.edu/acquisition-policy/ accessed 8/9/2017). These files are generally categorized
as being at-risk in the public opinion and survey research fields.

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments:

9. Documented storage procedures

Minimum Required Statement of Compliance:

0. N/A: Not Applicable.

Applicant Entry

Statement of Compliance:

4. Implemented: This guideline has been fully implemented for the needs of our repository.

Self-assessment statement:

Documentation of processes and procedures is done with a combination of Microsoft Word documents and the use of Atlassian's Confluence provided by Cornell University. Things such as user manuals are created with Word, while technical documentation (database diagrams, system configuration manuals, etc.) are held within Confluence. Confluence has built-in version control for changes made to documentation. Word documents are versioned by date. Updates are made to these documents if and when the applications change. User manuals are updated when something on the user interface changes or general functionality affecting the user changes. Technical documentation is updated when configuration of the system changes or the database changes, as well as when overall workflow changes.

In order to access the internal application managing the archive, a person must be a member of Cornell University and be given access to the internal application via the application's management console. Access to the archive for writing is only granted to the internal application, while users that have been added to the Roper Center group have read access only. This functionality is supported by the Roper Center's on-staff system administrator as well as Cornell's Information Technology (CIT) group.

The data preservation policy addresses the primary strategies for data preservation and data storage as follows:

The Center establishes and maintains connections between data files, documentation, marginal data, and secondary publications based on provenance. To enable the Center to retain the ability to regenerate distribution formats over time, the Center archives the original digital content received, the normalized versions of files, and superseded versions of files that have been distributed. The Center's infrastructure and documentation are compliant with the Data Documentation Initiative (DDI) standard in all material respects (DDI Lifecycle 3.2 http://www.ddialliance.org/Specification/DDI-Lifecycle/3.2/ accessed 8/8/2017). Staff will monitor and contribute to the development of new metadata standards and adopt standards that support the Center's infrastructure and technology as they are proven valuable by the community. The Center has adopted normalization and migration as its primary digital preservation strategies. (Roper Center Digital Preservation Policy, http://www.ropercenter.cornell.edu/digital-preservation-policy/ accessed 8/8/2017)

In addition to file level protocols, the Roper Center employs proactive security, redundancy, and backup measures in order to maintain and protect its digital assets and ensure long-term integrity. All core system resources are

firewalled and actively monitored to prevent unauthorized or inadvertent access. Duplication of backend storage, critical server resources, and load-balanced frontend applications are provided across multiple, physical locations to address single point of failure. All physical locations are secured and provide redundant network and power, and digital assets are backed up nightly and securely stored off-site.

The OAIS standard provides the central architecture design for the data processing workflow. (Roper Center Data Curation https://ropercenter.cornell.edu/about-the-center/data-curation/ accessed 8/8/2017) The DDI standards influence both the design of the Roper Center's metadata database as well as future external access endpoints. The layout and contents of the database are partially derived from the language and organizational structure of the DDI Lifecycle 3.2 Specifications. DDI will also be the standard format through which external systems can access Roper data. As a part of the curation process, DDI-compliant (Lifecycle version 3.2) XML files will be generated automatically and archived alongside its corresponding data by Spring 2018.

The archive is within Cornell's managed server farm, thus deterioration of storage media is monitored and handled by CIT.

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments:

10. Preservation plan

Minimum Required Statement of Compliance:

0. N/A: Not Applicable.

Applicant Entry

Statement of Compliance:

4. Implemented: This guideline has been fully implemented for the needs of our repository.

Self-assessment statement:

The Roper Center's Digital Preservation Policy informs and supports the Center's planning for the long-term preservation of digital assets (https://ropercenter.cornell.edu/digital-preservation-policy/).The policy formalizes the Center's commitment to addressing the challenges of changing technology and user needs Policy (Roper Center Digital Preservation Policy, http://www.ropercenter.cornell.edu/digital-preservation-policy/ accessed 8/8/2017). Specifically, the Technological and Procedural Suitability section defines normalization and migration procedures as the primary strategies to address the challenges of file format obsolescence (Roper Center Digital Preservation Policy, http://www.ropercenter.cornell.edu/digital-preservation-policy/ accessed 8/8/2017) (Roper Center Data Curation-Processing http://www.ropercenter.cornell.edu/about-the-center/data-curation/#processing accessed 8/8/2017). Additionally, file format obsolescence monitoring is a component of the Data Preservation Alliance for the Social Sciences (Data-PASS) technology responsiveness program whose purpose is to ensure the integrity and availability of social science research data (Data Pass Data Security http://www.data-pass.org/sites/default/files/DataSecurity.pdf accessed 8/9/2017).

