

# Rhode Island VW Environmental Mitigation Plan Informational Session

May 17, 2018

Rhode Island College

Gaige Hall, Room 200

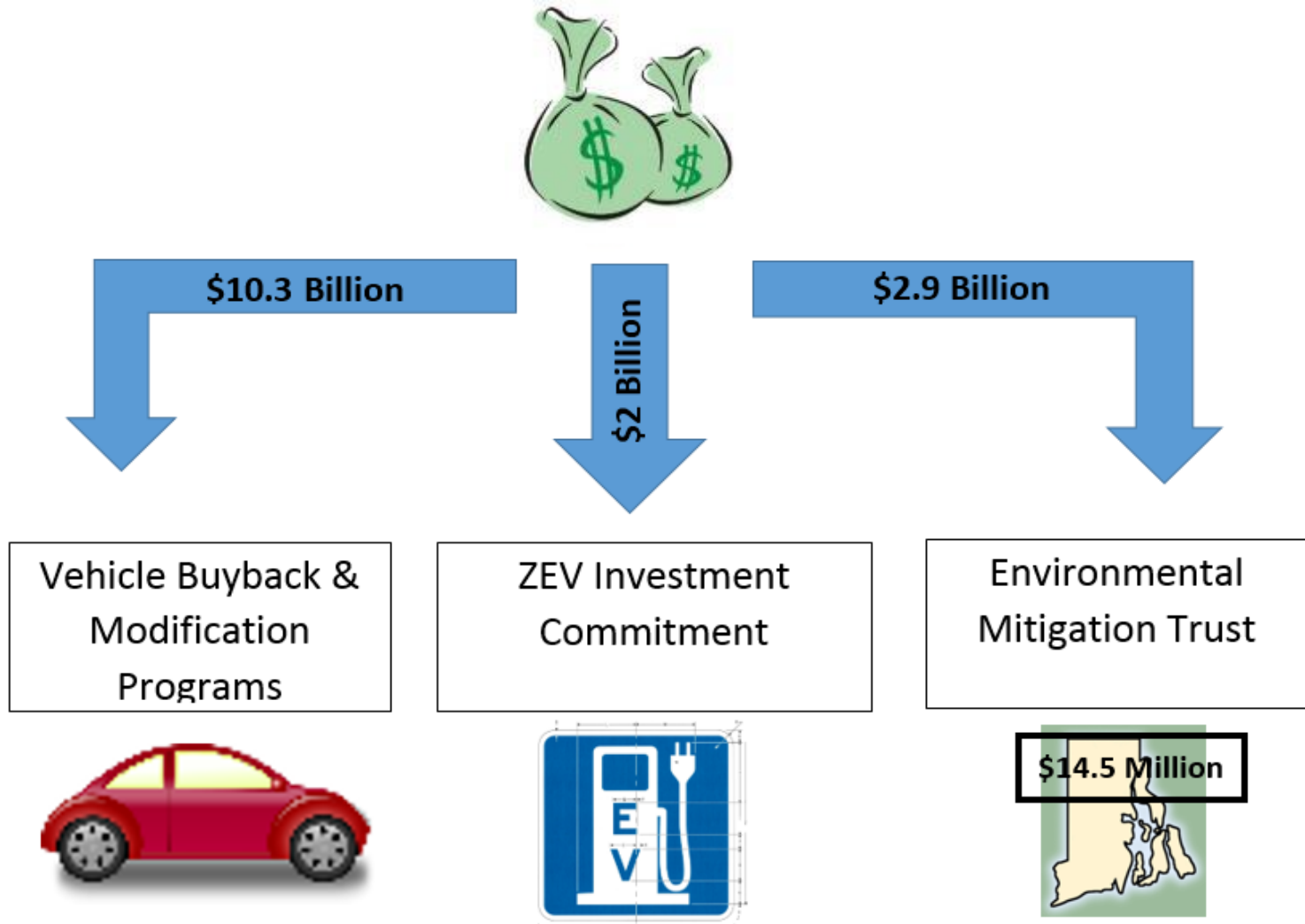
4:00PM – 6:00PM



# Agenda

- Welcoming Remarks and Overview of VW Settlement
- Background on VW Settlement
- Overall Goals of Plan and Proposed Use of Funds
- EV Transit Bus Proposal
- Charging Infrastructure Proposal
- Emission Reduction Quantification & Estimates
- Administrative Process & Next Steps
- Public Feedback

