

# DATA MANAGEMENT PLAN SOLUTION COMPARISON CHARTS

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## Chart Definitions

**Point of Contact:** Person or group serving as the coordinator to request access or help with setting up the solution.

**Classification:** The software automation level (manual, semi-automated, fully automated) of the solution.

**Web Accessible GUI:** A user friendly interface that is accessible from an online world wide web location (with notes on login/user account requirements).

**DMP Template Customization:** The potential to modify or build DMP templates according to individual science center or project needs.

**Output Format:** The output DMP file format(s) that is created by the solution.

**Workflow:** Workflow procedures that the solution supports (creation, review, approval, notification).

**Integration Capability:** Any systems integration supported by the solution that allows the solution and one or more external systems to work together and share information in an automated manner through machine-to-machine languages.

**Document Storage Management:** The storage option(s) for output files (DMPs) and associated workflow.

**Editing and Version Control:** Capability of the solution to track edits and versions of output files (DMPs).

**Cost:** Described as Direct versus Indirect and in terms of Immediate/long-term.

**Development and Design:** Description of the effort required to develop and design the solution to fit the individual needs of the science center or project (note any requirement to consults 3rd party development staff).

**Team Collaboration:** Description of the capability of the solution to mimic and facilitate team structures and collaboration (ex. Managers have access for project reviews).

**Administration:** Description of the administrative control (individual or group) provided by the solution to manage DMP templates and project created DMPs.

## DMPEditor

<b>Point of Contact</b>	<i>Project Supervisor:</i> Viv Hutchison <i>Group Email:</i> sciencebase@usgs.gov
<b>Classification</b>	Fully Automated
<b>Web Accessible GUI</b>	<i>URL:</i> <a href="https://my.usgs.gov/dmpeditor/">https://my.usgs.gov/dmpeditor/</a> (USGS Active Directory log in, can add non-DOI users)
<b>DMP Template Customization</b>	Templates can be customized, but funding is required.
<b>Output Format</b>	ScienceBase item attachment or downloadable PDF and CSV file formats with timestamp.
<b>Workflow</b>	Author can select co-PIs, and grant edit permissions by adding email addresses to the dmp record. System sends review comments on a DMP as an email once a day. Data Steward receives email notification when a DMP is ready for review.
<b>Integration Capability</b>	Ability to import from Word Doc (but it has to be exactly the same as the existing template to work). Can link to ScienceBase DMP ID, can import data from RFP Manager or ScienceBase when creating DMP.
<b>Document Storage Management</b>	Electronic forms are stored in the database for future access. Exported csv or PDF versions can be managed on local network resources.
<b>Editing and Version Control</b>	System records change history including timestamp, field item changed, and who made the change.
<b>Cost</b>	<i>Direct:</i> Funding required for DMP customization, access to online application and information storage and maintenance. <i>Indirect:</i> Staff allocation to data management roles.
<b>Development and Design</b>	3rd party development required if customization of the DMP is necessary, currently only the NCCWSC and NWC template is available for use.
<b>Team Collaboration</b>	Science Centers or other groups are represented as autonomous entities where Data Stewards are defined and users (Authors) are defined. Authors create and edit DMPs. Data Stewards review DMPs by editing and making comments (with the option of making comments available to the project team or set to private).
<b>Administration</b>	<i>DMP Template:</i> Controlled by 3rd party. <i>DMP:</i> PI have access to create using existing template, PI can add anyone (by email address) to give edit permissions. Data Steward also has permissions to comment and edit.

## DMPTool

<b>Point of Contact</b>	<p>California Digital Library (CDL). USGS has an institutional account with the DMPTool but does not have any control over the tool development or new features.</p> <p>CDL Contact Form: <a href="http://www.cdlib.org/services/uc3/contact.html">http://www.cdlib.org/services/uc3/contact.html</a></p> <p>USGS Contact Form: <a href="https://dmptool.org/contact">https://dmptool.org/contact</a></p>
<b>Classification</b>	Semi-Automated
<b>Web Accessible GUI</b>	URL: <a href="https://dmptool.org/">https://dmptool.org/</a>
<b>DMP Template Customization</b>	<p>Currently available: NWHC, USGS Aquatic eDNA, USGS CSASL DMP, USGS Detailed DMP Template, CDI SCSDWG DMP. Customizable template form options include text, numeric, date, enumerated (multiple choice). There are no options to build in form logic or use text formatting. Reference the online documentation at: <a href="https://github.com/CDLUC3/dmptool/wiki/template-creation">https://github.com/CDLUC3/dmptool/wiki/template-creation</a></p>
<b>Output Format</b>	Word Doc, PDF, JSON
<b>Workflow</b>	<p>Some notification capability between owner and co-owners of DMP's (e.g. notification when a new comment has been added to a DMP or preferences have been changed). Automated "institutional reviews" when the review option is enabled in the template. After a DMP is submitted for review, all institutional reviewers will have access to the DMP and an individual reviewer cannot be specified.</p>
<b>Integration Capability</b>	<p>Potential integration capability with JSON output via the API - <a href="https://github.com/CDLUC3/dmptool/issues/146">https://github.com/CDLUC3/dmptool/issues/146</a> -</p>
<b>Document Storage Management</b>	<p>Electronic forms are stored on the DMPTool server for future access and sharing. Exported Word Doc or PDF versions can be managed on local network resources following science center procedures.</p>
<b>Editing and Version Control</b>	<p>Provides a history including date and time of change and type of change (New, Completed, Revised); however, the DMPTool does not track individual changes.</p>
<b>Cost</b>	<i>Direct:</i> No; <i>Indirect:</i> Time to develop new template and workflow.
<b>Development and Design</b>	<p>Science Centers can develop their own templates without consultation of a 3rd party development staff or use existing DMP templates at the USGS institutional or public level. Suggested design improvements of the DMPTool should be referred to the California Digital Library staff.</p>
<b>Team Collaboration</b>	<p>Author can select co-owners (others who need access ex. Manager) with read write access during the DMP creation process.</p>
<b>Administration</b>	<p>DMP Template: In order to create a new template, an individual would need to complete the contact form to gain permissions to create or edit templates within the tool.</p> <p>DMP: Authors have access to create DMPs using existing templates.</p>

