

C-ITS SMART CORRIDOR NEWCASTLE

October 2017

C-ITS Smart Corridor—Update

The Newcastle Co-operative Intelligent Transport (C-ITS Smart Corridor) project is a partnership between Newcastle University, Newcastle City Council, Arriva and the Department for Transport.

The project tests equipment in order to make vulnerable road users safer and reduce the environmental impacts of congestion and idling at traffic lights.

This project builds upon the successful Compass4D deployment in Newcastle, which equipped 21 intersections in and demonstrated improvements in fuel efficiency and a reduction in the time taken for equipped vehicles to travel through an intersection.

How does this relate to Newcastle's strengths and objectives?

- Newcastle University is a world leader in evaluation of the impacts of C-ITS infrastructure, including of the pan-European Compass4D project, and will be evaluating the C-ITS Smart Corridor
- Newcastle Urban Observatory provides the largest set of publicly available real time urban data in the UK, including real time air quality monitoring for the C-ITS Smart Corridor and linking to the Urban Traffic Management system
- Newcastle City Council has a vision to work with partners to be one of the greenest, healthiest and most innovative cities in Northern Europe and to become a test bed for intelligent infrastructure

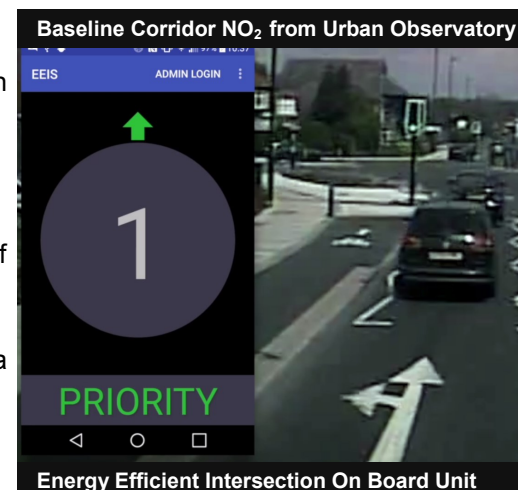
What have we done so far?

There are two main elements to the C-ITS Project;

- The Vehicle to Infrastructure Communications (bus to traffic signal communication)
- The Cycle Alert System

Work completed on the project up until now has included:

- Fitting roadside equipment and completing Site Acceptance Testing with an On Board Unit
- Fitting air quality monitors and collecting baseline air quality data
- Fitting buses and a number of cyclists with Cycle Alert tags, to raise awareness of cyclists' location in relation to buses
- Obtaining opinions from both bus drivers and cyclists about this equipment, as a baseline for the trial
- Collecting baseline fuel economy and mileage data for the bus fleet
- Procuring and delivering the units to fit on-board buses to communicate with the traffic signals
- Developing the final version of the visual display software, following workshops with bus drivers and amending to meet VOSA requirements



How will the trial work?

17 roadside units (RSU) have been fitted to traffic signals along Gosforth High Street. These units will provide information to 'black boxes' on-board Express Buses about the timings of the signals, and information will be returned recording the whereabouts of the bus. This information will be used to amend the priority of the signals as the bus approaches.

- If the signal is on green when a bus approaches, this green will be extended as long as possible to allow the bus priority.
- If the signal is on red when a bus approaches, an earlier green light will be requested to reduce waiting time.
- This information will be displayed to drivers on a visual display unit in the cab of the bus (similar to a sat nav), advising of the best speed to drive at in order to maximise green time and avoid stopping at red lights.

In addition to this, devices have also been installed along Gosforth High Street to monitor the impact on air quality. It is anticipated that smoother driving, combined with a reduction in waiting time at lights will reduce the emissions from buses and have a positive effect on air quality.

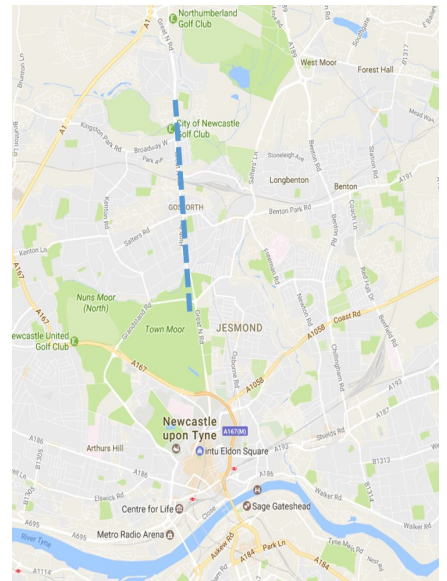
What's next?

The next steps of the project are;

- Equipment of all of the Express buses with on board units to begin the post-baseline phase of the trial and collect intervention data
- Continuing engagement with vulnerable road users to understand reasons for participation
- Training bus drivers and receiving their feedback, then comparing with baseline surveys to assess difference
- Ensuring compatibility between roadside unit standards and On Board Units
- Learning from other C-ITS authorities, including assessing the potential of interoperable On Board Units
- Continuing dissemination activities.

These have included:

Hosting the C-ITS Deployment Day at Newcastle University for 100 delegates in May 2017; Meetings with other UK C-ITS cities, Transport Systems Catapult, EU projects such as C-the Difference and the Technical University of Eindhoven; Presentations to Connected Corridors Birmingham, the ITS European Congress Glasgow and ITS World Congress Montreal



Useful information

- Newcastle is exploring how C-ITS can help support it achieve its ambitions in line with the UK Air Quality Plan
- The 'CMobile' EU project has commenced as of the summer of 2017. Newcastle City Council and Newcastle University are partners in this project and it will provide complementary benefits to the C-ITS Smart Corridor
- If you'd like further information about the project email:

Transport@newcastle.gov.uk

