

TRANSPORTATION RESEARCH BOARD

Greener in many ways: Environmentally sustainable funding and financing

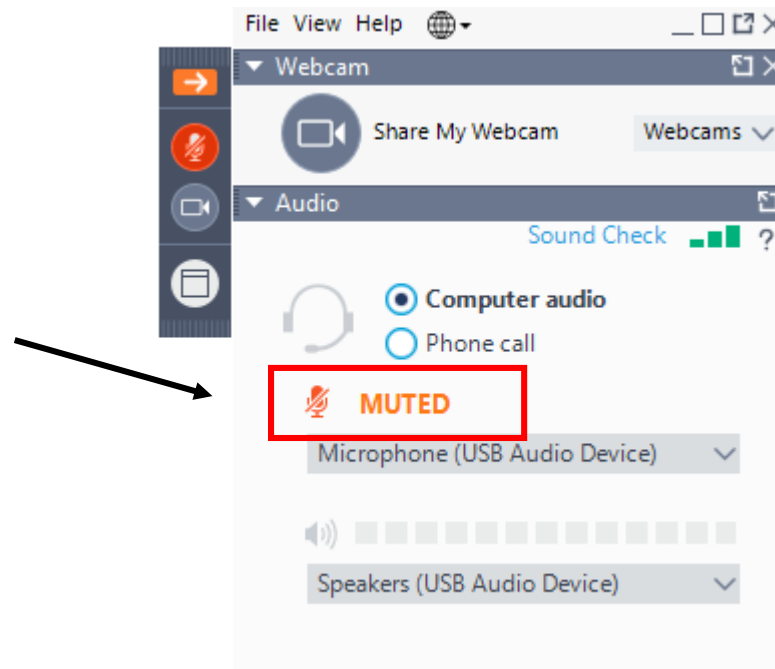
#TRBwebinar

Learning Objectives

1. List the mechanisms considered for integrating resiliency and sustainability into federal climate change legislation
2. Specify the policy considerations of multistate regional associations working together to align transportation funding and climate change policies
3. List the factors that ratings agencies consider in evaluating green bonds and other financing that supports climate change and resiliency projects

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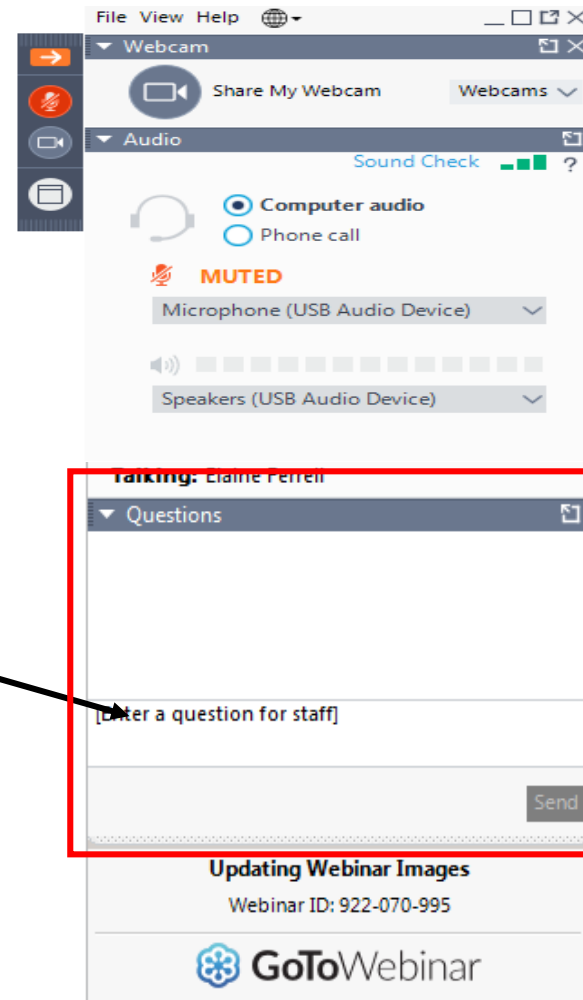
All Attendees Are Muted



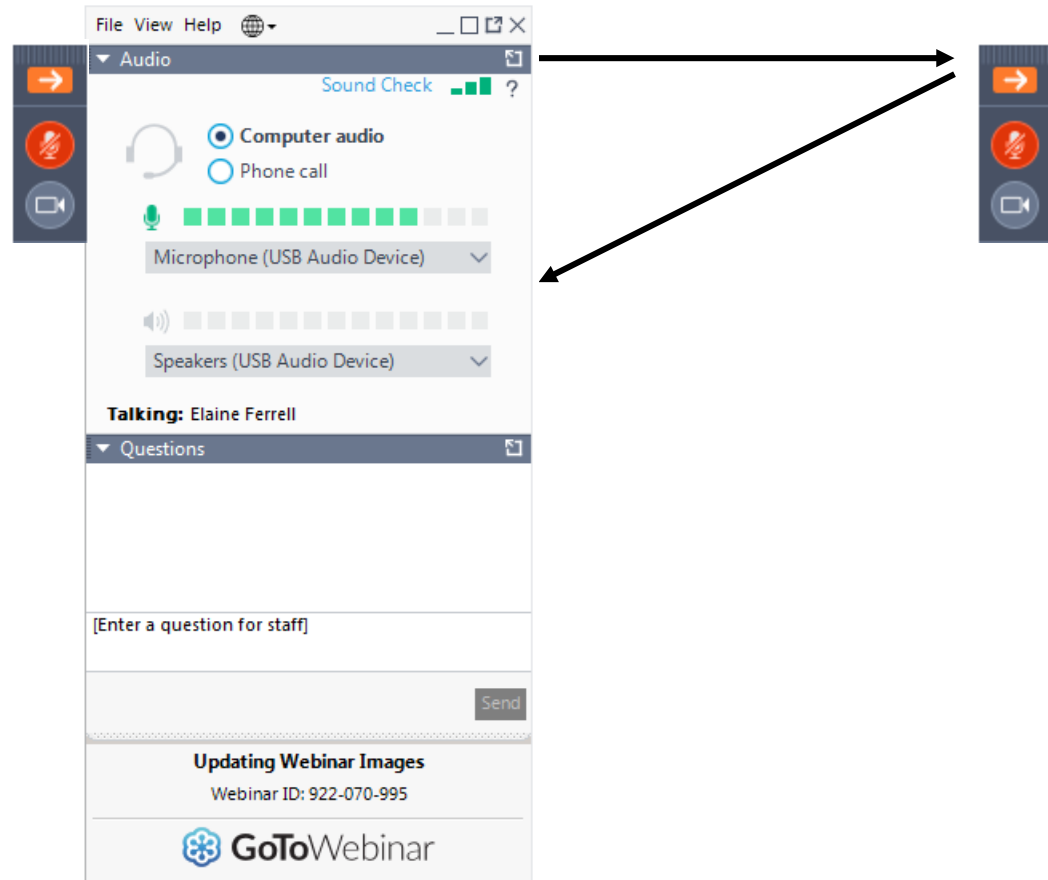
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Questions and Answers

- Please type your questions into your webinar control panel
- We will read your questions out loud, and answer as many as time allows



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Panelists Presentations

<http://onlinepubs.trb.org/onlinepubs/webinars/200422.pdf>

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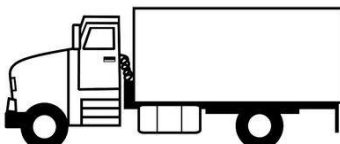
Nathan Macek,
Senior Vice
President and
Director of Project
Development and
Finance
at WSP USA

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Greener in More Ways Than One:
*Addressing Resiliency and Climate Change in the
Federal Surface Transportation Authorization*

