



## PREPARING CITIES FOR AUTONOMOUS MOBILITY

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### Short Description

Autonomous vehicles (AVs) have already entered cities through pilots. However, many cities, are not prepared for widespread use, and few have integrated AVs into their transportation plans. How can cities plan for an ambitious future as a livable city while incorporating AVs?

### Main part

Autonomous vehicles (AVs) present an opportunity to transform our cities and lives from being car-centric to people-centric. While the arrival of cars in the past determined the way cities were designed and how people lived and worked, the current challenge for cities and rural areas is to create attractive living environments that can be accommodated by autonomous mobility.

Although the mass deployment of autonomous vehicles may seem far away (current predictions show no mass deployment should be expected before 2040), cities already design and invest in new districts and infrastructure with a projected lifetime of more than 50 years.

Urban planners and city strategists need to be able to understand and apply AV insights. AVs might replace the need for extremely capital-intensive subway lines, and on-demand door-to-door transport may reduce the need for car ownership. This also provides new opportunities for district design with less parking space required, which could mean more green space or multi-modal transport hubs. The future of mobility is more than a new way of travelling, it will change the cities. Where will people and business want to be located? What are the long-term impacts on attractiveness and value of areas?

There are mainly two schools of thought on how cities can take new mobility such as autonomous vehicles into account in their city planning. Cities can either use a forecasting approach where they plan to adapt to future AV technology. Or they can create a desired future city scenario and focus on how AV technology can adapt and support this new city design. The second approach focuses on the livability of the city rather than having technology as the main driver for change meaning that cities actively design future living spaces.

Within the PAVE project, cities plan for new districts over the next five years. The participating cities work together with key international experts to design the spatial- and investment planning for the coming 30 years, focusing on supporting future uptake of autonomous mobility in urban environments.

The North Sea Interreg PAVE project takes a new approach and aims to stimulate the uptake of electric, shared AVs by developing green transport and spatial planning strategies that incorporate AV.

### What is new?

Although European cities have, or are planning, demonstrators with AVs, most urban and regional transportation plans and development strategies do not yet integrate autonomous vehicles.

Within PAVE, the cities of Almere, Hannover, Varberg, and the public transport provider HITRANS are collaborating with experts and research institutions to develop some of the first spatial mobility plans that take autonomous mobility into account. Participating urban planners will integrate input from international think tanks such as the Royal Institution of Chartered Surveyors and the Urban Land Institute in their current practices.

The project also facilitates transatlantic collaboration with state-of-the-art expertise from the USA.

**What is transferable to other cities and regions?**

The project develops topic guides, as follow-ups on the EU's Sustainable Urban Mobility Plan (SUMP) guidelines, for cities to develop their own urban planning strategies that integrate autonomous mobility. Furthermore, other cities with similar challenges (district development, making mobility more inclusive, etc.) can learn from the developed spatial plans of the cities within PAVe.

**What are outcomes and conclusions?**

At the heart of the project, urban planning strategies developed through new types of collaborations, while integrating AV technology and solutions. I also want to show an alternative approach to thinking about city planning; backcasting from an ideal future and, based on that, deciding how AVs should be integrated. Cities should not reinvent the wheel themselves when it comes to preparing for a future with autonomous mobility. Instead, they should collaborate with other stakeholders and take an active lead in shaping the world of tomorrow.

**Who are the main target groups?**

The main target group would be both city planners who work with city design, and industry players such as car manufacturers, construction workers etc.

**And what now? - what will change? - what is the relevance for the future?**

To develop SUMP that integrate autonomous mobility, cities should now gather the right experts and expertise. This is rather complicated as high-level expertise on this topic is not yet widely available. Therefore, cities should look beyond their own local networks and connect with the relevant knowledge partners through international collaborative programmes.

Cities will make informed (investment) decisions in the short term to prepare for an autonomous future while making effective use of available (financial) resources. This prevents cities from overinvesting or making investments that turn out to be unsustainable in the long term.

Cities expand rapidly and current projections show that the urbanisation rate will not slow down. This means cities need to develop new districts and/or re-develop the current city infrastructure to accommodate more people and to maintain effective transport infrastructure. Through collaborations like PAVe, cities can already make long-term (investment) decisions that prepare for a future where people can seamlessly move around, even though they live in dense, and large urbanised areas.