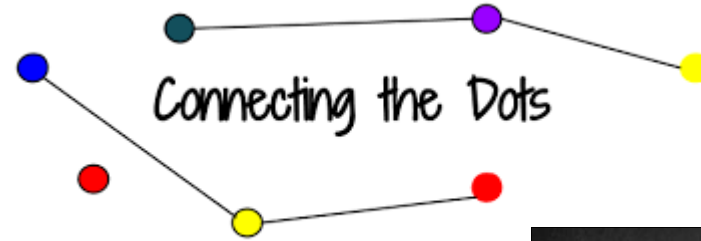


Atlanta Regional Commission Data & Tools

Kyung-Hwa Kim



Too much Information: Models and Data





New Roadway



Bike lane



Sidewalk



Transit



TSMO



Multi Purpose Trail



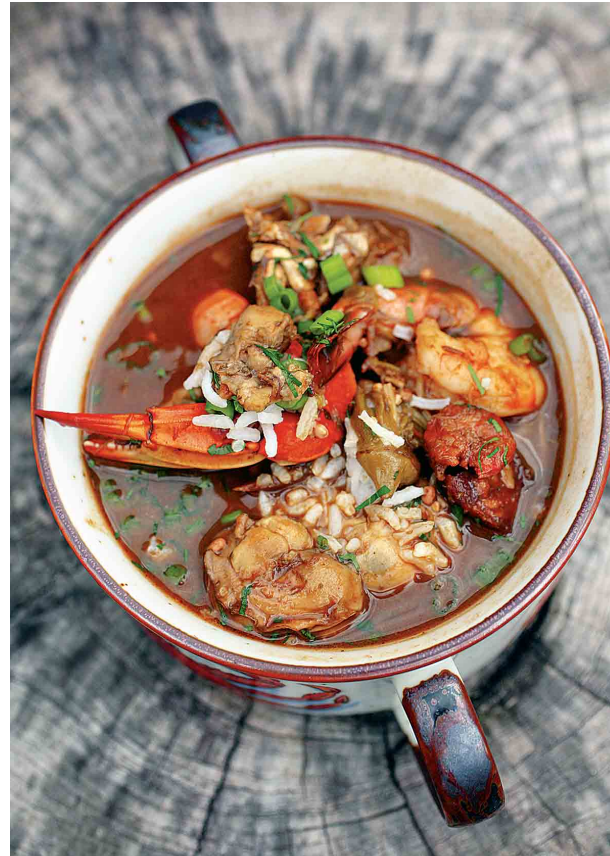
Complicated Transportation Issues and Data

Different data sources:

- Historic, Current, Estimated, Forecast
- Index, Weight, Matrix
- Mean, Median, Average
- Output, Outcome
- Data coverage
- Spatial Distribution
- Temporal variation
- Accuracy vs precision
- Different performance by project types and project scale
- Match making right data and right tool
- Organize data, tools, performance with plan goals

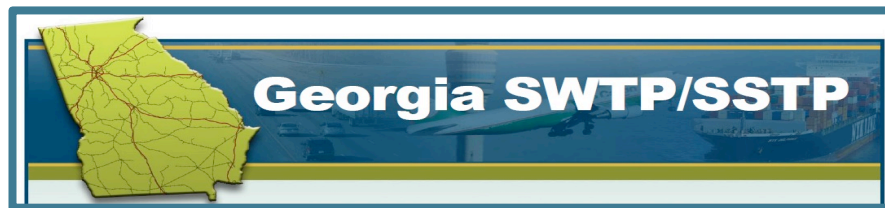
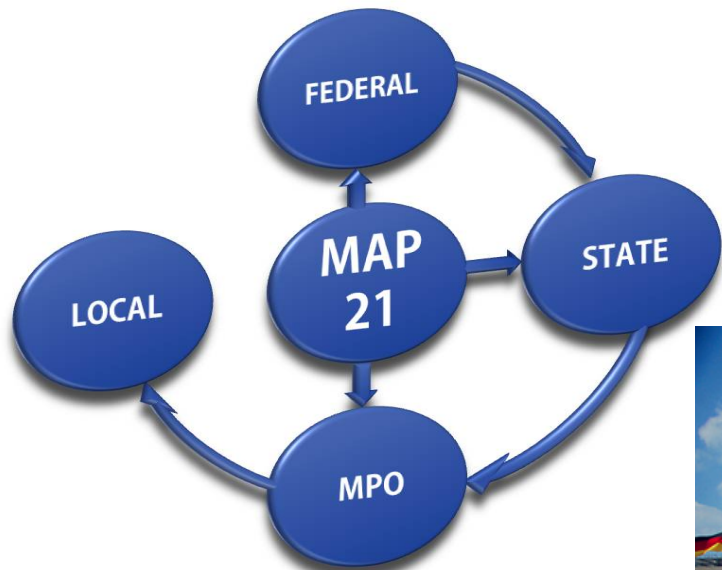


Similar Ingredients and Different Meals



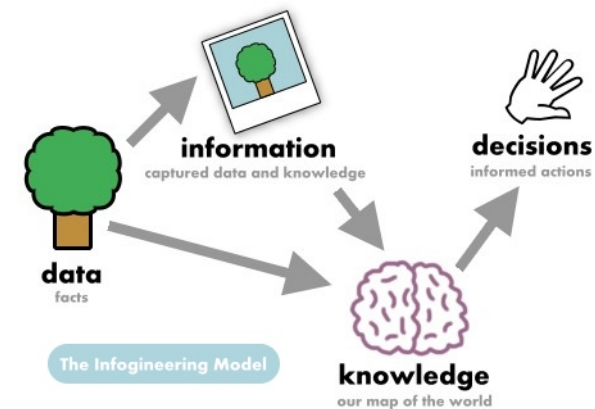
Different Tools for Different Purposes

▪ Strategic Future Analysis	RSPM, VisionEval
▪ Regional Transportation Plan	Activity Based Model
▪ Transportation Improvement Program	Data driven evaluation method
▪ Project level performance analysis	Macro, Meso, Micro modeling
▪ Air Quality Analysis	AREES(Atlanta Roadside Emissions Exposure Study) and MOVES
▪ Resilience Study	Combined Heat, Water, and Transportation Tool
▪ CMAQ Analysis	Excel Tool, MOVES
▪ Health Impact Study	ITHIM
▪ Equity Analysis	DASH visualization tool
▪ Bicycle/Pedestrian Planning	High Injury Network Analysis and Multimodal Connectivity Analysis
▪ Freight Studies	GIS tool, FHWA FAF data, IHS TRANSEARCH, FHWA Truck Parking model
▪ Transit Planning	ABM, Remix, Conveyal, STOPS
▪ ITS & TSM&O	Vistro,Vissim
▪ Big data	NPMRDS, INRIX Analytics, Airsage, Streetlight

