

Florida Freight Facility Dataset

CASE
STUDY

Fusing public administrative records and private map data to develop a statewide inventory of freight generators.

Freight Challenges Land Use, Last Mile Access

Data Sources Used Administrative Records

Analytical Approaches Location

WHAT ARE THE FREIGHT CHALLENGES?

Facilities that attract or generate large amounts of freight can have a negative impact on the performance of transportation system if their placement is in conflict with other land uses. For example, industrial and residential land uses in close proximity may result in many trucks operating on residential streets, or trucks being required to take longer, indirect routes to reach highways. A first step towards improving freight and land use coordination is understanding where large freight generators are located, why those locations were chosen, and which “last mile” routes trucks use.

WHAT WAS THE GOAL OF THE PROJECT?

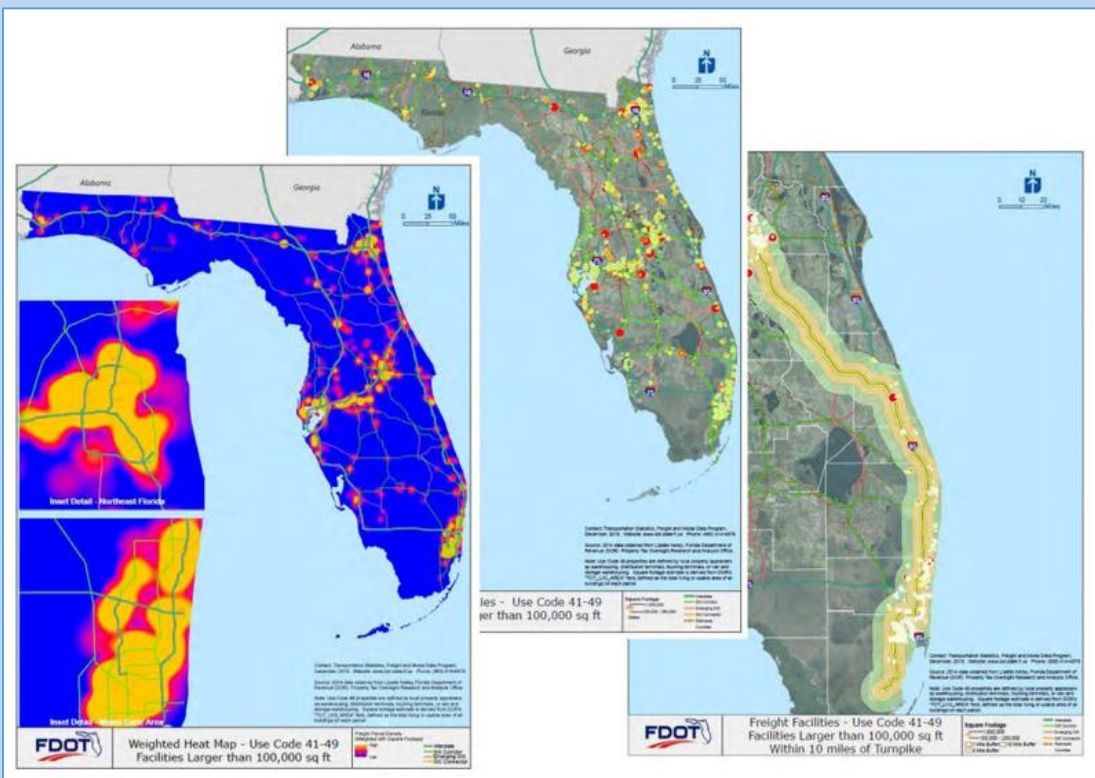
The Florida Department of Transportation (FDOT) sought to identify major freight traffic generators in the state, with the goal of supporting other freight-relevant work such as modeling, freight analysis, and public outreach.

WHAT DATA SOURCES WERE USED?

The Freight Facility Dataset was created from three main data sources. The Florida Department of Revenue (FDOR) provided two sources: tax parcel records, and spatial data on parcel boundaries. These were complemented by data collected from private online mapping services such as Google Earth and Google Street view.

