

## Pilot in Nes

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Demand-Responsive  
Transport to ensure  
accessibility, availability  
and reliability of rural  
public transport



## PILOT IN NES, NORWAY

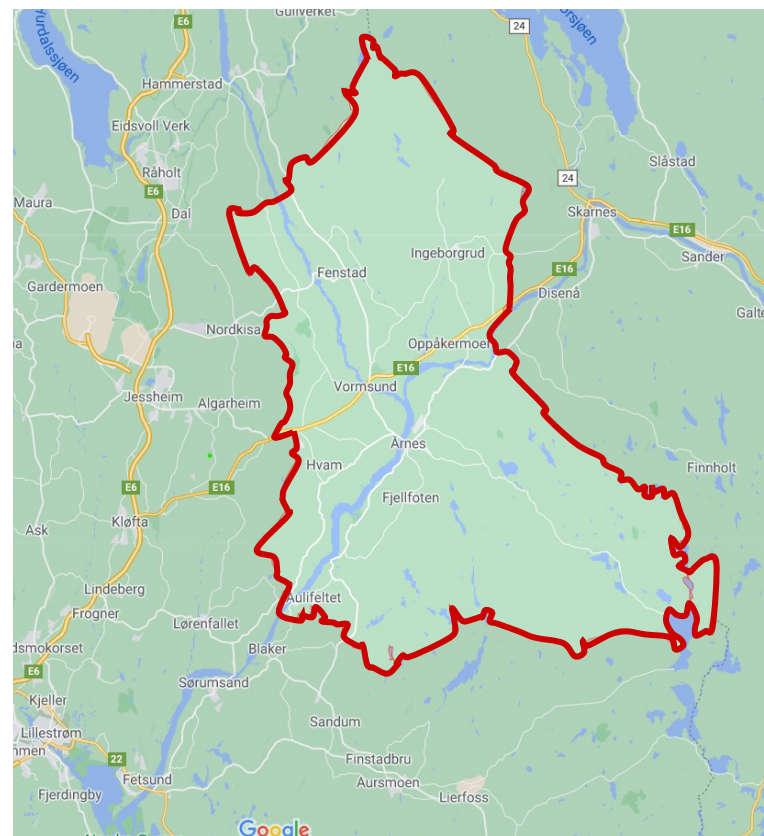
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### Starting and ending date of pilot

The pilot started on 11.11.2019 and was planned to run for twelve months. The pilot was paused between April 6th and October 5th and again between January and October 2021 due to Covid-19. The last phase of the pilot will run from October 18th until March 26th, 2022.

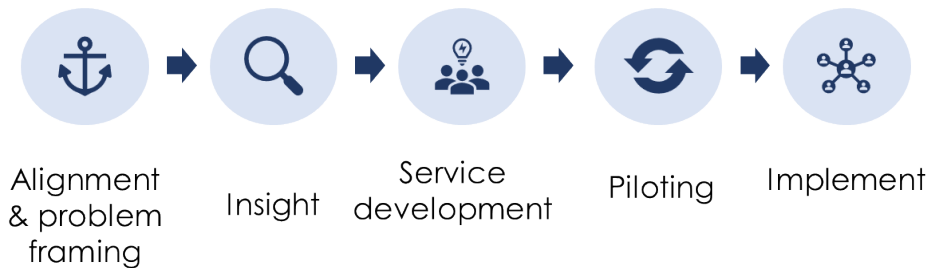
The pilot runs in Nes municipality in Viken, in the southeast part of Norway. The municipality is located 55km outside the Norwegian capital, Oslo. The background for the selection of Nes municipality is based on geographical conditions and existing public transport services.

### Map



## VISUAL REPRESENTATION OF THE PILOT PROCESS

The conceptual framework of developing innovation builds on the Norwegian model «KS veikart for tjenesteinnovasjon», which is developed by the Norwegian Association of Local and Regional Authorities (KS) is presented below.



The model illustrates the five phases of an innovation process on how to create agile and customer-oriented DRT-solutions. The model starts by discovering a need and ends with a new service in full operation. Throughout the model, different tools are used to involve the right people, make decisions based on the correct assumptions and develop the service based on customer needs and travel purposes.

The pilot in Nes municipality is testing a different aspect of the business model in an iterative process. In the pilot in Nes, we have three test phases which are presented in the table below. The pilot is currently in phase three.

The pilot is carried out in three phases:	Phase 1	Phase 2	Phase 3
<b>Target segment:</b>	People above the age of 67	People above the age of 67	All age groups
<b>Fleet optimization:</b>	Exploiting vehicles for other periods outside the opening hours of the service	Exploiting vehicles for other periods outside the opening hours of the service	Utilization of the vehicles for several services at the same time
<b>Travel routes:</b>	Flexible travels in all areas of Nes but the vehicles are divided into different areas.	Flexible travels in all areas of Nes. Vehicles drive all over Nes.	Flexible travels in all areas of Nes. Vehicles drive all over Nes.
<b>Plan system:</b>	Manual	Automatic & digital	Automatic & digital
<b>Booking:</b>	Phone	Phone & app	Phone & app

## SHORT INTRODUCTION TO THE PILOT

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The RESPONSE project partner Ruter has in collaboration with Viken (former Akershus county) and Nes municipality, carried out a pilot of demand-responsive transport (DRT) for the people in Nes municipality in Norway. Ruter wants to learn how to create more flexible and individualized transport solutions in rural areas by offering customized transport.

The pilot offers door-to-door service with flexible times and flexible routes within the service hours of Monday to Saturday between 9 am to 5 pm. The service is adapted to those who have challenges in using regular public transport. Journeys must be booked in advance by either calling a phone number or order in the app RuterBestilling. The customers can bring their wheelchair or walker on the bus, in addition to taking along a friend or caretaker. If necessary, the bus drivers will help the passenger on and off the bus as part of the service.

