

Stage 1 Data Management Plan Guidance

Updated: 2/27/24

The purpose of this guidance is to assist grant recipients in developing their Stage 1 Data Management Plans (DMP) for the Strengthening Mobility and Revolutionizing Transportation (SMART) grant program. **We recommend you review this entire document before beginning your DMP.**

The objectives of the DMP are to fulfill the reporting requirements and in accordance with the USDOT Public Access Plan, help prepare you for the implementation report and provide access to data so others may learn from your project. Grant recipients must consider, budget for, and implement appropriate data management for data and information outputs acquired or generated during the grant.

The SMART program is using a web-based Data Management Plan tool, [DMPTool](#), for grant recipients to develop and submit their plans. Instructions on how to create an account and access the SMART Grants Template can be found in the next section of this report.

Reporting Requirement:

The SMART grant agreement states that Stage 1 grant recipients must submit a Data Management Plan within 90 calendar days of receiving the grant.

To fulfill the reporting requirements and in accordance with the USDOT Public Access Plan, award recipients must consider, budget for, and implement appropriate data management for data and information outputs acquired or generated during the grant. Applicants are expected to account for data and performance reporting including:

- Default to open access when appropriate (exceptions include protecting personally identifiable information [PII], Indigenous data sovereignty, or confidential business information [CBI]).
- Protect PII, intellectual property rights, and CBI.
- Utilize, when possible, open licenses and protect USDOT's non-exclusive copyright to data and corresponding outputs.
- Make the source code or tools necessary to analyze the data available to the public, if relevant.
- Provide relevant metadata (in a DCAT-US file, and, optionally, a discipline-appropriate metadata standard file), and data documentation (README.txt files, data dictionaries, code books, supporting files, imputation tables, etc.); and
- Where applicable, consider contributing data to voluntary resources such as NHTSA's AV TEST Initiative.
- Projects should implement data management best practices including, but not limited to, implementation of published data specifications and standards (formal and informal); increasing data discoverability and data sharing; and enabling interaction of systems, interoperability, and integration of data system

Further guidance will be provided to assist applicants selected for a Stage 2 Grant to update their Data Management Plan

Instructions

Accessing the DMPTool and Creating a SMART Data Management Plan

1. Navigate to DMPTool at <https://dmptool.org/>
2. Go to the “Sign in / Sign up” box
3. Enter your email address
4. Click “Continue” button
5. You will go to “New Account” Sign Up page.
6. Enter First and Last Name
7. In “Institution” field, type and select: “United States Department of Transportation”
8. Create a Password
9. Accept terms and conditions
10. Click “Sign up” button
11. You will be taken to “My Dashboard” page
12. On the dashboard page, select the “Create plan” button

The screenshot shows the DMPTool interface. At the top, there's a navigation bar with links for Dashboard, Create Plan, Public Plans, Funder Requirements, About, and Logout. Below the navigation, it says "United States Department of Transportation (DOT) (transportation.gov)" and "US DOT Public Access staff". The main area is titled "My Dashboard" and contains a table of plans. The table has columns for Project Title, Template, Edited, Role, Test, Visibility, and Shared. One row is visible: "Automated Shared-Use Path Conflict Point Analysis" (Template: SMART Grants Stage 1 Data Management Plan (DMP), Edited: 01-05-2024, Role: Owner, Test: No, Visibility: Organization, Shared: No). At the bottom left of the dashboard area, there's a "Create plan" button. A yellow arrow points from this button towards the top of the table header.

Project Title	Template	Edited	Role	Test	Visibility	Shared
Automated Shared-Use Path Conflict Point Analysis	SMART Grants Stage 1 Data Management Plan (DMP)	01-05-2024	Owner	No	Organization	No

13. You will be taken to a new page to create a DMP plan. Follow these guidelines to create the plan:
 - **What project are you planning?**
 - Enter the name of your SMART project
 - **Select the primary organization**
 - Enter “United States Department of Transportation (DOT) (transportation.gov)”
 - **Select the primary funding organization**
 - Enter “United States Department of Transportation (DOT) (transportation.gov)”
 - **Which DMP template would you like to use?**
 - Select “SMART Grants Stage 1 Data Management Plan (DMP)” from the list
 - It is essential that you select the correct DMP template. Using the wrong template will delay review of your submission and likely require re-creating the plan, as the questions asked in other templates are not the ones required for SMART.
14. Click “Create plan” button.

