

Objectives of the measure

At measure level:

This measure aims to provide a smoother and faster journey for public transport in specific corridors of the city (selected within the scope of the project). The measure will supply quantifiable data in a vast variety for traffic safety, environmental and sustainable mobility. Objectives include:

- Providing a smoother and faster journey for public transport
- Increasing bus efficiency and punctuality
- Prioritizing bus transport
- Shortening journey times
- Increasing comfort onboard

Contributing to city level objectives of:

This measure will support innovative services for sustainable urban living:

- Prioritizing sustainable mobility
- Reducing private car use
- Increasing PT use

Description of the measure

Situation before:

Low average speed and comfort for public transport (by bus) in the city of Oslo. The average speed and comfort for public transport (by bus) in the city of Oslo drops to low values when there is a speed bump. The buses need to reduce very much their speed (compared to the cars) in order to reduce the discomfort for passengers. NPRA is willing to test some innovative solutions to increase the comfort of passengers in the bus and to adapt the speed bumps so as to prioritise PT.

General description:

This measure aims to use a smart traffic system that creates safe and accessible crossings for vulnerable road users, without disrupting the traffic flow. V2X smart speed bump (Actibump Edeva - Smart City Solutions) will be tested in Oslo.

V2X Actibump helps to provide a connected, smart, and sustainable traffic, so great benefits will occur for pedestrians and bicycles, traffic planning, public transport and, of course, traffic safety. A V2X Actibump system can for example generate continuous static vehicle counting, vehicle classification, vehicle weighing and environmental measurements. V2X Actibump can also communicate with other electronic roadside equipment.

The equipment will be monitored, and traffic related data will be presented in the software platform. V2X is connected to a software. It is a software as a service (SaaS) that handles both data collection and storage as well as remote monitoring of the hardware. A web interface presents the data, both in real-time and over the lifespan of the system. That is how we know how the V2X affects driver behaviour. Additional data, such as vehicle classification can be collected and presented using the V2X system.

Measure outputs:

This measure will deliver:

- V2X implemented in 2 to 4 corridors. We are going to search most efficient and suitable places in Oslo for V2X.
- Survey to PT users to evaluate the impact of the measure on their overall travel experience

Supporting activities

The changes in infrastructure will be done in cooperation with Ruter.

- **Interaction with other city measures: UPPER and non-UPPER measures**

The measure will explore a cooperation with the existing initiative "Kraftfulle Fremkommelighetstiltak", which is a cooperation between the City of Oslo and Ruter. It can be freely translated to powerful accessibility measures and aims towards increasing the accessibility of public transportation in urban environments.

Target groups and/or geographical impact areas

- **Target groups:** Passengers of public bus transport, including also vulnerable road users.
- **Geographic implementation area:** The V2X system will be implemented in NPRA roads in Oslo city. We are in the process of identifying geographical spots where we will implement V2X.

Stakeholders

The following stakeholders will be required for the implementation of this measure.

- **NPRA** (road owner)
- **Ruter** (PTA)

U-tools support

The implementation of this measure can be supported by two tools from the UPPER toolkit:

- **U-TWIN** and **U-SIM.live:** The tools can offer real-time and standardized information on different transport modes, incidents, delays etc.

Link to other UPPER measures

This measure is similar to UPPER measures implemented in other cities, especially:

- **VAL_04:** To reduce travel times through the implementation of dedicated bus lanes
- **ROM_04:** To design the new high frequency and high-capacity PT infrastructure
- **LIS_02:** Promote, extend services and prioritise PT
- **BUD_06:** To improve the existing PT prioritizing tools in Budapest
- **LEU_07:** Increase the quality of the PT services through traffic management and dedicated lanes for PT
- **TES_03:** To improve transit services through dynamic multimodal management of PT corridor
- **TES_06:** Social optimum-based traffic management to reduce PT travel times and increase user satisfaction

Process of implementation of the measure

Stages	Description	Intermediate milestones
Design	Data collection, geospatial analysis of road traffic flows and identification of location for infrastructure improvements with V2X.	<ul style="list-style-type: none"> - Data collection of private vehicles and PT - Data analytics - Identification of necessary improvements in infrastructure
Preparation	Scanning of national road network in Oslo.	<ul style="list-style-type: none"> - Identification of suitable places of national road networks in Oslo - Acceptance within stakeholders of implementation of V2X - Choose of right technology
Implementation	Road construction for implementing V2X.	<ul style="list-style-type: none"> - Implementation of right technology - Monitoring of V2X

Sub-measures and preliminary indicators

Measure	Sub-measure (if applicable)	Impact indicators
OSL_07	N/A	<ul style="list-style-type: none"> - Travel speed for PT, - Comfort for passengers, i.e. vibration - Air quality, emissions - Changes in traffic flow in specific corridors