

Freight Efficient Land Use: Tools of the Trade

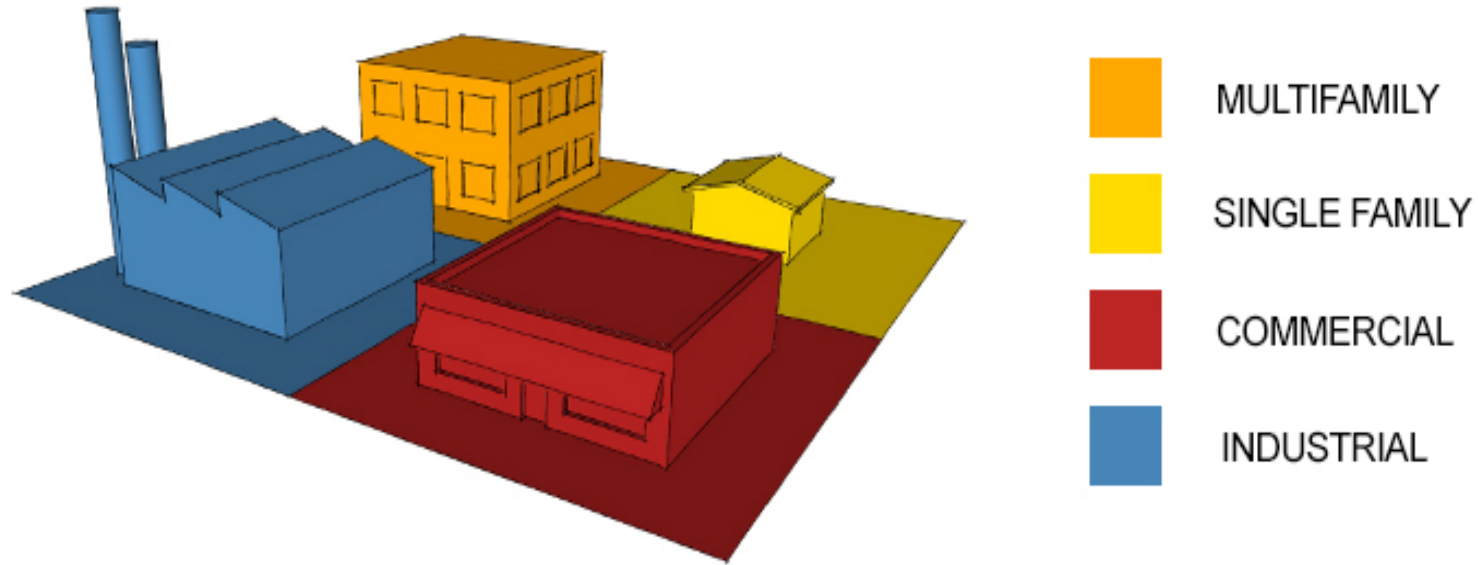


Dr. Catherine T. Lawson
University at Albany
Urbanism Next Conference
Portland, Oregon
March 5 - 7, 2018



Euclidean Zoning: Traditional Approach

EUCLIDEAN ZONING



Source: <http://www.rdlarchitects.com/content/uploads/Euclidean-Zoning-Graphic.jpg>

Euclidean Zoning: Traditional Approach

- Separation of uses to protect public health
- Broadly describe industrial activities that produce/attract truck trips
- Requires local legislative action
- Areas designated during a different economic era
- Few opportunities to facilitate freight activities, particularly for commercial and residential areas
- Used as an approach for understanding truck trip generation (NCFRP Reports 19 and 37)