NOTE: Another way to generate a plan with the correct template is using this unique link, which should generate a plan for you in the correct template and take you straight to the “Project Details” tab.

- <http://tinyurl.com/mw68b3z2>

After completing these steps, you have now successfully created a SMART template that you can populate with your Data Management Plan. The following sections of this guidance document will provide you with a description of each element of the DMP template by section.

Part 1 of 6: Project Details tab

Automated Shared-Use Path Conflict Point Analysis

Project Details **Collaborators** Write Plan Research outputs Request feedback Finalize Download

Project title *

mock project for testing, practice, or educational purposes

Project abstract

We will set up automated trail cameras at reported and suspected conflict points on area shared use trails to record the types of "conflict" interactions that occur. Typical trail user conflict reports include cyclist encounters with leashed dogs blocking trails; walkers being taken by surprise by cyclists suddenly appearing before or behind; slick spots on trail that lead to cyclist or skater crashes or "wipe outs" among others. Using this video and still data, paired with weather condition data, we will come up with mitigation strategies. Currently we expect that warning signs, limb clearing, and trail user education will help to reduce trail conflicts.

Press Alt 0 or Option 0 for help using the rich text editor with keyboard only.

Select Guidance
To help you write your plan, DMPTool can show you guidance from a variety of organizations.
Select up to 6 organizations to see their guidance.

DMPTool
Find guidance from additional organizations below
See the full list

Save

Fill in the following sections of the Project Details tab:

- **Project title:** This is the title of your SMART Grants award.
- **Project abstract:** The brief project description submitted as part of your SMART applicant can be used for the abstract. Please ensure it still accurately reflects your project and make any changes as necessary.
- **Research domain:** You may select one of the research domains from the list or leave this field blank.
- **Project Start:** This is the date your period of performance began.
- **Project End:** This is the date your period of performance will end.
- **Funder:** This should be pre-populated with "United States Department of Transportation"
- **Funding Status:** Select the "funded" option from the dropdown.
- **Funding opportunity number:** DOT-SMART-FY22-01
- **Grant number/url:** Insert the FAIN listed on your grant agreement.

Save this page and move on to the "Collaborators" tab at the top of the page.

Part 2 of 6: Collaborators tab

- **Add a contributor:** Contributors are the lead administrator(s) on your project and/or those responsible for data management. When you press “add a contributor,” you will be asked to provide the name, email, ORCID, affiliation, and role of contributors on your project. Note: ORCID is not required for SMART.
- **Invite collaborators:** Collaborators are specific people who can read, edit, or administer your plan. If you invite a collaborator, they will receive an email notification that they have access to this plan. To invite a collaborator, insert their email address and select which permissions to grant them. Below are the different permissions you can select (these can be changed at any point by the plan’s owner):
 - **Co-owner:** has admin rights to the plan (can invite other users, view the plan, answer questions, or comment).
 - **NOTE:** Only owners or co-owners can submit the plan. If a consultant or other contracted team member will be completing the plan, **the owner should be a member of the grant recipient agency, and should submit the final plan. Make the consultant an editor or co-owner.**
 - **Editor:** has edit rights to the plan (can view the plan, answer questions, or comment)
 - **Read Only:** has read rights to the plan (can view the plan or comment)

Save this page and move on to the “Write Plan” tab at the top of the page.

Part 3 of 6: Write Plan tab

Each section of the DMPTool template can be expanded, and award recipients will see a prompt to provide

more information on a specific topic. Each section of the DMP will provide a detailed description of what should be included. The DMP template includes the following topics:

1. Dataset and Contact Information
2. Data Description
3. Data Format and Metadata Standards Employed
4. Access Policies
5. Re-use, Redistribution, and Derivatives Products Policies
6. Archiving and Preservation Plan

Save each section of the DMP by pressing the “save” button within that section. Once all sections are completed, click the “Request Feedback Tab” at the top of the screen.

1. Dataset and Contact Information

Please provide as much of the following information as possible:

1. Name of the project;
2. Grant number;
3. Name of the person submitting this DMP;
4. **OPTIONAL:** ORCID of the person submitting this DMP;
5. Email and phone number of the person submitting this DMP;
6. Name of the organization for which the person submitting this DMP is working;
7. Email and phone number for the organization;
8. Link to organization or project website, if applicable; and,
9. Date the DMP was written.