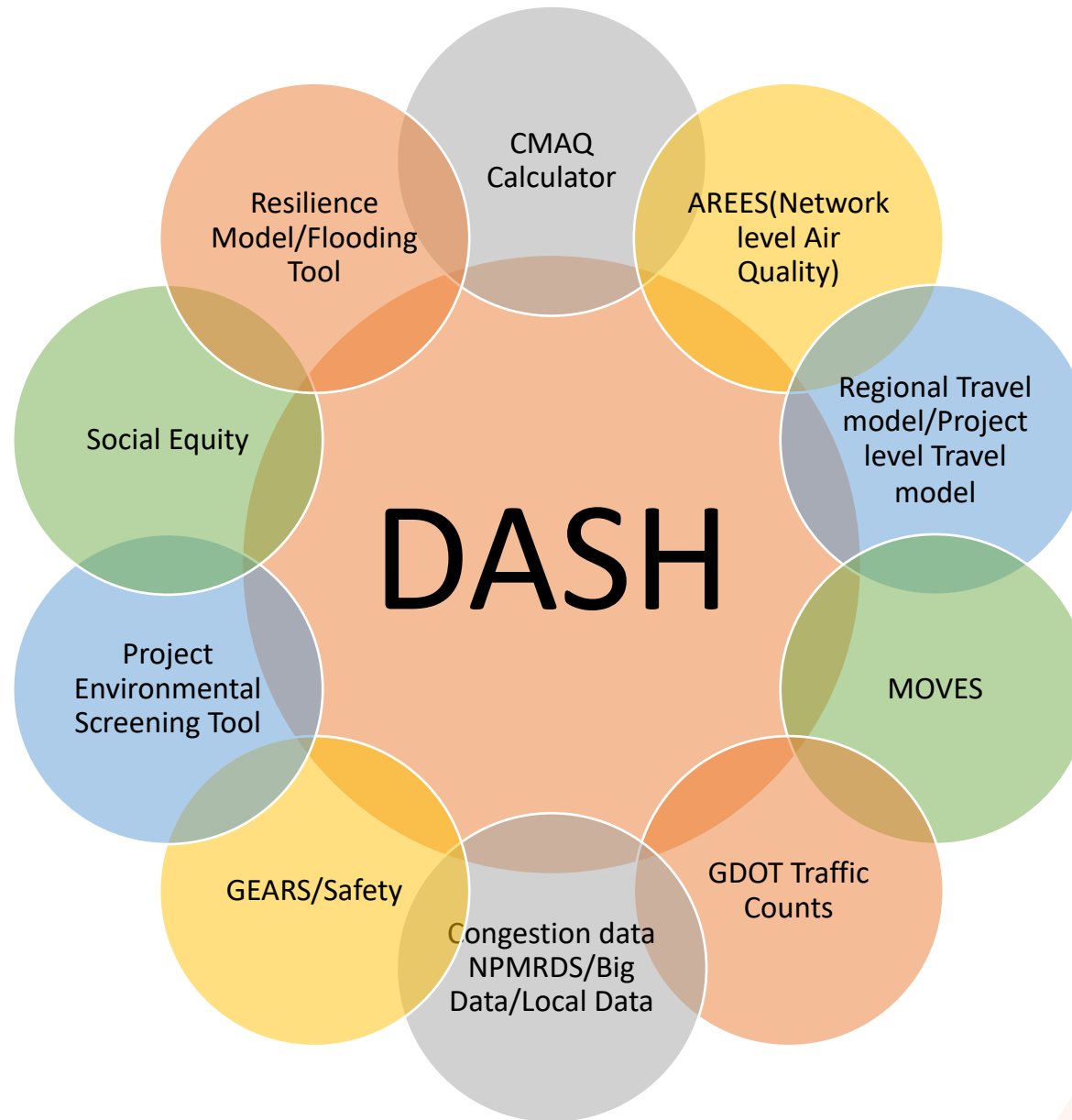


THE ATLANTA REGION'S PLAN VISION

Atlanta is one of the world's most dynamic metropolitan areas, competing globally on the strength of our diverse population, robust economy, myriad cultural assets and attractive lifestyles. We will 'win the future' through intensive collaboration that honors and leverages the uniqueness of our communities.



Visualization Tool & Data



Atlanta Regional Commission TIP: TSMO Evaluation Process

Tejas Kotak

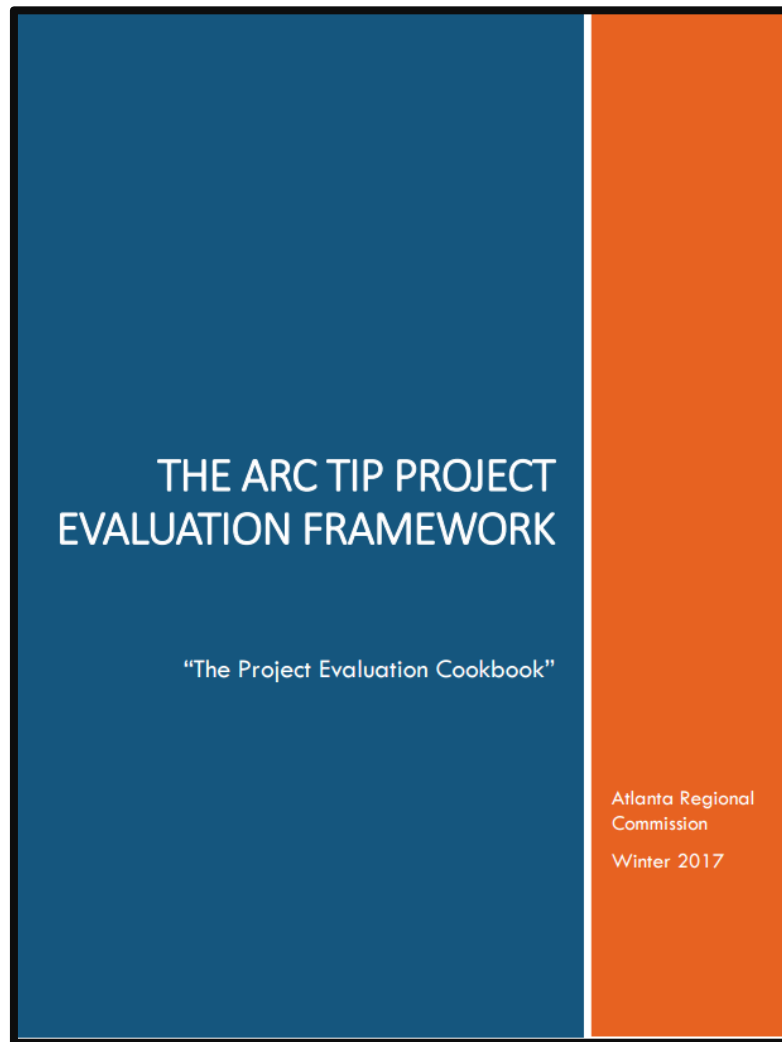
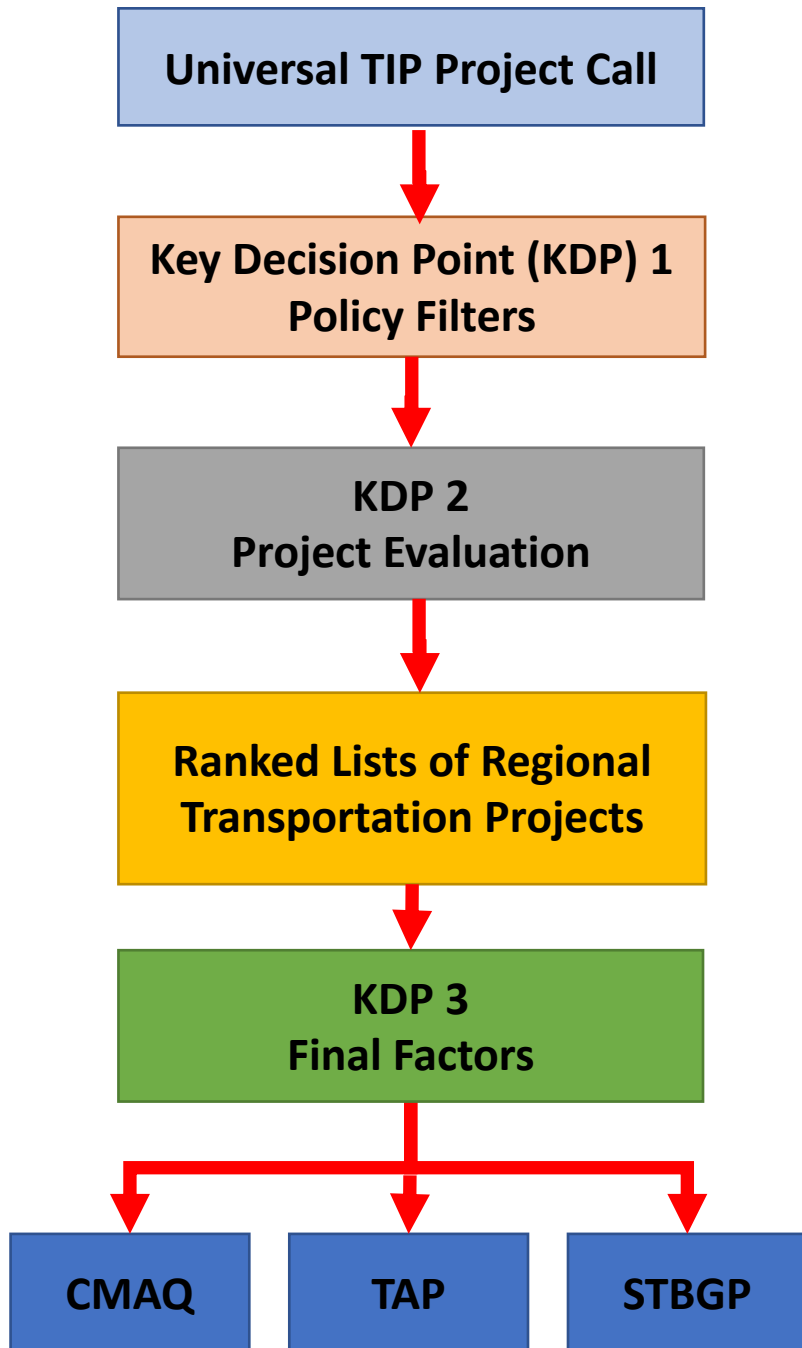