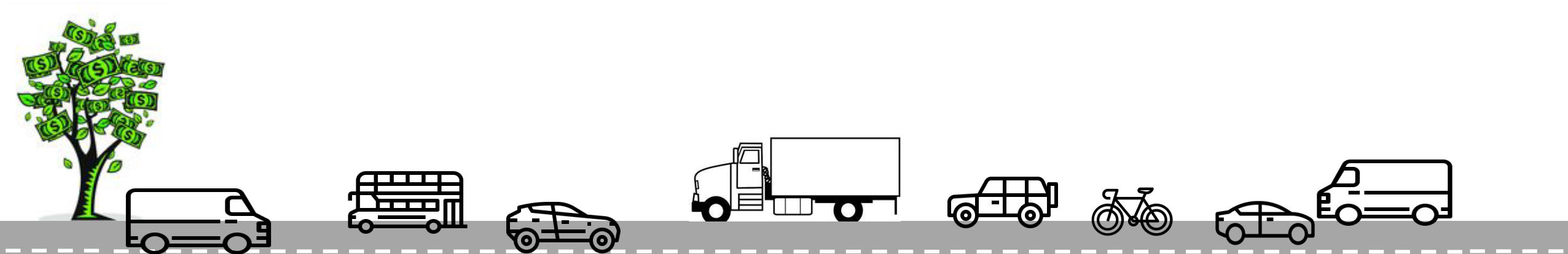
Rebecca Higgins

Senior Policy Advisor, Senate Committee on Environment and Public Works

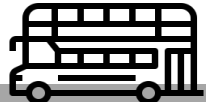
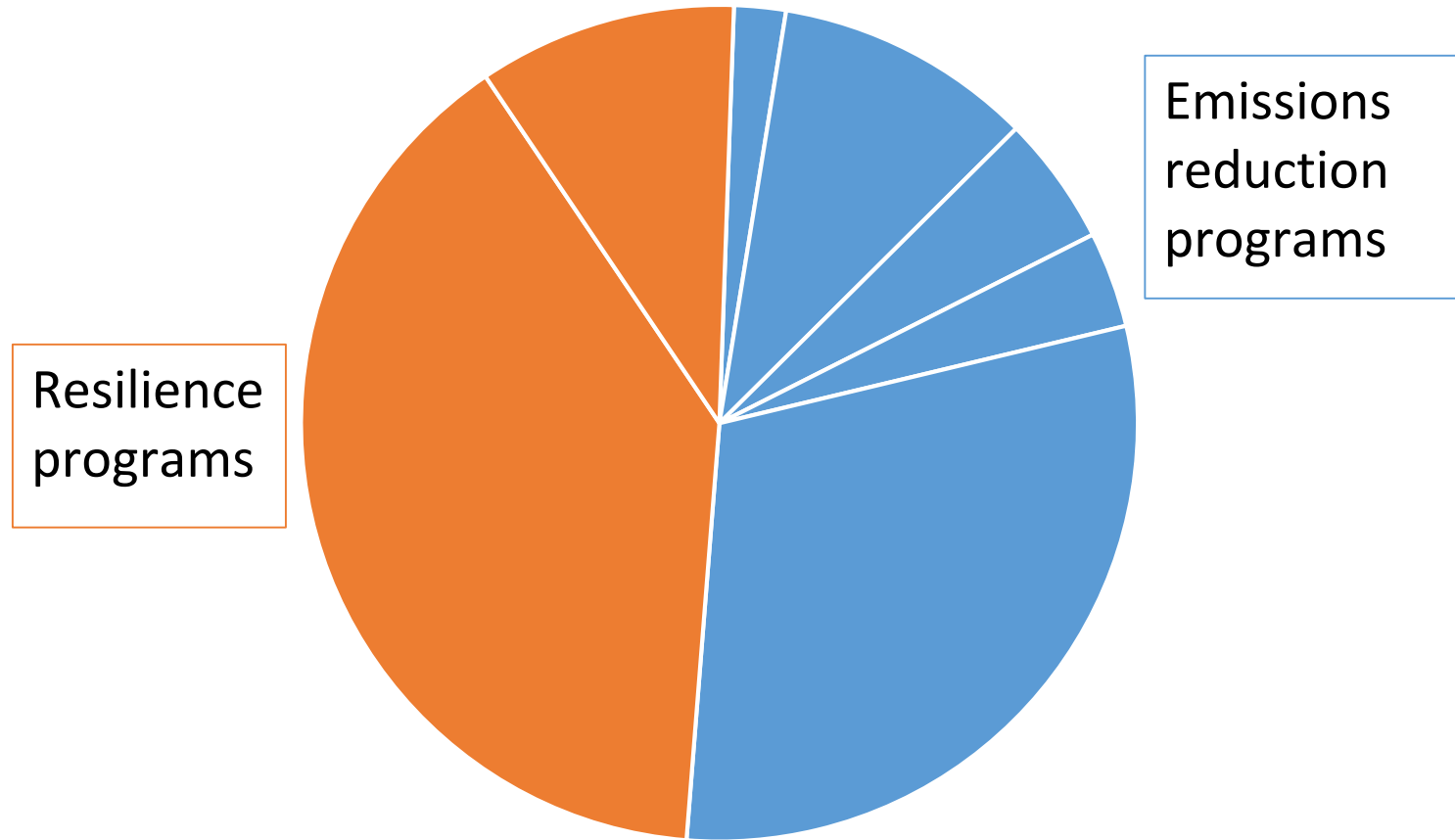


America's Transportation Infrastructure Act

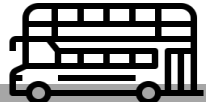
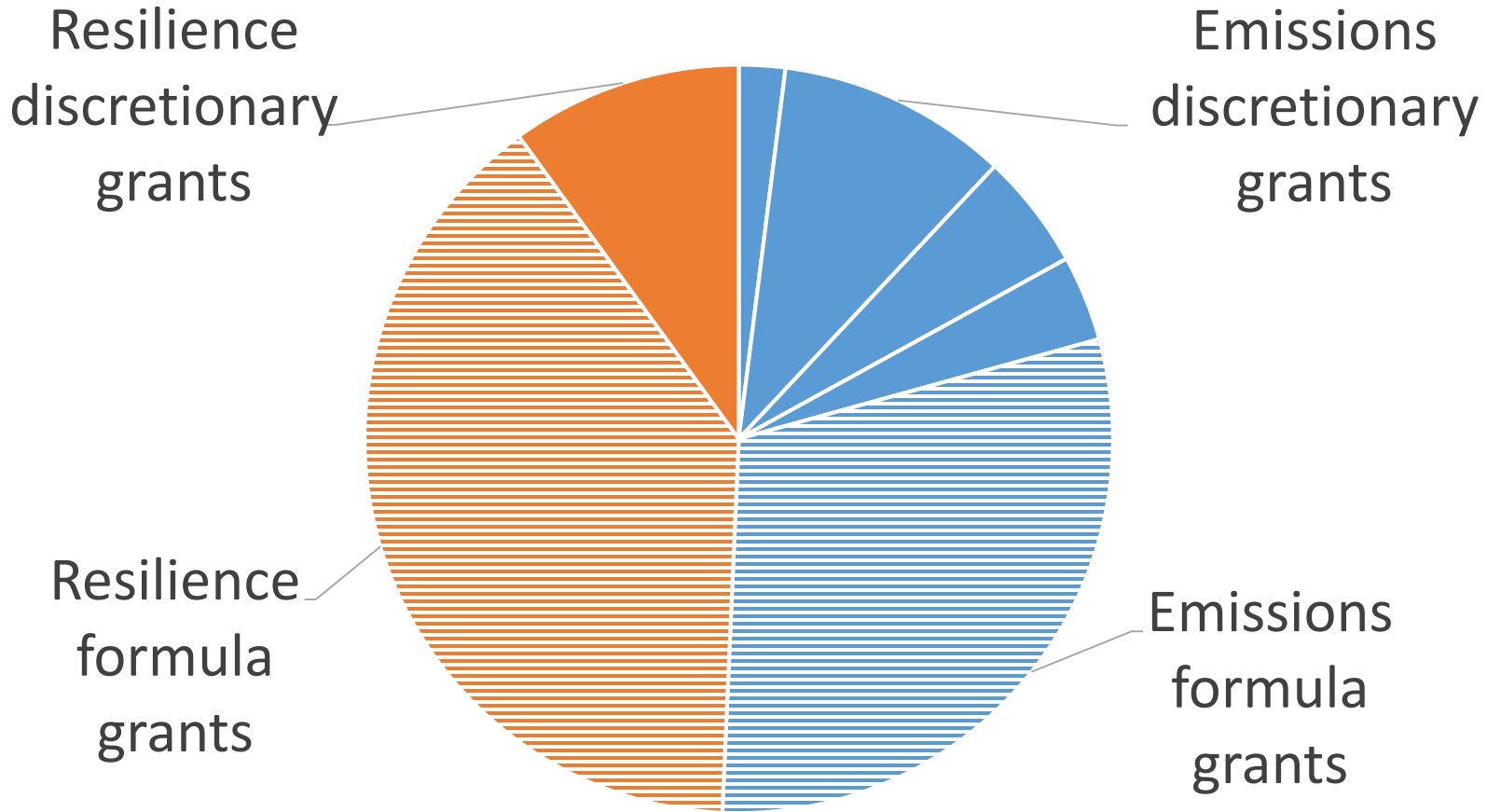
- 5 year reauthorization of highway programs
- \$287 billion in contract authority from the Highway Trust Fund
- Unanimous bipartisan committee vote in July 2019
- Climate Change title with \$10 billion in contract authority



