

3-2013

Traffic Safety Data: Expanding the Archive

Christopher Monsere
Portland State University, monsere@pdx.edu

Myenwoo Lim
Portland State University

Chengxin Dai
Portland State University, chengxin.dai@gmail.com

Xiaowei Wu
Portland State University

Follow this and additional works at: https://pdxscholar.library.pdx.edu/trec_briefs



Part of the [Transportation Commons](#), and the [Urban Studies and Planning Commons](#)

Let us know how access to this document benefits you.

Recommended Citation

Monsere, Christopher, Myenwoo Lim, Chengxin Dai and Xiaowei Wu. Traffic Safety Data: Expanding the Archive. 2009-232. Portland, OR: Transportation Research and Education Center (TREC), 2013.

This Report is brought to you for free and open access. It has been accepted for inclusion in TREC Project Briefs by an authorized administrator of PDXScholar. Please contact us if we can make this document more accessible: pdxscholar@pdx.edu.



OTREC
OREGON TRANSPORTATION RESEARCH
AND EDUCATION CONSORTIUM

P.O. Box 751
Portland, OR 97207-0751
Phone: (503) 725-2843
Web site: <http://otrec.us>
Email: askotrec@otrec.us



TRAFFIC SAFETY DATA: EXPANDING THE ARCHIVE

A project expands the capabilities of the Oregon Traffic Safety Data Archive, a tool for helping traffic safety engineers and planners reduce the occurrence of traffic accidents.

The Issue

Every state in the U.S. has been keeping records on traffic accidents since the 1920s, and now with the availability of so much abundant information, the challenge is to use it well. Being able to quickly track down specific information on traffic accidents — how many happened within a certain time frame, where they occurred, why they occurred — can help officials to improve safety measures and prevent future accidents. The Oregon Traffic Safety Data Archive, OrTSDA, was recently developed for this purpose, and it is in the process of being expanded so that safety officials in Oregon can more effectively reduce the occurrence of accidents. Local agencies might be able to use the site to track long-term safety performance measures for their city or county. The archive makes it easy for an engineer or planner to get summaries of crash data using many different factors.

The Research

The OrTSDA was developed by researchers at Portland State University. It is an online tool designed to help the state conduct more effective traffic safety analysis. The archive currently includes crash locations, fatalities, injuries, driver impairment, law enforcement activity, population data, and vehicle miles traveled, accessible on a single website.

The information now in the archive was previously collected and separately maintained by several different organizations: the Oregon Department of Transportation, the Population Research Center, the Law Enforcement Data Systems, the Oregon Uniform Crime Reporting Program, and the DUII Data Book. Researchers seeking statistics had to go to each of these respective places to find what they needed. The main goal of the OrTSDA project was to collect, organize, and intelligently display all of this information.

Christopher Monsere of Portland State University, along with a team of student researchers, started by taking a look at how traffic data are managed in other parts of the country. Many states in the U.S. currently offer no comprehensive public access to traffic safety

THE ISSUE

In Oregon, local transportation and planning agencies need to track long-term safety performance measures, in order to effectively analyze traffic safety and prevent accidents from occurring.

THE RESEARCH

The Oregon Traffic Safety Data Archive was developed by researchers at Portland State University, as a public clearinghouse where all of these performance measures could be stored for easy access. The archive:

- Contains twelve years of data on vehicle crashes and the factors that affect crashes;
- Displays the information according to how the user has requested it, with the capability of producing analytics (charts and graphs) upon request;
- Is free and publicly accessible.

THE IMPLICATIONS

Having traffic safety data housed in one location can help safety engineers to identify trends in traffic accidents, isolate their causes, and reduce their occurrence.

data. Others have developed online services similar to the one undertaken by the OrTSDA developers.

Monsere's team studied the systems in several other states in order to determine how data were being presented. In Kentucky and Michigan, the raw data are accessible, along with collision analysis tools that allow the user to query specific variables and receive output in the form of graphs or maps. In Iowa, the Traffic Safety Data Service provides maps, diagrams, and reports by request, but there is no access to raw data for researchers to view for themselves. New Mexico and North Carolina provide similar analytic services, but again, these states offer no access to raw data before it is interpreted. Monsere's team found that it was most helpful when a user could view the raw data, as well as having the ability to request data analyses and summaries.

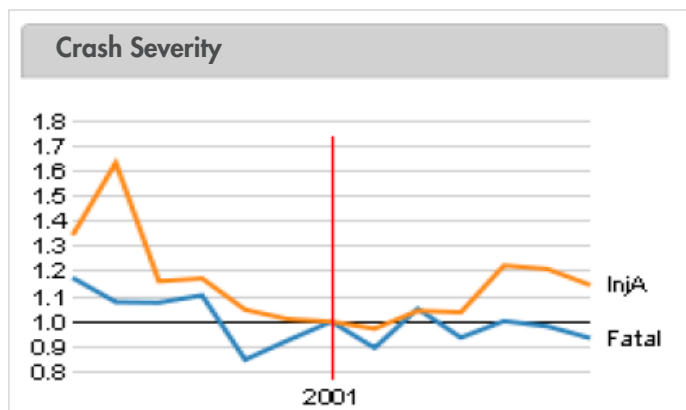
OrTSDA does offer access to unprocessed data, as well as the option to request specific sets of data synthesized into graphs or charts. Additionally, there is a helpful Google maps interface that will display crash locations and details when a user chooses the parameters. This allows the archive to be useful for a researcher at any expertise level, whether it be a transportation engineer who needs large amounts of raw data, or an interested citizen who wants a specific answer in a readable format.

Implications

The OrTSDA is a vast clearinghouse of information that will allow transportation and planning agencies to track long-term safety performance measures for their city or county. The database includes crash locations, fatalities, injuries, driver impairment, law enforcement activity, population data, and vehicle miles traveled. Transportation engineers and policymakers can use

this information to identify trends in traffic accidents, isolate their causes, and take steps to reduce their occurrence. The clearinghouse will be housed under the umbrella of PORTAL, the Portland, Oregon Regional Transportation Archive Listing, which is maintained by PSU.

OrTSDA currently contains data from 1995 to 2007, with subsequent years in the process of being loaded. Traffic data snapshots are released annually by ODOT, and each year the ODOT annual report will be loaded into the OrTSDA clearinghouse. This means that traffic safety data records will be kept current, and the archive will remain useful for safety engineers.



User-generated line graph showing crash severity from 1997 to 2007.

In the above sample, a user of the Oregon Traffic Safety Data Archive has requested information about the severity of crashes (injuries shown in orange, fatalities in blue). The graph is interactive, allowing the user to mouse over and view different years.

PROJECT INFORMATION

TITLE: Expanding Development of the Oregon Traffic Safety Data Archive

LEAD INVESTIGATOR: Christopher Monsere, PhD, Portland State University

PROJECT NUMBER: 2009-232

PARTNERS: Oregon Department of Transportation

CONTACT: Justin Carinci, 503-725-2843 carinci@otrec.us

MORE INFORMATION <http://otrec.us/project/232>