Evolution of Data Use: TSMO



2017 TIP





<https://documents.atlantaregional.com/transportation/projso/licitation/2019/ProjectEvalDocumentation2018Final.pdf>

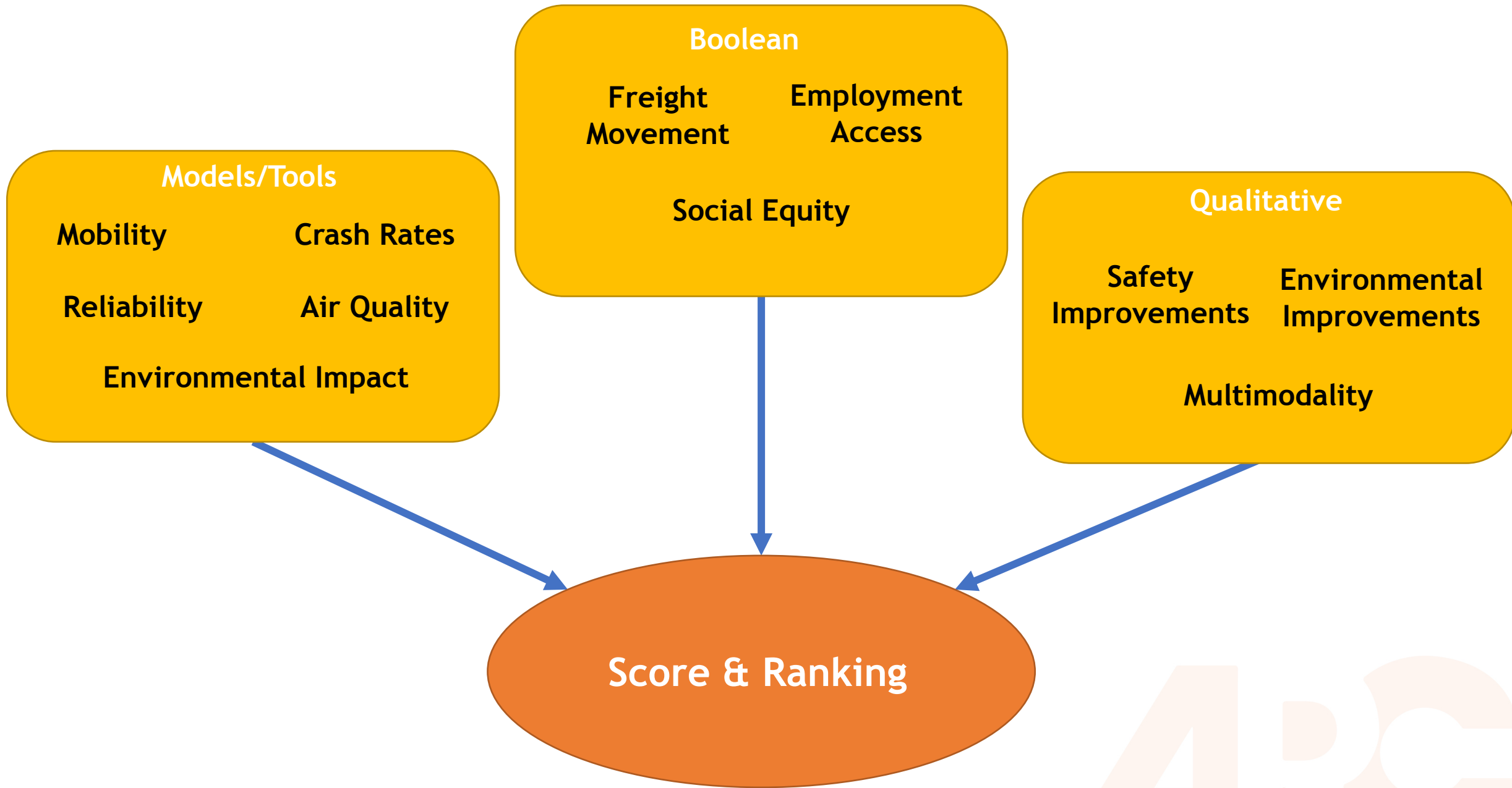
TIP Prioritization Task Force (2016)



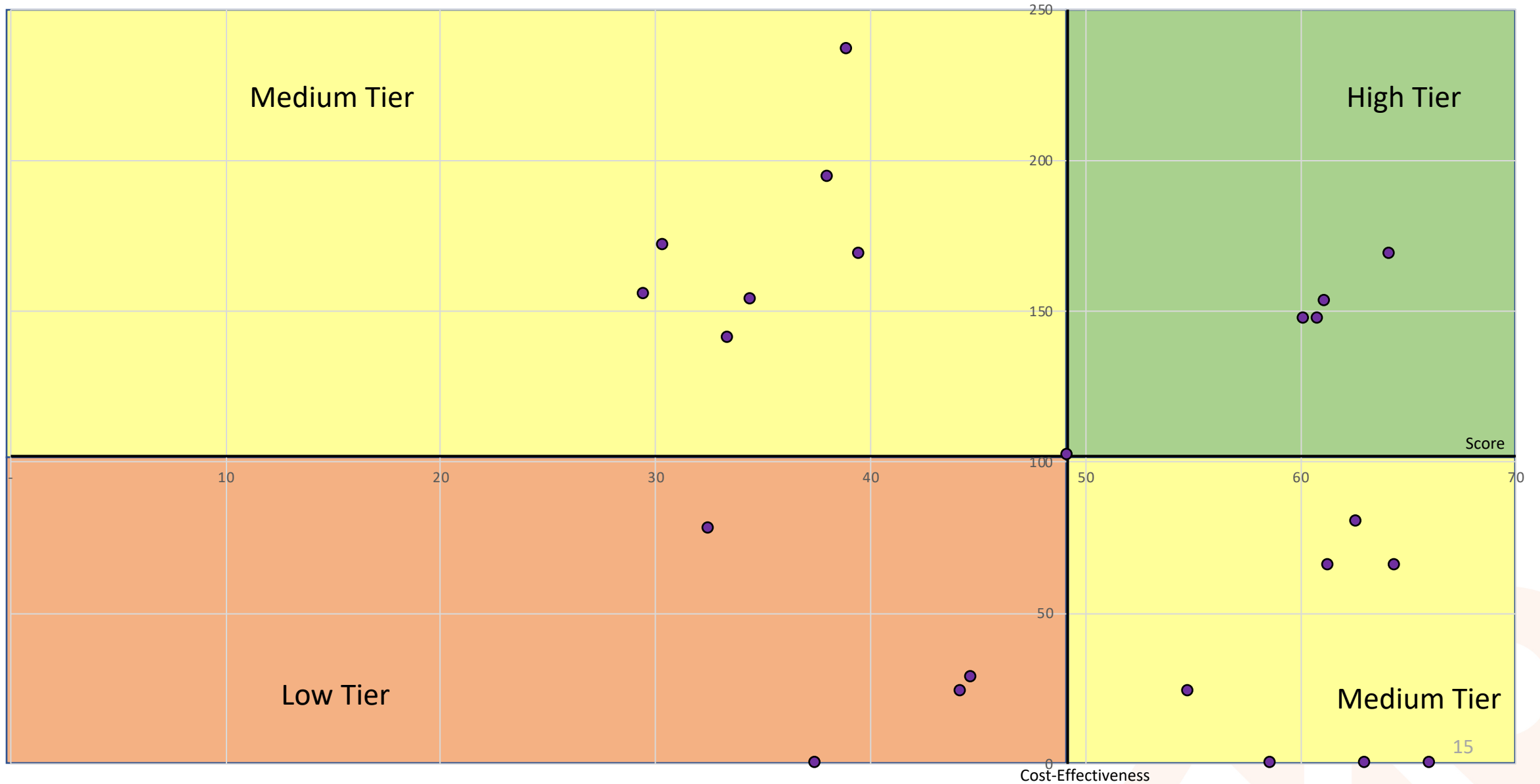
Table O2 – TIP Prioritization Task Force Project Type/Mode and Key Criteria