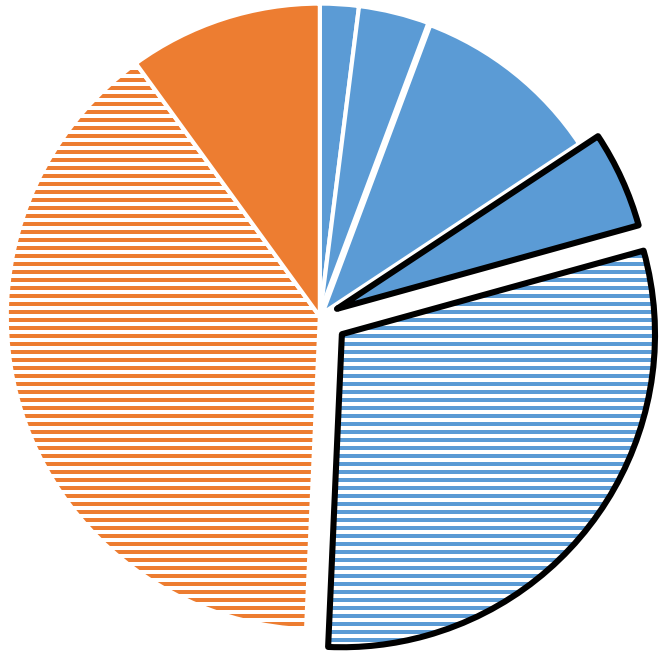
\$10 Billion Climate Title



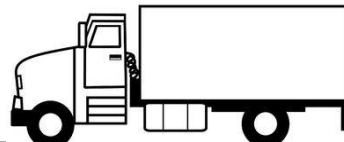
\$10 Billion Climate Title



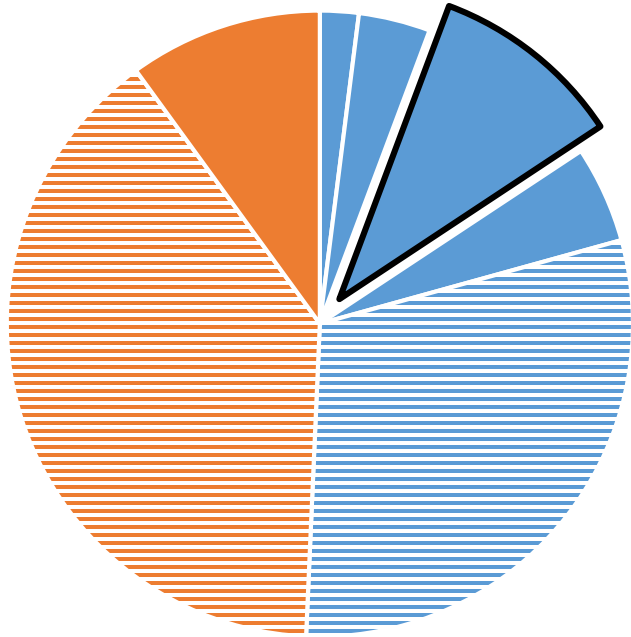
Carbon Reduction Performance Program and Incentives



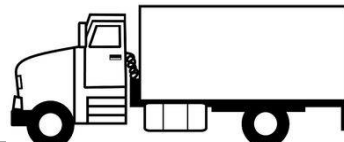
- \$3 billion in formula funds to projects to lower carbon emissions
- Projects to shift travel to low-carbon modes or off-peak times, electrification, transit, HOV lanes, bike-ped
- Incentives for developing a CO2 reduction strategy
- \$500 million for discretionary performance awards to states and local governments that have demonstrated the most progress in lowering transportation emissions



Alternative Fueling and Charging Infrastructure

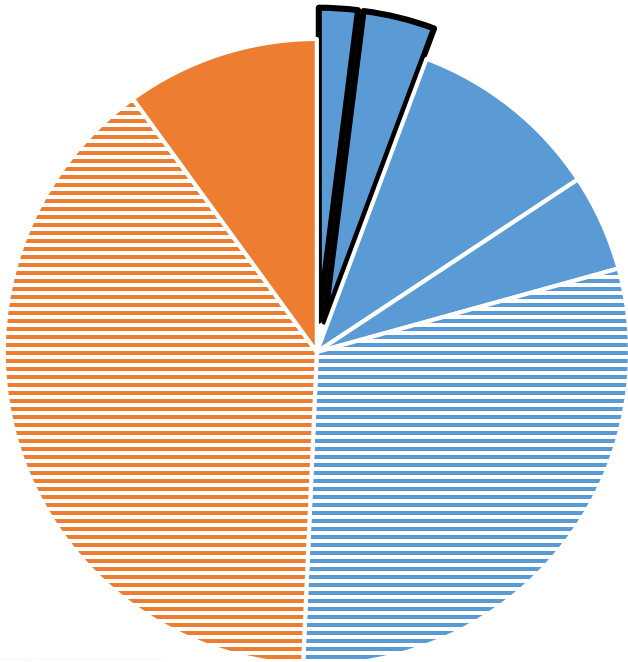


- \$1 billion in discretionary grants over 5 years
- Applicants must be public entities contracting with private partner
- Grants to build publicly accessible infrastructure for electric, hydrogen, and natural gas vehicles along designated alternative fuel corridors
- Eligibility for operating assistance for the first 5 years of operations



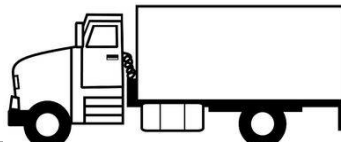
Port Truck Emission Reductions

- \$370 million over 5 years in discretionary grants to reduce port-related emissions from idling trucks

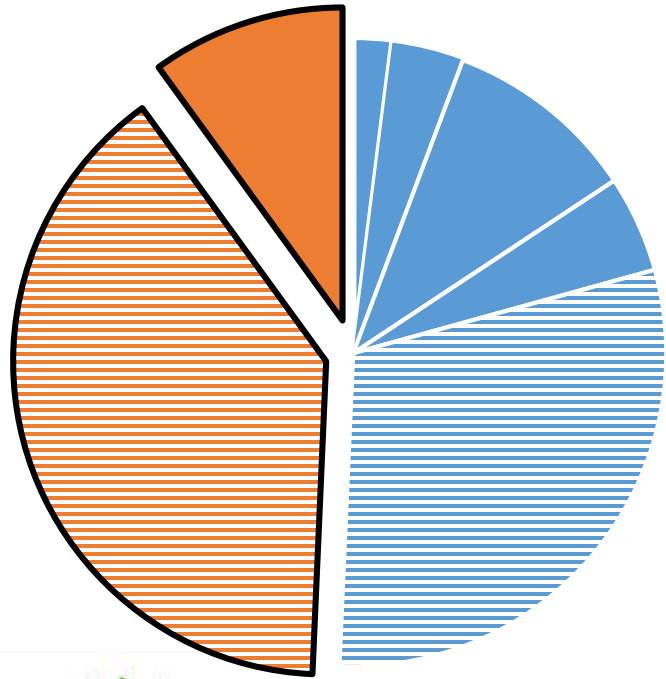


Congestion Relief Program

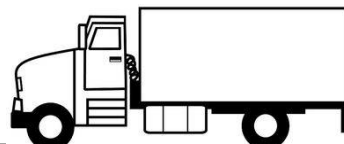
- \$200 million over 5 years in discretionary grants for innovative, multimodal solutions to congestion in large cities
- Goal is to reduce highway congestion and expand use of transit alternatives
- Projects can include pricing and tolling strategies



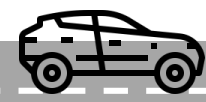
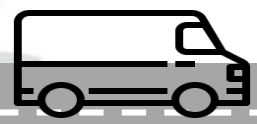
Climate Resilience – PROTECT grants



- \$3.9 billion in formula funds; \$1 billion discretionary
- Funds will enable existing assets to withstand impacts of sea level rise, flooding, extreme weather and natural disasters
- Eligibility for highway, transit, rail, and port resilience
- Incentives to do resilience planning and assessments
- Set-asides for evacuation routes, at-risk coastal infrastructure, and resilience planning work
- Requires monitoring to evaluate the effectiveness and impacts of awarded projects