# Overview of VW Settlement



# Overview of VW Settlement

- Settlement Finalized – October 25, 2016
- Trust Effective Date – October 2, 2017
- Rhode Island Submitted Beneficiary Certification Form – November 28, 2017
- RI Approved as Beneficiary – January 30, 2018

# Overview of VW Settlement in Rhode Island

- Rhode Island will receive \$14,368,858 in VW Settlement funds
- Funds may be used over a 10-year period
- The funds must be used for environmental mitigation projects that:
  - Remove old, dirty, polluting vehicles from the road and replace them with cleaner vehicles
  - Offset NOx emissions from polluting VW vehicles
  - Improve air quality and public health
- RIDEM will serve as lead agency for the State

# *Background on the VW Settlement*

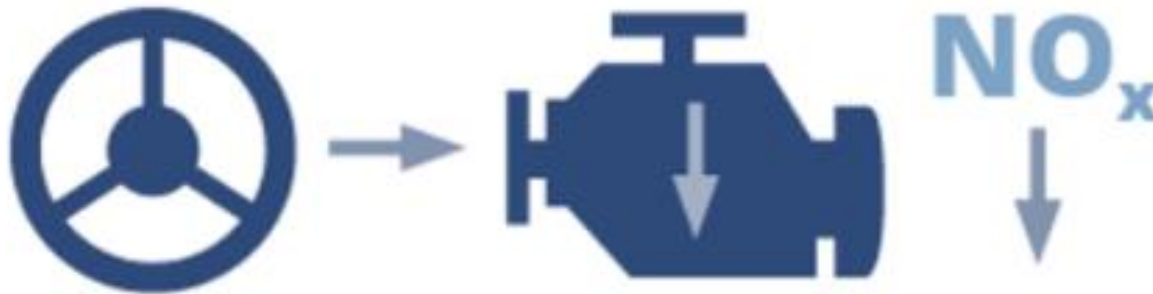
Volkswagen Group of America installed illegal software on approximately 11 million diesel engine cars worldwide. Roughly 3,000 cars were affected in Rhode Island.

## *The 'Defeat Device'*

The 'defeat device' found in Volkswagen cars was not a physical device, but a piece of software. The software sensed when the car was being tested and then activated equipment that reduced emissions.

# Background on the VW Settlement

The software turned the equipment off during regular driving, increasing emissions far above the legal limits (NO<sub>x</sub> are a group of gases that can cause respiratory problems).




The car detected when it was in test conditions (potentially by monitoring steering wheel movement or traction control deactivation)


The EPA discovered the Defeat Device and their investigation led to the VW Settlement. The Settlement funds were distributed among every state, based on the number of vehicles on their roads.

# Why Do We Care About NOx And Transportation?

- Environmental Impact & Public Health
- Environmental Justice



Ground-level ozone can lead to reduced lung function, more hospital visits and admissions for asthma, and premature deaths. Ground-level ozone (a key component of smog) is associated with a variety of health risks.




## RESPIRATORY ILLNESSES

Ground-level ozone is associated with many health problems, including diminished lung function, emphysema, and COPD, as well as increased hospital admissions and emergency department visits for asthma.

Air pollution is responsible for 200,000 premature deaths each year.

**Rhode Island asthma rates are 33% higher than national averages for adults and 40% higher for children.**

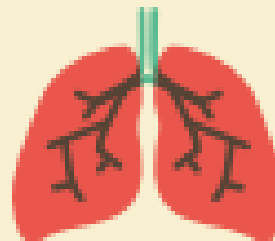




# NOx And Public Health

**1 IN 10** 

One in 10 Rhode Islanders has asthma.

