

This response to the Department of Transportation's "Increasing Public Access to the Results of USDOT-Funded Transportation Research" request for public input (Docket No. DOT-OST-2023-0045) is submitted on behalf of the Open Research Funders Group. The Open Research Funders Group (ORFG) is a partnership of 25 philanthropic organizations committed to the open sharing of research outputs. We believe openness is better for philanthropy, better for research, and better for society. Open research accelerates the pace of discovery, reduces information-sharing gaps, encourages innovation, and promotes reproducibility. Collectively, the ORFG members hold assets in excess of \$250 billion, with total annual giving in the \$12 billion range. Members' interests range the entirety of the disciplinary spectrum, including life sciences, physical sciences, social sciences, and the humanities. This response has been prepared by Greg Tananbaum and Dr. Erin McKiernan, Director and Community Manager (respectively) of the ORFG, in conjunction with representatives of the ORFG membership.

The Open Research Funders Group applauds DOT's request for input on its draft Public Access Plan. From a process perspective, the DOT's approach reinforces the federal government's stated desire to co-develop practical public access strategies in a transparent and inclusive manner.

DOT has requested feedback on a number of specific areas, which the ORFG provides below. Our perspective is that this guidance should be considered by all federal agencies and departments as they draft plans to address the OSTP's "Ensuring Free, Immediate, and Equitable Access to Federally Funded Research" 2023 memorandum at scale. Consistency across federal funding bodies with respect to best practices and standards will make it easier for (a) adjacent sectors (including private philanthropies and higher education institutions) to align their incentive structures to reinforce the key principles of the OSTP memo; and (b) funded researchers to understand and adhere to emerging research sharing norms and good practices.

1. How best to improve access to textual research outputs. The current DOT Public Access Plan requires grantees to share their DOT-funded textual research outputs –

including technical reports, research briefs, manuals, technology transfer documents, and other grey literature – by depositing a copy of their work in the DOT National Transportation Library digital repository for long-term preservation and public access. We applaud the inclusion of a wide array of written outputs, beyond just journal articles, in the DOT's public access policy. These outputs can improve the communication and dissemination of research, and may be more likely to reach and positively impact members of the public and policy makers. To maximize the reuse and innovation DOT would like to stimulate, we encourage DOT to consider a requirement that all textual outputs be shared under an open license to maximize equitable access and reuse (e.g., the <u>Creative Commons Attribution, or CC BY</u>, <u>license</u>), as detailed in responses #3 and #4 below. Additionally, DOT should consider providing funded researchers clear guidance on rights retention, as detailed in Response #4 below. Applying such conditions across all written outputs will ensure that they have the same accessibility and potential utility, regardless of the publication type or venue.

- 2. How best to improve accessibility of textual research outputs. Public access to research results can greatly improve equity for people who use computer screen readers and other assistive technologies to access information. Making research results available under a <u>CC BY license</u> or functional equivalent permits reproduction in multiple formats, including HTML and PDF, that are accessible and navigable using assistive technologies like screen readers. Additionally, content available under these terms can be easily converted to accessible formats such as Braille or large print, allowing people with visual impairments to access the content more easily. In addition to open licensing, we also encourage DOT to make all outputs shared in the DOT National Transportation Library digital repository available in machine-readable formats, as is done by agencies like the NIH for outputs archived in PubMed Central¹. Consistent with the OSTP guidance, machine-readability is one way to enable "broad accessibility through assistive devices".
- 3. How best to improve access to scholarly publications from DOT-funded research. Consistent with its 2015 Public Access Plan, DOT should promote compliance with the

¹ As per the NIH: "In the NIH Public Access Plan, "machine readability" is defined as a format that can be easily processed by a computer without human intervention while ensuring no semantic meaning is lost (such as the NISO Z39.96-2015 JATS XML standard currently used by PMC)." <u>https://grants.nih.gov/grants/guide/notice-files/NOT-OD-23-091.html</u>

2023 OSTP memorandum by encouraging grantees to deposit copies of their author's accepted manuscripts in the National Transportation Library digital repository. This approach would wisely balance a number of important considerations, including (a) leveraging existing infrastructure that is well established within the community; (b) providing authors with a no-cost compliance route; (c) maintaining wide freedom for authors to publish in the journals of their choosing; and (d) ensuring the people's interest in equitable access to the research their tax dollars underwrite. DOT should also make clear to grantees that they can leverage their institutional repositories as appropriate to comply with DOT policy, as this represents a low-friction, no-cost approach to archiving. Allowing DOT-funded publications to remain behind publisher paywalls limits access to knowledge, limits replication and reproducibility, and stifles civic engagement in science. Placing the burden for opening access to DOT-funded research on authors' institutions by relying on them to cover (often exorbitant) open access article processing charges (APCs) would potentially trade one set of inequities for another, creating a two-tiered system in which authors outside of well-funded R1 institutions lack the financial wherewithal to publish in some prestigious, brand-name journals. A repository-mediated ("green") route to federal policy compliance is thus an effective way to reduce the impact on younger researchers, women, scholars at minority-serving institutions, and others who are more likely to be disadvantaged by an APC-dominant publishing system (see, for example, the AAAS survey "Exploring the Hidden Impacts of Open Access Financing Mechanisms").

We also encourage DOT to explore strategies to support preprints as a mechanism for ensuring equitable, low-cost, and timely access to federally funded research. Additionally, DOT should consider providing funded researchers clear guidance on rights retention, building on guidance developed by other funder groups (e.g., <u>cOAlition S</u>) and the larger academic community. This is particularly important if DOT maintains the option of allowing researchers to distribute their outputs through the website or repository of their choice, in addition to the DOT National Transportation Library digital repository. Expecting scientists to be experts not only in their field of research, but also in the labyrinthine world of copyright law, presents an undue burden. DOT should make it as easy as possible for grantees to retain sufficient rights to make copies of their work available and reusable across the websites and repositories of their choice. Additionally, DOT can center equity by addressing reuse rights for shared research, which the OSTP guidance includes as an important consideration. A <u>CC BY license</u> or functional equivalent is the best way to enable text and data mining computational uses, and educational reuse.