Atlanta Region's Plan Goals	Performance Criteria	Project Types									
		Bicycle	Pedestrian	Trail	Roadway Asset Management & Resiliency	Roadway Expansion	Roadway Transportation Systems Management & Operations	Transit Expansion	Transit Asset Management and System Upgrades	Misc. Emissions Related Projects	
World Class Infrastructure	Mobility & Congestion	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Reliability					✓	✓	✓	✓		
	Network Connectivity	✓	✓	✓	✓	✓	✓	✓	✓		
	Multimodalism	✓	✓	✓	✓	✓	✓	✓	✓		
	Asset Management & Resiliency				✓				✓		
Healthy Livable Communities	Safety	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Air Quality & Climate Change	✓	✓	✓		✓	✓	✓	✓	✓ ¹	✓
	Cultural & Environmental Resources	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Social Equity	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Land Use Compatibility	✓	✓	✓				✓			
Competitive Economy	Goods Movement				✓	✓	✓				
	Employment Accessibility	✓	✓	✓	✓	✓	✓	✓	✓	✓	





Scores and Rankings



Future Considerations



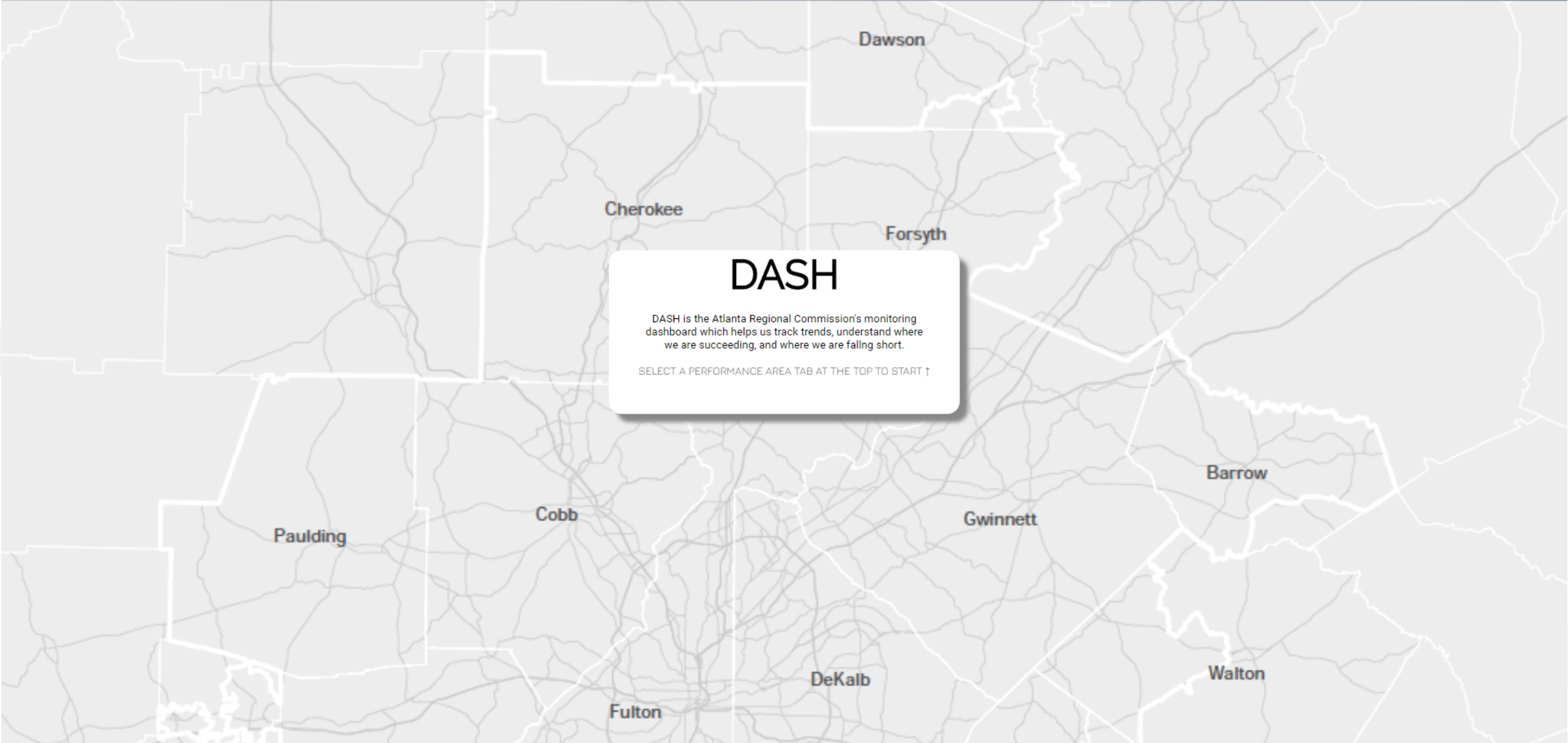
Atlanta Regional Commission DASH: Performance and project evaluation visualization