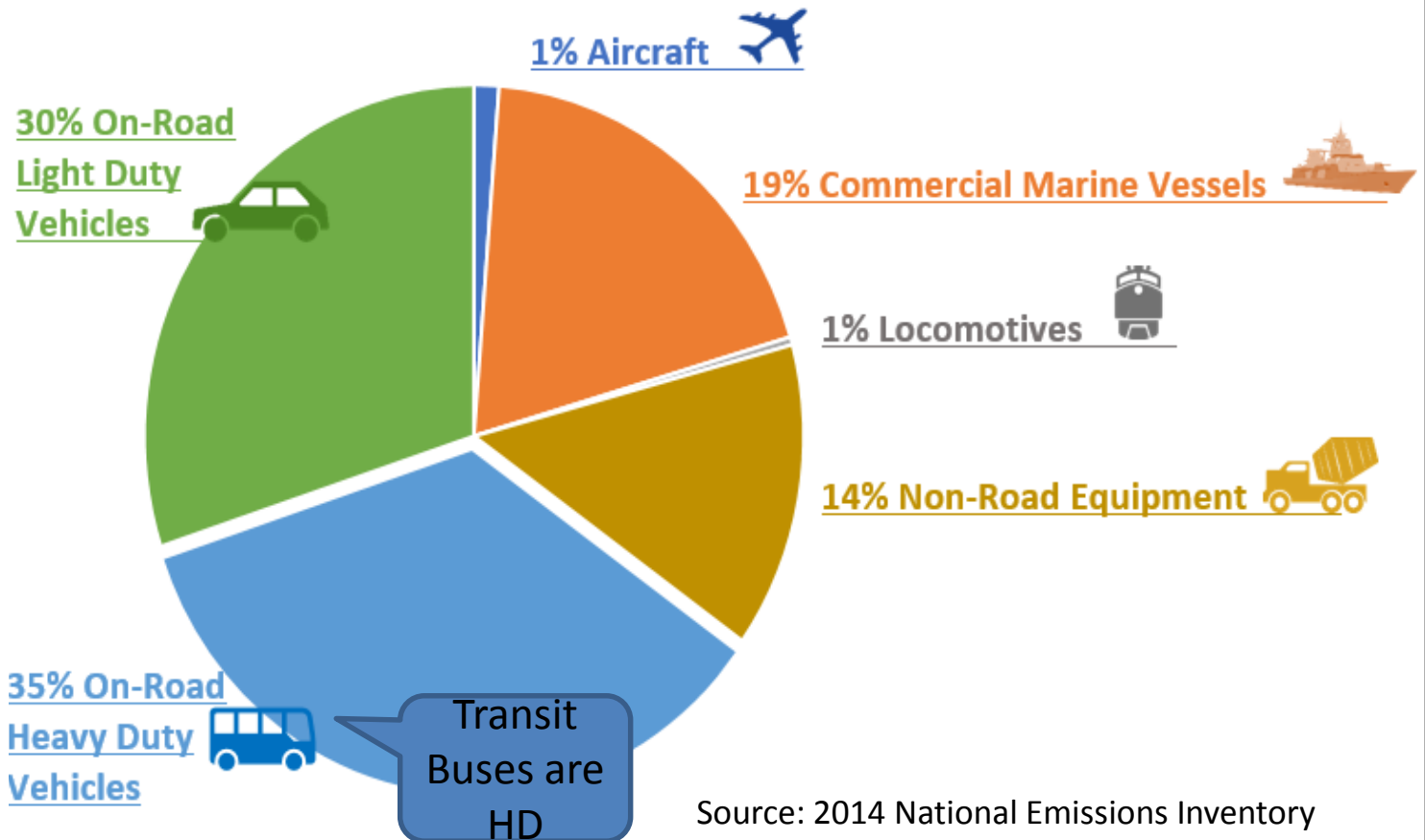
**40%**   
MORE LIKELY

Low-income adults in Rhode Island are 40% more likely than other adults to have asthma.