Comprehensive Plans

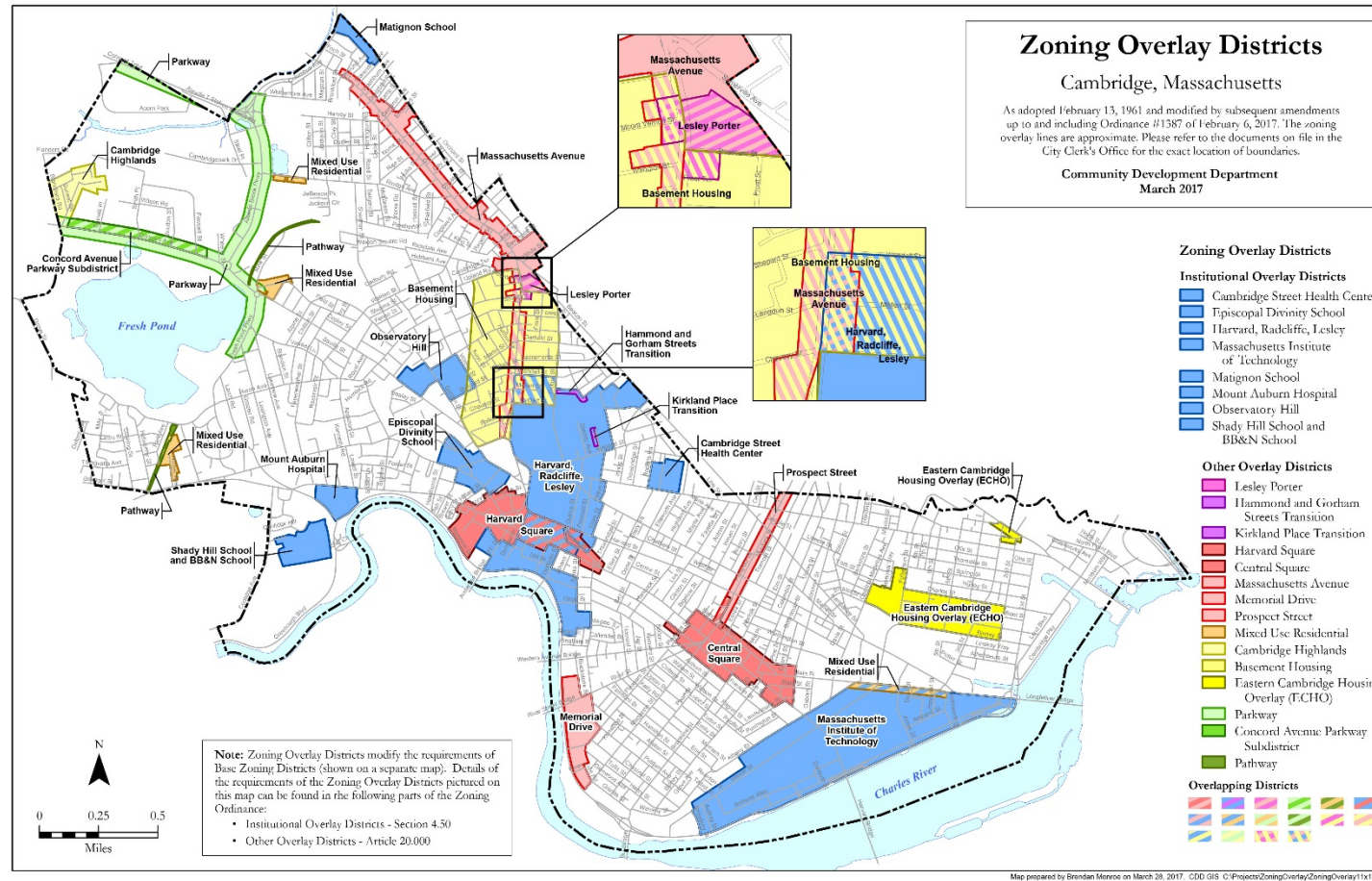


Source: <https://i2.wp.com/www.cmpdd.org/wp-content/uploads/2012/07/Zoning-Map.jpg>

Comprehensive Plans

- Intended to direct community aspirations for the future
- Requires local legislative action to amend or update
- Freight is often absent from the set of goals and objectives
- Could be updated to reflect changes needed to improve freight efficiency
- Could benefit from national effort (e.g., APA)

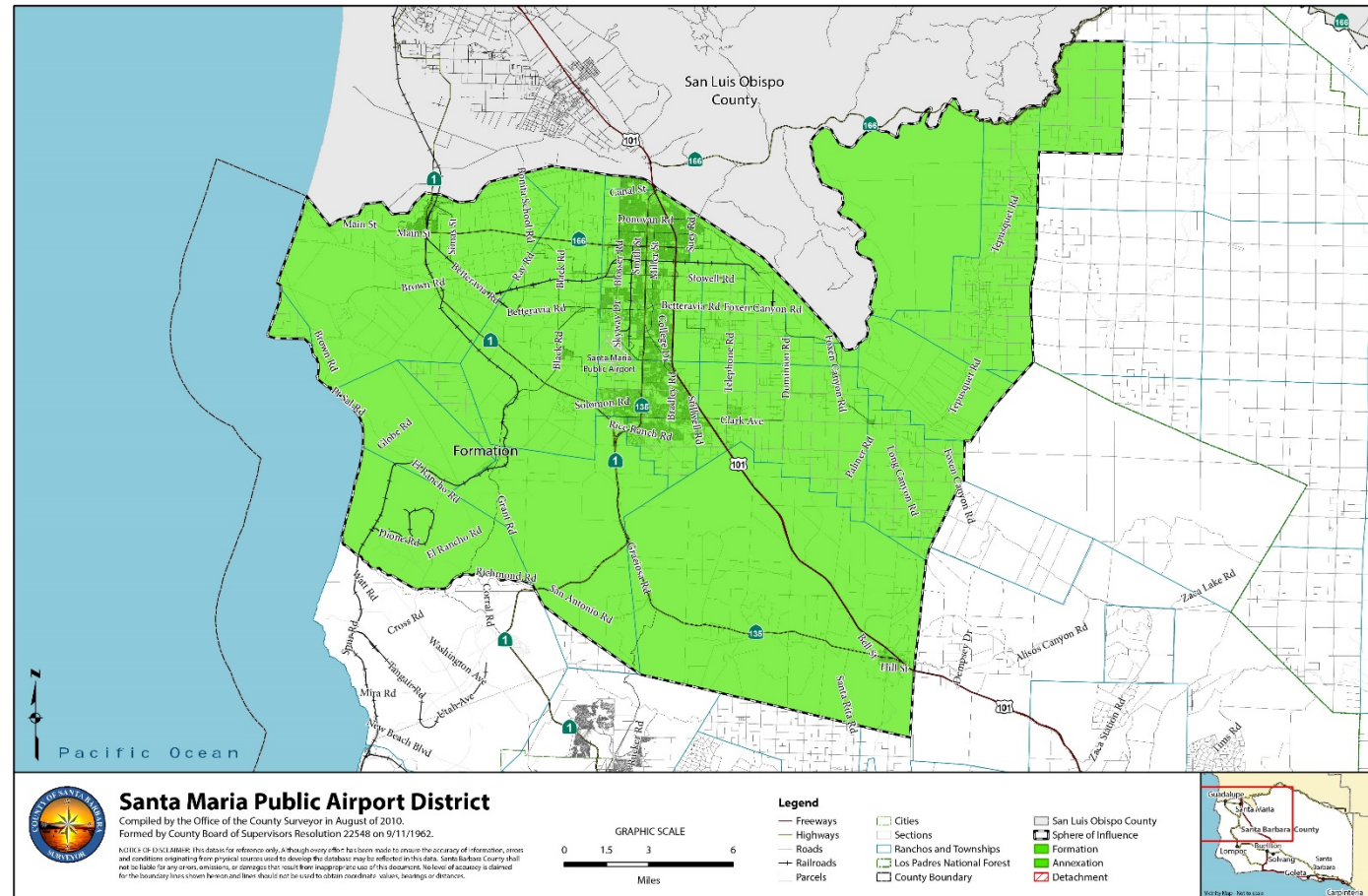
Overlay Zones



Overlay Zones

- Easier to enact or amend, but still require local legislative action
- Less subject to court action
- Used to address freight issues
 - Case Study
 - Maritime Industrial Zoning Overlay District (MIZOD)