Shichen Fan



DASH walkthrough





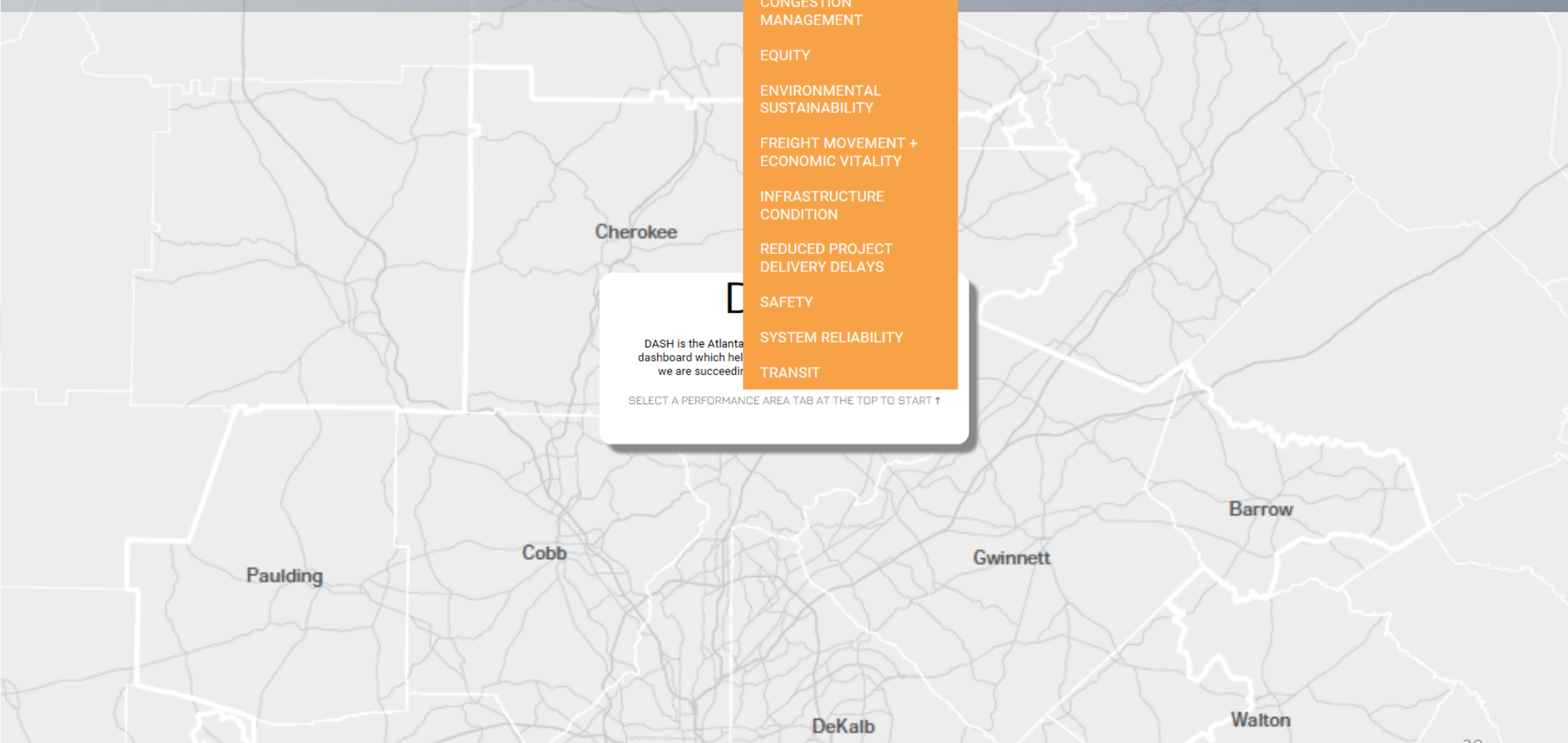
DASH

DASH is the Atlanta Regional Commission's monitoring dashboard which helps us track trends, understand where we are succeeding, and where we are falling short.

SELECT A PERFORMANCE AREA TAB AT THE TOP TO START ↑

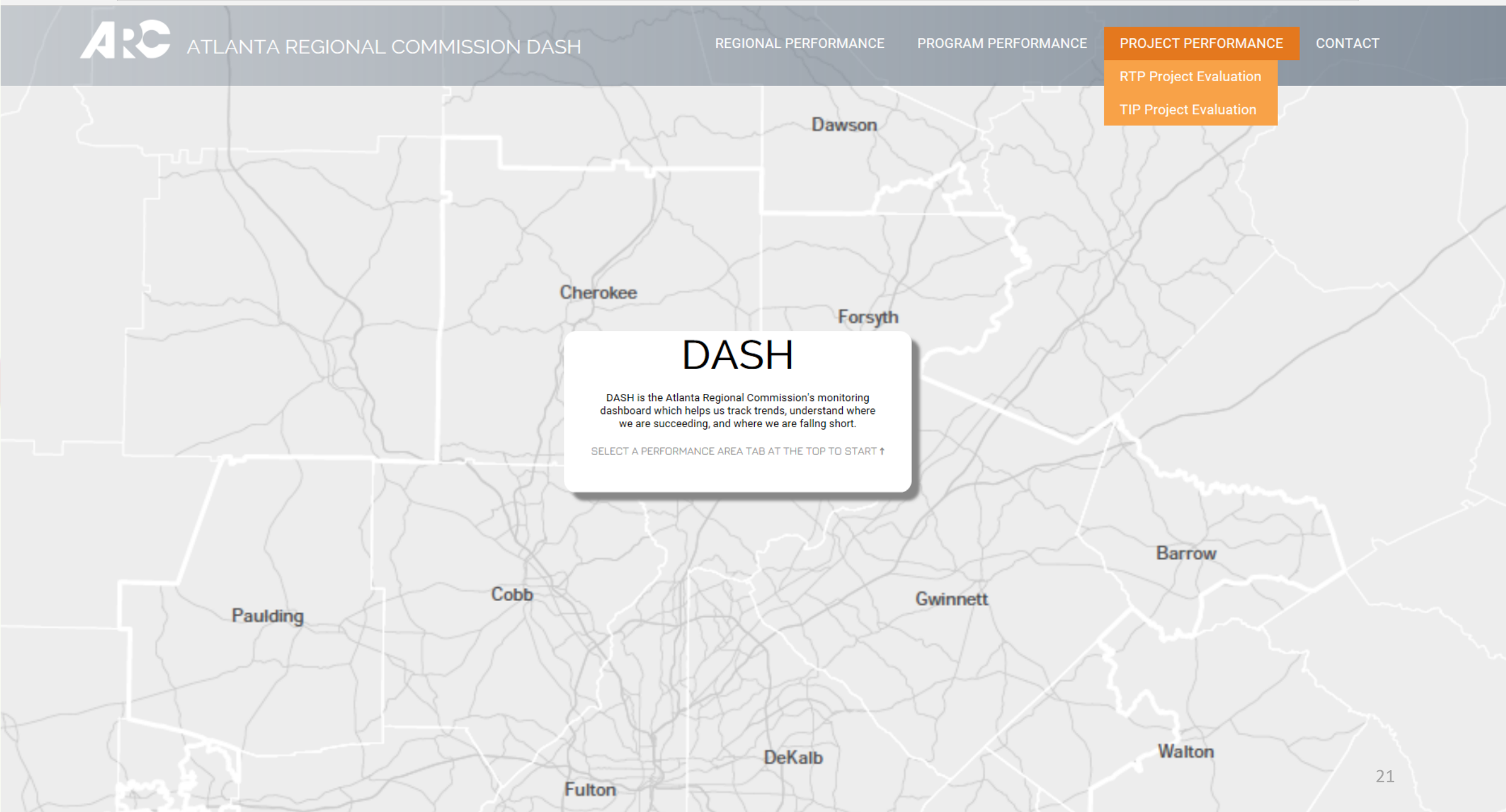
- REGIONAL PERFORMANCE
- CONGESTION MANAGEMENT
- EQUITY
- ENVIRONMENTAL SUSTAINABILITY
- FREIGHT MOVEMENT + ECONOMIC VITALITY
- INFRASTRUCTURE CONDITION
- REDUCED PROJECT DELIVERY DELAYS
- SAFETY
- SYSTEM RELIABILITY
- TRANSIT

local relevance + regional impact



DASH is the Atlanta dashboard which helps us see how we are succeeding

SELECT A PERFORMANCE AREA TAB AT THE TOP TO START ↑



DASH
DASH is the Atlanta Regional Commission's monitoring dashboard which helps us track trends, understand where we are succeeding, and where we are falling short.
SELECT A PERFORMANCE AREA TAB AT THE TOP TO START ↑