Source: RI DOH

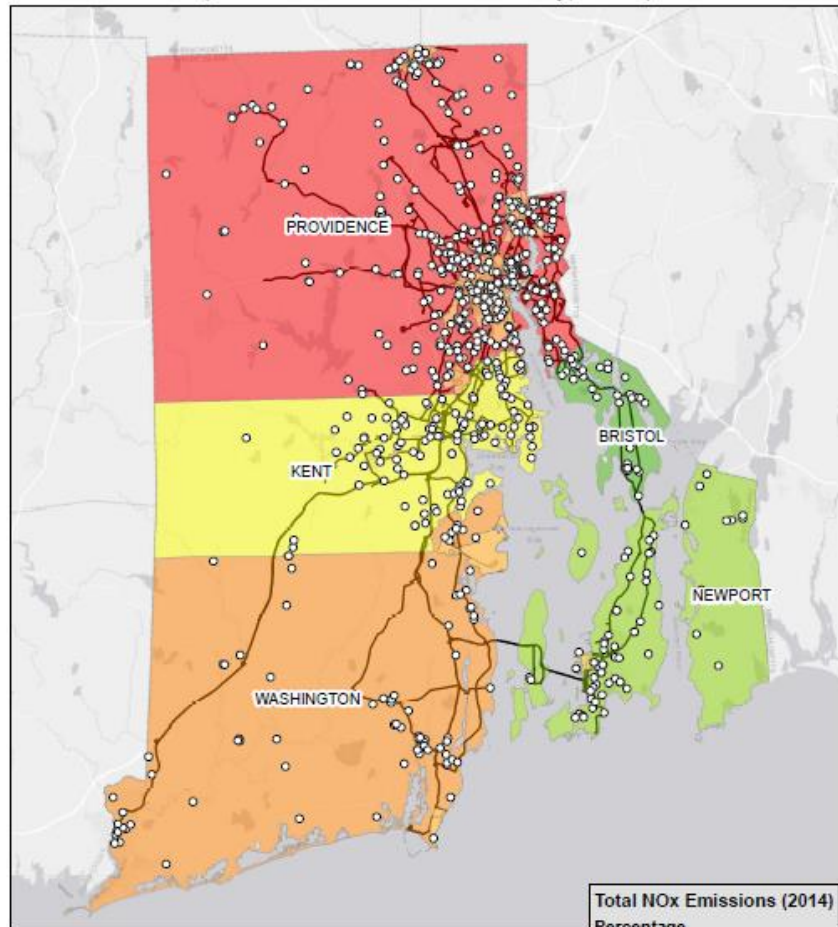
# Statewide Mobile Source NOx Emissions

## % of Total NOx Emissions by Sector



# Where Are The Highest Levels of NOx?

Mapping RIPTA Bus Routes Relative to Environmental Justice Areas, RI Schools, and Total NOx Emissions Percentages by County (National Emissions Inventory, 2014)



0 4 8 16 Miles

Draft Map Produced for RIDEM Internal Use  
Office of Customer and Technical Assistance  
Date: 02/27/2018

Data Sources: RIDEM, RIGIS, RIDE

Total NOx Emissions (2014)	
Percentage	
2.74	Light Green
10.61	Medium Green
15.96	Yellow
26.71	Orange
43.96	Red

Refer to Legend Key for additional map symbology

# Primary Goals of Plan

- Reduce NOx emissions & smog
- Reduce GHG emissions
- Reduce negative health impacts
- Benefits our environmental justice communities
- Protect communities from emissions that are nearby roadways with high traffic volumes
- Increase economic development
- Increase fuel security
- Expedite development and widespread adoption of zero emission vehicles and engines.

# Proposed use of funds

**15% (\$2.15M)**

## **Administrative Expenditures**

Funds split between  
DEM, OER, and RIPTA



**10% (\$1.5M)**

## **Charging Infrastructure for Light Duty Electric Vehicles**

Adds ~15-30 charging stations



**75% (\$10.7M)**

## **RIPTA Bus Replacement**

Replaces ~20 diesel buses  
with zero emission buses

# *EV Transit Bus Proposal*

**Phase I: Lease**

**Test**

**Deploy 16-20 Zero Emissions Vehicles (ZEV) to replace older diesel RIPTA buses**

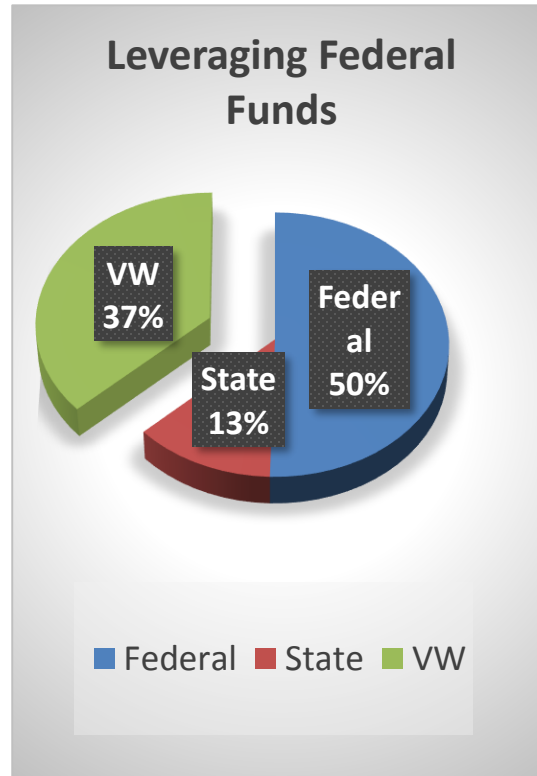
- **Phase I (2018-2020) - Lease three ZEV buses for 36 months each, starting in Fall 2018**
  - Install depot charging equipment
  - Test performance throughout system & develop Phase II deployment plan
  - Develop bid specifications, order vehicles, plan utility upgrades