Special Districts

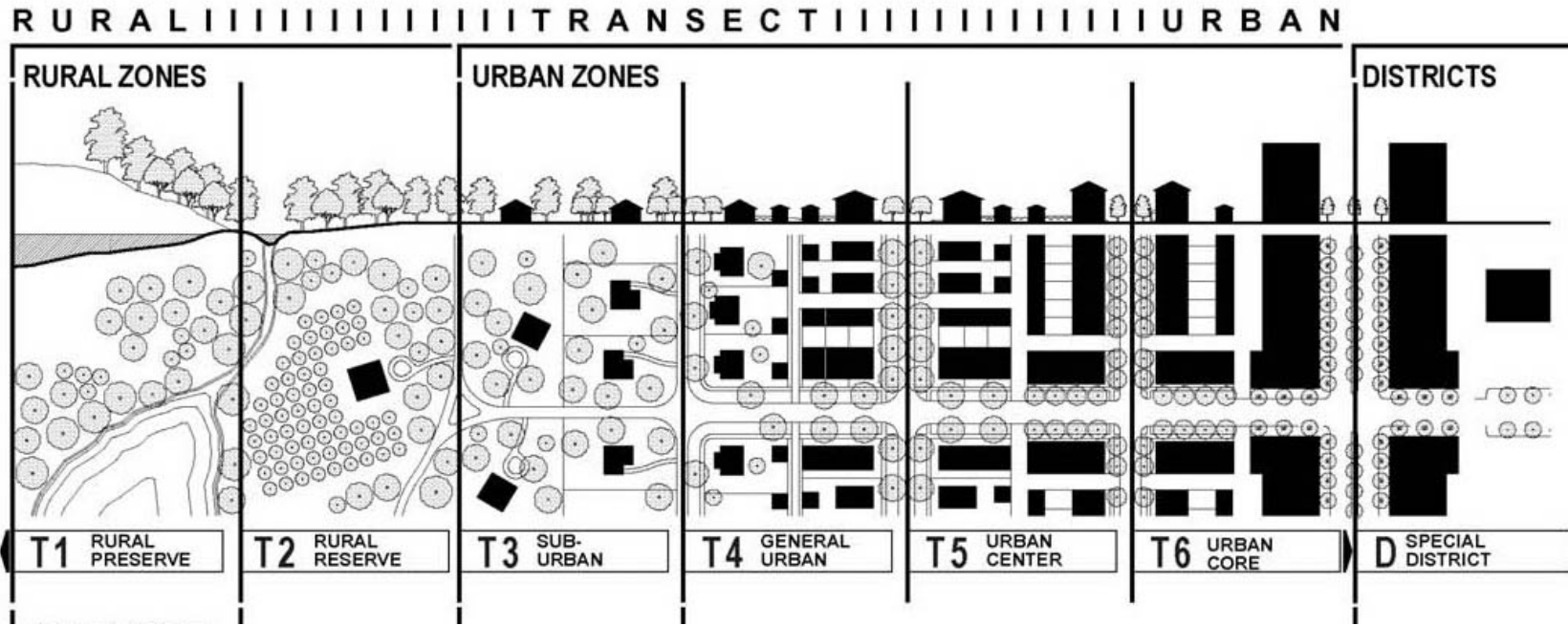


Source: http://surveyor.countyofsb.org/downloads/specialdistrict/Santa_Maria_Public_Airport_District.pdf

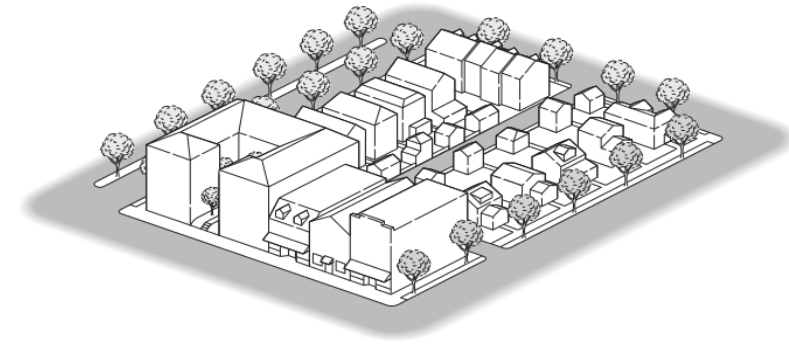
Special Districts

- Form of overlay approach
- Used for areas within a jurisdiction where freight issues require action
- Mitigation strategies to reduce conflicts, parking, noise, etc.
- Recognition of specific needs
- Case Study
 - Portland, Oregon

Form-based Zoning



Source: https://freeassociationdesign.files.wordpress.com/2009/12/physical_hi.jpg