WHAT ANALYTICAL APPROACHES WERE APPLIED?

FDOR records for 91,895 tax parcels with freight-related land use codes were joined with a FDOR parcel boundary map file. Next, specific data fields within the parcel records were extracted to describe the freight-related parcels. These fields included the parcel ID number, year built, square footage, owner, and address.



Freight Facility Dataset Presentation

Source: FDOT, Transportation Statistics Office, "FREIGHT FACILITY DATASET", April 2016. Available: <http://www.fdot.gov/planning/statistics/multimodaldata/FreightFacility.pdf>

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WHAT ANALYTICAL APPROACHES WERE APPLIED (Cont.)?

Only parcels with a total indoor area 100,000 square feet or greater were included in the final dataset, which had 2,756 parcels. The data extracted from FDOR's datasets was supplemented using online mapping applications such as Google Maps or Microsoft Bing Maps, as well as street imagery from sources like Google StreetView. Staff used these sources to verify that FDOR land use assignments were correct, and to collect additional attributes for parcels, such as business name, whether or not the building appeared to be vacant, and number of truck bays. Each additional attribute had a "source" field, where staff could note what map source (Google, Bing, etc.) had provided information for specific parcels.

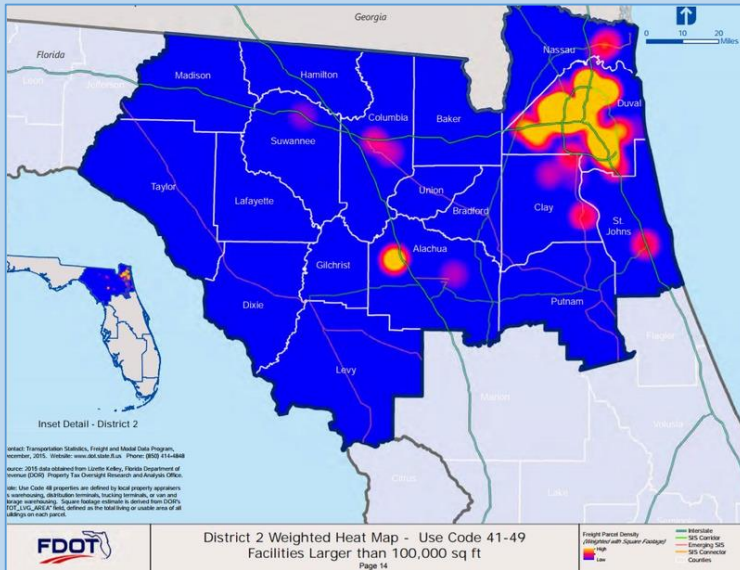
Some issues encountered during the project included buildings that spanned multiple FDOR tax parcels, multiple map shapes with the same parcel ID, and the differences in the dates of streetside observations from map sources like Google and Microsoft Bing, which could result in inaccurate records of building occupancy or names of occupant businesses.

WHAT WERE THE RESULTS?

The final dataset is made up of 2,756 tax parcels. A best practice from the study of this dataset's development is the ease with which it can be updated, and thus remain relevant for future decision making. The dataset uses a relational database to link each freight facility to specific tax parcels, and additional parcels and facilities can be added to the database or edited from updated tax records. Update work has been delegated to FDOT's District Freight Coordinators, who often have firsthand knowledge of freight facility development in their districts, and can even update the dataset before updated tax records are available. This ease of updates transformed the project from a single year "study" of freight facilities to a true "tool" that could be adapted as time passed.

HOW WERE THE RESULTS VISUALIZED OR COMMUNICATED?

Results of the dataset's development were communicated via a written paper, as well as a set of maps visualizing the distribution of major freight facilities across the state. Heat maps (such as the maps shown in figure on the previous page and this page) showing the intensity of freight activity were a unique way of quickly visualizing freight activity centers.



Example Dataset Presentation: Weighted Heat Map

Source: FDOT, Transportation Statistics Office, "Freight Facility Dataset", April 2016. Available: <http://www.fdot.gov/planning/statistics/multimodaldata/FreightFacility.pdf>

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