Overall Spending – ATIA vs FAST



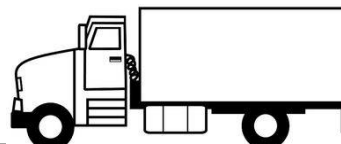
Climate Policies

Expands eligibilities for resilience, including eligibility to incorporate green infrastructure, natural infrastructure, and protective features functionally connected to highways

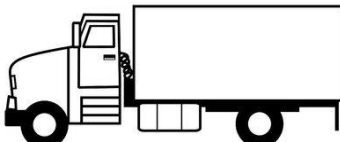
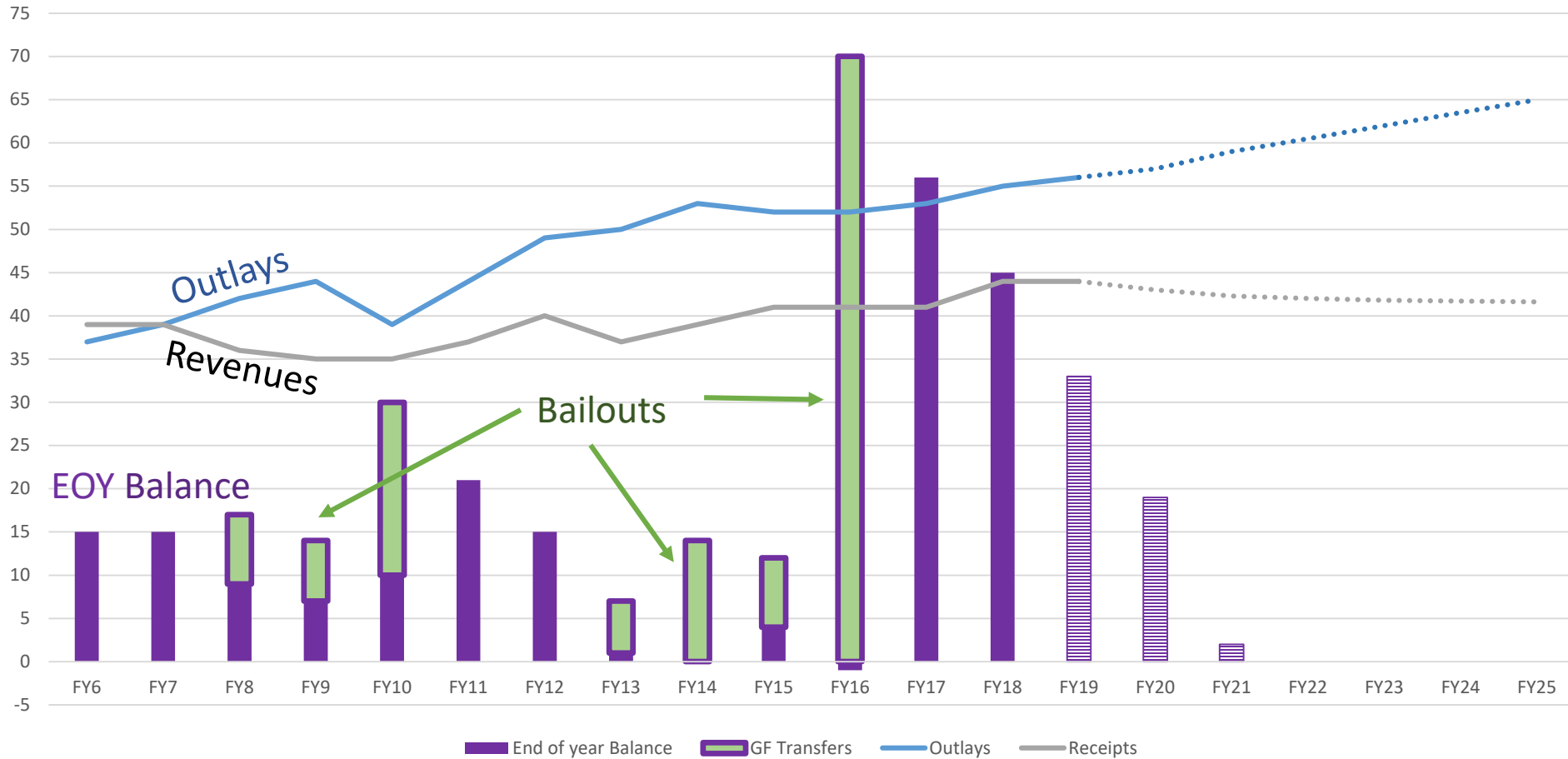


Significant increase in funding for non-motorized transportation

Incentives, rather than requirements, to plan for climate change and assess emissions mitigation and resilience needs



Highway Trust Fund Status



Federal and State Policy to Reduce Transportation Emissions and Increase Resilience

April 22, 2020

TRB webinar series

Happy Earth Day!

Vicki Arroyo, Executive Director, Georgetown
Climate Center

Professor from Practice, Georgetown Law

Georgetown Climate Center: A Resource for State and Federal Climate Policy

- Launched in 2009 as a resource to states
- Works at the nexus of federal-state policies
- Supports states through research, facilitation, and convening



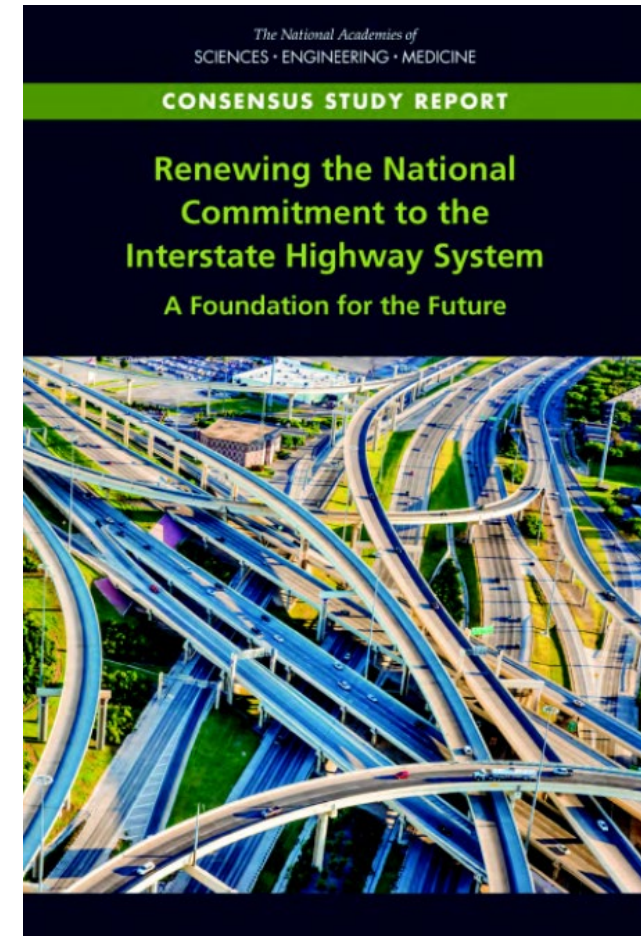
Future of the Interstate Highway System

Recommendation 9

“U.S. DOT and FHWA should be directed to ... develop standards, in conjunction with states, for incorporating cost-effective resilience enhancements into projects; and develop and maintain a database of cost-effective practices and resilience strategies employed by state highway and other transportation agencies...”

Recommendation 10

“Congress should direct U.S. DOT and FHWA to ascertain the Interstate Highway System’s contribution to the country’s emission of greenhouse gases and recommend options for reducing this contribution in conjunction with reductions in other emissions of pollutants...”