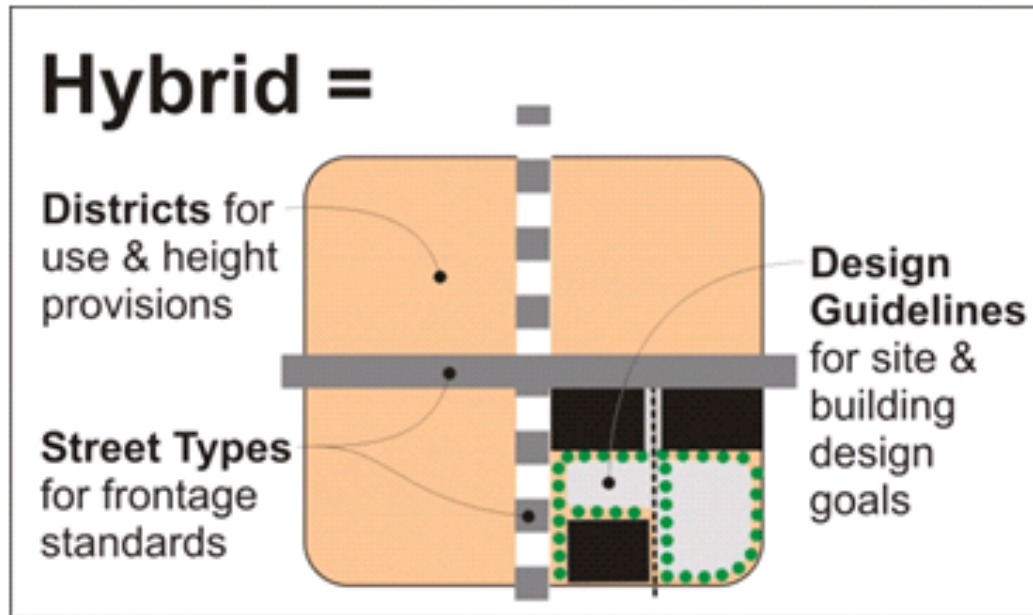


Source: <https://formbasedcodes.org/definition/>

Form-based Zoning

- Attempts to control outcomes of development through descriptions and illustrations
- Requires intensive public outreach to adopt, but reduces need for legislative actions going forward
- Uses a transect concept that marginalizes freight activities
- Case Study
 - Miami, Florida

Hybrid Zoning



A hybrid approach can combine traditional zoning, form-based street frontage standards, and design guidelines.



The draft regulating map guides permitted uses, frontage standards, and building heights in downtown.

Hybrid Zoning

- Creates a mix of traditional and form-based zoning techniques
- Has been successfully used to describe and illustrate freight activities
- Requires intensive public outreach to adopt, but reduces need for legislative actions going forward
- Case Study
 - Albany, New York

Hybrid Zoning

Section 375-2 Zoning Districts
Section 375-2(E): Special Purpose Districts
Section 375-2(E)(1): I-1 Light Industrial

(c) DIMENSIONAL STANDARDS

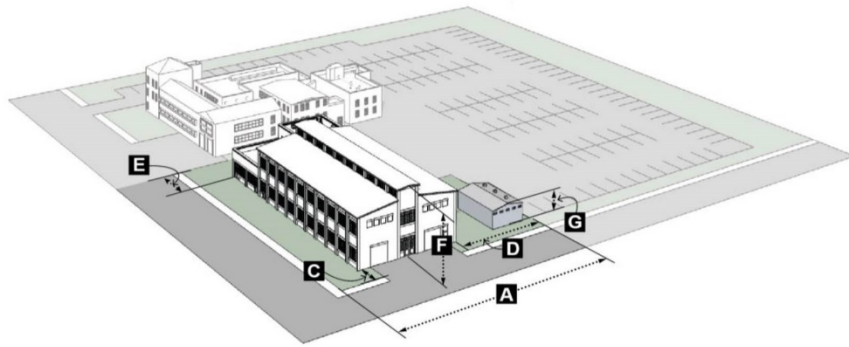


Table 375-2-30: I-1 Light Industrial See Section 375-4(A) for more details		
Lot Standards		
A	Lot width, minimum	25 ft.
B	Impervious lot coverage, maximum	N/A
Setbacks		
C	Front, minimum	0 ft.
D	Side, minimum	10 ft.
E	Rear, minimum	20 ft.
Building Standards		
F	Height, principal building, maximum	2 stories
G	Height, accessory buildings, maximum	N/A

Section 375-2 Zoning Districts
Section 375-2(E): Special Purpose Districts
Section 375-2(E)(2): I-2 General Industrial

(c) DIMENSIONAL STANDARDS

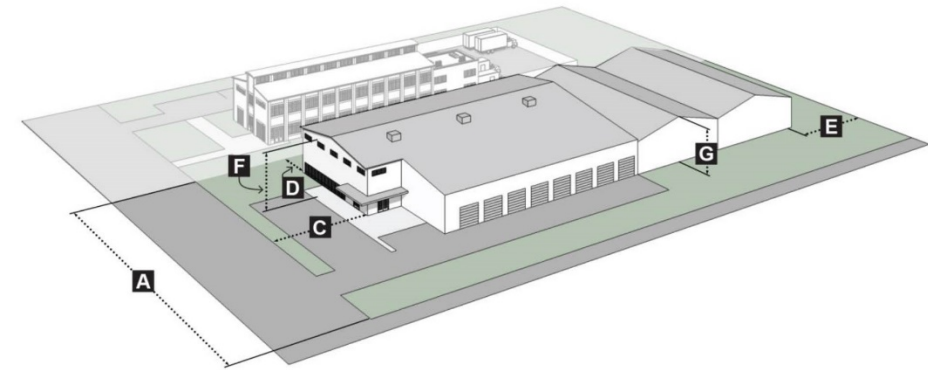


Table 375-2-32: I-2 General Industrial See Section 375-4(A) for more details		
Lot Standards		
A	Lot width, minimum	50 ft.
B	Impervious lot coverage, maximum	N/A
Setbacks		
C	Front, minimum	10 ft.
D	Side, minimum	15 ft.
E	Rear, minimum	40 ft.
Building Standards		
F	Height, principal building, maximum	6 stories
G	Height, accessory buildings, maximum	N/A

Source: Clarion Associates. (2017). *Albany, New York: Rezone Albany.*

Other Land Use-related Approaches

- Planned Unit Developments
- Impacts Fees
- Transfer Development Rights
- Planned Manufacturing Districts
- Business Improvement Districts
 - Freight Concierge Services

Freight Activities Impacting Land Use

- Port-centric Logistics Zones
- Logistics Support Zones
- Urban Distribution Centers
- Urban Consolidation Centers
- Freight Villages/Logistics Clusters

Joint Logistics Systems

- Entrepreneurial Collaborative Logistics (UCC)
 - Tokyo, Japan -- Sky Tree Town
- Logistics Land Use Plan
 - Paris, France - Logistic Hotel

