December 13, 2023

PhillyFreightFinder

Freight Data Portal for the Delaware Valley

Baltimore Regional Transportation Board Freight Movement Task Force



Kristen Scudder Freight Program Manager Delaware Valley Regional Planning Commission

Background

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An **online**, **interactive** platform for sharing freight network **data to enhance the understanding** of performance and value of freight in the regional economy

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LAUNCHED IN 2013

With support from the DVRPC Freight Advisory Committee, the initial product was made public in 2013. The FAC assisted with identification of data and included a mix of public and private-sector members.



Why build *PhillyFreightFinder*

- **Expand reach** of freight planning efforts
- Improve visibility + availability of freight data
- Educate regional planners and the public
- Develop better data sharing with public- and private-sectors



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Value to our partners and to us

- County planners have expanded freight planning capacity
- Engaged new partners (public + private)
- Centralized, accessible data resource for region
- Foundation for additional performance measure tracking

ADDED VALUE TO OUR WORK being a resource improves visibility of all our products and improves the quality and level of input we get in our process

Components of PhillyFreightFinder

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FRONTEND APPLICATION

- Built 100% in-house
- Flexible, lightweight
- Open Source code
- Independent of Esri stack



BACKEND DATA WAREHOUSE

- ArcGIS Server +
 PostgreSQL
- Python for data intake
- Automation of data updates built-in to workflow



Data, data, and more data!



PRIORITIZE DATA

- essential to understanding the intermodal supply for freight movements;
- that explains freight demand and supply-chain logic; and
- that measures **system performance**.



4 internal

4private



Evaluation of Data

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CONSIDERATIONS

- Practical use or application
- Cost to acquire
- Time/cost of processing
- Computational requirements
- Utility and availability over time

WHAT WE LEARNED

- Recency/frequency is a key consideration
- Consistency and reliability impact the utility of data for planning and tracking purposes
- Telling the story of freight with data requires an ongoing commitment

TOOLS WE USE FOR DATA MANAGEMENT



Schema Design

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- Helpful step to understand context/relationships
- Key for planning optimization
- Provides documentation
- Foundation for Extract-Transform-Load process



Extract + Transform

- Only what we need
- Optimize for analysis/use
- Data validation checks

WHAT SHOULD WE AUTOMATE?

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import urllib2
from operator import itemgetter
import yaml, csv

csa_data = []
top_twofive = []
port_lookup = []

url = 'http://api.census.gov/data/2013/acs5?
get=NAME_B01001_001E&for=metropolitan+statistical+area/micropolitan+statistical+area:*&key=flebba0078fa76b97
94f7070402b4b72095564b1'
response = urllib2.urlopen(url).read()
parsed_json = yaml.safe_load(response)

for msa in parsed_json[1:]:
 csa_data.append([msa[0],int(msa[1]),msa[2]])

sorted_msa = sorted(csa_data, key=itemgetter(1), reverse=True)

for msa in sorted_msa[:25]:
 top_twofive.append(msa[2])

print top_twofive

with open('port-msa-match.csv', 'rb') as f: reader = csv.reader(f) for row in reader: if row[5] in top_twofive: port_lookup.append(row) print port lookup

KEY CONSIDERATIONS

automation is an effective tool to reduce future work **but** dependent on data source consistency. Error reporting and log tables are essential

Open Freight App

PHILLY FREIGHT FINDER @dvrpc 🛷 About 🗸 S Tools - ^{III} View Map 🟫 Home **Open Freight App** Open Freight App is a project by the Delaware Valley Regional Planning Commission 🔘 View Project on GitHub (DVRPC) to share with regional and national transportation planning partners the framework that is the basis for the PhillyFreightFinder web mapping and data application. Through this effort, DVRPC hopes that county planning agencies, metropolitan planning organizations and state departments of transportation, and economic development agencies can leverage this framework to further their efforts in making freight transportation data public. By utilizing the Open Freight App framework, rather than building from scratch, planning agencies can focus their time and resources on the development of data sets that can serve to improve the access to information on freight facilities and their role in economic development and transportation across the country. Open Freight App would serve as a self-hosted solution to offer these datasets to other planners, economic developers, public officials, decision-makers and the general public. Details Open Freight App, is a white-label, open source version of the DVRPC PhillyFreightFinder application. This version is available for download and open for replication by any user. This version will have no branding or color styling applied and a standardized icon set will be provided for a sample set of data. In addition, the project will include the following: Full documentation and guide on: • Adding map functionality for layers and features Creating info windows for feature data Creating and modifying legend and layer controls Populating search criteria Converting ArcGIS Shapefiles to lightweight GeoJSONs for use in the map o and more! Fully commented versions of all necessary HTML, JavaScript and CSS files A starter set of freight facility icons License and credit materials Advanced coding support is not included with this product. While staff at DVRPC can field general questions and assist with certain aspects of the project, formal support in the form of coding, styling, graphic design and advanced development must be done by an outside consultant. If you require more advanced support please contact us for more information.

