

Development and Implementation of Sustainable Transportation Resilience Indicators Dataset

Dataset available at: <https://doi.org/10.5281/zenodo.3351637>

(This dataset supports report **Development and Implementation of Sustainable Transportation Resilience Indicators**, https://martrec.uark.edu/research/vu_development_final_report_accessible.pdf)

This U.S. Department of Transportation-funded dataset is preserved by the Maritime Transportation Research and Education Center in the digital repository Zenodo (<https://zenodo.org/>), and is available at <https://doi.org/10.5281/zenodo.3351637>.

The related final report **Development and Implementation of Sustainable Transportation Resilience Indicators**, is available from the National Transportation Library's Digital Repository at <https://rosap.ntl.bts.gov/view/dot/42275>

Metadata from the Zenodo Repository record:

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Description: Communities are complex systems subject to a variety of hazards that can result in significant disruption to critical functions. Community resilience assessment is gaining popularity as a means to help communities better prepare for, respond to, and recover from disruption. Sustainable resilience, a recently developed concept, requires communities to assess system-wide capability to maintain desired performance levels, while simultaneously evaluating impacts to resilience due to changes in hazards and vulnerability over extended periods of time. In an earlier work, the authors developed a classification scheme to aid in identification, selection and application of community sustainable resilience indicators that can be tailored to a community's needs in operationalizing the assessment process. These indicators were characterized according to whether they aligned with social, economic or environmental systems that are necessary for a community to achieve a sustainable resilience domain of survival, well-being, or full preparedness. Of the critical infrastructure systems that support these systems and domains, transportation is arguably the most important. This is based on the premise that transportation is a means to an end, providing the mobility that enables a community to establish and maintain a social, economic and environmental fabric. Whether it involves an educational, medical, recreational, religious, work or other purpose, absent a safe and reliable transportation system, none of these activities can be satisfactorily pursued. Moreover, in times of crisis, transportation serves as a vital artery for enabling access to and egress from impacted areas. The objective of this project was to establish and demonstrate a method for evaluating a community's transportation resilience, such that if deficiencies exist, attention can be focused on mitigating those concerns. This approach was designed around the scenario of a river valley community exposed to the threat of a significant flood event, with the expectation that the methodology has

the potential to be extended to assess community resilience to other natural and manmade hazards.

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Versions:

- Version 1 - 10.5281/zenodo.3351637
- You can cite all versions by using the DOI 10.5281/zenodo.3351636. This DOI represents all versions, and will always resolve to the latest one.

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Dataset description:

This dataset contains 1 .zip file collection described below.

MarTREC_Vanderbilt_DataManagement.zip:

This collection contains a folder of the same name and two sub folders. The two sub folders are listed below with their contents.

- MarTREC_DM_Maps folder contains 23.jpg files titled MarTREC_Fig(numbered 1-12 with the possibility of an additional identifier a-d) ie. MarTREC_Fig1.jpg or MarTREC_Fig9b.jpg. The file type .jpg is an image file that can be opened with a variety of different software. NTL staff were able to view the files with Windows Photos Application(for more information on .jpg files and software, please visit (<https://www.file-extensions.org/jpg-file-extension>)).
- MarTREC_DM_Tables folder contains one .xlsx file with the same name, which can be opened with Excel, and other free available software, such as OpenRefine

National Transportation Library (NTL) Curation Note:

As this dataset is preserved in a repository outside U.S. DOT control, as allowed by the U.S. DOT's Public Access Plan (<https://ntl.bts.gov/public-access>) Section 7.4.2 Data, the NTL staff has performed *NO* additional curation actions on this dataset. NTL staff last accessed this dataset at <http://doi.org/10.5281/zenodo.3351637> on 2020-02-20. If, in the future, you have trouble accessing this dataset at the host repository, please email NTLDataCurator@dot.gov describing your problem. NTL staff will do its best to assist you at that time.