Freight Community Needs

- Where are the primary freight activities in your region?
 - Ports (water and air)
 - Industry Clusters
 - Pass-through truck traffic
 - Residential/Commercial mixed use deliveries

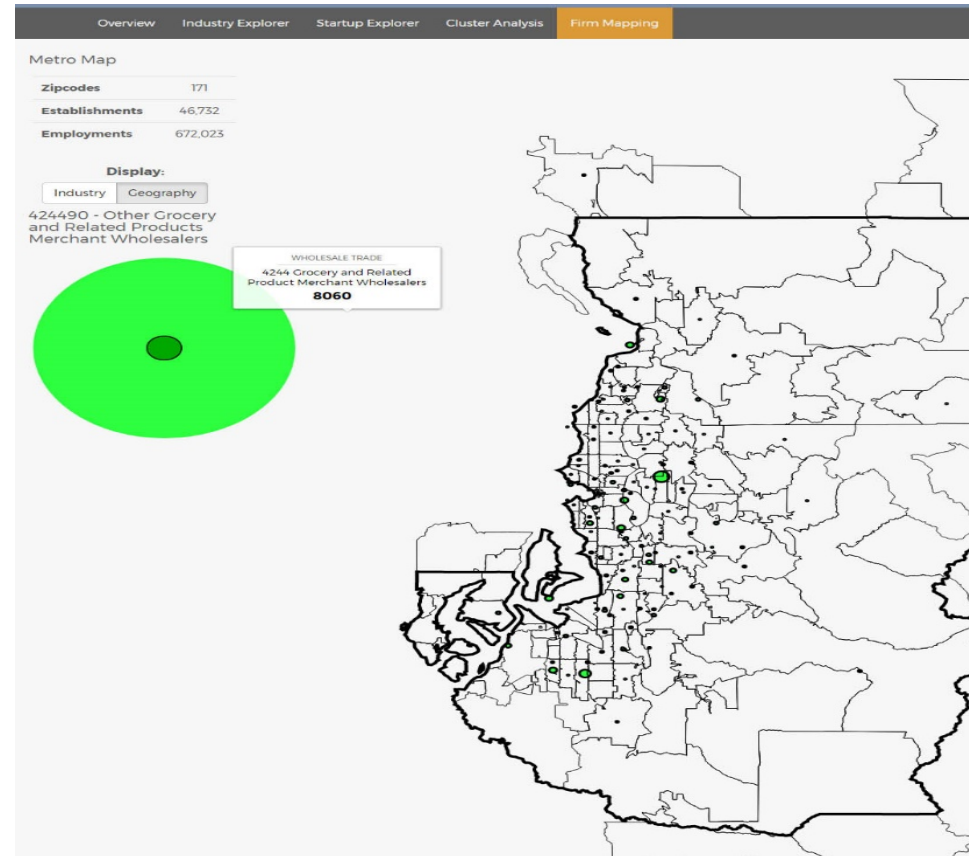
Freight Community Needs

- Maturity level of regional land use planning community
 - Collaborative or competitive
 - Data-driven or reactive
 - Multi-modal/multi-sector/multi-agency or siloed
- Integrating Freight Efficient Land Use (FELU) innovations into State Freight Plans
 - Funds expected to become available in FAST Act for freight improvements