2. Data Description

Please provide as much information as possible:

1. Provide a description of the data that you will be gathering in the course of your project or data from a third party that you will re-use, if any;
 - a. If there will be no data collected or re-used from another source, state that this is case;
2. Address the expected nature, scope, and scale of the data that will be collected, as best as you can at this stage;
3. As best as you can, 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;
 - a. If data might be sensitive, please describe how you will protect privacy and security, if you know that now;
 - b. You may need to update your DMP later to add more detail;
4. Discuss the expected value of the data over the long-term.

3. Data Format and Metadata Standards Employed

Please provide as much information as you can:

1. Describe the anticipated file formats of your data and related files;
2. To the maximum extent practicable, your DMP should address how you will use platform-independent and non-proprietary formats to ensure maximum utility of the data in the future;
 - a. 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.
3. Identify the metadata standards you will use to describe the data.
 - a. At least one metadata file should be a DCAT-US v1.1 (<https://resources.data.gov/resources/dcat-us/>) .JSON file, the federal standard for data search and discovery.

Some Notes/Tips for this section:

1. Non-proprietary vs. Proprietary Formats

- Proprietary: software that is privately owned, controlled, and distributed under specific licensing terms that restrict its usage and often requires a fee or subscription to be used.
 - If proprietary formats are used there needs to be thorough documentation addressing why and the software and version needed for a user to open and view the data or documentation files.
 - Also, remember that although Microsoft Office is for the most part widely available it is proprietary software that requires purchase. Instead, you could use .csv for Excel files and .txt or pdf. for Word files.
- Non-proprietary or Open Access: software that has no patent or copyright conditions associated with it. Nonproprietary software is publicly available software that can be freely installed and used.

What to Write in your DMP:

- A general statement regarding open-access formats vs. proprietary formats. Just a general stance that you aim to be as open-access as possible with the release of the data to the public.
- List of file formats, and if any are proprietary you need documentation addressing why and the software and version needed for a user to open and view the files.

2. DCAT-US v.1.1 Metadata Schema

- The federal standard for data search and discovery. A requirement that allows for discovery in all government data catalogs, such as data.gov and transportation.data.gov.
 - <https://resources.data.gov/resources/dcat-us/>
 - A .JSON file.

What to Write in your DMP:

- First list any other potential metadata schemas you might use, if relevant. Then include a statement, such as:
 - “The final data will have a DCAT-US v1.1 (<https://resources.data.gov/resources/dcat-us/>) .JSON metadata file, which is the federal standard for data search and discovery to be compliant with the USDOT Public Access Plan.”

4. Access Policies

Please provide as much information as possible:

1. Describe any sensitive data that may be collected or used;
2. Describe how you will protect PII or other sensitive data, including IRB review, application of CARE Principles guidelines, or other ethical norms and practices;
 - a. If you will not be able to deidentify 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;
3. Describe any access restrictions that may apply to your data;
4. If necessary, describe any division of responsibilities for stewarding and protecting the data among Principal Investigators or other project staff.

5. Re-use, Redistribution, and Derivatives Products Policies

Please provide as much information as possible:

1. Describe who will hold the intellectual property rights for the data created or used during the project;
2. Describe whether you will transfer those rights to a data archive, if appropriate;
 - a. Identify whether any licenses apply to the data;
 - b. If you will be enforcing terms of use or a requirement for data citation through a license, indicate as much in your DMP;
 - c. Describe any other legal requirements that might need to be addressed.

6. Archiving and Preservation Plan

Please provide as much information as possible:

1. State where you intend to archive your data and why you have chosen that particular option;
2. Provide a link to the repository;
3. You must describe the dataset that is being archived with a minimum amount of metadata that ensures its discoverability;
 - a. Whatever archive option you choose, that archive should support the capture and provision of the US Federal Government DCAT-US Metadata Schema
<https://resources.data.gov/resources/dcat-us/>
4. In addition, the archive you choose should support the creation and maintenance of persistent identifiers (e.g., DOIs, handles, etc.) and must provide for maintenance of those identifiers throughout the preservation lifecycle of the data;
5. Your plan should address how your archiving and preservation choices meet these requirements.