Opportunities for Federal Transportation Funding to Increase Resiliency and Invest in Low-Carbon Infrastructure

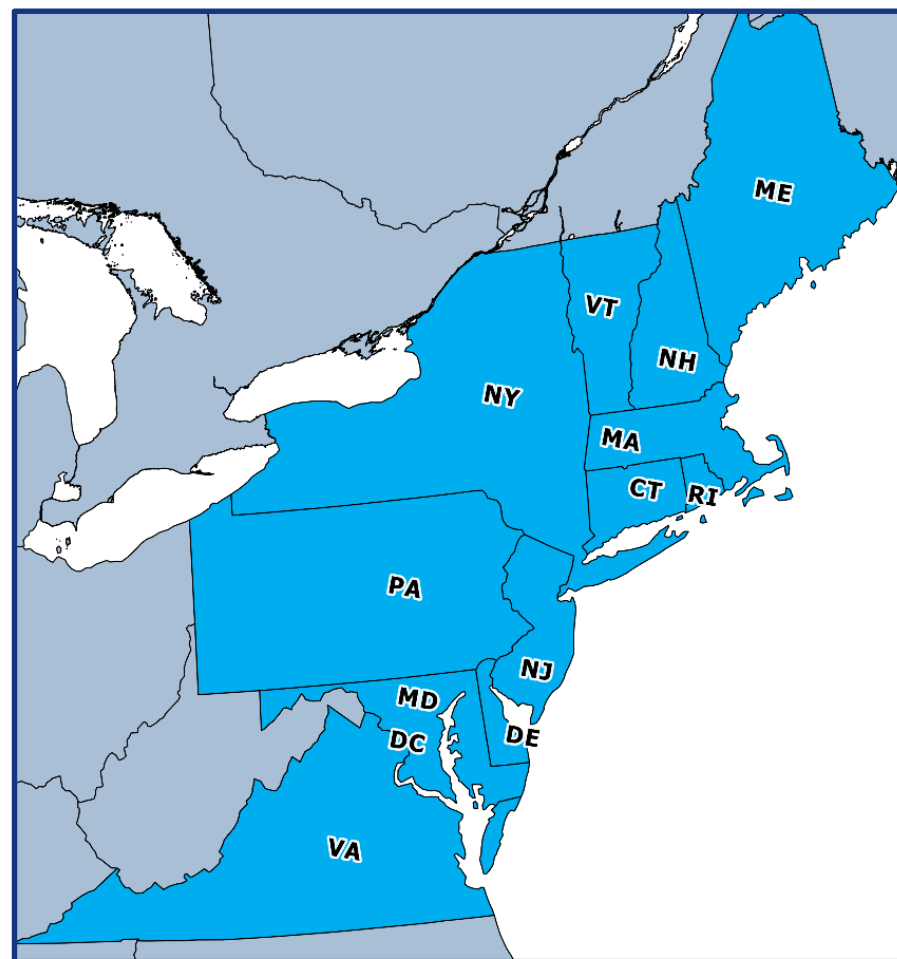


House Transportation & Infrastructure Committee hearing, February 2019

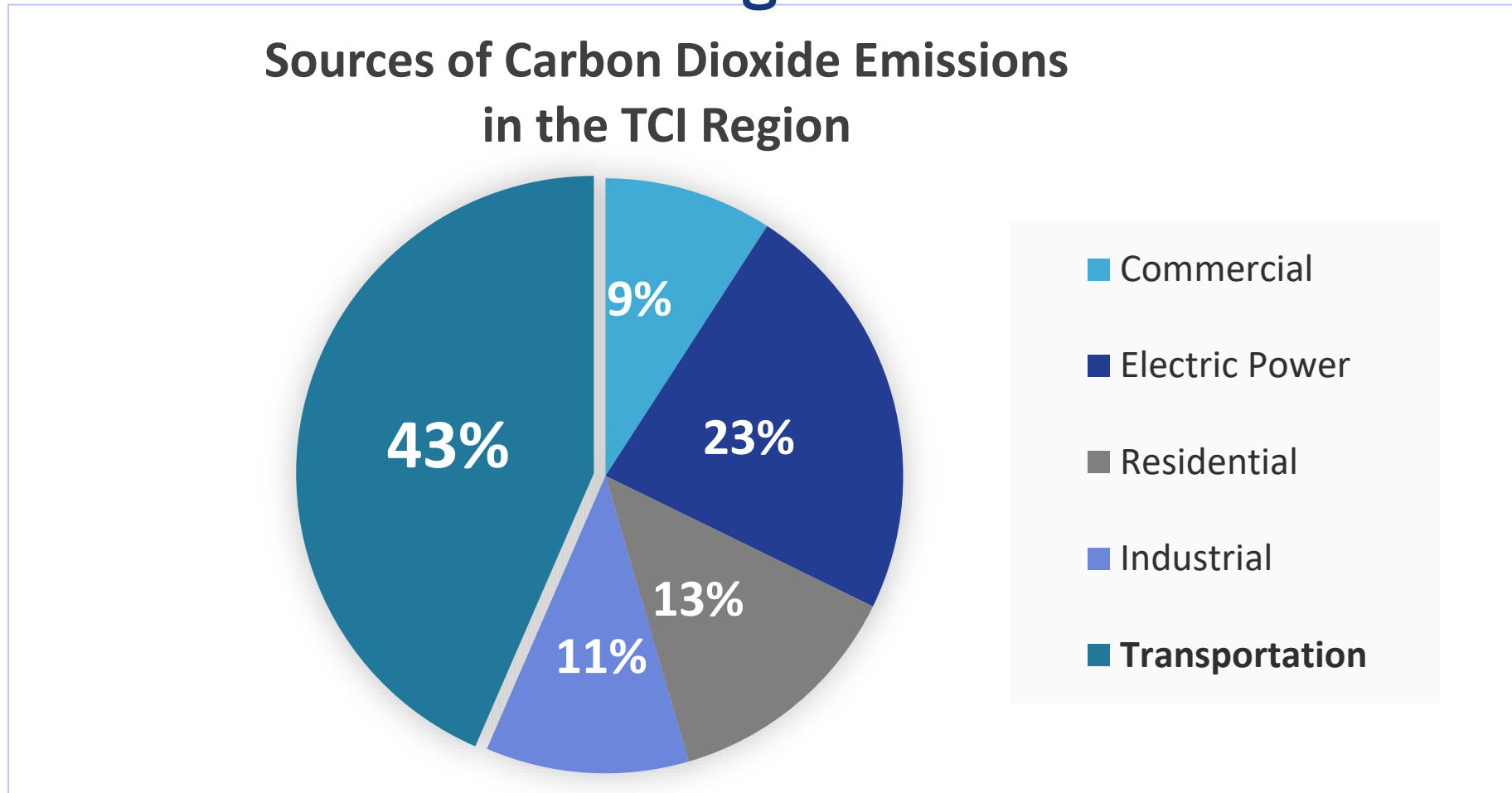
- Electric vehicle fast charging along interstate highways
- Funding zero- and low-emission transit fleets
- Multi-modal transportation for people and goods
- Preparing for climate change impacts when rebuilding transportation infrastructure

Transportation & Climate Initiative

- 12 northeast and mid-Atlantic states and the District of Columbia
- Working together to reduce GHG emissions from transportation
- Georgetown Climate Center provides facilitation, conducts research, and supports the states



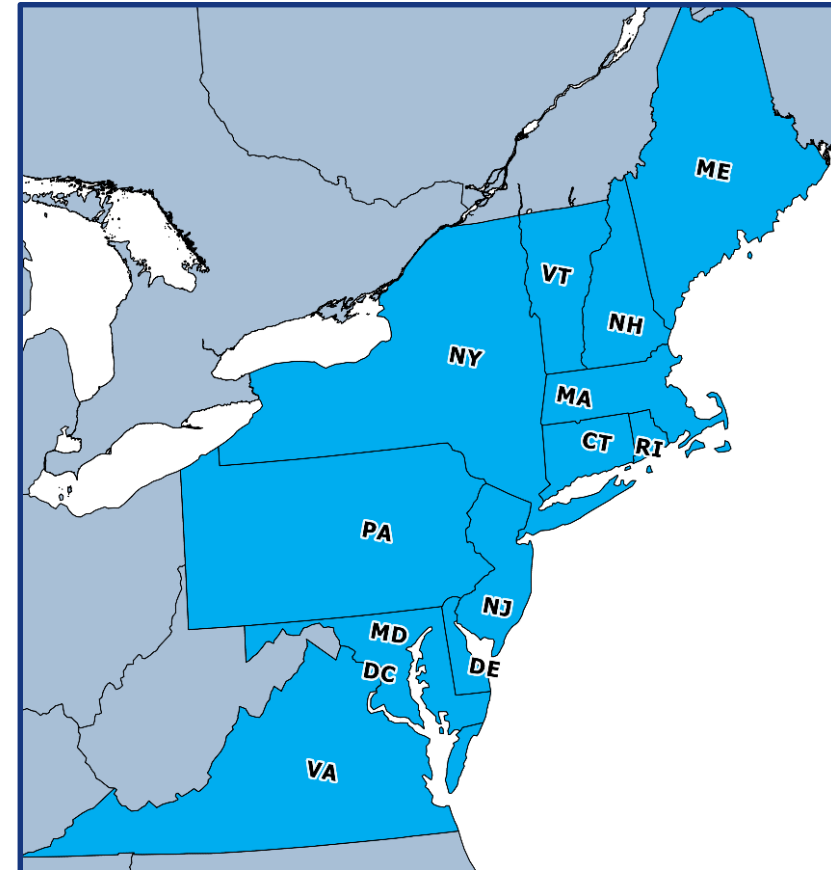
Transportation is the Largest Source of Carbon Pollution in the TCI Region