Entrepreneurial Ecosystem Atlas
<http://eea.availabs.org/>

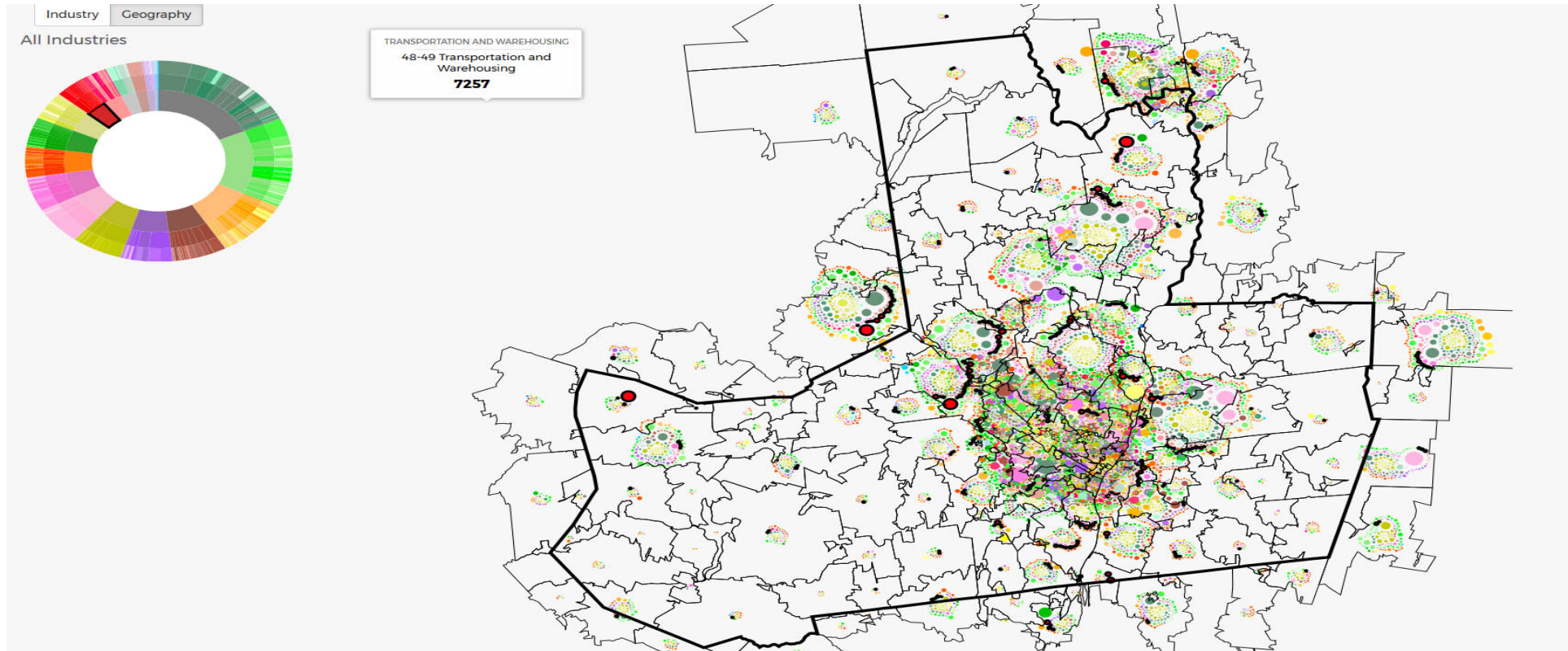
Entrepreneurial Ecosystem Web Tool

The Entrepreneurial Ecosystem Web Tool provides a regional view of NAICS clusters by ZIP code.



<http://eea.availabs.org/>

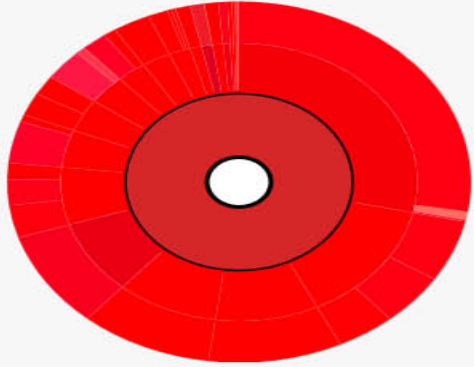
Albany-Schenectady-Troy MSA – ZIP Business Patterns