# *EV Transit Bus Proposal*



- **Phase II (2021-2024) - Replace 16-20 aging diesel vehicles with ZEV Buses**
  - Install depot charging equipment
  - Deploy vehicles & update utilities determined through Phase I planning

# EV Transit Bus Proposal

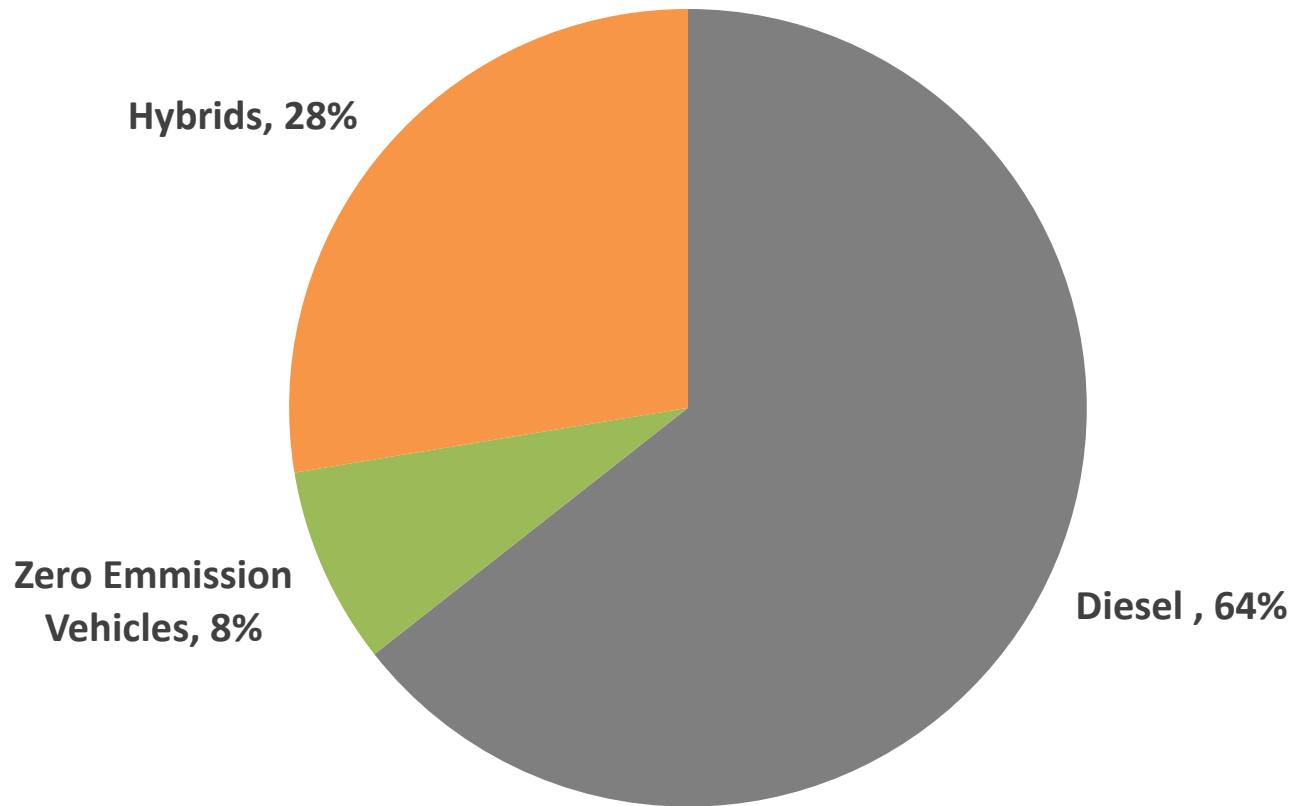


Funding: \$11.9M from the VW Settlement that leverages federal grants for a total estimated \$25.5M