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📄 data	Initial commit	9 years ago 4 View license
🖿 lib	Fix to table/infobox_ height issues	7 years ago 🔨 Activity
🗅 .gitignore	Add proper selected icon support	8 years ago
LICENSE.md	Initial commit	9 years ago 😵 6 forks
README.md	Update README.md	9 years ago Report repository
index.html	Initial commit	9 years ago
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Evolution of Philly Freight Finder

- Addition of tools over time
 - County Profiles
 - Maritime Indicators
 - Highway Performance Measures
 - Freight Center Interactive Story
- Data updates- challenge to maintain regular maintenance
- New and better data practices
- Other agency data center tools
- What's next?



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PhillyFreightFinder:http://dvrpc.org/webmaps/phillyfreightfinderOpen Freight App:http://dvrpcfreight.github.io/open-freight-app/

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About - Solor → M View Map

Freight Data Portal for the Delaware Valley

The Delaware Valley is a premier freight transportation gateway. It possesses one of the world's busiest freshwater ports; rail freight service from two large Class I railroads and 12 smaller short lines; an airport with expanding international cargo services; an excellent highway and connector network; and numerous rail and port intermodal terminals.

The performance of this extraordinary network helps promote and support a thriving economy. *PhillyFreightFinder* is a resource for exploring and tracking the Philadelphia-Camden-Trenton regional freight network.

Get started below

County Freight Profiles

The DVRPC region is comprised of nine counties, each with a unique freight profile of facilities, employment, and trade patterns. The County Profile Tool provides insights on these unique aspects.

Explore a county

Performance Indicators

A key to understanding freight in the Delaware Valley is evaluating the performance of the facilities that support freight in the region.

View Highway Performance

View Maritime Indicators

Explore Our Network

The region's extensive network includes hundreds of individual facilities that function together to drive the economy. Our map tool allows you to explore key details and facts about each of these facilities.

Browse the network map

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County Freight Profiles Performance Indicators Explore Our Network The DVRPC region is comprised of nine A key to understanding freight in the The region's extensive network includes counties, each with a unique freight profile Delaware Valley is evaluating the hundreds of individual facilities that function of facilities, employment, and trade patterns. performance of the facilities that support together to drive the economy. Our map tool The County Profile Tool provides insights on freight in the region. allows you to explore key details and facts these unique aspects. about each of these facilities. **View Highway Performance** Explore a county View Maritime Indicators Browse 101 (map







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network

trade patterns

DVRPC Region Overview

The Delaware Valley region consists of nine counties: Bucks, Chester, Delaware, Montgomery and Philadelphia in Pennsylvania, and Burlington, Camden, Gloucester and Mercer in New Jersey.

The DVRPC region contains an impressive freight transportation network consisting of highways, rail lines, ports, airports, and pipelines. These key linkages unite an expansive list of facilities including warehouses, manufacturing sites, rail yards, and truck stops.

Strategically positioned in the middle of the densest population center in the United States; over 100 million people live within a 500-mile radius of Philadelphia, representing a vast consumer base and making the region ideally situated as a manufacturing and distribution hub.

> Explore freight facilties and activity by county (select a county of interest)

BUCKS MONTGOMERY HILADELPHIA CHESTER DELAWARE GLOUCESTER HERCER

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overview

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overview

Philadelphia County Network

Like powerful Internet networking tools, Philadelphia, Pennsylvania's freight system affords rapid, productive, and global connections. Once known as the *Workshop of the World*, Philadelphia now serves as the calling card of the Delaware Valley region's impressive freight assets. For even the casual observer, the City's prominence in international commerce is abundantly evident: mammoth container cranes, multi-cultural company logos, and non-stop daily pick-up and delivery patterns dot the landscape.





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network

trade patterns

A Ship being unloaded at Packer Avenue Marine Terminal





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Freight Network Statistics

www.dvrpc.org/webmaps/phillyfreightfinder

UNIQUE

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EMPLOYMENT



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Top Inbound - Commodities by Volume Warehouse & distribution center Crude petroleum Petroleum refining products Misc. industrial organic chemicals Metal scrap or tailings Rail intermodal drayage from ramp Broken stone or riprap Gravel or sand 0 1,000 2,000 3,000 4,000







0

Top Inbound - Commodities by Volume -







Top Inbound - Commodities by Volume -

Minneapolis, MN

Indianapolis, IN

Cincinnati, OH

Buffalo, NY

51.0 ktons

50.7 ktons 40.7 ktons

39.0 ktons



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general cargo terminal
 annual ship calls

2

444



Source: Maritime Exchange of the Delaware River and Bay, DVRPC

www.dvrpc.org/webmaps/phillyfreightfinder

export share of

foreign trade

by volume

18%







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