Albany-Schenectady-Troy MSA – ZIP Business Patterns

Industry Geography

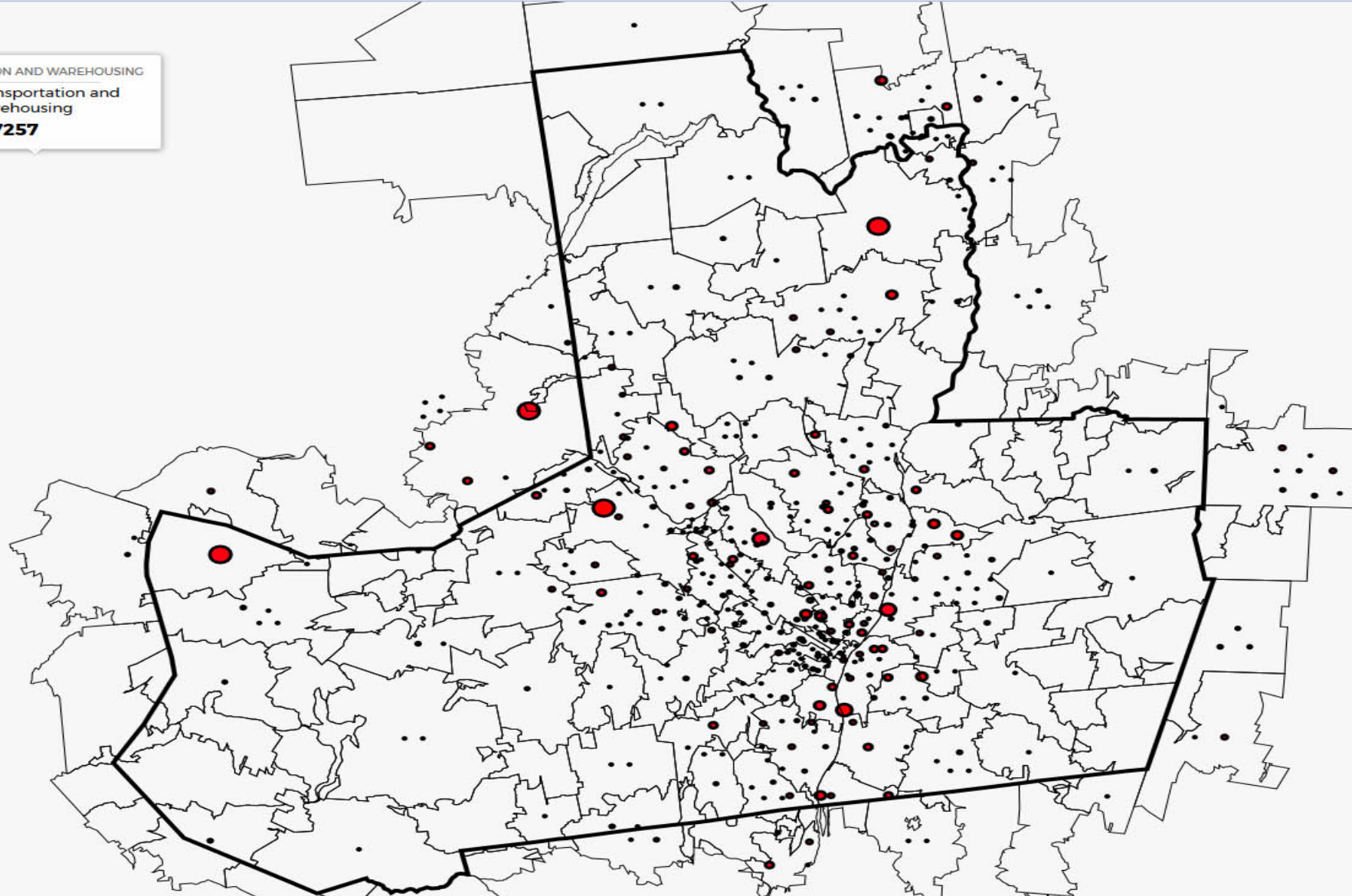
48-49 - Transportation and Warehousing



TRANSPORTATION AND WAREHOUSING

48-49 Transportation and
Warehousing

7257

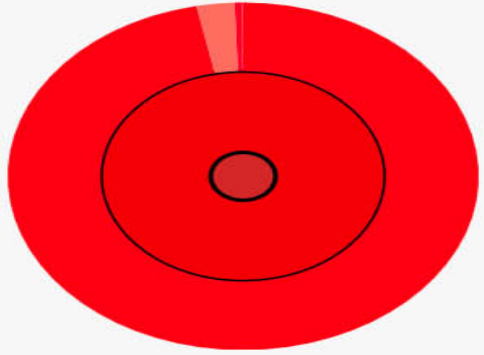


Albany-Schenectady-Troy MSA – ZIP Business Patterns

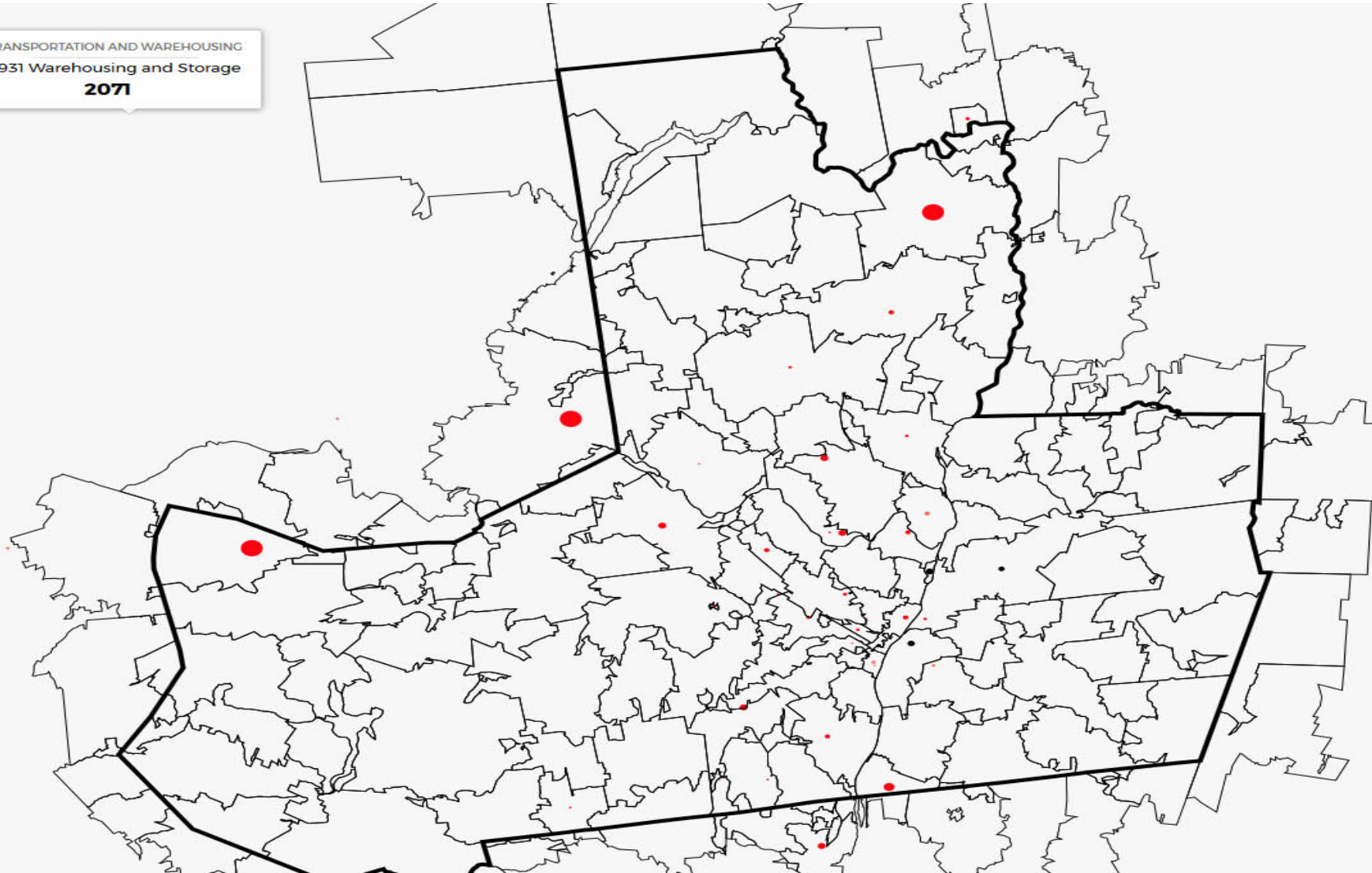
Industry

Geography


4931 - Warehousing and Storage



TRANSPORTATION AND WAREHOUSING
4931 Warehousing and Storage
2071



NPMRDS Tool Suite
<http://npmrds.availabs.org/>

 Home

Dashboard

Dashboard

Guide

Activity/Messages

11

Create A Custom Route

Use route creation tool to create routes for analysis

Create A Route



Design A Report

Use route comparison tool to create custom report

Create A Report



View Performance Measures

See custom reports on Map-21 performance measures

View Measures



Analyze Bottlenecks

View and analyze bottleneck locations

View Bottlenecks



Quick Reports

Weekday
Template



PM3 Template
2014-2016



Displays PM3 data for a single route on a year over year basis

Hours of Delay
Template



A template for viewing hours of delay and transcom incidents info for a single route from 2015 and 2016

Year over Year
Template



Displays data for a single route on a year over year basis

NPMRDS

Home

Measures

Routes

Reports

Bottlenecks

Networks

Account

Signout

Home Guide

Dashboard Guide

Activity/Messages 11

Control+Click to place start and end markers

Quick Start Guide



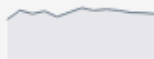



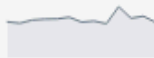







Do you need to develop a corridor analysis, create reports showing trends and visualizations, or simply want to find the best or worst time to travel? Through the NPMRDS app, these analyses can be performed quickly and intuitively. The first step is to create a route in Route creation tool. Next, you can load your route into a pre-designed report template based on your chosen analysis theme. Lastly, you can modify the template to better fit your research needs.