2017 Data, U.S. Energy Information Administration

Scale of the TCI Opportunity

- 72 million people
- \$5.3 trillion in GDP
- 52 million registered vehicles
- Modeled TCI cap (254 MMT CO₂) would cover more than three times the carbon pollution covered by RGGI cap



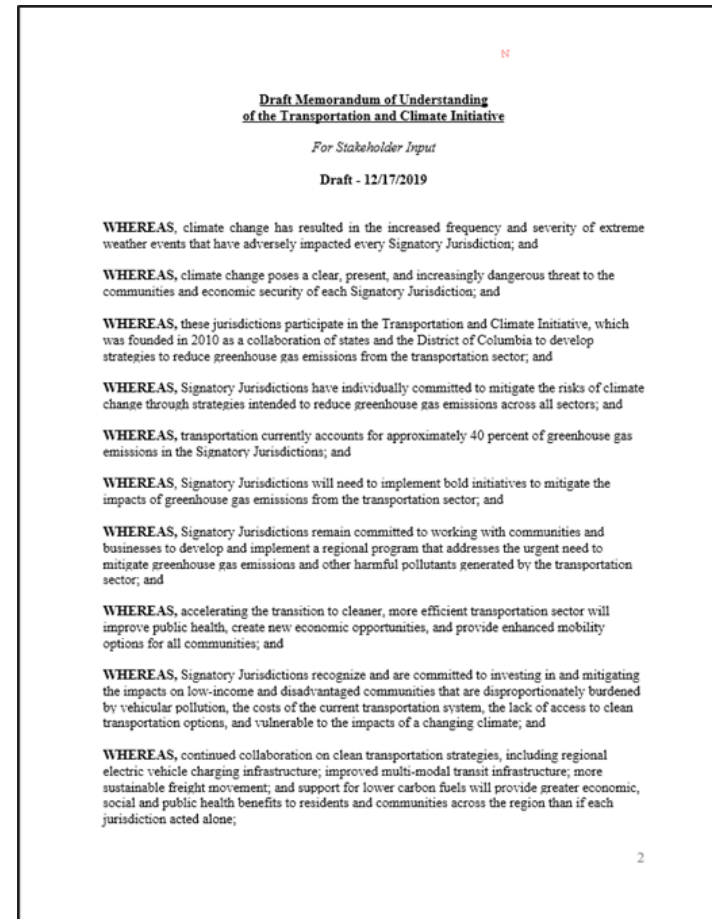
TCI States Engaged with People, Communities, and Businesses

- Three regional TCI workshops with participation of 1,000 people
- Over 1,200 submissions to TCI public input portal
- Community engagement by individual states



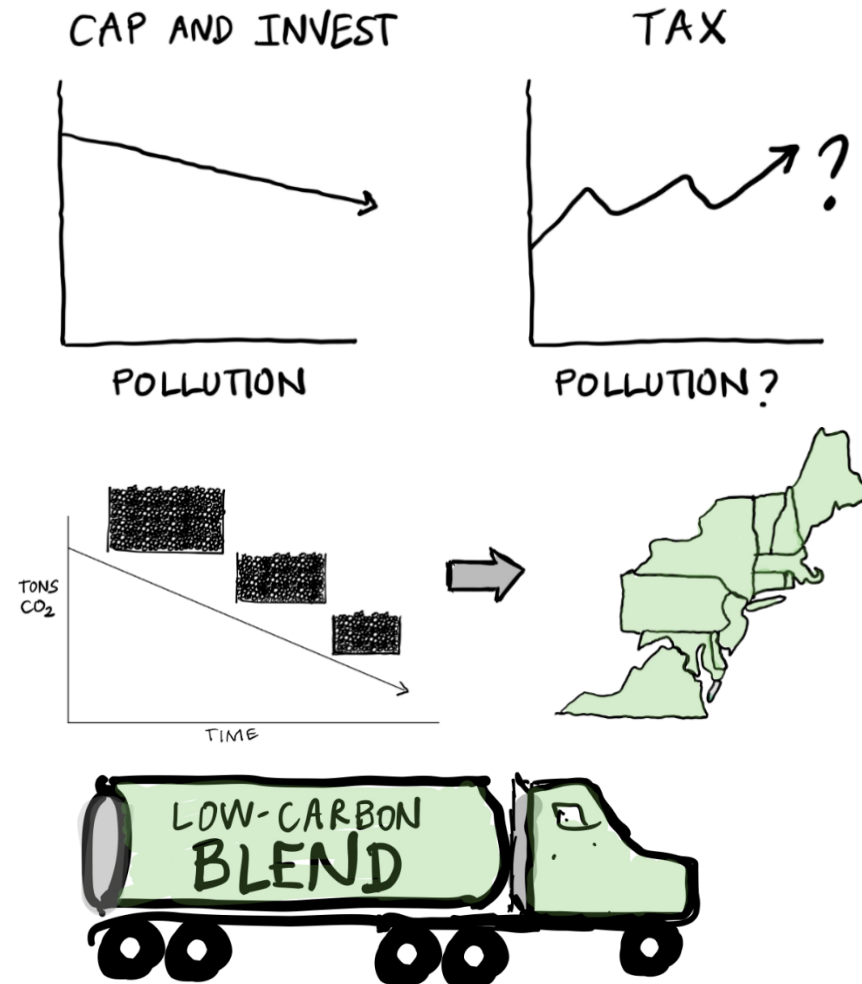
Draft Memorandum of Understanding

- Draft MOU Includes:
 - Program Goals & Schedule
 - Elements of a Model Rule
 - Investments & Equity
 - Regional Organization
 - Program Monitoring & Review
- Invited Input through February 28, 2020
- Final MOU: Late Spring 2020



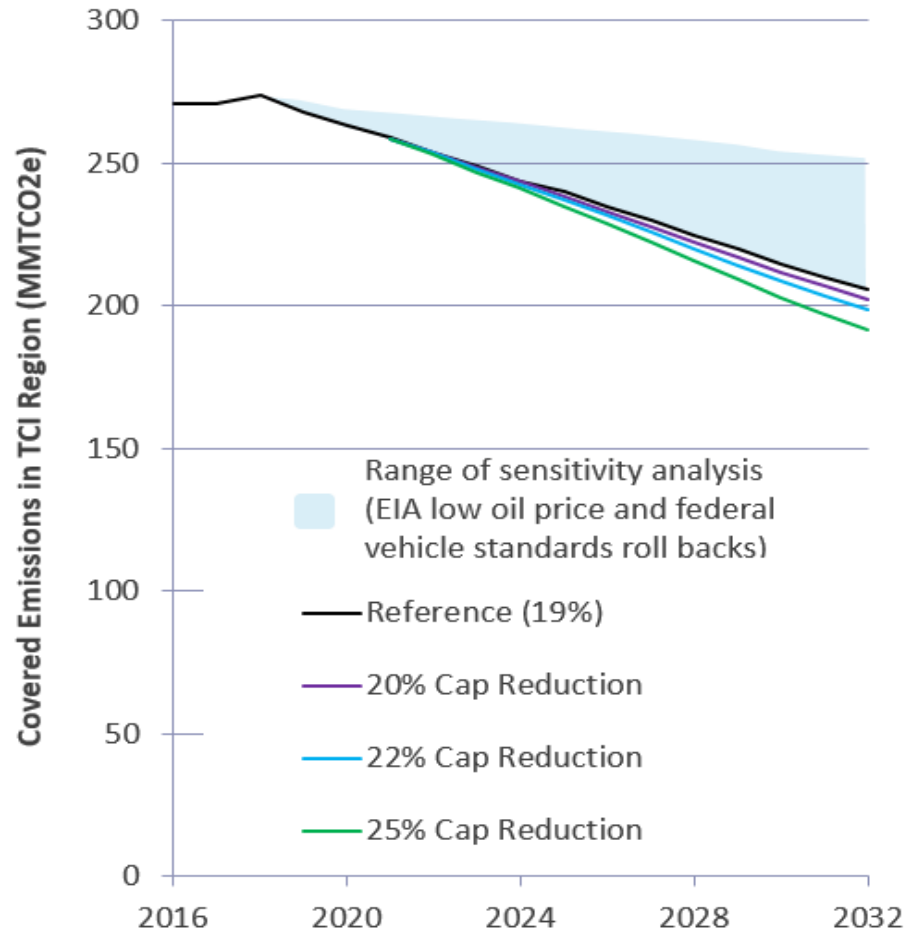
Features of Regional Cap & Invest Approach

- Guarantees Pollution Reduction
- Regional Consistency of Allowance Prices
- Offers Flexibility in Compliance
- Drives Innovation and Investments in Low Carbon Transportation Programs









Emissions Cap Scenarios Results: Projected Transportation CO₂ Emissions

- A declining emissions cap could lock in decreases in CO₂ emissions that are expected through 2032 and drive additional reductions.
- More stringent caps result in greater emissions cuts and more proceeds for investments.
- Initial annual proceeds range from \$1.4 billion at start in the 20% case up to \$5.6 billion in the 25% case.