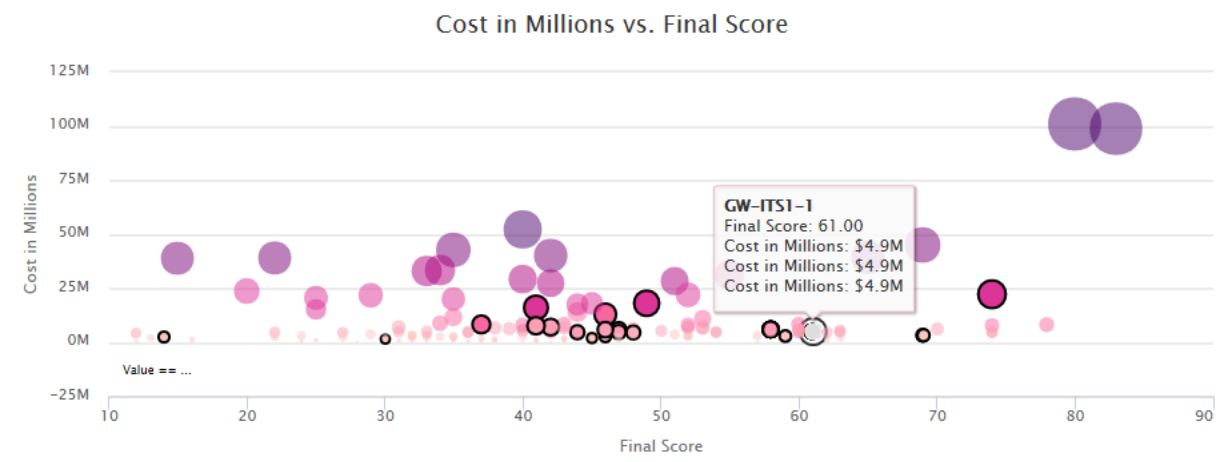
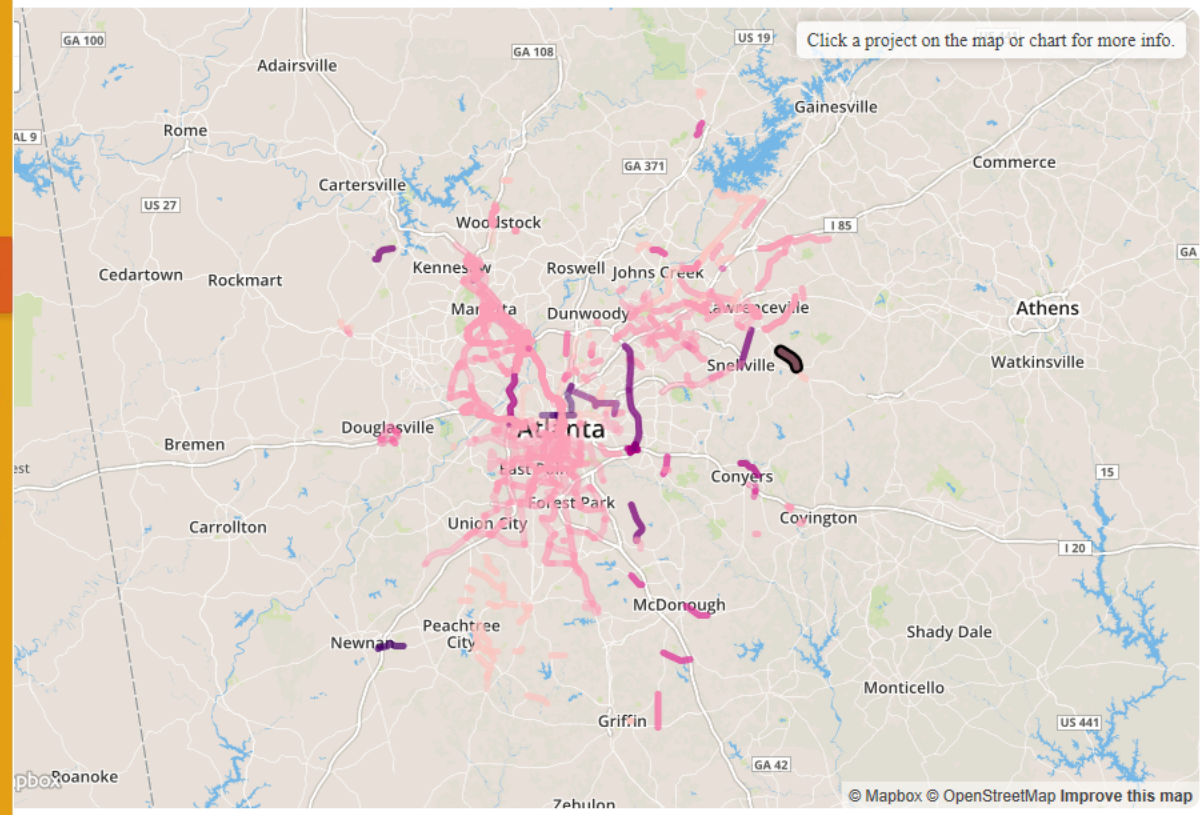
TIP / RTP evaluation page

TIP Project Evaluation

ARC Project Evaluation Map Table

About

local relevance regional impact



Manipulate the bubble chart with the controls below:

x

Final Score

The sum of the weighted data points indicating performance

radius

Cost in Millions

Total cost of project in millions of dollars

y

Cost in Millions

Total cost of project in millions of dollars

color

Cost in Millions

Total cost of project in millions of dollars

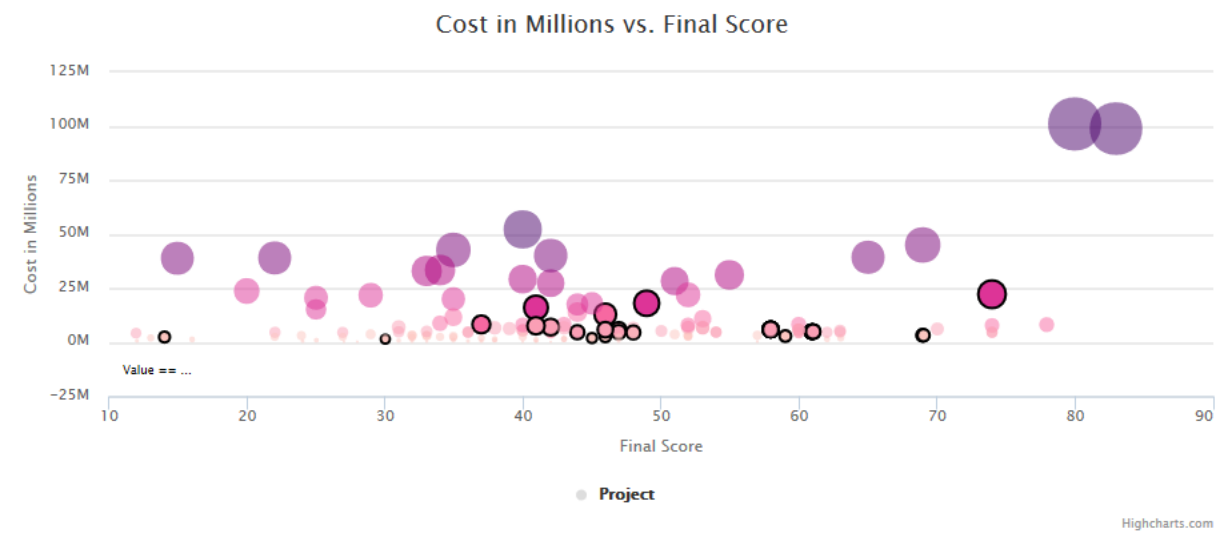
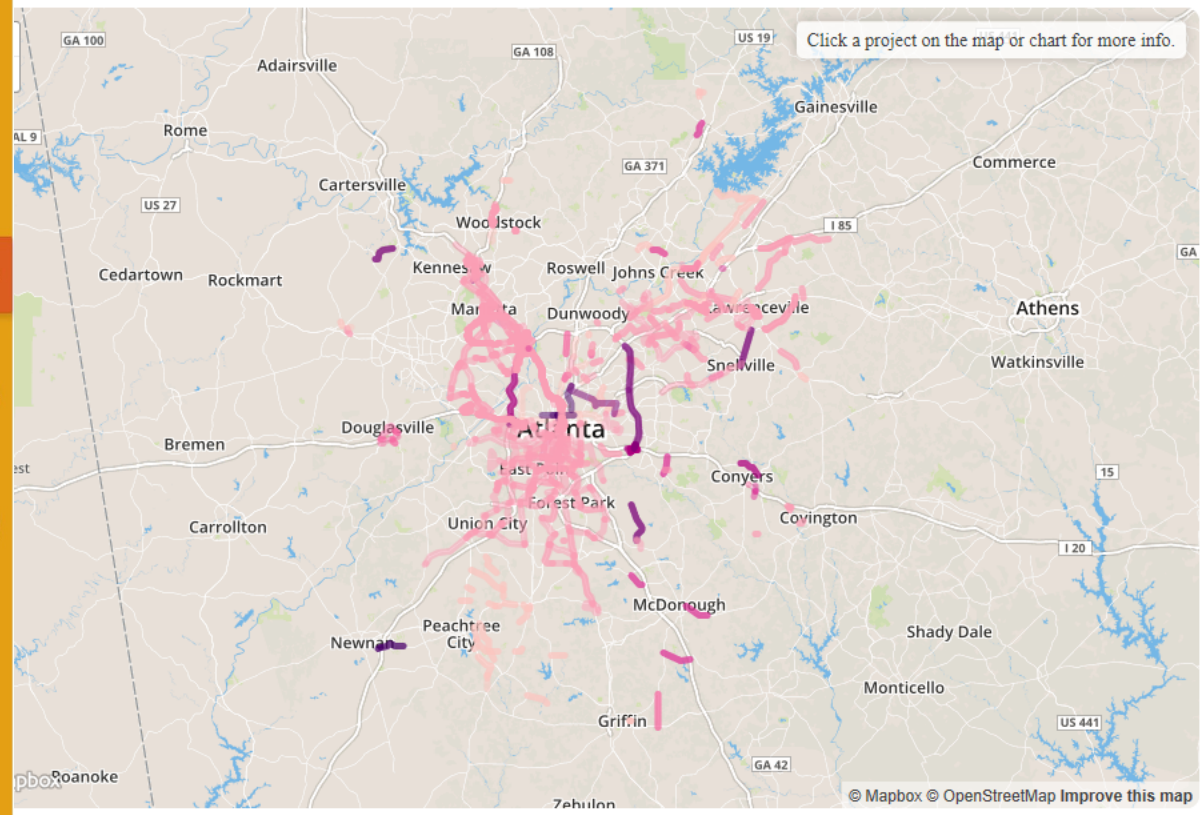
Filter by project type Road Operations