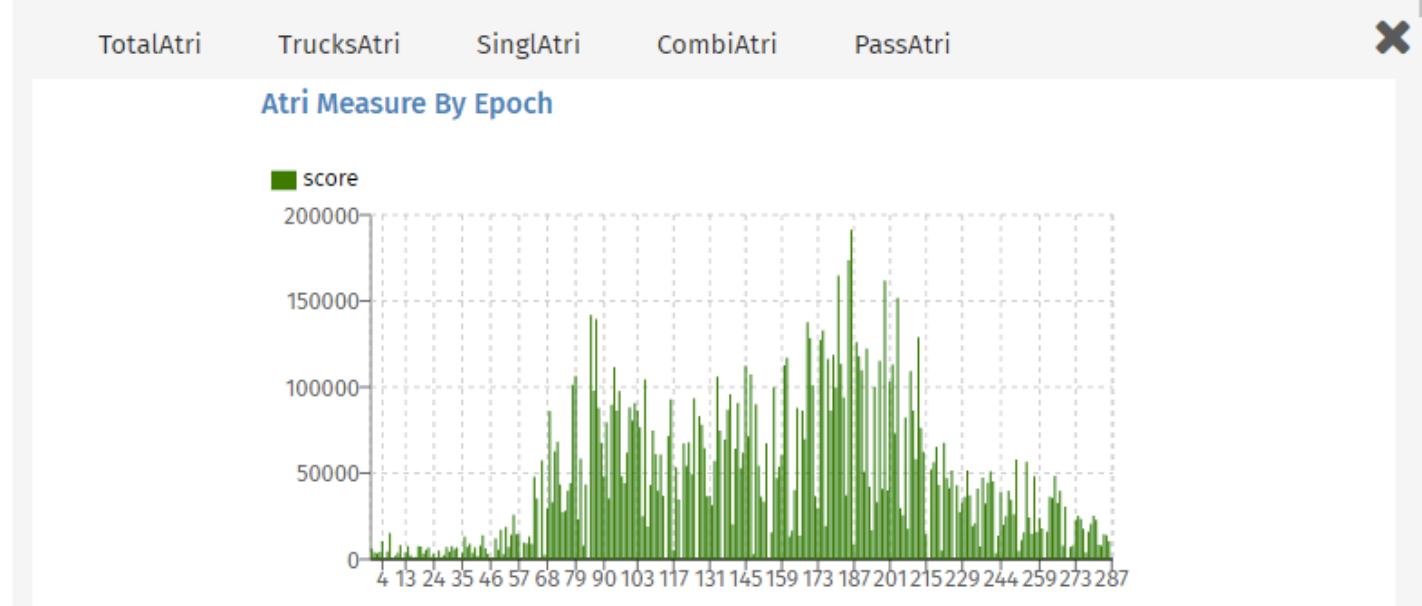
Create Routes

Getting started in the tool suite. The first step is to create a route. In this guide you'll learn how to create a route.

PM3 Federal Performance Measurement Tools

This guide is an introduction to the DM3 tools

name	firstname	key	history	rankhistory	rank	rankchange	atri
Everett Rd	I-90	120P16175			46	-6	22158898
I-87 N	I-87/Exit 1	120-05852			397	-81	9675453
I-87 S	I-87/Exit 24	120+05853			403	-44	9592868
I-90 E	I-90/Exit B1	120-06290			439	-57	9062644
Everett Rd	I-90	120N16175			456	-65	8770558
I-90 W	US-9/Exit 12	120+05839			534	-86	7507425
I-90 E	I-87/Exit 24	120N05853			569	-46	7057743



Capital District Transp

2017

Jun

combi

Previous

1

2

3

4

5

6

...

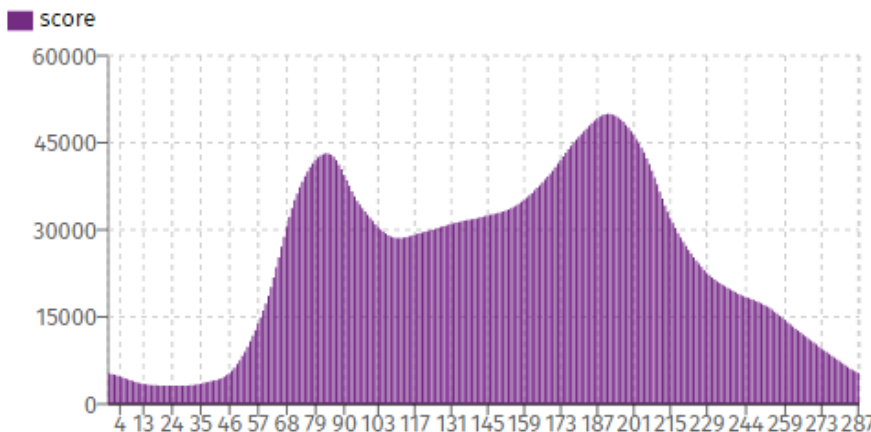
83

Next

name firstname key history rankhistory rank rankchange atri



AADT By Epoch



I-90 W	I-87/Exit 24	120P05853			572	17	7039785
Collar City Brg	6th Ave	120N05888			593	15	6787262
Broadway	Loudonville Rd	120-24611			622	199	6432176
Broadway	NY-32/Wolfert A	120+24612			661	-58	6053930
3rd Avenue Ext	IIS-4/Troy Rd	120+24702			683	-74	5897783

Remove

+

-

▲

Mountain View

Eastmor

Shyders C

Van Allen Park

ights

Sherwood Park

Luther

East Greenbush

mapbox

i

Questions?

Contact info: Catherine T. Lawson
lawsonc@albany.edu

Albany Visualization and Informatics Lab
www.availabs.org