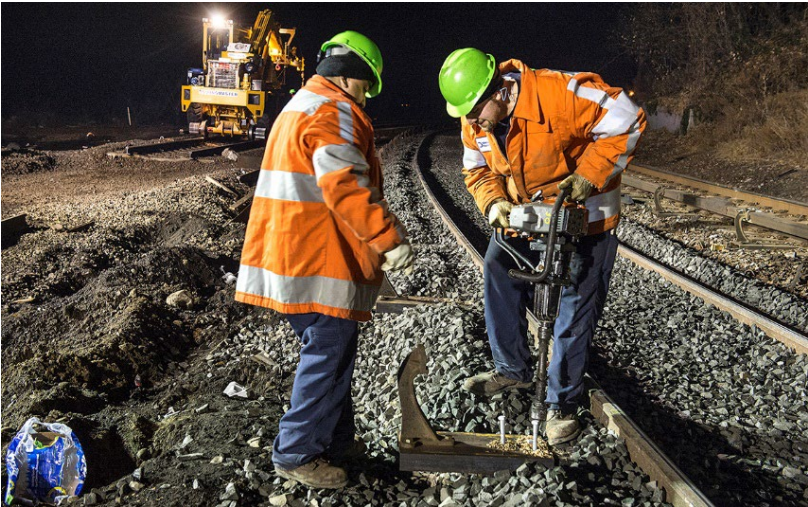


Range of Clean Transportation Investments in Modeled TCI Scenarios

- Modeled annual clean transportation investments by strategy in 2032
- Combined \$1.84 billion to \$6.92 billion in modeled scenarios

	\$554 million to \$2 billion	Electric cars, light trucks and vans
	\$425 million to \$1.6 billion	Low & zero-emission buses and trucks
	\$333 million to \$1.2 billion	Transit expansion and upkeep
	\$259 million to \$970 million	Pedestrian and bike safety, ride sharing
	\$148 million to \$554 million	System efficiency
	\$148 million to \$554 million	Indirect/ Other

Reducing Pollution Delivers Multiple Benefits



Preliminary Public Health Benefits



- Fewer asthma symptoms
- Fewer premature deaths
- Fewer traffic-related injuries
- Total estimated public health benefits:
\$3 billion to \$10 billion

TCI Program Development Timeline

- **December 17, 2019** – Release of a draft Memorandum of Understanding (MOU) with modeling results
- **January/February 2020** – Public input on Draft MOU
- **January through Spring 2020** -- Additional Modeling Analysis
- **Late Spring 2020** – Jurisdictions release a final Memorandum of Understanding. At this point, each jurisdiction will decide whether to sign the MOU and participate in the regional program.
- **Spring through Fall 2020** – Signatory jurisdictions develop a “model rule” and take any legislative steps that could be needed to implement the regional program.
- **2021** – Signatory Jurisdictions conduct rulemaking processes to adopt regulations.
- **As early as 2022** – Program implementation begins.



Environmental Concerns in Infrastructure Financing

Scott Zuchorski, Managing
Director

Head of North American
Infrastructure

April 22, 2020



Fitch's ESG Framework

- ESG = Environmental, Social, and Governance
- Focused on how ESG elements affect credit ratings, rather than judging the quality of an entity's ESG practices
- Examples: exposure to extreme weather (E), labor relations (S), management strategy (G)

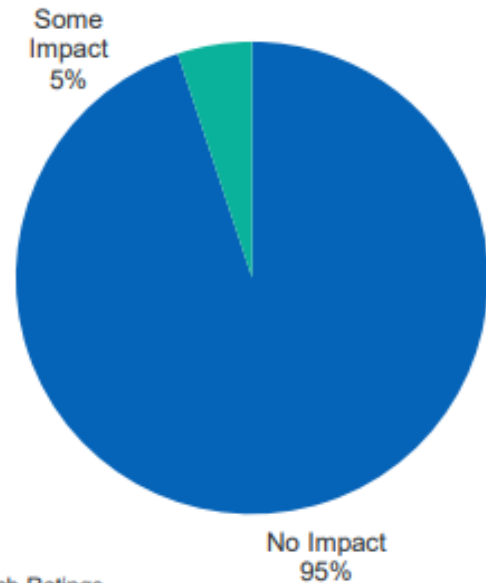
ESG Scoring Definitions

Lowest Relevance		Neutral	Credit-relevant to Issuer	
1	2	3	4	5
Irrelevant to the entity rating and irrelevant to the sector.	Irrelevant to the entity rating but relevant to the sector.	Minimally relevant to rating, either very low impact or actively managed in a way that results in no impact on the entity rating.	Relevant to rating, not a key rating driver but has an impact on the rating in combination with other factors.	Highly relevant, a key rating driver that has a significant impact on the rating on an individual basis.

ESG and Global Infrastructure

- ESG factors generally have a low level of direct impact on our current infrastructure ratings
- Social and governance factors tend to be the most relevant drivers
- In the future, environmental events caused by extreme weather are expected to become increasingly credit relevant

Relevance to Issuer Portfolio

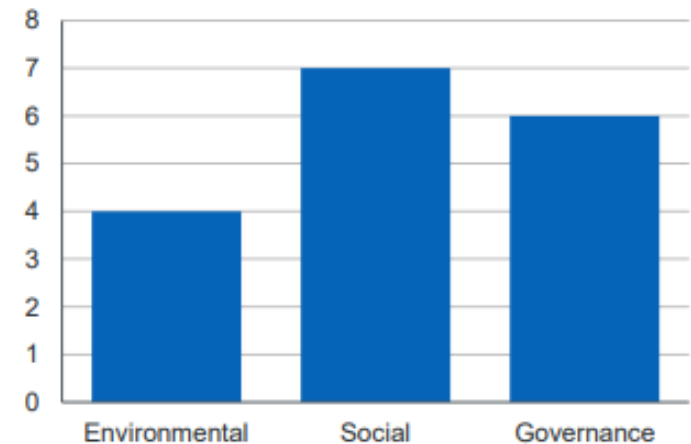


Source: Fitch Ratings

Infrastructure - ESG Elements Driving Issuer Credit Impact

(ESG Score of 4 or 5)

(No.)



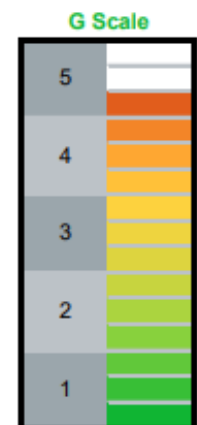
Source: Fitch Ratings

Example: Miami-Dade Expressway Authority

- The Florida state legislature passed a bill that dissolved MDX, called for significantly lower tolls, and placed a prolonged moratorium on rate hikes
- Governance issue that directly impacted the rating

