Putting Safety Data in the Hands of Users

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Outline

- What is OrTSDA?
- Mission and Vision
- Other examples
- Teasing with some screenshots
We’ve been at it a long time

- At a 1924 national conference on street and highway safety it was reported that safety data “are so vital to any comprehensive understanding and treatment of the safety problem that their collection and analysis in every State and community are essential” (Griffith, 2003).
Mission

The mission of the Oregon Traffic Safety Data Archive is to build the knowledge base of traffic safety data in Oregon. The archive hopes to become a valuable traffic safety data resources with researchers, practioners, and community supporters.
Linking Safety Related Traffic Records

- Crash
- Driver Files
- Enforcement
- Exposure Data
- Highway Geometry
- Emergency Medical Services
- Court Records

OTREC
Oregon Transportation Research and Education Consortium
Goals of OrTSDA

- Not to replace tools/data from ODOT crash analysis unit
- Make data accessible to those that don’t often use it
- Make things quicker for advanced users
- Once we figure something out, lets keep it!
WHAT IS AN ARCHIVE?
Main Entry: ¹ar·chive
Pronunciation: \ær-kīv\
Function: noun
Etymology: French & Latin; French, from Latin archivum, from Greek archeion government house (in plural, official documents), from archē rule, government
• ¹: a place in which public records or historical documents are preserved; also: the material preserved—often used in plural
• ²: a repository or collection especially of information
Welcome to the Portland Transportation Archive Listing (PORTAL). The purpose of this project is to implement the U.S. National ITS Architecture's Archived Data User Service for the Portland metropolitan region. This system is being developed at Portland State University by students in the Intelligent Transportation Systems Laboratory under the direction of Dr. Robert Bertini. We are working in close cooperation with the Oregon Department of Transportation, Metro, the City of Portland, TriMet and other regional partners. This work is supported by the National Science Foundation.*

We welcome your participation in our project. The current PORTAL system archives the Portland metropolitan region's freeway loop detector data at its most detailed level and also archives area weather data. We plan to expand the capabilities of our system and to include multimodal data sources from both Oregon and Washington. We provide access to the system by password. To request access to the system click on the Request Account link to the left.

*This website is based upon work supported by the National Science Foundation under Grant No. 9978537. Any opinions, findings, and conclusions or recommendations expressed in this website are those of the authors and do not necessarily reflect the views of the National Science Foundation.
What’s in the PORTAL Database?

Loop Detector Data
20 s count, lane occupancy, speed from 500 detectors (1.2 mi spacing)

Incident Data
140,000 since 1999

Bus Data
1 year stop level data 140,000,000 rows

Weather Data
Every day since 2004

Days Since July 2004
About 300 GB
4.2 Million Detector Intervals

VMS Data
19 VMS since 1999

WIM Data
22 stations since 2005 30,026,606 trucks

Crash Data
All state-reported crashes since 1999 - ~580,000
What’s Behind the Scenes?

Database Server
PostgreSQL Relational Database Management System (RDBMS)

Storage
2 Terabyte Redundant Array of Independent Disks (RAID)

Web Interface
SOME EXAMPLES OF A SAFETY “ARCHIVES”
CREATE A DATA TABLE

If you need help filling out this form, you can visit the Help page or click on the question mark icon beside any question.

### Datasets

- I want counts of: Crashes, Vehicles, People
- Include non-reportable crashes

### Data filters

- Geographic area: Statewide, County, City, Troop, Division
- Worst injury sustained in the crash: Fatality, Non-fatal injuries, Any injuries, No injuries
- Count crashes where at least one vehicle has:
  - Driver age 16-19
  - Driver age 65 or older
  - Driver age 75 or older
  - Bicycle
  - Pedestrian
  - Motorcycle
  - Large Truck/Bus
  - Alcohol involvement
  - Speeding

### Variables

- Table type: One-way table, Two-way table
- Variable 1 (down): [Select]
- Order for values: Dates or numbers, Alphabetical, Descending frequency

[Create Table]
## CARE

Selected Data Source: 2007 Alabama Crash-Data
Selected Filter: Bicycle
Row Variable: COUNTY
Column Variable: MONTH

For additional information, see the Help topics at the bottom of the screen.

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TOTAL: 20.939%
Center for Excellence In Rural Safety
OrTSDA

- Project funded by OTREC in 2 phases
- Phase 1 nearly complete
  - Crash data only
- Phase 2 starting
  - Other data sources
OrTSDA

Oregon Traffic Safety Data Archive

USERNAME:  Password:  Login

SIDE BAR MENU
- Research
- On-line Crash
- Data Archive
- Faculty
- Links

2005 DATA
- 408 fatalities
- 29,022 injuries
- 44,878 crashes

NEWS
- New data added to the archive!

MISSION STATEMENT
The mission of the Oregon Traffic Safety Data Archive is to build the knowledge base of traffic safety data in Oregon. The archive hopes to become a valuable traffic safety data resource with researchers, practitioners, and community supporters.

OREGON ON-LINE CRASH DATA
Coming soon! The OrTSDA has partnered with the Oregon Department of Transportation to provide access to the 2005 Oregon State crash data. This tool is a work in progress and provides the user with summary graphs and tables based on their parameters.

RESEARCH 1
Coming soon! We provide a number of useful data summaries compiled from a variety of sources that track the performance of the Oregon transportation system.

RESEARCH 2
Coming soon! In the course of our research, we have assembled a number of common data sources that are useful for safety analyses. These data are provided for your use with helpful instructions. Also, some data sets processed for research are stored in their final format for others to use and validate our research.

Portland State University

OTREC
Oregan Transportation Research and Education Consortium
Main Menu

- Dashboard
- Enforcement
- Intersections
- Segments
- Mapping
Dashboard

- Time series of key crash parameters
  - Severity
  - Behavior
    - Alcohol
    - Drugs
    - Seatbelts
  - Vehicle and crash type
- Option to compare to a “peer” group
Summary Crash Data

- Each page has filters for:
  - Time
  - Year or Month
  - Spatial
  - City or County
Example - FARS – Out of Hospital Time
Mapping

- 2007 data has latitude-longitude
- Key to linking many data
- Can we go back and repopulate past years?
  - Maybe…
Fixed objects – no state highways
Enforcement

- Some ideas
  - Behavior-related crash analysis
  - Hot spots
  - Include some citation maps (?)

- OSP - LEDS
Figure 43: Surface Plot of Alcohol-Involved Injury Crashes by Hour of Day and Weekday –Multnomah County, 1995-2004
Intersections / Segments

- Map driven queries
- Summary performance data for comparison
  - By facility type
  - By geometry
- Some trend identification plots
  - Examples for data mining
Fatal Crashes, by Functional Class, By Collision Type, 1995-2005, State Highways Only

ORTSDA, Special Query, Source: ODOT.CDS
Research Archive

- Statewide Intersection Safety
- High-speed Intersection Safety
- Illumination
Ideas?

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