A central priority of the Center's Digital Preservation Policy is that any actions necessary to ensure the long-term usability of acquired data are incorporated throughout the curatorial workflow (Roper Center Digital Preservation Policy, http://www.ropercenter.cornell.edu/digital-preservation-policy/ accessed 8/8/2017).The Center uses reasonable efforts to fulfill this objective by employing robust, interoperable metadata management strategies that help to ensure that data will be provided to users while remaining readable, meaningful, and independently understandable in perpetuity (Roper Center Data Curation-Processing http://www.ropercenter.cornell.edu/about-the-center/data-curation/#processing accessed 8/8/2017). No assurance can be made, however, that such measures will be completely effective. The Center's participation in the Data-PASS consortium helps to ensure the long-term preservation of digital assets even in a case where the Center is no longer able to retain archived material (Data-PASS website, About Data-PASS http://www.data-pass.org/about.jsp#partners, accessed 8/8/2017).

The data provider agreement cosigned by the Roper Center and its data providers clearly provides the Center with the authority and rights to meet the obligations of its preservation policy in terms of transforming, storing, preserving and disseminating the data (Roper Center Sample Data Provider Agreement https://ropercenter.cornell.edu/wp-content/uploads/2014/12/Roper-Center-Data-Provider-Agreement-sample.pdf accessed 8/8/2017).

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments:

11. Data quality

Applicant Entry

Statement of Compliance:

4. Implemented: This guideline has been fully implemented for the needs of our repository.

Self-assessment statement:

Quality assurance on each dataset is achieved through thorough review by data processors to ensure that sufficient documentation is provided for user understanding and that the data adheres to the quality standards of the acquisitions policy. Quality assurance at a data provider level is determined by a review process conducted by the Center with, when appropriate, input from the Board of Directors.

The Center requires that any Submission Information Package (SIP) contain the documentation necessary for appraising the quality of deposited data, e.g., a methodology report, questionnaires, and interviewer instructions (Roper Center Data Deposit Form https://ropercenter.cornell.edu/wp-content/uploads/2015/04/DataDepositForm.pdf accessed 8/8/2017). All data providers should provide each of the full disclosure elements as outlined by the American Association for Public Opinion Research (AAPOR) standard (AAPOR Disclosure Standard http://www.aapor.org/Standards-Ethics/AAPOR-Code-of-Ethics/Survey-Disclosure-Checklist/Disclosure-Standards.aspx access 8/9/2017). Compliance with this standard is strongly encouraged by the Center. In addition, to help users learn more about data provider organizations, information about each current data provider is given on the Roper Center website, including information about whether the data provider is part of the AAPOR Transparency Initiative. (Roper Center Data Providers https://ropercenter.cornell.edu/polls/data-providers/ accessed 8/9/2017). General information about polling methodology and survey quality is provided in the support section of the Roper Center website to assist users with making quality evaluations (Roper Center Polling Fundamentals https://ropercenter.cornell.edu/support/polling-fundamentals/ accessed 8/9/2017), (Roper Center Analyzing Polls https://ropercenter.cornell.edu/support/analyzing-polls/ accessed 8/9/2017).

The mechanism for metadata and data quality review is the dataset ingest system, which is used to review, clean, and process incoming data, apply metadata, implement version control, track changes, and move files into archival storage. The system was based on a plan created by Ann Green of Digital Lifecycle Research & Consulting (Roper Center Project Overview: A Review and Redesign of Roper Center Infrastructure https://ropercenter.cornell.edu/project-overview-a-review-and-redesign-of-roper-center-infrastructure/ accessed 8/9/2017). Jeremy Iverson and Dan Smith of Colectica have reviewed the system for adherence to data archival standards and accurate mapping to DDI. These reviews have ensured that the required metadata and documentation is sufficient for end users to understand and utilize the data. The metadata entered into the internal database has been improved in recent months, becoming more expansive and more granular. These changes will be reflected in the searchable and displayed metadata fields on the website in the next 18 months in order to make user quality evaluation easier. In the meantime, this information is available in the PDF documentation provided for each dataset.

Roper Center solicits feedback from the designated community on the website, through attendance at academic conferences, and through involvement with professional organizations.