Some Notes/Tips for this section:

1. **What does Public Access mean for data after a research project?**

- Projects carried out under a US DOT SMART Grants are federally funded; therefore, as stated in grant language:
 - Recipients must comply with the US DOT Public Access Plan, meaning, among other requirements, project data must be shared with the public, either by the researchers or by US DOT;
 - Recipients grant the US DOT a comprehensive non-exclusive, paid-up, royalty-free copyright license for all project outputs (publications, datasets, software, code, etc.). This includes all rights under copyright, including, but not limited to the rights to copy, distribute, prepare derivative works, and the right to display and/or perform a work in public; and,
 - Under, Chapter 18 of Title 35 of the United States Code, also known as the Bayh-Dole Act, where grant recipients elect to retain title to any invention developed under this grant, US DOT retains a statutory nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States any such invention throughout the world.

2. Conformant Repositories and Persistent Identifiers.

- In Section 6 we are looking to see where you are going to store the data after the completion of the research project. It should be in a publicly accessible repository (no payment requirements), provide persistent identifiers or captures them if you personally provide one to the data, and the repository should support the capture and provision of the US Federal Government DCAT-US Metadata Schema.
- You can find a list of pre-approved data repositories that are conformant with the US DOT Public Access Plan at <https://doi.org/10.21949/1520566>.
 - All of the data repositories on this list meet the Persistent Identifiers and DCAT-US requirement, so if you select one of them you would only need to add a brief sentence, such as “The repository _____ does provide persistent identifiers to their published data and supports the capture and provision of the DCAT-US Metadata Schema.”

Save each section of the DMP by pressing the “save” button within that section. Once all sections are completed, click the “Request Feedback Tab” at the top of the screen.

NOTE: Research Outputs tab

This section of the DMP template does not need to be completed by SMART Grant recipients, unless there are specific research outputs that recipients wish to make part of their DMP.

Part 4 of 6: Request Feedback Tab

Once you have completed writing your DMP you will go to the “Request Feedback” tab and hit the “Request feedback” button. This will notify the NTL Data Services Team that there is a DMP in need of

review.

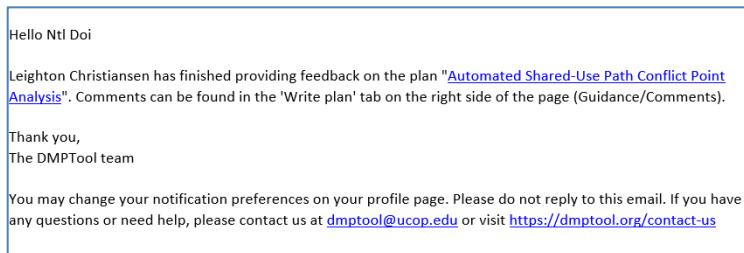
**Remember to click the “Request Feedback” button.
This is how you formally submit your Data Management Plan.**

Can't see the Request Feedback tab?

There are two factors that can affect whether the “Request feedback” tab shows up. Both are included below so you can determine which are preventing you from seeing it and submitting your plan.

- First you need to verify the institution listed under your profile. If you go to your Dashboard and look in the top right-hand corner you should see a person silhouette, click on it and a drop-down should show with the first option being edit profile, which you will then click on. When viewing your profile, by institution it should be “United States Department of Transportation (DOT) (transportation.gov).”
- Secondly, only the owner or someone who has been provided with Co-owner permissions under the collaborator’s tab can see “Request feedback” and submit it. So, if you are an editor you will be unable to submit it and the owner (who created the DMP) will either need to submit it or change your permissions to be co-owner.

Once the NTL Data Services Team has reviewed your DMP and made comments the DMP will be returned, and you will see an email like the one below:



Please go in and review all the comments and make changes as necessary. Once you have addressed all the comments, go back to the “Request feedback” tab and submit it again for review by the NTL Data Services team. **Your revised plan has not been received until you select ‘request feedback’ again.**

This process should be repeated until an NTL Data Services team member comments that the DMP is now approved.

Once complete, move to the “Finalize” tab at the top of the screen.

Part 5 of 6: Finalize Tab

No settings need to be changed from the default on this page. However, if you would like to make your DMP public you may toggle the options on this screen to do so. The SMART Grants program does not require that you make your DMP public.

- Once complete, move to the “Download Tab” at the top of the screen.

Part 6 of 6: Download Tab

- **Format:** Select one of the six available file options from the drop-down menu.
- **Download settings:** Select all or some of the pages you would like to include in the report.
- **Font:** Select the font style and size you would like the report to reflect.

Once complete, select the Download Plan button to save a copy of your DMP for your own recordkeeping.

Once you select ‘request feedback,’ the DMP is automatically sent to the Bureau of Transportation Statistics for review. **You do not need to email a copy of the DMP to the SMART team.**