



## Data Management Plan for the National Center for Sustainable Transportation

University of California, Davis

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### Data description

Projects funded by the National Center for Sustainable Transportation (NCST), a part of the University Transportation Centers program of the U.S. Department of Transportation, may gather many different types of data, including:

**Travel surveys:** On-line or on-paper surveys administered to samples of individuals or households as to travel behavior and choices, attitudes and perceptions, and demographic characteristics. Datasets include individual and/or household records with names, addresses, and all other personal identifiers redacted.

**Professional surveys:** On-line or on-paper surveys administered to random samples or purposive samples of individuals acting in their professional capacity and/or as representatives of their organizations. Datasets include individual or organization records with individual names, addresses, and all other personal and business identifiers redacted.

**Interviews:** Structured, semi-structured, or open-ended interviews conducted by phone, video conference, or in-person with human subjects and/or key informants on topics relating to travel behavior, transportation policy, transportation practice, or similar topics. Datasets include transcriptions of interviews with name, addresses, and all other personal identifiers redacted. Any video and audio recordings will be granted an exception to data sharing requirements owing to privacy concerns and requirements of Institutional Review Boards.

**Video observations:** Video recordings of the operation of transportation facilities, such as streets, roundabouts, bike trails, and transit stations, which may include the movement of people and vehicles through these facilities. Datasets may include video files, as well as manual or automated coding of the video.

**Vehicle/person location and activity data:** Time-stamped vehicle trajectories or person location collected by mobile device or GPS loggers. Other parameters such as energy use and emissions or pollutant levels may be collected through instrumentation of test vehicles or humans. Data may also be produced through lab experiments or simulation models including input data and output data for the EPA MOVES and FEC models. High-resolution data will be granted an exception to data sharing requirements owing to privacy concerns and requirements

of Institutional Review Boards. Datasets summarizing the high-resolution data will be made available.

**Traffic volume and speed data:** Proprietary datasets collected using traditional instruments such as loop detectors, infrared sensors, and video or more recent techniques, including cell phone tracking and Bluetooth signals. In some cases data may be purchased or licensed from third parties; datasets summarizing the purchased or licensed data will be made available.

**Demographic data:** Data on individual and household characteristics, as well as vehicle ownership and other travel-related characteristics acquired from state agencies and/or commercial vendors. Exceptions to data sharing requirements will be granted when access to such datasets is restricted and special permission is required for access.

**Industry data:** Data on business operations acquired from state agencies and/or commercial vendors. Exceptions to data sharing requirements will be granted when access to such datasets is restricted and special permission is required for access.

**Existing datasets:** New datasets created as a result of calculating new variables with data from pre-existing datasets, such as travel surveys. Exceptions to data sharing requirements will be granted when access to such datasets is restricted and special permission is required for access.

## **Data format and metadata standards**

Data from NCST projects will be stored in non-proprietary formats, such as txt, CSV, mp3, etc. We will generally follow the format of the NREL TSDC server and/or the FHWA Research Data Exchange.

## **Policies for access and sharing**

All projects involving human subjects will abide by the requirements of the Institutional Review Board of the institutions of the Principal Investigators of the projects. These projects must have an IRB-approved protocol for ensuring informed consent of participants and protecting privacy and confidentiality. Data will be shared only after redaction of all individual identifiers, including names, residential addresses, exact geo-coordinates of residences or workplaces, and email addresses.

Projects using proprietary data from commercial or public sources will abide by all conditions and requirements imposed on the use of the data. If the source organization, license agreement, or terms of sale prohibit the public sharing of the data, the project will be granted an exception from data sharing requirements.

The Principal Investigators of the project will be responsible for acquiring IRB approval and adhering to IRB and other data sharing requirements. The PIs must report IRB approvals and other data sharing requirements in their project proposals and progress reports.

## **Policies for re-use, redistribution, derivatives**

Intellectual property rights will generally be held by the Principal Investigators of the projects and/or their home institutions. Rights will not be transferred to a data archive. Copyrights may apply to data from some projects, such as those using copyrighted instruments or proprietary data courses. PIs will identify whether any copyrights apply to the data, as might be the case when using copyrighted instruments. Projects using proprietary data from commercial or public sources will abide by all conditions and requirements imposed on the use of the data.

## **Plans for archiving and preservation**

Merritt, the data repository of the University of California, will be the primary repository for the NCST. PIs may opt for other repositories with the approval of the NCST Director; other repositories must also meet federal requirements and 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. **All PIs will be required to provide sufficient metadata to ensure its discoverability. PIs will be required to submit a project-level data management plan before funding for the project is awarded.** Future funding for the PI for this or other NCST projects is contingent on successful implementation of the project-level data management plan.