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments:

12. Workflows

Minimum Required Statement of Compliance:

0. N/A: Not Applicable.

Applicant Entry

Statement of Compliance:

4. Implemented: This guideline has been fully implemented for the needs of our repository.

Self-assessment statement:

Roper Center's data curation program is aligned with the Open Archival Information System (OAIS) Reference Model (Roper Center Data Curation https://ropercenter.cornell.edu/about-the-center/data-curation/ accessed 8/9/2017). The Center's processing workflow describes the sequence of actions that occur from submission of materials (Submission Information Packages--SIP) to their distribution (Dissemination Information Packages--DIP) including all movements to archival storage (Archival Information Package--AIP) (Roper Detailed Data Processing Diagram https://ropercenter.cornell.edu/wp-content/uploads/2014/12/RoperDataProcessing_v2.png accessed 8/11/2017).

The Center's archive staff creates and maintains detailed instructions about all practices and procedures that occur during each phase of processing throughout the data life cycle. The instructions are available to all Roper Center staff members through the Center's centralized knowledge bases in Confluence and SharePoint. The Roper Center also provides similar instructional material for outside users through its website including basic file format migrations (Roper Center website, Bring ASCII Data File into Stata: http://www.ropercenter.cornell.edu/support/ascii-data-into-stata/ accessed 8/9/2017), (Roper Center website, Bring ASCII Data File into SPSS: http://www.ropercenter.cornell.edu/support/ascii-data-into-spss/accessed 8/9/2017).

A conceptualized overview of the data life cycle, processing workflows and its phases is available for data producers, academics, and other researchers on the Roper Center's website (Roper Center Data Curation https://ropercenter.cornell.edu/about-the-center/data-curation/ accessed 8/9/2017). This informs our various stakeholders of the effort incurred to enhance studies with meaningful information, making them as complete as possible, usable, and independently understandable for future researchers.

The data deposit process is described fully on the Roper website and examples of the Data Deposit Form and Data Provider agreement provided (Roper Center Deposit Data (Roper Center Sample Data Provider Agreement https://ropercenter.cornell.edu/wp-content/uploads/2014/12/Roper-Center-Data-Provider-Agreement-sample.pdf accessed 8/8/2017), (Roper Center Data Deposit Form https://ropercenter.cornell.edu/wp-content/uploads/2015/04/DataDepositForm.pdf accessed 8/8/2017).

In accordance with the Roper Center Acquisition Policy, some data submissions are accepted in non-preferred formats that require additional processing. Some non-preferred formats, such as multi-punched column binary, are

internally migrated to preferred formats and normalized for long-term preservation. In the case of non-preferred file formats that fall outside of the staff's expertise, Center will seek professionals outside of the organization with specific knowledge of those formats to perform recovery and migratory operations.

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments:

13. Data discovery and identification

Minimum Required Statement of Compliance:

0. N/A: Not Applicable.

Applicant Entry

Statement of Compliance:

3. In progress: We are in the implementation phase.

Self-assessment statement:

The Roper Center offers rich discovery tools for the data in its collections. Abstracts are written to describe the topical coverage in each dataset. Datasets can be accessed by search functions on title, abstract keyword, organization, country, sample, and dates. For datasets from national U.S. populations, users can also search the question-level iPOLL database by keyword within the text of the question, organization, controlled-language topic, and dates. Once a question of interest is found, the user can navigate easily to the dataset catalog entry for the related dataset and download the documentation and individual-level data, as well as any supporting materials available, such as topline reports or data tables.

Data citations are provided to end-users at the question-level for questions in the iPOLL database, and at the dataset level for datasets in the archival catalog. The dataset citations indicate the dataset title, producer, distributer, version number, access date, and the archive number, a unique identifier. The iPOLL question citations indicate the dataset title, producer, distributer, access date, and the question number, a unique identifier.

The Center is in the process of implementing a system which will assign DOIs at the dataset and survey release levels, part of a larger technological rebuild. Completion of this project has been delayed until late winter or spring 2018. (Roper Detailed Data Processing Diagram https://ropercenter.cornell.edu/wp-content/uploads/2014/12/RoperDataProcessing_v2.png accessed 8/11/2017).The Center expects to make DOIs visible to end users sometime in late 2018.

Metadata for the collection is also provided to Dataverse to enhance discovery (https://dataverse.harvard.edu/dataverse/roper). The Center is working with DataCite to share metadata and facilitate citation within the coming year. The Roper Center maintains a selected bibliography of publications based on Roper Center data (https://ropercenter.cornell.edu/roper-center-bibliography/).

