

Plan Overview

A Data Management Plan created using DMPTool-Stage

Title: Qian_Interdependability

Creator: Sean Qian - ORCID: [0000-0001-8716-8989](https://orcid.org/0000-0001-8716-8989)

Affiliation: Carnegie Mellon University (CMU)

Principal Investigator: Sean Qian

Data Manager: Sean Qian

Funder: United States Department of Transportation (DOT) ([transportation.gov](https://www.transportation.gov))

Funding opportunity number: 7/1/17-6/30/18

Template: U.S. Department of Transportation Public Access Guidance v1

Last modified: 10-08-2017

Copyright information:

The above plan creator(s) have agreed that others may use as much of the text of this plan as they would like in their own plans, and customize it as necessary. You do not need to credit the creator(s) as the source of the language used, but using any of the plan's text does not imply that the creator(s) endorse, or have any relationship to, your project or proposal

Qian_Interdependability

The main objective of this project is to develop theories, algorithms and system to utilize energy and social media data to analyze traffic congestion patterns. We propose to develop an integrative data platform for public agencies. The processed data will be stored and managed in the PI's servers at CMU and the original raw data are collected from those agencies who own the data. Where not in violation of agreements made with third parties in order to collect data from their systems, all the data related to project will be made available to the research community through the same web application designed for this project.

While integrating data extracted from various entities, such as Pennsylvania Department of Transportation, Port Authority of Allegheny County, etc., the raw data will first be converted to mySQL database file for cleansing, fusion and processing. The data in mySQL are further imported into OpenStreetMap for visualization. The PI and research assistants will code algorithms using ANSI C++ that is compatible for any platform. The output data will mainly be temporal-spatial flow and system performance metrics. They can be provided in the standard .cvs format or GIS formats to any interested party via a web application.

Throughout the duration of the proposed work, the PI will in a timely manner communicate any significant findings with the scientific community in accordance with USDOT policy through journal publications, national and international conference presentations, and seminars. The reported results will be made available to the research community, where possible and permitted and upon request.

When sharing the data, the PI commits to protect privacy, confidentiality, and security. If the research and discoveries found during the project might be secured with intellectual property, the PI will work with our respective Technological Transfer Offices to protect potential proprietary data. In addition, the PI will not post to any publicly available site any raw data that are not permitted to share, especially under data usage agreement with private sector.

Data derived from this project shall be retained for at least one year. The tool developed in this project will be open source and shared along with research results to research community through the web designed for this project. The data in this project does not contain private or confidential information.

Any used data will reside on PCs and workstations belonging to the PI's university. All data will be periodically and systematically backed up either onto multiple external hard drives, or a centralized backup cloud through the university, to ensure full data recovery in the event of equipment failure.
