Data Management Plan (DMP)

*Based upon Wyoming DOT’s Research DMP and modified with permission.*

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| Contractor Name | Click here to enter text. |
| Project Name | Click here to enter text. |
| Project Number | Click here to enter text. |
| Project Purpose | Click here to enter text. |
| Project Duration | Start Date: Click here to enter a date. | End Date: Click here to enter a date. |
| Plan Dates | Original: Click here to enter a date. | Modified: Click here to enter a date. |
| Plan Comments (optional) |  |
| Do the [U.S. DOT Public Access requirements](https://www.transportation.gov/sites/dot.gov/files/docs/Official%20DOT%20Public%20Access%20Plan%20ver%201.1.pdf) apply to your digital dataset(s)?[[1]](#footnote-1) | [ ]  Yes | [ ]  No |

* **What constitutes data** shall be determined by the Principal Investigator(s) and the Research Manager.
* Your plan should address **final research data** (recorded factual material commonly accepted in the scientific community as necessary to validate research findings and any **unique data** which may be generated as part of your research and which cannot be readily replicated.
	+ Final research data would **not** **include** laboratory notebooks, partial datasets, preliminary analyses, drafts of scientific papers, plans for future research, peer review reports, communications with colleagues, or physical objects, such as gels or laboratory specimens.
* As a Principal Investigator, it is your responsibility to comply with [U.S. DOT Public Access Plan requirements](https://www.transportation.gov/sites/dot.gov/files/docs/Official%20DOT%20Public%20Access%20Plan%20ver%201.1.pdf). As the funding agency for this project, we will support your efforts with information and non-legal advice.
* MoDOT expects the timely release and sharing of data to be no later than the acceptance for publication of the main findings from the final dataset, unless the Principal Investigator will be embargoing the data. In such a case, the data cannot be embargoed for a period longer than twelve (12) months.

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# Definitions Used in This Plan

| Term | Definition |
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| Code or Scripts | Code used in the collection, manipulation, processing, analysis or visualization of data, but may also include software developed for other purposes. |
| Copyright | Set of legal rights extended to copyright owners that govern such activities as reproducing, distributing, adapting, or exhibiting original works fixed in tangible forms. |
| Data | The recorded factual material commonly accepted in the scientific community as necessary to validate research findings, but not any of the following: preliminary analyses, drafts of scientific papers, plans for future research, peer reviews, communications with colleagues. Recorded material excludes physical objects (e.g. laboratory samples). Research data also does not include trade secrets, commercial information, materials necessary to be held confidential; and personnel and medical information and similar information the disclosure of which would constitute a clearly unwarranted invasion of personal privacy. Video material may also be considered data and must be secured to prevent disclosure of personally identifiable information.  |
| Data Archive | A site where machine readable materials are stored, preserved or possibly redistributed to individuals interested in the materials. |
| Data Management Plan | Data Management Plan is a document that specifies your plans for managing your data and files for a research project. |
| Dataset | A collection of data. |
| Metadata | Structured data about data which helps define administrative, technical, or structural characteristics of the digital content.  |

# Data Types and Storage

Describe the types of data and/or datasets generated and/or used in this project.

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## Instructions

Provide a description of the data that you will be gathering in the course of your project. You should address the nature, scope, and scale of the data that will be collected. Describe the characteristics of the data, their relationship to other data, and provide sufficient detail so that reviewers will understand any disclosure risks that may apply. Discuss value of the data over the long-term.

## Checklist

* What type of data will be produced?
* How will data be collected? In what formats?
* How will the data collection be documented?
* Will it be reproducible? What would happen if it got lost or became unusable later?
* How much data will there be, and at what growth rate? How often will it change?
* Are there tools or software needed to create, process or visualize the data?
* Will you use pre-existing data? If so, from where?
* What is your storage and backup strategy?

# Data Organization, Documentation and Metadata

Describe the plan for organizing, documenting, and using descriptive metadata to assure quality control and reproducibility of the data.

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## Instructions

Your DMP should describe the anticipated formats that your data and related files will use. To the maximum extent practicable, and in accordance with generally accepted practices in your field, your DMP should address how you will use platform-independent and non-proprietary formats to ensure maximum utility of the data in the future. If you are unable to use platform-independent and non-proprietary formats, you should specify the standards and formats that will be used and the rationale for using those standards and formats.

For a list of acceptable Common Core metadata fields according to the US DOT Public Access Plan, see <https://project-open-data.cio.gov/v1.1/schema/>. At present, the NTL has not decided which metadata elements will be required. This may be handled in future by cataloging the dataset.