Information about cataloging and describing the Roper Center archive is provided to membership representatives at member institutions, to encourage these institutions to make finding Roper Center data easy for their users. Links to member institution EZProxy logins are also made available on the Roper Center website (https://ropercenter.cornell.edu/list-of-members/). Many academic institutions include information about Roper in their resource lists for social science or public opinion data; for example Princeton University (Princeton University Library Public Opinion and Survey Research Data Source,

http://libguides.princeton.edu/politics/opinion accessed 9/10/2017) and Harvard University (http://guides.library.harvard.edu/public_opinion accessed 9/10/2017).

Citations are not provided for articles written based on Roper Center datasets. However, the repository has a plan for creating such a system in the future. The Roper Center maintains a selected bibliography of publications based on Roper Center data (Roper Center Bibliography https://ropercenter.cornell.edu/roper-center-bibliography/ accessed 8/9/2017). The Center is working with DataCite to provide metadata on the collection to the DataCite system within the coming year. The Center also has plans to create links between Roper-archived, researcher-created datasets based on original data in the Roper Center system and those primary datasets.

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments:

14. Data reuse

Minimum Required Statement of Compliance:

0. N/A: Not Applicable.

Applicant Entry

Statement of Compliance:

4. Implemented: This guideline has been fully implemented for the needs of our repository.

Self-assessment statement:

Dataset files are only made available to use if sufficient documentation can be provided to ensure that the data can be used and understood. The Center requires that any Submission Information Package (SIP) contain the documentation necessary for ensuring the long--term usability of deposited data, e.g., a methodology report, questionnaires, and interviewer instructions (Roper Center Data Deposit Form https://ropercenter.cornell.edu/wp-content/uploads/2015/04/DataDepositForm.pdf accessed 8/8/2017). All data providers should provide each of the full disclosure elements as outlined by the American Association for Public Opinion Research (AAPOR) standard (AAPOR Disclosure Standard http://www.aapor.org/Standards-Ethics/AAPOR-Code-of-Ethics/Survey-Disclosure-Checklist/Disclosure-Standards.aspx access 8/9/2017). Fulfillment of these standards is necessary for data to be understood and reused over time.

This information is then provided to end users via the dataset catalog (Roper Center RoperExpress https://ropercenter.cornell.edu/roperexpress/ accessed 8/9/2017). Catalog entries on the Roper Center website provide essential metadata about the survey title, sponsors, survey organization, study dates, sample, sample size, variables, weighting, as well as usage and sampling notes when necessary. This information is also duplicated in the downloadable PDF documentation, which also includes information on interview method and other methodological information, a full questionnaire, a dataset X-ray, and the column location for ASCII files. This documentation can also provide more extensive methodological information and a complete codebook. Further documentation is provided whenever possible, including topline and survey reports, presentations, charts, banner books, or other materials. This documentation, including the necessary metadata information, is provided in a downloadable PDF file or files.

All datasets that can be downloaded from the website are available in ASCII format for long-term preservation. Most downloadable datasets, and all new incoming datasets, are also made available as SPSS portable files. Both ASCII and SPSS portable are archival formats that ensure long-term usability with appropriate documentation. For the sake of greater reuse, the Center is also providing datasets in Stata. The Center is planning to develop a system for conversion to other formats at the point of download for ease of reuse by a broader range of users.

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments:

15. Technical infrastructure

Minimum Required Statement of Compliance:

0. N/A: Not Applicable.

Applicant Entry

Statement of Compliance:

4. Implemented: This guideline has been fully implemented for the needs of our repository.

Self-assessment statement:

The Roper Center's archival processes follow the OAIS reference model, a draft International Standardization Organization (ISO) standard, which is expected to become a full-fledged standard in the future. (Roper Center Data Curation https://ropercenter.cornell.edu/about-the-center/data-curation/ accessed 8/8/2017) The Roper Center maps its archival metadata to the DDI standard. The Data Documentation Initiative (DDI) is an international standard for describing the data produced by surveys and other observational methods in the social, behavioral, economic, and health sciences. (DDI https://www.ddialliance.org/ accessed 8/9/2017) The Roper Center uses the ISO 3166-1 alpha-2 standard for geographical metadata information. Web applications produced by the Roper Center follow HTTP protocols and transfer data using JSON.