TIP Project Evaluation

ARC Project Evaluation Map Table

About

local relevance regional impact



Manipulate the bubble chart with the controls below:

- Performance Tier
- Cost in Millions
- Mobility & Congestion Index
- Reliability Index
- Network Connectivity Index
- Multimodalism Index
- Asset Management & Resiliency Index
- Safety Index
- Air and Climate Index
- Cultural & Environmental Resources Index
- Social Equity Index
- Land Use Compatibility
- Goods Movement Index
- Employment Accessibility Index
- Final Score

radius

Cost in Millions

Total cost of project in millions of dollars

color

Cost in Millions

Total cost of project in millions of dollars

Filter by project type Road Operations

TIP Project Evaluation

ARC Project Evaluation [Map](#) [Table](#)

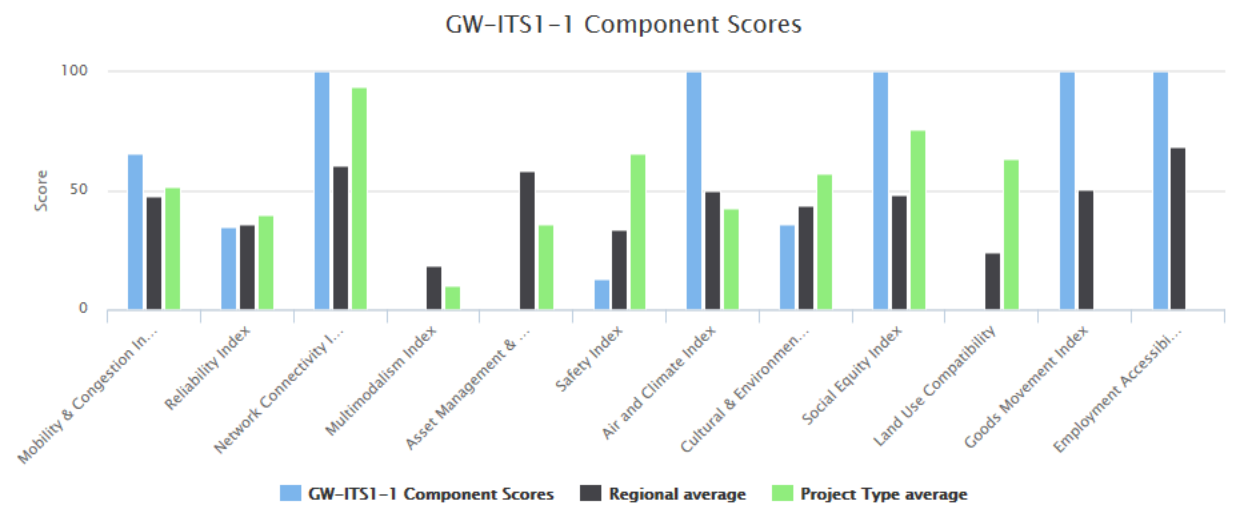
[About](#)

50 entries

[Clear](#) [Filter Data](#)

Search:

Project	Project Type	Description	Performance Tier	Cost in Millions	Mobility & Congestion Index	Reliability Index	Network Connectivity Index	Multimodal Index
GW-ITS1-1	Road Operations	ITS Expansion - PH1	1	\$4,890,000	66.00	35.00	100.00	0.00



Its Expansion - Ph1

[View Fact Sheet](#)

Category	GW-ITS1-1	Regional
Performance Tier	1.00	2.37
Cost in Millions	\$4.9M	\$9.3M
Final Score	61.00	44.85

Showing 1 to 1 of 1 entries (filtered from 154 total entries) [Previous](#) [1](#) [Next](#)

local relevance
+
regional impact

Tools used

- HTML + CSS + JavaScript



- R + Shiny package

<https://shiny.rstudio.com/gallery/>



- Visualization:

- Leaflet



- Plotly



- Highcharts



- DataTables



How we assemble it as a data hub



GitHub - atregional/DA x +

GitHub, Inc. [US] <https://github.com/atregional/DASH>

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atregional / DASH Watch 5 Star 0 Fork 0

Code Issues 0 Pull requests 0 Actions Projects 0 Security Insights

Join GitHub today

GitHub is home to over 40 million developers working together to host and review code, manage projects, and build software together.

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DASH repo for Performance Measures Group <https://atregional.github.io/DASH/>