4. How best to improve access to datasets. As part of its revised Public Access Plan, DOT should specify that datasets should be deposited in trusted, public repositories that maximize discovery, collaborative development, version control, long-term preservation, and other key elements of NSTC's "<u>Desirable Characteristics of Data</u> <u>Repositories for Federally Funded Research</u>".

DOT should allow grantees to include data-sharing costs in their grant budgets. This could include costs associated with data management, curation, hosting, and long-term preservation. For many projects, data-hosting costs will likely be minimal. For projects that will generate larger amounts of data, additional hosting costs can be budgeted. The most important cost may be the personnel time and expertise required to properly prepare data for sharing and reuse. DOT should consider increasing the allowable personnel costs within grant budgets to permit principal investigators to buy time for team members or hire a dedicated data steward.

Consistent with the guidance provided in Response #3 above, DOT should require grantees to share data under licenses that facilitate reuse. The recommended <u>free</u> <u>culture license</u> for data is the <u>Creative Commons Public Domain Dedication</u> (CC0). The <u>reasoning</u> behind this is two-fold: first, data does not allow incur copyright and therefore reserving certain rights under other licenses may be inappropriate, and the second reason is to avoid attribution or <u>license stacking</u> that may occur as datasets are remixed and reused. <u>Other options</u> include the <u>Creative Commons Attribution</u> (CC BY) or <u>ShareAlike</u> (CC BY-SA) licenses.

5. How to implement evolving ethical frameworks to DOT-funded research. DOT should strongly encourage grantees to share data according to established best practices. These include, but are not limited to: (a) the <u>FAIR Principles</u>, which outline how to share data so they are Findable, Accessible, Interoperable, and Reusable; (b) the <u>CARE Principles for Indigenous Data Governance</u>, which emphasize the importance of Collective Benefit, Authority to Control, Responsibility, and Ethics in the context of indigenous data, but could also inform the responsible management and

sharing of data for other populations; and (c) privacy rules, including those already established by federal statute and in use by DOT.

- 6. How to best improve access to other types of research outputs. DOT should consider incorporating code and software sharing requirements as a necessary extension of its data sharing policy. To accurately be able to replicate and reproduce results and build upon shared data, researchers must not only have access to the files but also the code and software used to open and analyze data, thereby making data truly findable, accessible, interoperable, and reusable (FAIR). DOT should encourage grantees to apply licenses to their research software that facilitate replication, reuse, and extensibility, while balancing individual and institutional IP considerations. Agencies can point grantees to guidance from the <u>Open Source Initiative</u> on its approved licenses. As with datasets, DOT should ensure that preservation costs are additive to proposal budgets, rather than consuming funds that would otherwise go to the research itself.
- 7. How to implement persistent identifiers (PIDs) for people; research documents and outputs; and research entities. DOT should include specific, actionable guidance on persistent identifiers (PIDs) and metadata to its funded researchers. The ORFG encourages DOT and other federal agencies to embrace de facto community standards where they exist. These include digital object identifiers (DOIs) for articles, datasets, data management plans, and grants; ORCIDs for authors; and RORs for institutions and agencies. In the interest of making policy compliance as easy as possible for individual researchers, DOT should coordinate with other agencies and the National Science and Technology Council's (NSTC) Subcommittee on Open Science, to align on PID and metadata best practices. The ORFG would welcome the engagement of DOT and other federal agencies in the community we have nurtured since fall 2022 to improve research output tracking. This group is uniquely positioned with its cross-sector expertise drawing from funders, higher education, technology providers, publishers, standards bodies, and international organizations to provide such guidance on best practices.
- 8. How to improve research project lifecycle management. DOT can build upon its 2015 DOT Public Access Plan to improve research project lifecycle management in several ways beyond those enumerated above. DOT should explore ways to enhance project management tools that allow researchers to better manage the research

project lifecycle. These tools can include project management software, data collaboration platforms, and tools for monitoring and reporting on research progress. DOT can also provide training and support to grantees on how to use these tools effectively.

Additionally, DOT can improve transparency and accountability by requiring researchers to report on their progress and outcomes. DOT can also establish procedures for monitoring and evaluating research projects to ensure that they are meeting their objectives and delivering the expected outcomes.

Finally, DOT can encourage researchers to adopt a wide range of open science practices, such as preregistration, preprints, and open peer review. Preregistration, which grantees establish a transparent and verifiable record of their research plans, (including the research question, study design, and data analysis plan) can help DOT better understand the scope and nature of the research projects they fund, and track their progress over time. Sharing preprints can help disseminate research findings quickly and provide DOT with early access to research results, allowing the Department and the broader community to keep up-to-date with the latest research findings and potential implications for policy. Open peer review can help enhance public trust in DOT-funded research, as well as provide insights into the community dialog around research findings. This, in turn, can help DOT make informed decisions about future funding and research priorities, and identify areas where additional research may be needed.

These practices can increase transparency, accelerate the dissemination of research findings, increase public engagement and confidence in science, inform evidence-based policymaking, and improve the quality of research.

The Open Research Funders Group wishes to again express our gratitude and support for the work of the Department of Transportation, the OSTP, and other federal agencies to advance a more open, equitable, rigorous, and inclusive research ecosystem. We appreciate the opportunity to comment on this draft plan, and we are eager to assist in its eventual rollout.