Developed by the Community for Data Integration Science Center Strategy Development Work Group (CDI SCSDWG), a subgroup of the Data Management Work Group on Sept 8, 2016.  
<https://my.usgs.gov/confluence/display/cdi/Science+Center+Strategy+Development>

## Word Document Files

<b>Point of Contact</b>	<p>Climate Science Centers (CSC): Emily Fort, (<a href="mailto:efort@usgs.gov">efort@usgs.gov</a>)</p> <p>Powell Center: <a href="mailto:powellcenter@usgs.gov">powellcenter@usgs.gov</a></p> <p>Alaska Science Center: Dennis Walworth (<a href="mailto:dwalworth@usgs.gov">dwalworth@usgs.gov</a>)</p>
<b>Classification</b>	Manual (This solution assumes that the DMPeditor tool is not being used, although use of the tool is an option for CSC projects.)
<b>Web Accessible GUI</b>	<p>Guidance and templates available only.</p> <ul style="list-style-type: none"> <li>• <a href="https://nccwsc.usgs.gov/content/data-policies-and-guidance">https://nccwsc.usgs.gov/content/data-policies-and-guidance</a></li> <li>• <a href="https://powellcenter.usgs.gov/data-resources">https://powellcenter.usgs.gov/data-resources</a></li> <li>• <a href="http://ascinternal.wr.usgs.gov/subject2.php?dataid=362">http://ascinternal.wr.usgs.gov/subject2.php?dataid=362</a></li> </ul>
<b>DMP Template Customization</b>	Any DMP template can be used. The CSC, Powell Center, and ASC are examples of templates already in use by USGS programs and centers.
<b>Output Format</b>	Word Doc or conversion to PDF
<b>Workflow</b>	Dependent on structure of DMP template and science center operations. This is an example from the Powell Center: 1) DMP submitted with proposal; 2) Data Manager reviews, suggests edits, and ultimately approves DMP; 3) Data Manager works with other staff to secure data resource needs of the project; 4) Copies of DMP stored on local network storage and sent to alternate USGS location. Additionally, CSC conducts several DMP reviews throughout the project.
<b>Integration Capability</b>	This solution has no direct connectivity to other data management applications.
<b>Document Storage Management</b>	Local network storage and management defined at science center or project level.
<b>Editing and Version Control</b>	Procedures and conventions defined by the science center or project.
<b>Cost</b>	<i>Direct:</i> Free; <i>Indirect:</i> Management and staffing allocation.
<b>Development and Design</b>	Some effort required to customize templates and create local workflows, but 3rd party development and design consulting is not required.
<b>Team Collaboration</b>	Dependent on the workflow and approval procedures set up by the science center.
<b>Administration</b>	Administration of DMPs could be set in a variety of ways to accommodate operations at the science center.

## Google Forms

<b>Point of Contact</b>	USGS Email Google Docs, Online developer manuals
<b>Classification</b>	Semi-automated
<b>Web Accessible GUI</b>	Yes, access through USGS Google Docs environment.
<b>DMP Template Customization</b>	Development of new and modified DMP template forms requires Google Script code writing skills.
<b>Output Format</b>	PDF, Word Doc, google spreadsheet
<b>Workflow</b>	Some procedural capability through email notifications
<b>Integration Capability</b>	None currently
<b>Document Storage Management</b>	Google docs. Exported PDF's could be managed externally on local network storage following science center practices. (Google Drive emails the completed form to the user, and also saves a Google Doc copy of the result in Google Drive. Form values are saved in a Google Sheet.)
<b>Editing and Version Control</b>	Google forms allow multiple edits. Some version control information can be tracked programmatically. An Edit link is provided through email and PDF output to revisit the form and make changes as needed/required. Version control is handled through the Google Sheet that stores the form responses (though it would only be available to individual(s) managing the tool) and a timestamp can be applied programmatically to the PDF.
<b>Cost</b>	<i>Direct:</i> Free; <i>Indirect:</i> Initial local development and configuration time. Additional future tweaks may be necessary as Google refines their Google Scripts services.
<b>Development and Design</b>	Development and design can be done individually by referencing online Google Docs manuals.
<b>Team Collaboration</b>	Approval staff can be automatically notified by email when a DMP is completed.
<b>Administration</b>	<i>DMP Template:</i> After a Google Form is developed, template administration is reserved only to owner or administrator of the form. <i>DMP:</i> Anyone with the link to the DMP form content can make changes.