# Proposed Fleet Composition by Fuel Type

RIPTA bus fleet composition by type, 2024 projected based on proposal



# Benefits of EV Transit Bus Proposal

- **Clean transportation:** removes old and polluting buses from the road and replaces them with cleaner electric vehicles, improving air quality
- **State-of-the-art technology:** takes advantage of cutting edge electric bus technologies that are ready to be deployed
  - Electric buses are already on the road in other states
  - Buses are well suited for electrification (e.g., because they are centrally fueled and operate in areas where pollution is a problem)
- **Social equity:** buses are available to all Rhode Islanders, and deployment of ZEV buses will be prioritized for areas with poor air quality and asthma rates

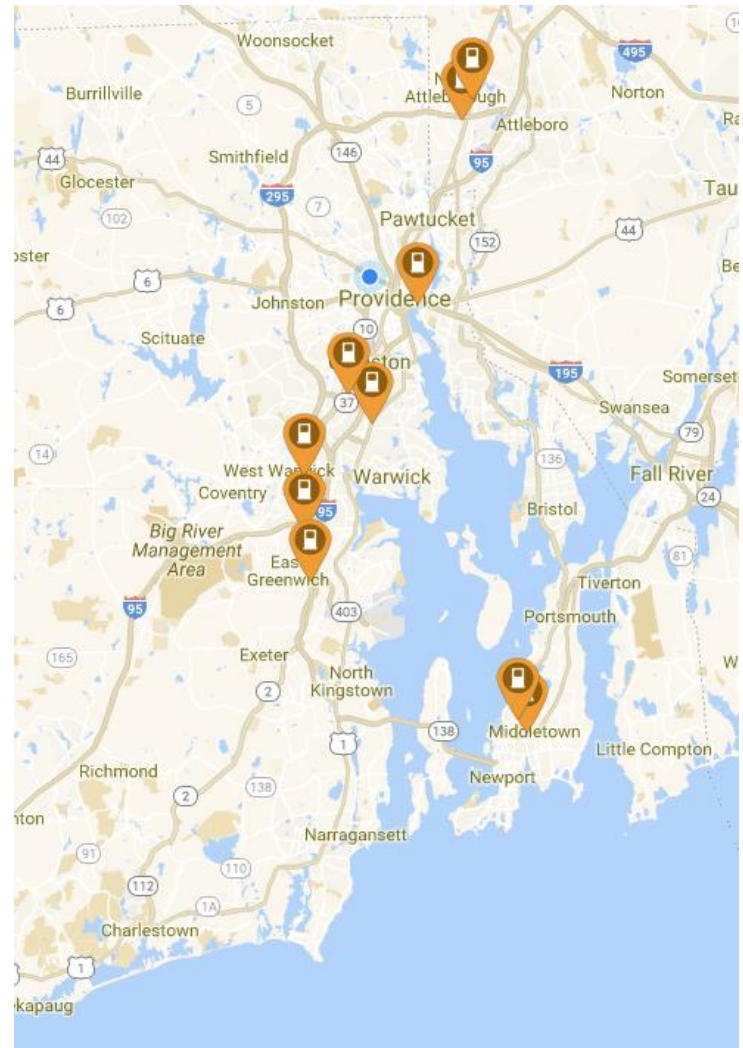
# *Benefits of EV Transit Bus Proposal*

- **Highly visible:** acts as Rhode Island's first big step to combatting climate change in the transportation sector
- **Lead by Example:** supports the Lead By Example Executive Order that calls for strategies to reduce fossil fuel/GHG from the State fleet
- **Innovation for the future:** opportunity to work with a large fleet operator in anticipation of private fleet electrification and conduct critical analysis for future expansion

# Charging Infrastructure Proposal

## Expand DC Fast Charging in RI

- \$1.5M to develop a public DC Fast Charging station network in Rhode Island
- DC Fast Charging (DCFC) provides 60 – 80+ miles per 20 minutes of charging
  - Currently only **8** publicly available DCFC in the state
- Goal is to add at least **15 – 30** DCFC stations throughout the state
- Focus on I-95 alternative fuel corridor, with consideration of geographic diversity (e.g. Aquidneck Island)



# Charging Infrastructure Proposal

- Benefits to RI –
  - Reduces range anxiety for state and local travelers
  - Recharge speed adds convenience and familiarity
  - Reduces barriers to entry
  
- Proposed timeline –
  - 2018/19: consider analysis of preferred locations along major RI corridors; coordinate planned investment with outcomes of Electrify America (VW) and National Grid rate case
  
