

Mid-America Transportation Center (MATC) Data Management Plan

Upon receiving the US Department of Transportation's Region VII University Transportation Center (UTC) grant, MATC has developed an overarching Data Management Plan (DMP) in fulfillment of the grant requirement. MATC will require Principal Investigators to complete DMPs for individual research projects in accordance with the values and processes outlined in the following DMP.

1. Data Description

Region VII is experiencing a significant increase in the movement of hazardous goods on the surface transportation network, the danger of which is exacerbated by major stressors that affect safety performance such as aging infrastructure, lack of maintenance, a growing and aging population, and both natural and man-made disasters. The data collected from MATC researchers will come from projects designed to reduce the risk related to hazardous material transport, reduce and/or eliminate crashes, improve emergency response to unexpected events, and increase the safety of all transportation system workers and users. The products and processes that result from this research will be adopted for use and practice in federal, state, and local transportation agencies, peer institutions, and the private sector.

MATC research projects and data collection will span the length of the five-year grant period, beginning January 2017. Projects will generally follow a one-year time frame. At the end of the funding year, researchers will submit their final data to the MATC Research Coordinator for archiving. As part of the proposal development process, PIs will explicitly define individual data management plans that: (1) acknowledge compliance with the US Department of Transportation Public Access Plan and the overarching MATC DMP, (2) identify the types of data that will be collected and submitted to MATC staff for archiving, and (3) indicate which data, if any, is confidential. For additional guidance, PIs are encouraged to visit the National Transportation Library's webpage on developing DMPs at: https://ntl.bts.gov/publicaccess/creatingaDMP_extramural.html.

MATC anticipates collecting final data from PIs in various forms including, but not limited to, software codes, mathematical decision-making models, design drawings, traffic accident images, surveys, eye-tracking data, maps, system diagrams, hazardous material incidents report data, temperature, sensed data of workers and objects (e.g., safety equipment, working equipment, materials to be transposed, etc.), and driving simulator scores testing visual, cognitive, and mobility functions. Data will be compiled from existing documents and collected by means of observation, experimentation, and simulation. The final data will be archived in file formats such as TXT, PDF, Excel, JPEG, PPTX, and PLT.

2. Standards Used

MATC research data will be stored through the University of Nebraska-Lincoln (UNL) Data Repository: <https://dataregistry.unl.edu/index.html>. The UNL Data Repository (UNLDR), hosted and facilitated by UNL libraries, supports UNL researchers by providing a secure site to store data for long-term use and dissemination. UNLDR uses the Dublin Core metadata standard (<http://dublincore.org/documents/dcmi-terms/>) for dataset description. At a minimum, metadata will include Title, Creators (e.g., PI), Contributors (e.g., co-PIs), Identifiers (e.g., researcher ORCID IDs, digital object identifier (DOI), grant number), Publishers (e.g., university

performing research, sponsor), Description, Types, Formats, Subjects, Date Submitted, and IsPartOf (e.g., MATC Research Archive). The established metadata will contribute to the discoverability and accessibility of the research data. The isPartOf element, in particular, will serve to establish a MATC Research Archive within the UNL Data Repository for sponsors, researchers, and other users to easily locate all data connected to MATC research rather than searching by individual MATC research projects.

3. Access Policies

The data that is collected and stored by the UNL Data Repository will be publically accessible and free of charge, unless otherwise indicated. Individual researchers will be held accountable for protecting the identity and privacy of research participants and conducting their experiments according to the specific ethical codes and procedures of their universities. PIs will remove personally identifiable information before submitting final data to MATC staff for archiving. Confidential information relating to organizations and national security may also be restricted from public use. Confidential data will be appropriately indicated in the database and stored for the purpose of preservation. Data marked as confidential will not be publically accessible. Only the research team responsible for the confidential data may be granted access to it in the repository by directly contacting the UNL Data Curation Librarian.

All project data that is submitted to the UNL Data Repository will be assigned a DOI for the purpose of identifying content and providing a permanent link to the location of the dataset on the internet. The DOI will allow the data to be discoverable through the repository and the Libraries' Encore search interface. DOIs will be posted on the MATC website for easy accessibility of data that is open to the public, not confidential. Project information will be displayed in the research database on the MATC website: http://matc.unl.edu/research/research_search.php. The DOI connected with each project's data will be listed on the associated project description page.

4. Re-Use, Redistribution, and Derivative Products Policies

MATC staff will be responsible for collecting, inputting, and managing research data. MATC staff will work with the UNL Data Curation Librarian to ensure the data is properly described and archived for future users. The intellectual property rights of the data will follow the respective institution's policy on ownership of data at the time of deposit. Subawardees will grant UNL the necessary data rights to meet the obligations of this Data Management Plan. The UNL Data Repository will not overtake any rights with the data. Any copyrighted data is owned by the author with rights granted to the respective institution to meet contractual obligations.

5. Archiving and Preservation Plans

All of the MATC research data described in section 1 will be archived and shared using the UNL Data Repository. The repository provides data integrity checks, secure and replicated storage with multiple copies of data stored both onsite and at a remote server location, accurate and reliable metadata, and international accessibility. The UNL Data repository ensures data preservation for a minimum of twenty years.

Adopted: March 1, 2017

Updated: March 19, 2018