atlanta arc-dash arc dash atl

117 commits 2 branches 0 packages 0 releases 1 contributor

Branch: master New pull request Find file Clone or download

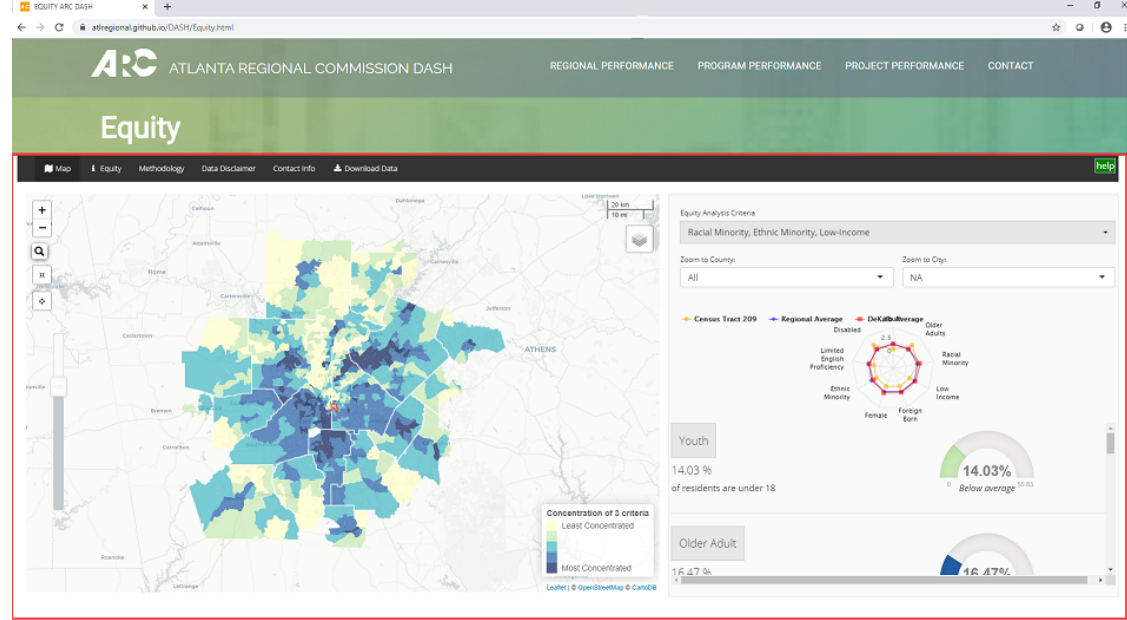
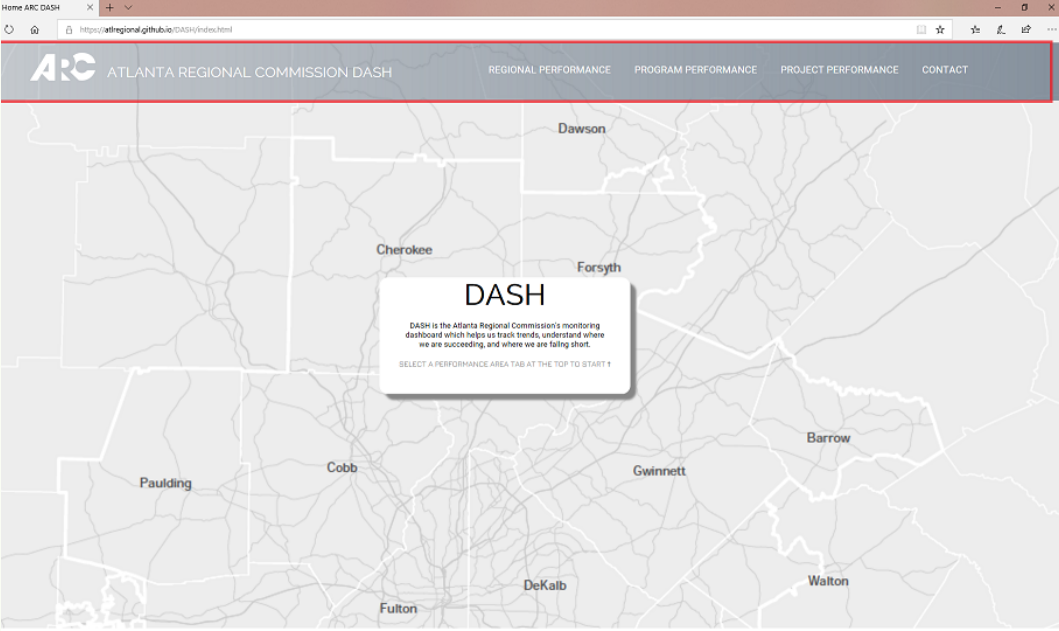
shichenfan Update contact.html	Latest commit 81b795f on Dec 17 2019
Capture.JPG	Add files via upload 13 months ago
Capture1.PNG	Add files via upload 12 months ago
Capture11.PNG	Add files via upload 12 months ago
Congestion_Management.html	Update Congestion_Management.html 4 months ago
Env_screen.html	Update Env_screen.html 4 months ago
Equity.html	Update Equity.html 4 months ago
README.md	Readme update (#1) 10 months ago
RTP.html	Update RTP.html 4 months ago
RTP2020.html	Update RTP2020.html 4 months ago
TAM.html	Update TAM.html 4 months ago

<https://github.com/atregional/DASH>

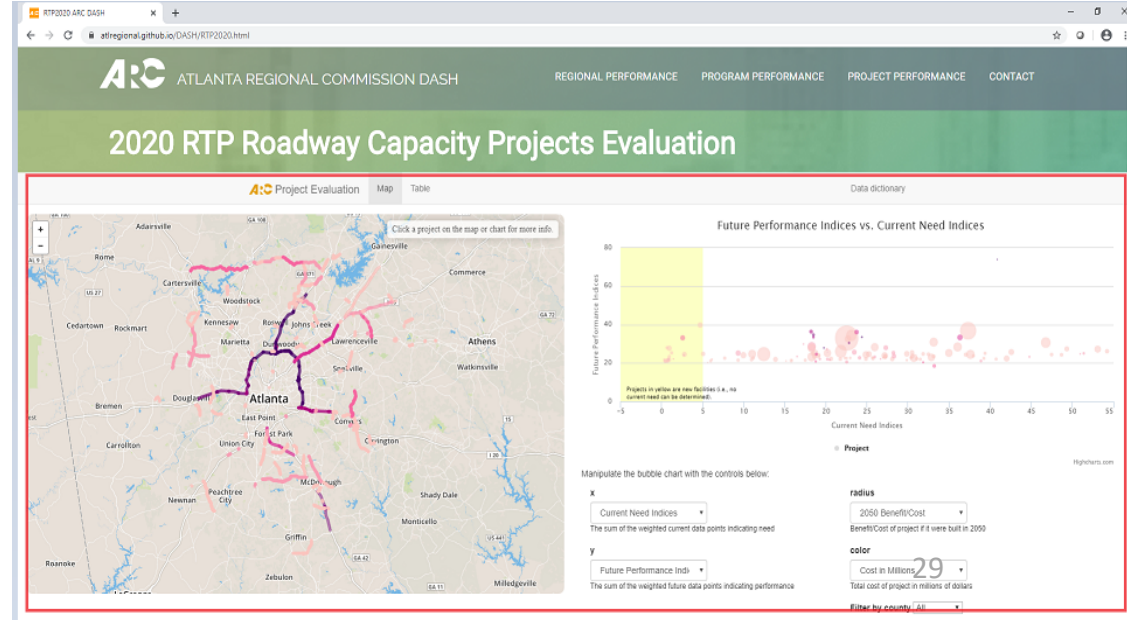
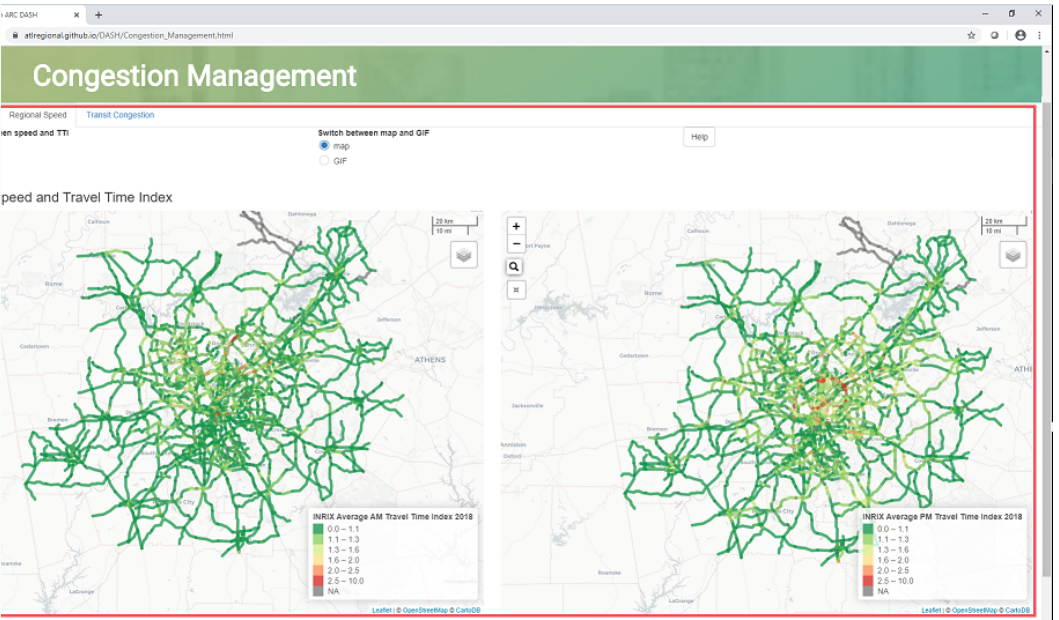
local relevance

+

regional impact



Index + iframe pages



Questions?

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Tejas Kotak

TKotak@atlantaregional.org

Shichen Fan

SFan@atlantaregional.org