The Roper Center has a comprehensive plan for infrastructure development based on a Robert Wood Johnson Foundation-funded project titled The Review and Redesign of Roper Center Infrastructure (Redesign of Infrastructure https://ropercenter.cornell.edu/project-overview-a-review-and-redesign-of-roper-center-infrastructure/ accessed 11/21/2017). A complete rebuild of the Roper Center architecture began in 2016 and is expected to be ongoing through 2018. Planning for this development project is managed with a combination of Microsoft Project for high level scheduling of tasks and Atlassian's Jira for execution and implementation of those tasks. During implementation, the Roper Center follows the Agile methodology with work being done in two-week segments.

Areas for infrastructure development include, but are not limited to: internal data ingest workflows, external user access allowing users to search for questions and datasets that exist within the Roper Center archive, export of metadata in a DDI format, and export of on-demand, member-requested usage reports that are COUNTER compliant.

A data ingest system has been built to automate workflows that were previously tracked and managed by hand. The main implementation of this system was completed in August of 2017. This system enforces and tracks proper ingest workflows, enforces entry of required metadata fields, and automatically versions metadata and files. Additional rounds of enhancements are currently in development to add support for DOI generation; add functionality for entering question-level metadata to support iPOLL question search; and enforcing consistency checks for dataset files, including checking for missing data, checking for confidential data, and checking for out-of-range codes. The generation of DOIs is planned to be completed by Spring 2018, the rest of these improvements by Winter 2018.

The development of external search will be to rebuild the current functionality in a way that is more architecturally sound and able to handle enhancements more rapidly. This should be completed by Winter 2019.

DDI will be the standard format through which external systems can access Roper data. As a part of the curation process, DDI-compliant (Lifecycle version 3.2) XML files will be generated automatically and archived alongside its corresponding data by Spring 2018.

Member-requested usage reports will be a part of a member's self-service portal. This will remove the dependency for a member to contact a Roper Center staff member to receive usage reports, as well as provide the member with COUNTER compliant usage reports. This should be completed by Winter 2019.

Software inventory for the Roper Center is maintained by Cornell's Endpoint Management via Microsoft System Center Configuration Manager (SCCM). System Documentation is readily available via Roper's instance of Confluence. In addition, Microsoft OneNote is used to manage documentation for IT Internals.

Most software used by the Roper Center is not community-supported. However, Python 2.6 is installed on Roper Center systems for use in facilitating ASCII file conversions to SPSS, SAS, and Stata formats.

The provision of around-the-clock connectivity to public and private networks is at a bandwidth sufficient to meet the global responsibilities of the repository. The load time for requests to the Roper Center average 7 seconds, with industry averages being between 7 and 13 seconds. Roper has designed an internal benchmark test app that checks our load times and notifies IT staff internally if speeds fail our threshold. Roper has notifications enabled on all AWS resources if anything is failing their designed health checks.

All entities that are in the archive have a checksum produced when they are originally archived and when they are versioned to ensure consistency across archival copies. The Roper Center is in the planning phases for performing daily validation of the checksums against the files both in the archive and the various backup locations; implementation is expected in early 2018.

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments:

16. Security

Applicant Entry

Statement of Compliance:

3. In progress: We are in the implementation phase.

Self-assessment statement:

Roper Center has multiple systems in place to ensure swift recover of essential services in the case of outage. Twice-daily backup services are run to replicate the archive on multiple servers within Cornell as well as to multiple AWS S3 locations. The web application is comprised of multiple servers load-balanced to handle a large volume of users and prevent against a server going down. The web database uses AWS's Relational Database Service (RDS) and makes use of RDS' replication feature. (Amazon Web Services RDS https://aws.amazon.com/rds/ accessed 8/9/2017) The use of AWS has further allowed for load balancing, the capacity to spin up another server when the load is high (i.e. during election period), and the opportunity to have multiple instances/locations of the database for recovery purposes. CIT's database group also assists with patching and backups of the database.

The Roper servers are located in the CIT server farm, an environmentally controlled secure Data Center, 757 Rhodes Hall, at Cornell University, Ithaca, NY. A proximity card reader secures the 757 Rhodes Hall Data Center. Access to the Data Center is granted by an authorized proximity card (Cornell University ID card) issued only to Cornell staff with the required credentials according to Cornell University Policy 8.4 -- Management of Keys and Other Access Control Systems. Entrance and exits to the Data Center are automatically logged, and monitored by Cornell Information Technology staff.