  - 2019/20: Issue RFP for EVSE installer/provider; commence installation



# Emissions Reductions

- **Tailpipe Emissions from replacing approximately 20 Existing MY2004 Diesel Buses**

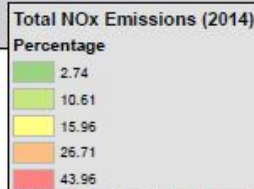
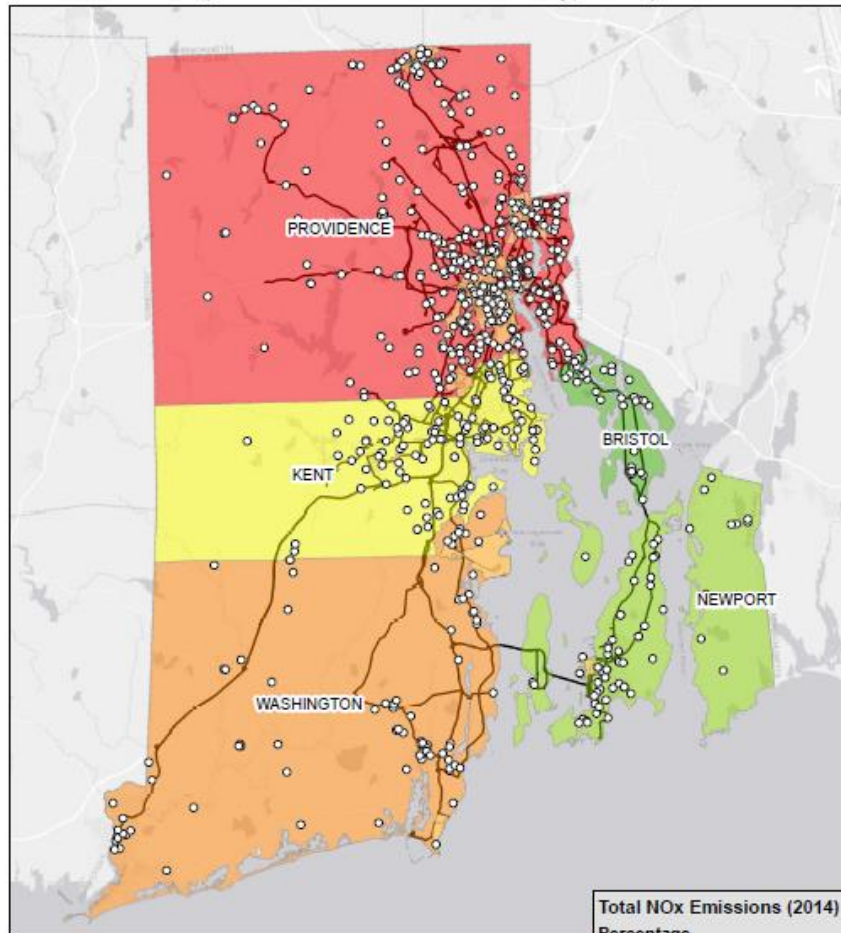
	<b>NO<sub>x</sub></b> <b>(tons/year)</b>	<b>PM 2.5</b> <b>(tons/year)</b>	<b>CO<sub>2</sub></b> <b>(tons/year)</b>	<b>Hydrocarbons</b> <b>(tons/year)</b>
<b>Transit Vehicle Replacements</b>	12-30	0.5-2.5	3-6	1.5-2.5

\*Emissions from the electrical grid are not included in the results, granting the NO<sub>x</sub> emissions in Rhode Island from electricity generation is equal to 0.1835 annual NO<sub>x</sub> output per lb/MWh. The national average is 0.9461 annual NO<sub>x</sub> output per lb/MWh.

