



**Department of
Environmental
Conservation**



**Department
of Health**

**NYSDEC Division of Air Resources
Air Quality Study
Key Findings, Actions, and Recommendations**

**NYSDOH Center for Environmental Health
Health Outcome Review
Hospitalizations and Emergency Department Visits
Selected Outcomes: 2005 - 2015**

Albany South End

**November 6, 2019
Albany County Housing Authority**

Albany South End Neighborhood Air Quality Study

NYSDEC



Department of
Environmental
Conservation

Why the study was initiated

- To address community concerns and identify specific emission sources impacting the community
 - Oil trains – fumes, odors, safety, noise
 - Heavy truck traffic – pedestrian safety, emissions, noise, dust
 - Health impacts – respiratory, cardiac, cancer
 - Environmental justice community, unfairly burdened

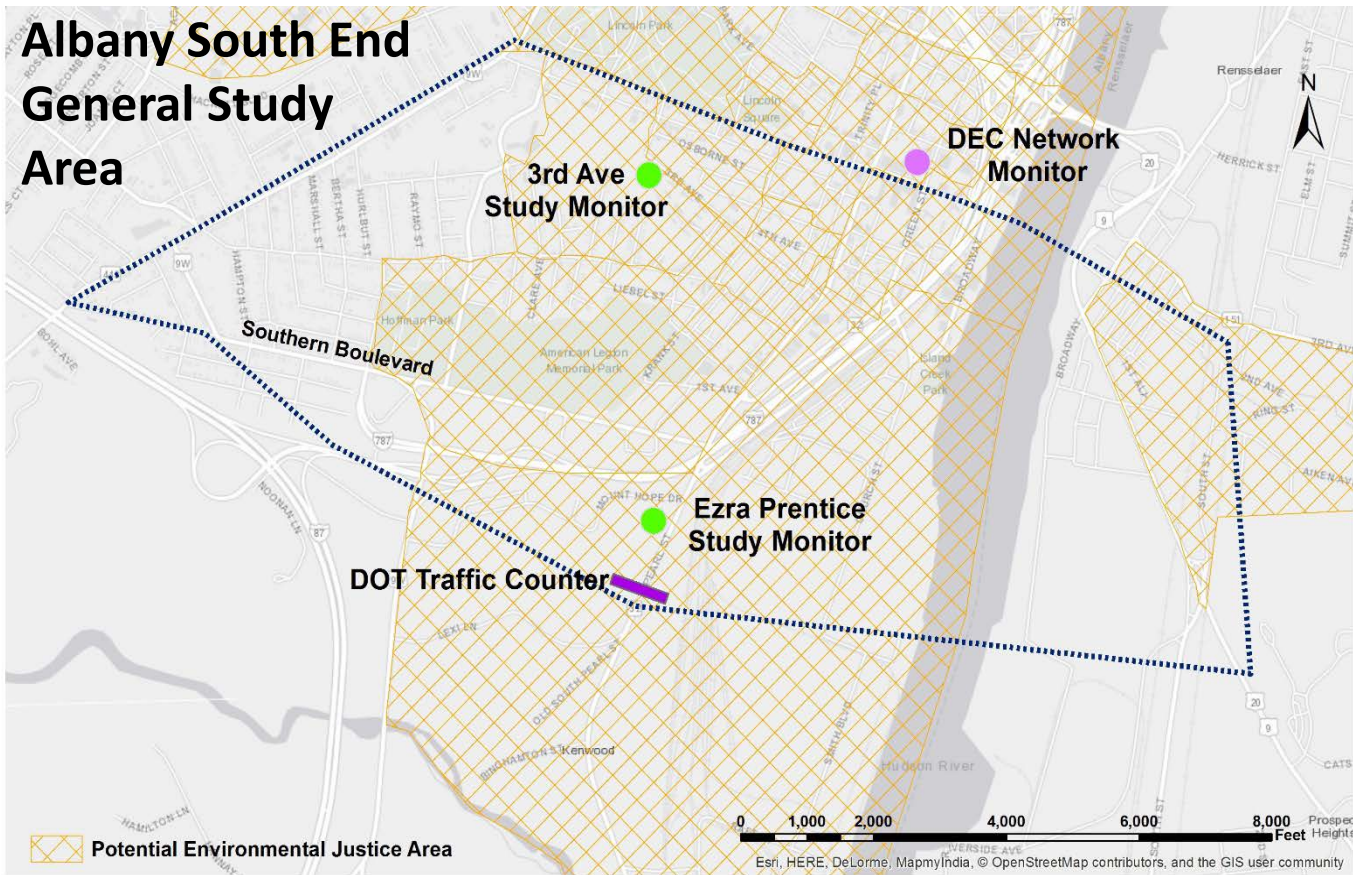


Study details: Summer 2017 – Fall 2018

- First of its kind, state-of-the-art community monitors paired with portable street-level measurements
- NYSDEC and partners performed over a year of monitoring to account for meteorological and source activity variability
 - 260 hours backpack monitoring and 780 miles walked
 - 6,480 hours using portable monitors
 - 8,570 vehicle photos
 - 70,000 hours of monitoring data
 - Over 100 benzene sample locations
- NYSDOT collected 4,400 hours of traffic data



Albany South End General Study Area



 Potential Environmental Justice Area

0 1,000 2,000 4,000 6,000 8,000 Feet

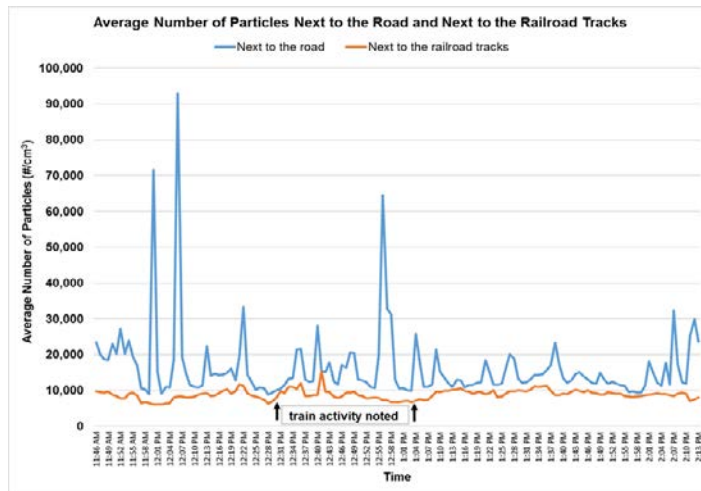
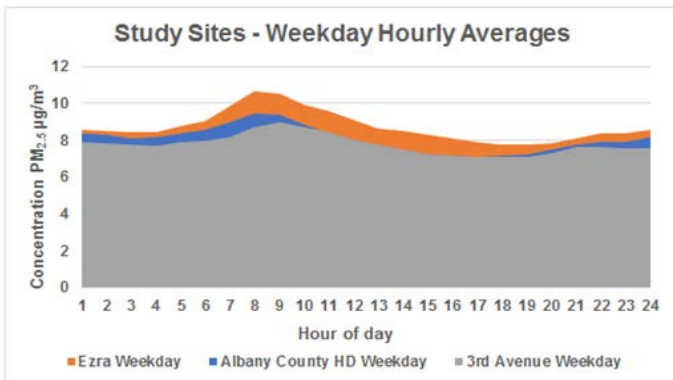
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community



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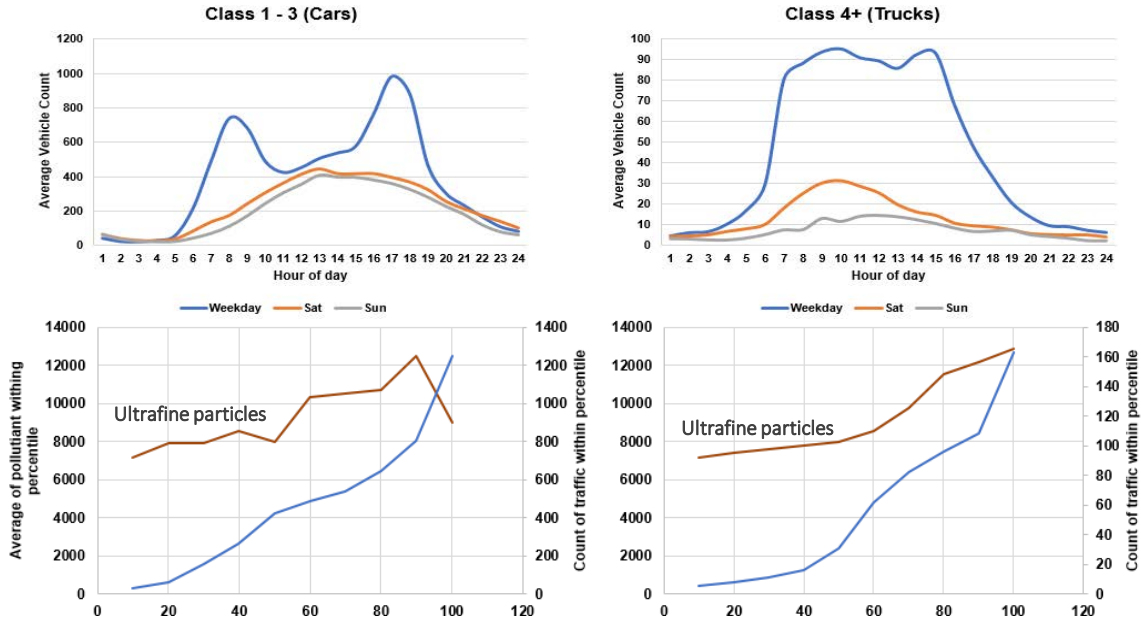
Key Findings

Far more particulate matter is coming from local traffic than Port activities



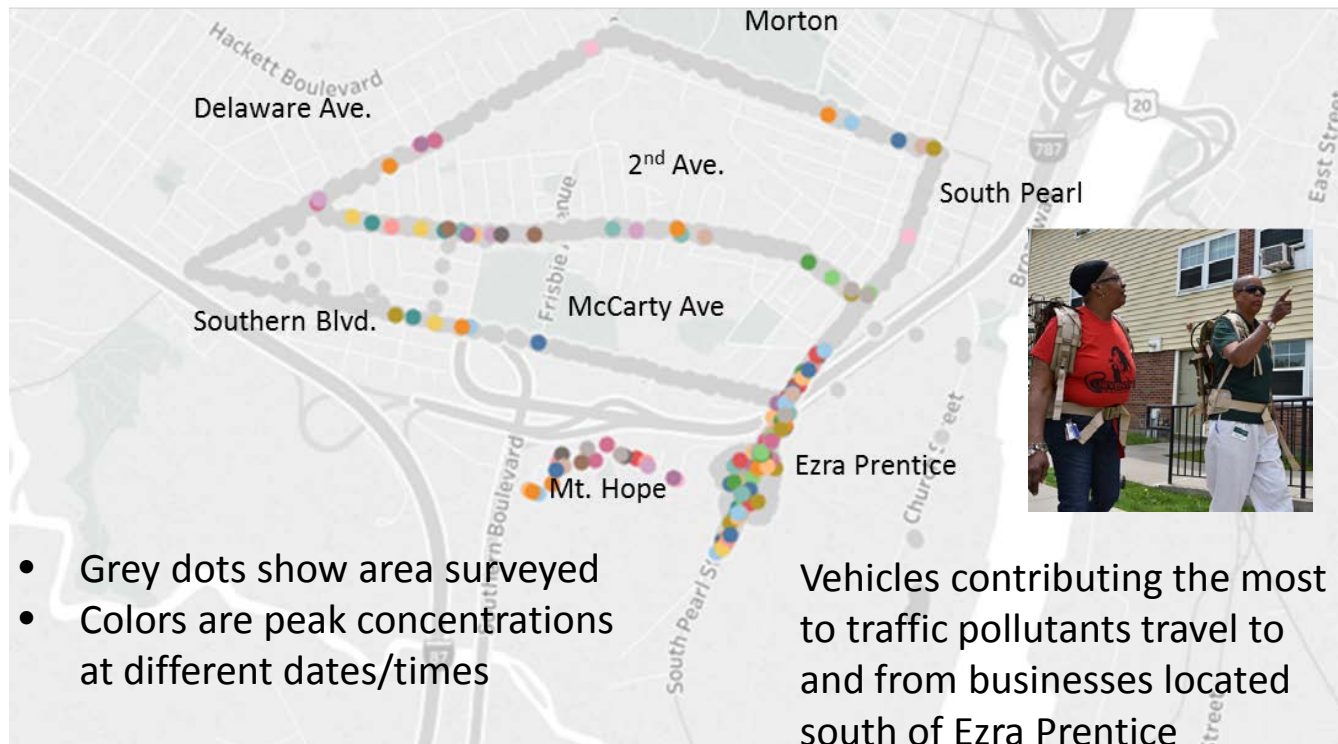
- Emissions from locomotives and port shipping transport are minimal in comparison to local traffic
- Study then transitioned to focus on local traffic pollutants

South Pearl Street: cars and trucks



- NYSDOT traffic data shows time of day when car and truck volume higher on South Pearl St.
- Community monitors showed trucks responsible for majority of traffic pollutants at Ezra Prentice

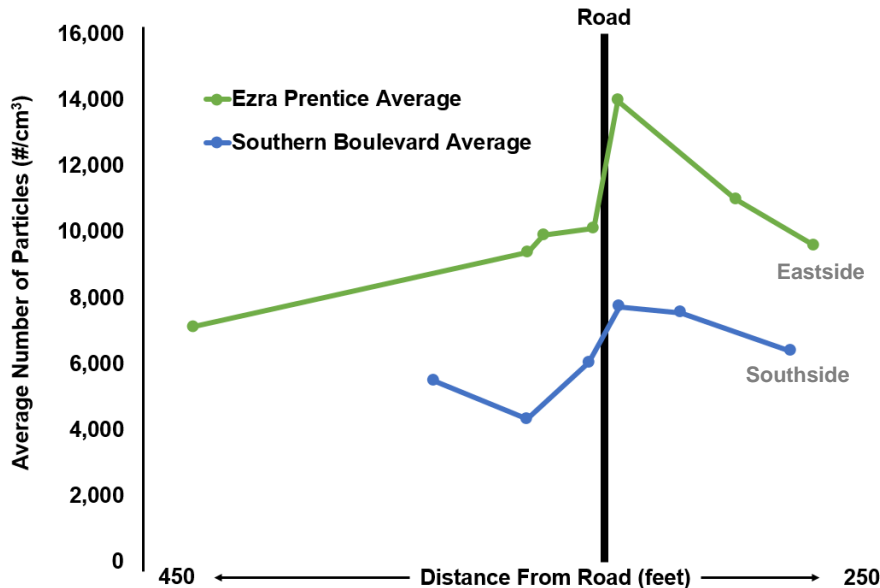
Traffic pollutants relatively uniform throughout the South End, except for Ezra Prentice



- Grey dots show area surveyed
- Colors are peak concentrations at different dates/times

Vehicles contributing the most to traffic pollutants travel to and from businesses located south of Ezra Prentice

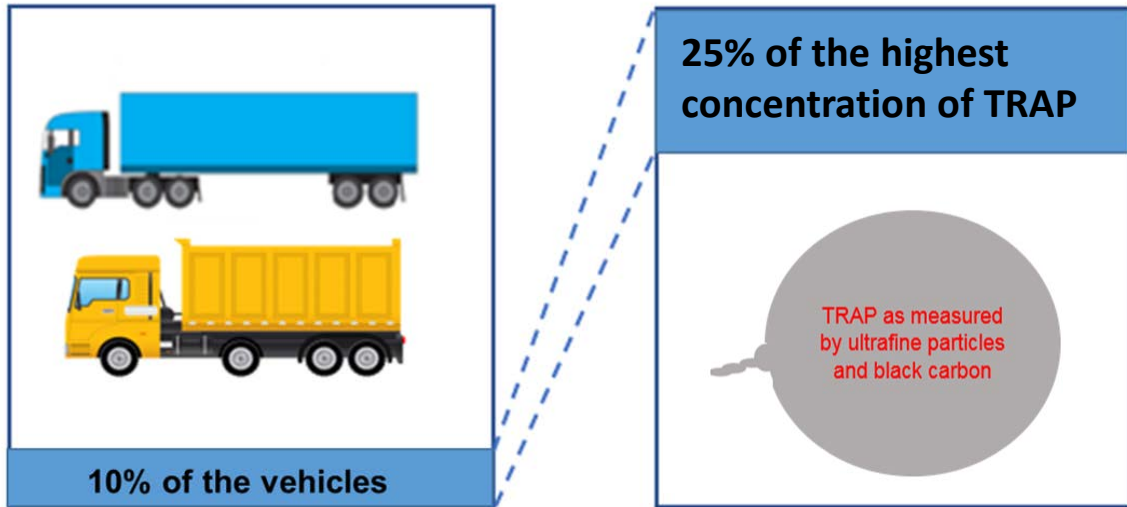
Traffic pollutants at Ezra Prentice are twice as high as Southern Blvd



Ezra Prentice community is disproportionately impacted by traffic pollutants

- Total traffic volume at Ezra Prentice and Southern Boulevard are very similar
- Ezra Prentice has 6 times the truck volume

HEVs are about 10% of total traffic, however responsible for the highest 25% of the total TRAP



- Reducing peak concentrations from HEVs would have the greatest benefit.

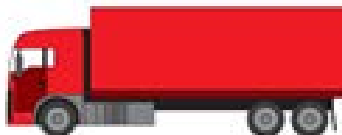
Some of the vehicle types identified

- Some of the vehicle types that were present when the highest concentrations were collected near the edge of the road
- NYSDEC is identifying other vehicle types

Buses



Trucks with 3-axes
(includes dump trucks)

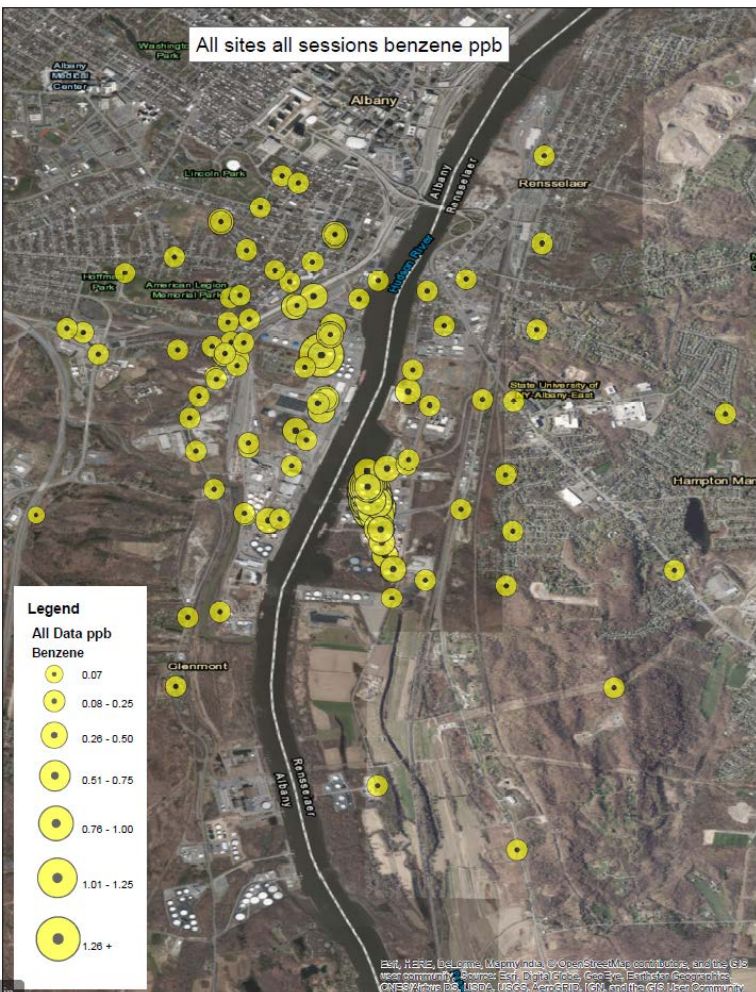


Small buses & small trucks



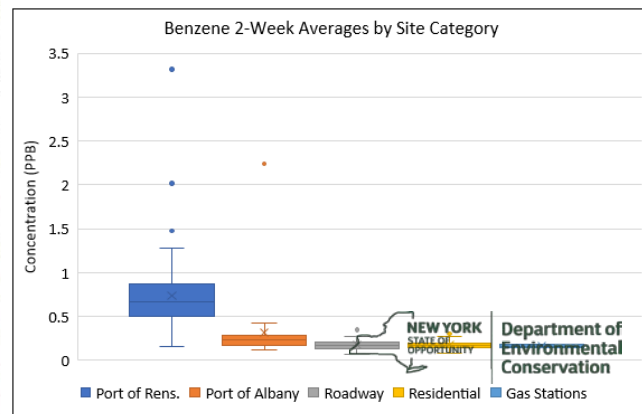
Semitrailers with 5-axes
(includes tanker trucks)



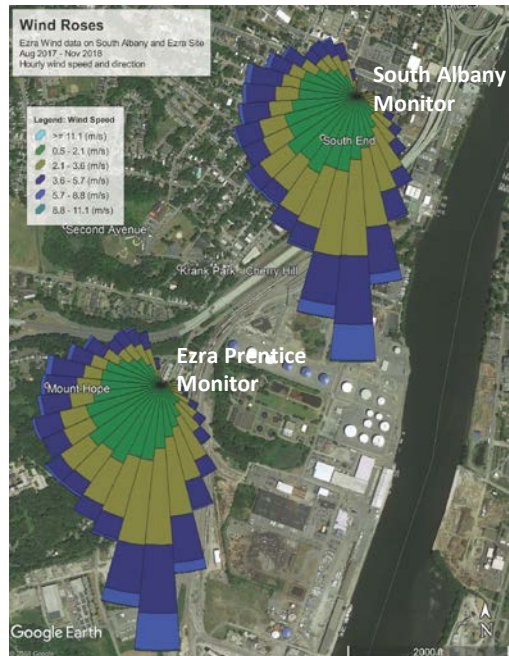
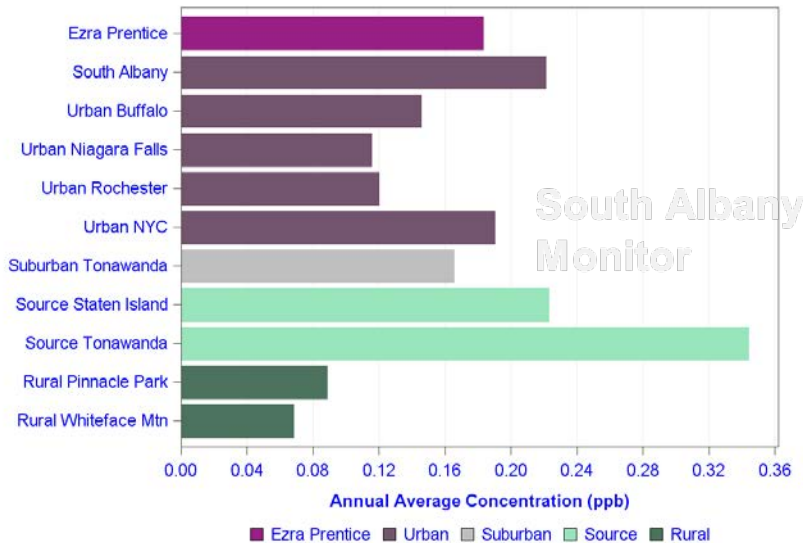


Benzene sampling results

- Residential areas were low and less variable
- Higher levels found near operations that store and transfer gasoline and petroleum products



Community monitor shows port activities contribute to local benzene concentrations



- Benzene higher at South Albany, compared to other NYSDEC network monitors in urban areas
- Benzene lower at Ezra Prentice, compared to South Albany monitor, due to predominant wind direction

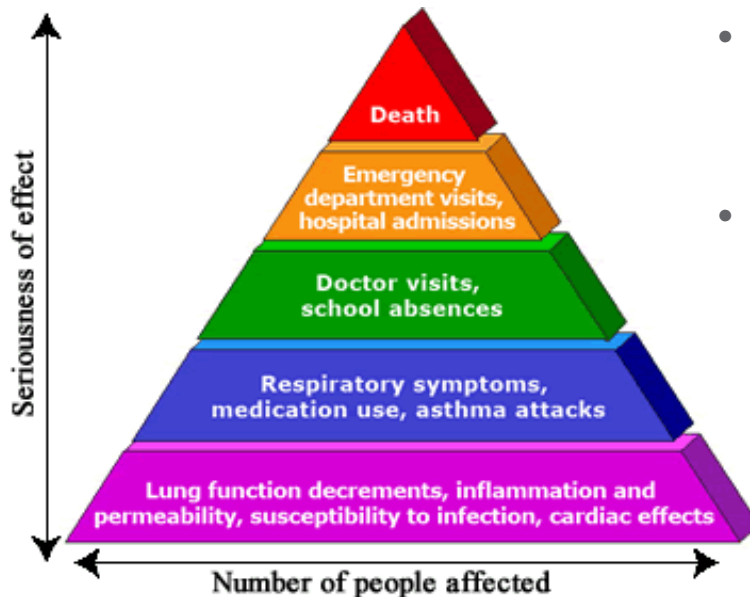
**Hospitalizations and
Emergency Department
Visits
Selected
Health Outcome Review**

NYSDOH

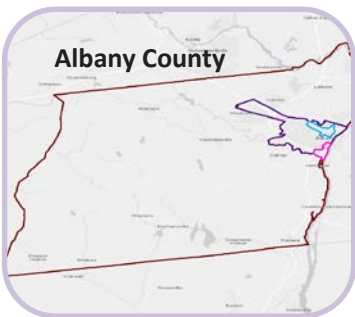
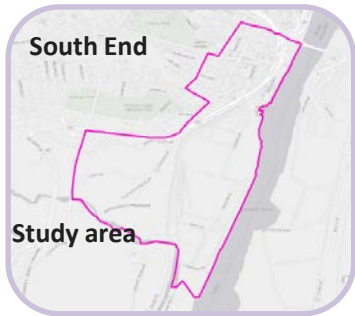
NYSDOH Health Outcome Review

- Background and Purpose
 - Evaluate health concerns in Ezra Prentice via epidemiological study of hospital records
 - Health outcome data spanning 2005-2015
 - Focus on outcomes related to air pollution
 - Responsive to Albany County request for DOH health assessment
 - Follows a 2016 community health survey conducted by A Village/Radix

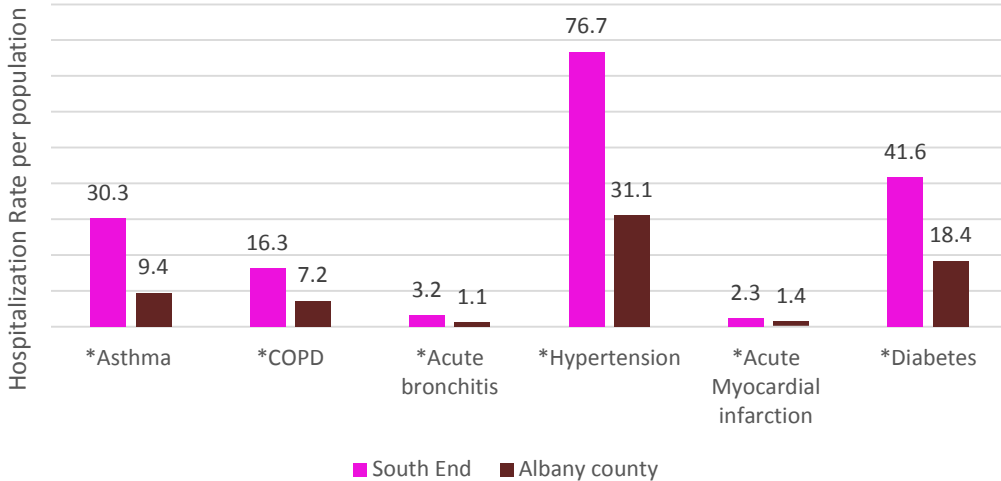
Spectrum of Health Impacts



- Endpoints studied (hospital admissions and emergency department visits) are near the top of the pyramid.
- Studying at this level can miss a portion of the burden of disease, but should capture data on the most severely affected people.



Hospitalization Rates per 1,000 for South End Compared to Albany County

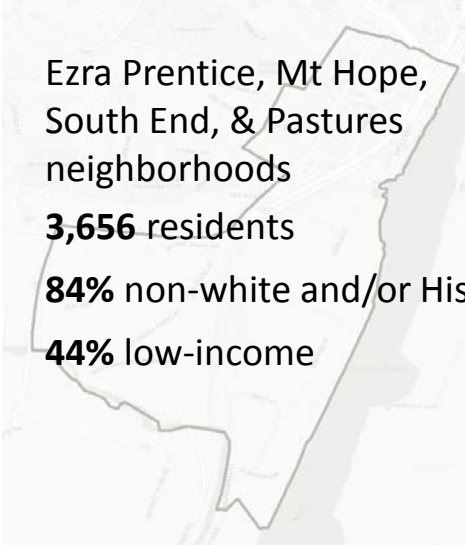


Rates are adjusted for age and gender.

* Statistically significant

Approach for Comparison Area Selection

South End, Study Area



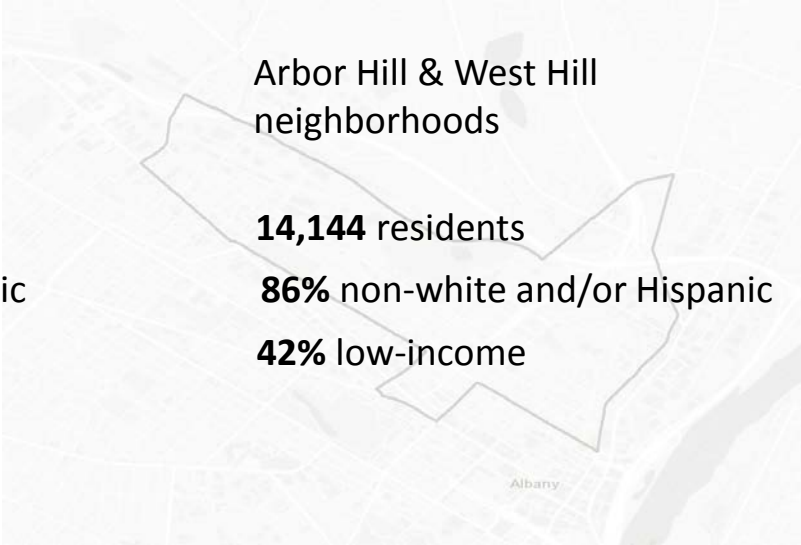
Ezra Prentice, Mt Hope,
South End, & Pastures
neighborhoods

3,656 residents

84% non-white and/or Hispanic

44% low-income

Arbor Hill, Comparison Area



Arbor Hill & West Hill
neighborhoods

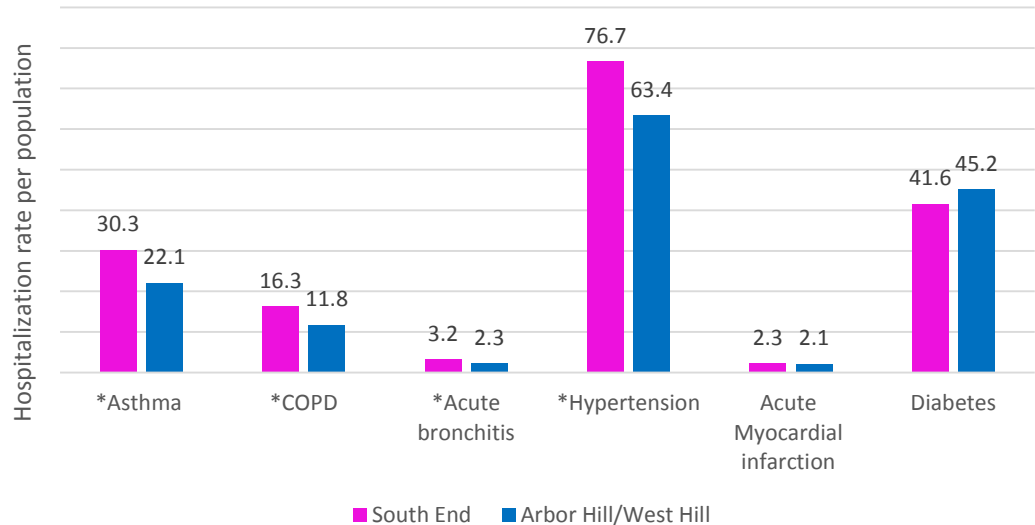
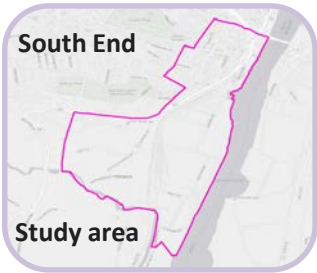
14,144 residents

86% non-white and/or Hispanic

42% low-income

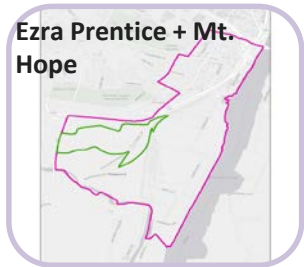


Hospitalization Rates per 1,000 for South End Study Area Compared to Arbor Hill/West Hill

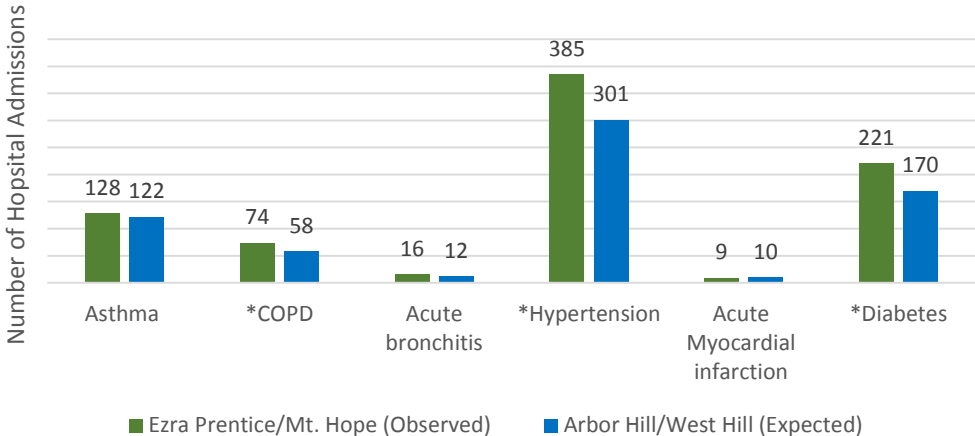


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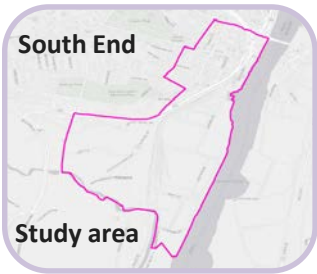


Observed vs Expected Hospital Admissions for Ezra Prentice + Mt. Hope Compared to Arbor Hill/West Hill



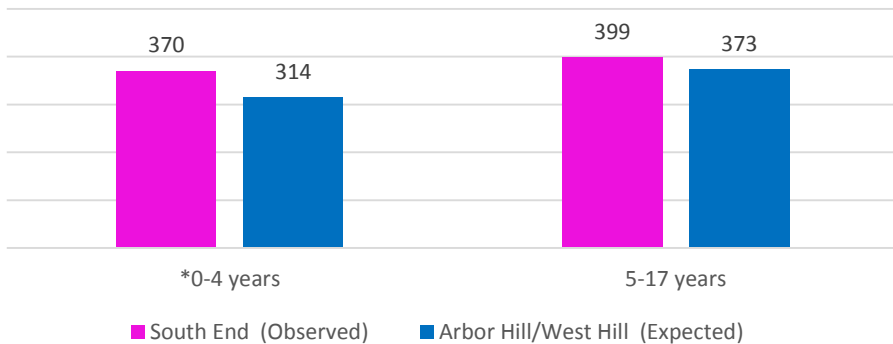
Expected are adjusted for age and gender.

* Statistically significant



Children Only: Observed vs Expected Emergency Department Visits for Asthma for the South End Compared to Arbor Hill/West Hill

Number of Emergency Department Visits



Expected are adjusted for age and gender.

* Statistically significant

Health Outcome Review Conclusions

- The hospital admissions data show some substantial and consistent elevations for COPD, acute bronchitis, hypertension and diabetes in both the South End study area and/or sub-areas compared to the Arbor Hill / West Hill area.
- Asthma admissions are statistically significantly high for the South End compared to the Arbor Hill / West Hill area, but sub-area analyses do not add strength to the findings.
- The hospital admissions data do not show any elevations in the South End study areas for AMI.



Limitations

- Association does not prove causation
 - Group level study design
- Differences in health outcome rates could be due to factors not considered in this analysis, such as:
 - Individual-level exposures to air pollution are not measured
 - Other individual-level risk factors were not taken into account
 - Occupational exposures
 - Lifestyle factors such as smoking, diet, and exercise
- Hospitalizations are a rough estimate of disease burden in the community:
 - Do not capture cases well managed through primary care
 - However, they do capture the most severe cases



ALBANY COUNTY DEPARTMENT OF HEALTH SERVICES

ELIZABETH F. WHALEN, MD, MPH
ALBANY COUNTY COMMISSIONER OF HEALTH

OCTOBER 2019

2018 ANNUAL PROGRAM AND SERVICES REPORT

[HTTP://WWW.ALBANYCOUNTY.COM/LIBRARIES/DEPARTMENT OF HEALTH/2018 ANNUALREPORT FINAL 1.SFLB.ASHX](http://www.albanycounty.com/libraries/departments_of_health/2018_annualreport_final_1.sflb.ashx)

ALBANY COUNTY
Cares about our health

CHRONIC DISEASE PREVENTION SERVICES: MUTUALLY REINFORCING STRATEGIES



Environmental Changes

- Provide safe streets to walk and bike
- Promote healthy eating
- Implement *Tobacco 21*



Lifestyle Change Resources

- Diabetes Prevention
- Blood Pressure Monitoring
- Asthma Control
- Tobacco Cessation



Clinic – Community Linkages

Chronic Disease Community Health Workers

- *Health Coaching: asthma, diabetes, high blood pressure*
- *Link to Resources: housing, food, transportation, etc.*



Actions

Actions Underway to reduce Community Exposure to Traffic Pollutants

Vehicle Replacement

- DEC and DOT are making \$20 million available from the Volkswagen settlement and other resources to fund clean trucks statewide, with a focus on environmental justice communities like the South End and DEC is working with identified truck fleets to evaluate ways fleets can reduce emissions.
- DEC has allocated an additional \$52.4 million for future projects to replace transit buses, school buses and paratransit buses statewide.

Actions Underway to reduce Community Exposure to Traffic Pollutants

Vehicle Re-routing

- DOT has reclassified four roads within the Port to allow trucks to shift their current routes away from Ezra Prentice.
- DOT is committed to providing technical support to the City of Albany, including direct engineering assistance, in support of the city's continued assessment of South Pearl Street and potential alternative routes for truck traffic.
- Albany coordinated the voluntary rerouting of frequent truck traffic by several commercial entities in the South End, reducing truck traffic by 30%. The Mayor's Office directed the City of Albany Department of General Services (DGS) to prohibit its vehicles from using South Pearl Street other than for regularly scheduled solid waste pickup and street cleaning.

Additional Actions Underway

- Indoor Exposure: The Albany Housing Authority is minimizing residents' indoor exposure to traffic pollutants by installing window air conditioners where appropriate and evaluating additional options, including central air conditioning.
- Benzene Exposure: DEC undertaking enforcement investigation and frequent leak detection at petroleum handling facilities. DEC has required one gasoline and petroleum terminal in Rensselaer to repair leaks identified using that equipment.
- Continuing Effort: DEC, Mayor's Office and Housing Authority will lead workgroup efforts to develop additional mitigation strategies.

