

Data Management Plan

A. Products of Research

This study will generate 1) survey data from households collected on paper, 2) interview recordings and transcripts from emergency managers, and 3) derived datasets from analysis of quantitative and qualitative data. The project will follow NSF's Data Sharing Policy (PAPPG XI.D.4) and share the data through *DesignSafe-CI*.

B. Data Formats and Standards

1. Household survey data:

- (1) Original paper survey: The household survey will be treated as strictly confidential. The PIs, Japanese collaborators, and research assistants (RAs) are the only ones with access to the individual questionnaires. These personnel will be listed in the UNT IRB application and will provide the necessary human subject research training documents. Data will be reported at an aggregate level when the survey results are shared with other stakeholders. No information that identifies individual households will be made available to others when sharing our data through *DesignSafe-CI*.
- (2) Excel file: The original paper survey data will be coded into several Microsoft Excel spreadsheets.
- (3) SPSS file: The Excel spreadsheets will be further converted to SPSS files for analysis.

2. Emergency Manager interview data:

- (1) Study participants' contact information will be solely used for the study recruitment and data collection process. The qualitative raw data for this project will be collected through semi-structured interviews with emergency management in Japan. Interviews will be digitally recorded, and notes will be taken during the interviews. The RAs and Verbit.AI will transcribe the recorded interviews. Verbit AI has an agreement with UNT, which includes data security. The research assistants and PIs will be listed in the UNT IRB application and will provide the necessary human subject research training documents. All participants will be assigned unique identifiers, and information that could be used to identify individual participants will be removed from the data. The PIs and the research assistant are the only ones with access to the individual responses. Identifying information will be stored in a locked file separate from the rest of the data. Transcripts will be de-identified before sharing *on DesignSafe-CI*. Data from participants will be presented anonymously or in aggregate in reports, publications, and presentations, such that these data cannot be linked to any particular participant.

3. Metadata:

All data types in this research project will be accompanied by a separate metadata file that will specify: 1) author, 2) data format, 3) date of creation or last modification, 4) procedure(s) used in collecting the data, and 5) confidentiality requirements. This metadata file will also be deposited to *DesignSafe-CI*.

All data will be preserved in multiple on-site backups in the form of DVDs and RAID hard drive storage. Copies of these data will be preserved at the PIs' university offices. If requested, access to the data will be provided by contacting the Principal Investigators (PIs) before depositing it into *DesignSafe-CI*. The data will be made available for access and sharing as soon as possible, but no later than one year after the coding process is completed. The data will be preserved for at least three years, as required by NSF guidelines. We do not anticipate that there will be any significant intellectual property issues involved with the acquisition of the data. In the event that discoveries or inventions are made in direct connection with this data, access to the data will be granted upon request, once appropriate invention disclosures and/or provisional patent filings are made. Key data relevant to the discovery will be preserved until all issues of intellectual property are resolved. The data acquired and preserved in the context of this proposal will be further governed by the University of North Texas and SUNY University at Albany policies pertaining to intellectual property, record retention, access control, and data management.

C. Dissemination, Access, and Sharing of Data

In accordance with NSF Dissemination and Sharing of Results requirements, all significant findings will be promptly prepared and submitted for publication, with all individuals contributing to the work participating as authors. The PIs will be responsible for data management and will monitor compliance with the Data Management Plan, ultimately transferring responsibility for data management to *DesignSafe-CI*.

DesignSafe-CI will be used for end-to-end data management, analysis, and publication. The PI will work within the *DesignSafe-CI* Data Depot to store and share data in a private “My Data” space and collaborate on documents in the “My Projects” space. Each space allows the management of access to include only those individuals – the research team - with permission to access the data. All data collected as part of the research and any processing scripts and products from data analysis will be stored in the My Data and My Projects space for this team. Project data will be kept private until the completion of the project and dissemination plans. Two years after conclusion of data collection, study protocols, data, and metadata will be published through *DesignSafe-CI*. The research team will work with *DesignSafe-CI* staff and guidelines to curate the data from the study, including organizing, categorizing, and describing the data within the *DesignSafe-CI* Data Depot. *DesignSafe-CI* provides assistance from a curator for training and to guide research teams through the process to meet minimum metadata requirements. The research team will comply with all Institutional Review Board regulations regarding human subjects data. Data with Personal Identifiable Information (PII) will be protected. Following *DesignSafe-CI* publishing procedures, data with more than three indirect identifiers will not be shared publicly. This data will be available to be requested by researchers by contacting the project investigators. When data is not shared to protect PII or is limited due to indirect identifiers, aggregate summary measures will be shared in *DesignSafe-CI*. Upon completion of the curation and publication process, the data receive a Direct Object Identifier (DOI) and a DataCite schema for citations. The dataset will be licensed through an Open Data Commons Attribution license when submitted to *DesignSafe-CI*.

D. Ethics and Privacy

1. Informed consent: The PIs and RAs will follow the policy that informed consent statements, if applicable, will not include language that would prohibit the data from being shared with the research community.
2. Disclosure risk management: the PIs and RAs will remove any direct identifiers in the data before depositing. Once deposited, the data will undergo procedures to protect the confidentiality of individuals whose personal information may be part of archived data. These include (1) rigorous review to assess disclosure risk, (2) modifying data if necessary to protect confidentiality, (3) limiting access to datasets in which the risk of disclosure remains high, and (4) consultation with data producers to manage disclosure risk. The data will be processed and managed in a secure, non-networked environment using virtual desktop technology.

E. Re-Use, Re-Distribution, and Production of Derivatives

De-identified data will be curated and published in *DesignSafe-CI* with metadata, data collection instruments, study protocols, and outputs. This will be publicly available for re-use. Guidelines for use will be included in the published information. For researchers or practitioners who would like further access to data that is not published due to containing Personally Identifiable Information (PII), information for the PI will be provided to reach out to discuss collaboration to achieve objectives. *DesignSafe-CI* and IRB will be consulted with each request for access to ensure standards for the protection of human subjects are upheld.

F. Archiving of data

Data will be archived in its entirety in a secure password-protected Project space on *DesignSafe-CI*. Once primary research objectives are completed, hardcopies of data will be digitized and uploaded to the Project space in *DesignSafe-CI*.