- **Offsets the NO<sub>x</sub> from affected VW vehicles in Rhode Island**

# Emissions Reductions

Mapping RIPTA Bus Routes Relative to Environmental Justice Areas, RI Schools, and Total NOx Emissions Percentages by County (National Emissions Inventory, 2014)

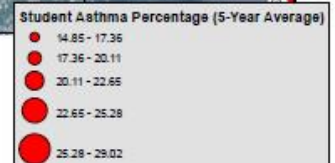
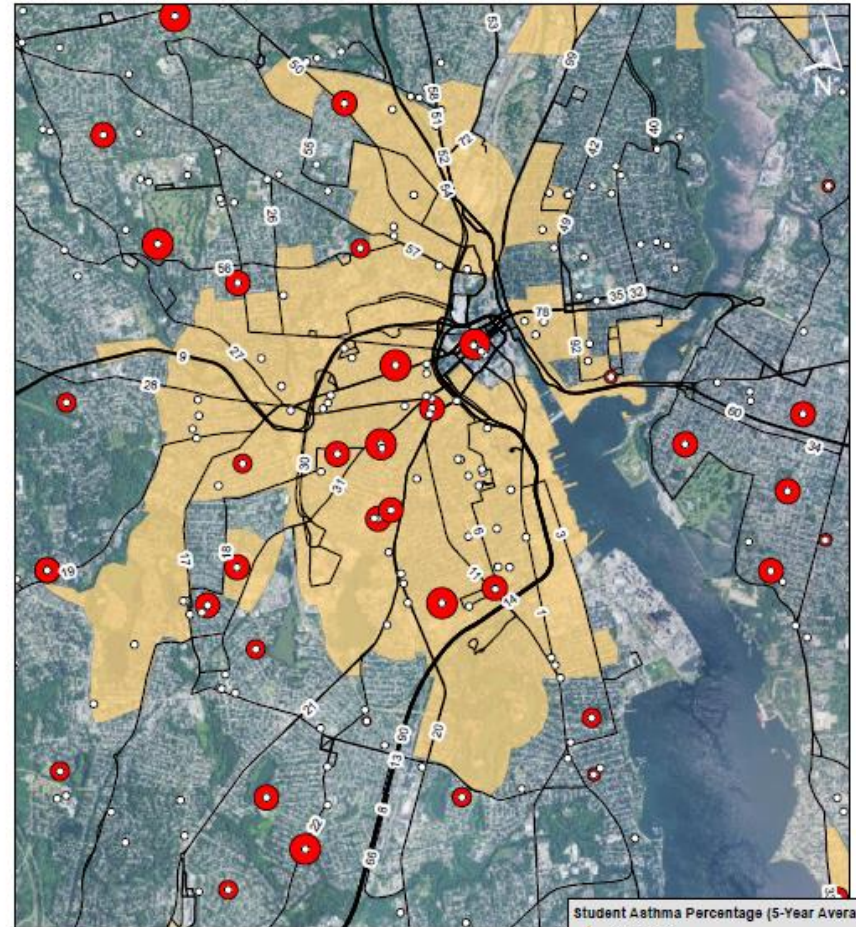


0 4 8 16 Miles

Draft Map Produced for RIDEM Internal Use  
Office of Customer and Technical Assistance  
Date: 02/27/2018  
Data Sources: RIDEM, RIGIS, RIDE

Refer to Legend Key for additional map symbology.

Mapping RIPTA Bus Routes Relative to RI Schools, Student Asthma Percentages, and Environmental Justice Areas (Five-Year Average Student Asthma Percentage, Providence, RI)



0 0.5 1 2 Miles

Draft Map Produced for RIDEM Internal Use  
Office of Customer and Technical Assistance  
Date: 02/27/2018  
Data Sources: RIDEM, RIGIS, RIDE

Refer to Legend Key for additional map symbology.

# Next Steps

- **Release Draft Beneficiary Mitigation Plan** (May 10, 2018)
- **Hold Public Information Session** (May 17, 2018)
- **30-day Public Comment Period** (until June 11, 2018)
- **Summary of Public Feedback** will be distributed and posted on DEM's VW Webpage (June 2018)
- **Submit Beneficiary Mitigation Plan** (June 2018)
- **Submit first funding request** (July 2018)
- **Leased electric buses on the roads** (Fall 2018)



# *Why The EV Transit Bus & Charging Infrastructure Proposals Are The Best Use Of Funds...*

- Zero Tailpipe Emissions
- Health benefits to all Rhode Islanders
- Reduces localized pollutants in environmental justice areas
- EV transit buses are already on the road in other states
- Electric saves money
- Battery electric transportation options are getting cheaper
- Create in-state jobs
- Keeps oil money in-state
- Helps RI and region expedite development and widespread adoption of zero emission vehicles and engines



# THANK YOU!

We welcome any plan specific comments,  
please send to [Allison.Callahan@dem.ri.gov](mailto:Allison.Callahan@dem.ri.gov) by  
June 11, 2018