## Checklist

* What standards will be used for documentation and metadata?
* Is there good project and data documentation format/standard?
* What directory and file naming convention will be used?
* What project and data identifiers will be assigned?
* Is there a community standard for metadata sharing/integration?

# Data and/or Database Access and Intellectual Property

Describe any access and/or ownership concerns.

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## Instructions

Protecting research participants and guarding against the disclosure of identities and/or confidential business information is an essential norm in scientific research. Your DMP should address these issues and outline the efforts you will take to provide informed consent statements to participants, the steps you will take to protect privacy and confidentiality prior to archiving your data, and any additional concerns. If necessary, describe any division of responsibilities for stewarding and protecting the data among the Principal Investigators.

If you will not be able to de-identify the data in a manner that protects privacy and confidentiality while maintaining the utility of the dataset, you should describe the necessary restrictions on access and use. In general, in matters of human subject research, your DMP should describe how your informed consent forms will permit sharing with the research community and whether additional steps, such as an Institutional Review Board (IRB), may be used to protect privacy and confidentiality.

## Checklist

* What steps will be taken to protect privacy, security, confidentiality, intellectual property or other rights?
* Does your data have any access concerns? Describe the process someone would take to access your data.
* Who controls it (e.g. Principal Investigator, student, lab, University, funder)?
* Are there any special privacy or security requirements (e.g. personal data, high-security data)?
* Are there any embargo periods to uphold?

# Data Sharing and Re-Use

Describe how the data will be released for sharing.

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## Instructions

Describe who will hold the intellectual property rights for the data created by your project. Describe whether you will transfer those rights to a data archive, if appropriate. Identify whether any copyrights apply to the data, as might be the case when using copyrighted instruments. If you will be enforcing terms of use or a requirement for data citation through a license, indicate as much in your DMP. Describe any other legal requirements that might need to be addressed.

## Checklist

* If you allow others to reuse your data, how will the data be discovered and shared?
* Are there any sharing requirements (e.g. funder data sharing policy)?
* Is there an audience for reuse? Who will use it now or later?
* When will you publish it and where?
* Are tools or software needed to work with the data?

# Data Preservation and Archiving

Describe how the data will be preserved and archived.

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## Instructions

Describe how you intend to archive your data and why you have chosen that particular option. You may select from a variety of options including, but not limited to:

* Use of an institutional repository[[2]](#footnote-2)
* Use of an archive or other community-accepted data storage facility
* Self-dissemination

You must describe the dataset that is being archived with a minimum amount of metadata that ensures its discoverability. Whatever archive option you choose, that archive must support the capture and provision of U.S. Federal Government "Common Core" metadata. In addition, the archive you choose must support the creation and maintenance of persistent identifiers and must provide for maintenance of those identifiers throughout the preservation lifecycle of the data. Your plan should address how your archiving and preservation choices meet these requirements.

Please refer to the [NTL Guidelines for Evaluating Repositories](https://ntl.bts.gov/public-access/guidelines-evaluating-repositories) if applicable.

## Checklist

* How will the data be archived for preservation and long-term access?
* How long should it be retained (e.g. 3-5 years, 10-20 years, permanently)?
* What file formats is the data in? Are they long-lived?
* Which archives or repositories are most for your data (e.g. subject-based, institutional)?
* Who will maintain your data for the long-term?

Last revised: 8/17/2018

1. If your research project is funded using FHWA SP&R funds, it would be considered exempt. However, if your project is funded in part by any other federal funds (e.g. through UTC matching funds), then the requirements will apply. For more details, please refer to the [Public Access Plan](https://www.transportation.gov/sites/dot.gov/files/docs/Official%20DOT%20Public%20Access%20Plan%20ver%201.1.pdf). [↑](#footnote-ref-1)
2. As of August 2018, [**Missouri S&T’s Scholars Mine**](http://scholarsmine.mst.edu/) has received its [CoreTrustSeal certification](https://www.coretrustseal.org/) (so we would consider this meeting the [US DOT repository requirements](https://ntl.bts.gov/public-access/guidelines-evaluating-repositories)). MATC will be using the [**University of Nebraska-Lincoln Data Repository**](https://dataregistry.unl.edu/). Although UNL has not gone through the data seal process, they believe they meet the US DOT repository requirements. We are awaiting confirmation from [**University of Missouri’s MOspace**](https://mospace.umsystem.edu/xmlui/) to determine if it meets those requirements. See NTL’s [list](https://ntl.bts.gov/public-access/data-repositories-conformant-dot-public-access-plan) of conforming repositories. [↑](#footnote-ref-2)