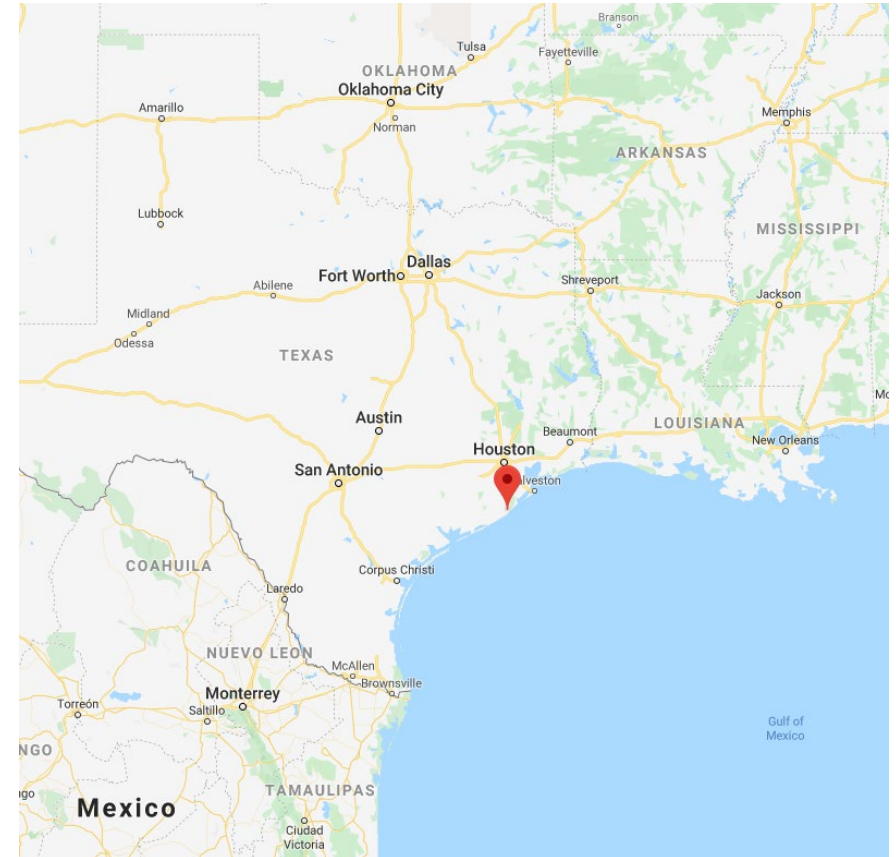
“The downgrade to ‘A-’ reflects legislative passage of House Bill 385 (HB 385; the bill)...thus reflecting the culmination of an unprecedented degree of state political interference into the affairs of a local tolling authority” (MDX RAC, published 5/8/19)

General Issues	G Score	Sector-Specific Issues	Reference
Management Strategy	3	Operational implementation of strategy informed by sponsor strength/experience and ability to effectively manage risks; involvement of local parties	Structure and Information
Governance Structure	5	Board independence and effectiveness; ownership concentration; ring fencing	Structure and Information
Group Structure	3	Complexity, transparency and related-party transactions	Structure and Information
Financial Transparency	3	Quality and timeliness of financial disclosure; reliability, level of detail and scope of information (informed by data sources, use of expert reports)	Structure and Information



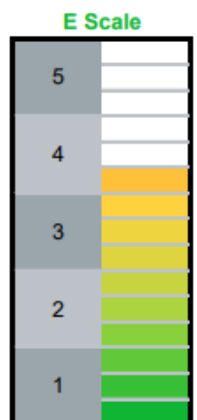
Example: FLNG Liquefaction

- Located in Freeport, TX
- Exposed to extreme weather
- Hurricane Harvey caused delays and cost overruns, which remain an issue



Environmental (E)

General Issues	E Score	Sector-Specific Issues	Reference
GHG Emissions & Air Quality	3	Emissions from operations	Operation Risk;Infrastructure Renewal Risk;Financial Profile
Energy Management	3	Energy use in operations	Operation Risk;Infrastructure Renewal Risk;Financial Profile
Water & Wastewater Management	1	n.a.	n.a.
Waste & Hazardous Materials Management; Ecological Impacts	3	Operations proximity to environmentally sensitive areas; ecological impact of operating incidents and spills	Operation Risk;Infrastructure Renewal Risk;Financial Profile
Exposure to Environmental Impacts	4	Exposure to extreme weather events, resulting in loss of revenues, increased costs, and project construction delays	Completion Risk;Revenue Risk;Operation Risk;Infrastructure Renewal Risk;Financial Profile



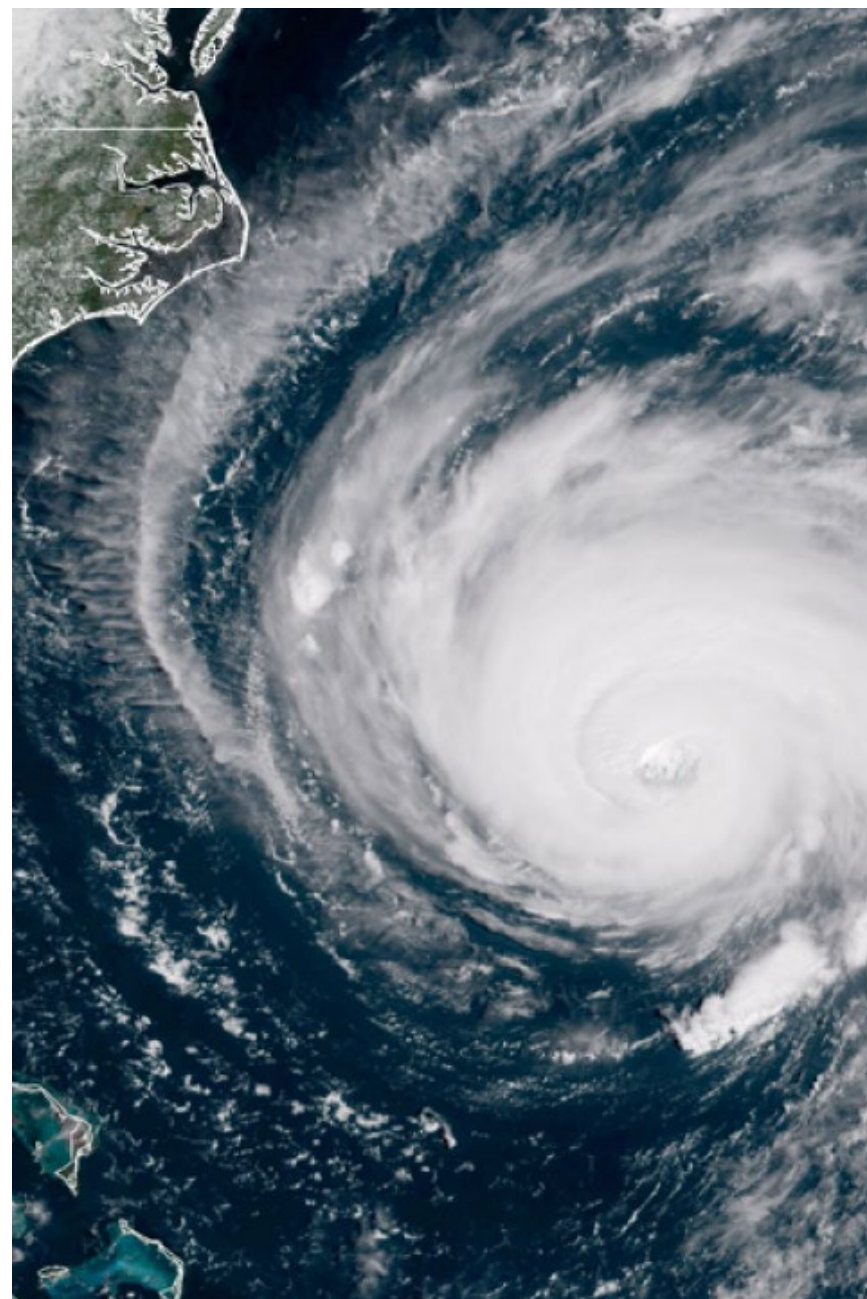
Infrastructure Resiliency

- Severe weather events, natural disasters, and climate change impact core infrastructure assets
- The ability to prepare and plan for, absorb, recover from, or adapt to adverse events is important to credit consideration
- Working definition: “Infrastructure resiliency relates to an infrastructure asset’s ability to resist and recover to its original state of operations from a natural and human-induced disruption or shock by integrating institutional, operational, management and financial safeguards”



Resiliency & Credit Risk

- Fitch does not rate to event risk, but is interested in the relationship between infrastructure resiliency and credit risk
- Climate change is an increasing credit consideration: protect vs. retreat (improving physical protection from weather threats vs. creating new routes/moving locations)
- Credit mitigation strategies: shorter debt maturities, cash trap features, longer concessions, dedicated resiliency departments, longer asset lifespans, etc.
- High costs associated with making assets resilient can make it prohibitive



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Nathan Macek



Rebecca Higgins



Vicki Arroyo

GEORGETOWN CLIMATE CENTER
A Leading Resource for State and Federal Policy



Scott Zuchorski

Fitch Ratings

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