The Roper Center has EC2 Instances in the CIT controlled Amazon Web Services Cloud. These systems are controlled by a direct connect Virtual Private Cloud (VPC) back to Cornell's 10-space network along with special security to only allow traffic that is needed between the systems and servers being hosted at Rhodes Hall CIT server farm.

Data in the Roper Center archive is stored on two servers within Cornell's managed server farm, and each server is backed up to Cornell's EZ-Backup solution. (Cornell IT Managed Servers https://it.cornell.edu/managed-servers accessed 8/9/2017), (Cornell IT EZ Backup https://it.cornell.edu/ez-backup accessed 8/9/2017) EZ-Backup allows several versions of the same files to be kept for as long as the user requires and is deemed viable for long-term storage. As files change, previous backup versions are retained within EZ-backup for a limited time (six months). The data entrusted to the

EZ-Backup service is also copied to a secure off-campus location in New York City.

In addition, the Roper Center archive is replicated to Amazon Web Services' (AWS) Simple Storage Service (S3) product in both the United States and in Europe (Amazon Web Service S3 https://aws.amazon.com/s3/?sc_channel=PS&sc_campaign=acquisition_US&sc_publisher=google&sc_medium=s3_b&sc_content=s3 8/8/2017). For replications made to S3, the files do not expire. Multiple data storage locations, including in the U.S. and Europe, ensure that the data archive is protected from local disaster. Data is backed up and replicated to these locations three times a day, while the iPOLL question-level database is backed up and replicated twice a day.

Roper staff are mainly located on the 6th floor of Rhodes Hall at Cornell University and at times in the CISER building, 391 Pine Tree Road, Cornell University. In Rhodes Hall the offices are keyed access, while in CISER the offices use an authorized proximity card (Cornell University ID card) issued only to Cornell staff with the required credentials according to Cornell University Policy 8.4 -- Management of Keys and Other Access Control Systems. Entrance to the CISER staff offices are automatically logged, and monitored by CISER staff responsible for operation of the B.A.S.I.S. door security system.

The Roper Center has completed a Written Information Security Plan (WISP) as a Cornell Unit. This process helps Cornell units to close gaps, mitigate risks, and improve its IT operations, and covers the following areas: Confidential data; Human Resource Security; Physical and Environmental Security; Data hygiene; System Security Practices; Reporting Electronic Security Incidents; Asset and System Management; Awareness and training ; Communication and Outreach; Identity and Access Management; Authentication and Group Management; Login; Directory; Applications; Risk Assessment Process; Technology and Service Life Cycle; Data Governance; Backup and Recovery; Regulatory Compliance/Regulatory Domains and Other Obligations. Roper is in the process of completing a Cornell C-COOP Continuity Plan, which includes identification of essential services, stakeholders, applications, facilities, records and resources, and planning for business continuity and disaster management. Completion of the C-COOP is expected in Fall 2017.

Key security personnel include Systems Administrator Brandon Cruz and Software Engineer Tim Parsons.

Risk analysis tools in use by the Roper Center include Nessus Scans (System Vulnerability Scans) and AppSpider (Security Analysis of Web Applications).

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments:

17. Comments/feedback

Minimum Required Statement of Compliance:

0. N/A: Not Applicable.

Applicant Entry

Statement of Compliance:

0. N/A: Not Applicable.

Self-assessment statement:

There is considerable overlap among the questions in the assessment, which seems to create an undue burden. It is also not clear what level of compliance is appropriate when a repository is in a constant state of development. The current approach may be "sufficient", but the institution may be undergoing significant improvements in that same area to be at the cutting edge of best practices. A 3 or a 4?

Overall, however, the process of preparing the DSA application has overall been very positive for our organization, providing an opportunity to review the whole of our approach and ensure that we are doing the best possible job at preserving the data.

Just an additional point on the revise and resubmit process. When a user makes a change to the application and saves it, the reviewer comments disappear. After being instructed to save as many times as you wish, one assumes that one can make one change in response to one reviewer comment, then return to respond to another without losing those comments. I hope that all questions have been answered.

The Roper Center is aware of the importance of DOI assignment. However, the substantial technological rebuild we are currently undertaking has, as often the case with IT projects, taken a bit longer than expected, and some projects expected to be completed by this stage will be delayed a few months. We feel that it is better to complete each stage to the highest level of quality (dataset ingest, external data portal, and currently iPOLL ingest) than to rush, despite the importance of next tasks. We hope that the Core Trust Seal review will recontact us to suggest changes if our current timeline is problematic.

Reviewer Entry

Accept or send back to applicant for modification:

Accept

Comments: