



# Research Brief

## A Trusted Data Platform for Transportation Data Sharing



Principal Investigator: Bill Raisch, NYU

Research Area: Resilient, Secure, and Smart Transportation Infrastructure

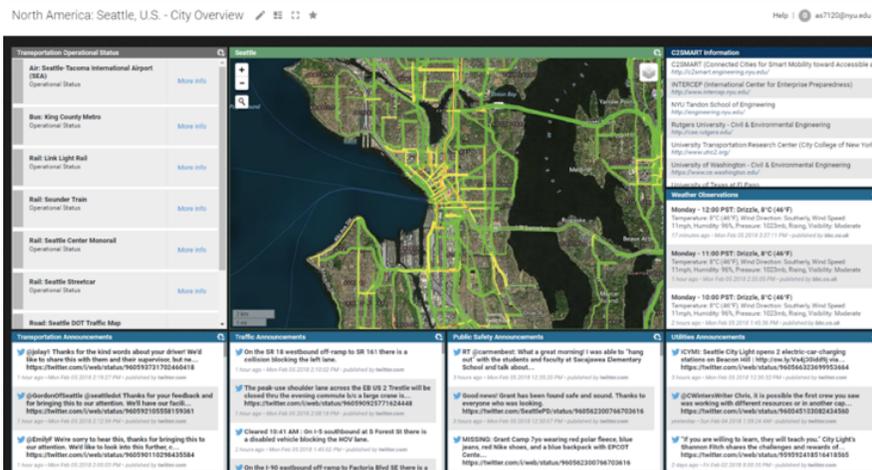
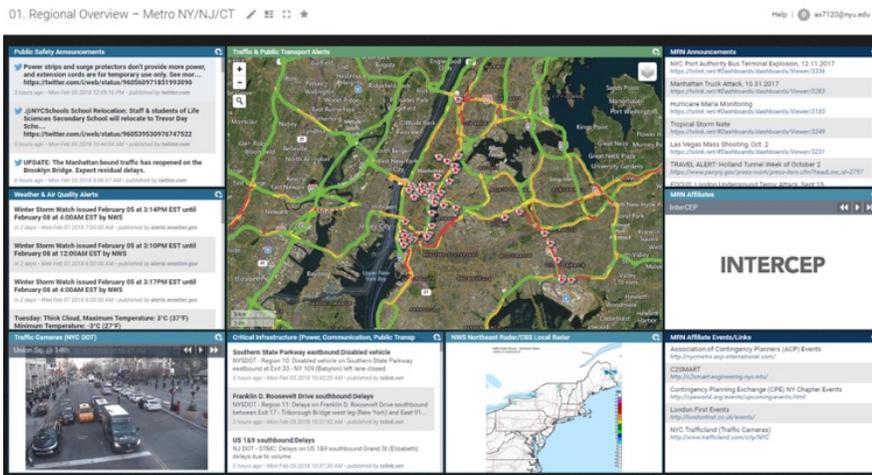
### Overview

Led by INTERCEP founding director Bill Raisch, this project aims to adapt an information sharing and situational awareness technology platform currently used by INTERCEP's Metropolitan Resilience Network to support transportation data sharing and stakeholder engagement in New York City and each of the C2SMART consortium member cities. This platform is designed to help users understand their

larger operating environment, identify risks in that environment, and make informed decisions during disruptions using the assembled data.

The platform can be used by researchers, as well as public agencies and private stakeholders, to identify key transportation and infrastructure issues in their cities and evaluate potential solutions to build

organizational resilience. It can also facilitate information sharing and help educate and train potential users on the applications of transportation and infrastructure data, including data generated through C2SMART's research activities. The project built upon three years of experience with the Metro-Ops platform developed for the metropolitan New York area, which has integrated information flows from a diverse range of critical infrastructure sources and is currently utilized by over 400 public and private sector organizations.



### Project Description

To build the platforms, the research team identified available real-time information feeds in the cities where C2SMART collaborating institutions are located (New York City, Newark, El Paso and Seattle). These feeds were used to build four dashboards (see Figure 1), which focus on transportation data, but

also include other elements of critical infrastructure. Typical real-time information flows displayed on the dashboards include:

- Traffic Cameras (in some situations)



- Transportation Operational Status Links for
  - Airports
  - Mass Transit (Bus, Rail, Subway, etc.)
- Traffic Announcements – City / Regional Department of Transportation Twitter, RSS, Email

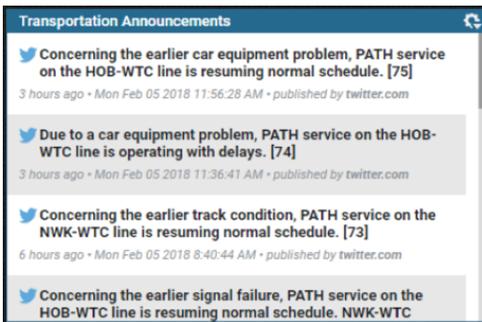
- Public Safety & Health Announcements

- Fire Department Twitter / Email / RSS
- Sheriff / Police / FBI Twitter / Email / RSS
- Public Health Twitter / Email / RSS
- Emergency Management Twitter /

Email / RSS

- Transportation Announcements

- Airport Twitter / Email / RSS
- Mass Transit Twitter / Email / RSS
- 511



- Utilities Announcements
  - Electric Utility Twitter / Email / RSS
  - Water Utility Twitter / Email / RSS
  - Telecom
- City Government Twitter / Email / RSS
- Hourly Weather Observations via Twitter / Email / RSS (National Weather Service, etc.)
- C2SMART Information – Links to collaborating centers / universities

C2SMART principal investigators at collaborating institutions were provided with access to the dashboards and briefed on their elements and functionality. The investigators were then interviewed about their observations and ideas for potential applications for enhanced information and situational awareness.

## Conclusions and Future Applications

This situational awareness and information sharing platform constitutes a powerful data and information dissemination tool. The platform can also potentially help multiple stakeholders provide input into C2SMART's direction, integrate data generated through C2SMART research into their day-to-day operational activity, and advance organizational resilience objectives. Additionally, access to these platforms provides C2SMART staff and collaborators with an opportunity to better understand commonalities and differences among the consortium's host cities and generate ideas for further collaboration. Potential future applications for and additions to the platforms include:

- Collecting quantifiable data from the dashboards and comparing performance of transportation systems and other critical infrastructure systems across cities.
- Displaying and archiving data about how people choose to travel and how they combine transportation modes
- Incorporating a GIS component
- Using them to understand and analyze utilization of new mobility services, such as
  - Capturing real-time data on electric vehicle charging stations
  - Incorporating real-time information on mobility-on-demand services, such as bike and car share systems
- Using the dashboards' variety of information sources to compare the impact of weather and other factors on transportation mode choices
- Displaying data from simulations developed through other C2SMART projects
- Monitoring and informing planning for parking capacity
- Displaying information about movement of goods into and around cities, such as a GIS map displaying truck flows around New York
- Archiving real-time information to support research on potential failures or how transportation performs during a major event, such as extreme weather.