### **Pilot audience**

The pilot is carried out for people with mobility challenges or in need of transport during the day. The pilot was only available for people above 67 years in the first test phases. In the third phase of the pilot, the service opened for all people in Nes municipality.

Many people, especially the elderly, dread using ordinary public transport because of the long distance to the closest bus stop, no available seats on regular buses, or the need to travel with a wheelchair or a walker.

The pilot also studies how the buses can complement or maybe replace some of the public offers for arranged transport for disabled people who cannot travel on their own.





## **Aim of the pilot**

The pilot is created for research in the field of demand-responsive transport alternatives. The pilot's purpose is to retrieve insights into how the pilot works operationally and what models for operating are best suited to the target group.

By offering customized transport for the people in Nes municipality, the purpose is to contribute to:

- Increased freedom as more elderly people get out
- Improved health and improved quality of life
- Reduce the use of a private car and get more people to travel together
- Reduce loneliness through increased opportunity for social participation
- More people can live at home longer
- Possible reduction in budgets related to health as a result of increased quality of life and the opportunity to stay home longer and live longer

## **Covid-19**

Public transport in Norway was severely affected by the covid-19 pandemic. The government encouraged the population to not travel by public transport unless they must. In addition to the travel advice, many shops and seniors' centers closed when the pandemic broke out. This resulted in very few orders for the pilot, and Ruter, therefore, decided to stop the pilot from April 6th temporarily.

After the summer, more activities and shops were opening again, and Ruter decided that the pilot should start October 5th. Still, due to low usage, the pilot was cancelled again on December 23rd. The pilot re-opened on October 18th, 2021 and is still running.



## EVALUATION

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### Organisation of the pilot

Pilot Nes is designed based on experience working with Ruter age-friendly transport in Oslo municipality. The pilot service differs from ordinary public transport by being a door-to-door service where customers can be picked up at home and driven where they want within Nes municipality. Furthermore, the drivers help customers with boarding and disembarking when needed, and time is set aside for this. In addition, the vehicles are adapted so that customers can bring a walker and wheelchair.

### The service is designed as follows:

- Door-to-door order transport service where they are picked up at home and driven to the desired address within a geographically defined area
- The service is open from Monday to Saturday from 09.00–17.00
- The customers may book a trip whenever the need for travel occurs and choose either pick-up time or arrival time at the destination.
- Ordered by phone between 08.00 and 16.00, or through the app "RuterBestilling"
- The ticket price is a regular Ruter ticket.
- Customers can bring a friend if their journey starts and end at the same address.
- It will be possible to buy tickets on board with cash, via the RuterBillett app or by using a travel card.

Ruter uses a digital plan system to create routes based on customers' demands. At the beginning of the pilot, the planning was done manually. Due to innovation in the transport sector and the rapid growth of communication technologies and planning systems, it is now possible to effectively offer new forms of demand responsive transport through an automatic plan system. In phase two of the pilot, Ruter started to use an automatic and digital plan system. This was time-saving and Ruter experienced that the system optimizes routes in an effective and good way to ensure quality for the customers.

The pilot also has an available app for customers to book their trips. Experience shows that the elderly prefer to call the customer center to book their trip, but youths prefer booking by the app.

All contracts used in Pilot Nes include a monthly fixed price for the buses, which is independent of the number of hours driven. As part of the learning, it was interesting to look at the possibilities for utilizing the buses used in Nes municipality. The buses were used to run school transport in the morning. Until now, it has worked well to use the buses for school driving in the morning before Pilot Nes starts at 9 am. In test phase three, the pilot also drives school transport for high school students during the opening hours.

There were three on-demand transport lines in Nes municipality, which were cancelled during test phase three. This was because Ruter believes that area-wide, flexible order transport will probably cover more travel needs and is perceived as more user-friendly and accessible to customers. This led to a reduction in cost per trip as more customers used the pilot. Customer satisfaction is not investigated at present.

### **Pilot KPIs**

During the piloting period, Ruter has followed the economics and kept up the accounting to see how the business model works financially. Furthermore, we measured key statistics relative to the KPIs to ensure we could evaluate and make changes in the business model if needed. Some examples of the KPIs used in the pilot are:

- Number of trips
- Number of new customers and customers in total
- The service productivity (number of trips per hour)
- Length and driving time of the trips
- Number of delays and missed trips
- The number of customers that bring friends
- The number of wheelchairs that are brought on to the bus (elderly)
- Which geographical area do the customers travel to
- Number of bookings through the app
- The number of customers that order the trip by pick-up time and how many orders are based on delivery time
- The number of customers who drive together during one trip
- The number of customers who do not get the time they want due to lack of capacity
- Cost per trip
- The age of the customers





## Customer experience

In the winter of 2020, a user survey was conducted in which 31% of the customers in Pilot Nes answered the survey. We see that the service achieves high customer satisfaction where 9 out of 10 users are very satisfied with the service. Users think Pilot Nes works better than other types of transport because it is flexible, takes less time, and has good service from the drivers.

The results from the survey also show that 7 out of 10 indicate that Pilot Nes has influenced their everyday life to a very large or large degree. They mention, among other things, that everyday life has become easier, it is easier to get around the municipality, and they do not have to depend on asking others to drive them to places. A statement from the survey says, "you can be part of life, meet people, get out of loneliness, do necessary errands. Pilot Nes was absolutely crucial when my husband was still alive, as he was dependent on a wheelchair and thus transport".

9 out of 10 non-users states that they are, to a considerable extent or to a large extent, dependent on driving themselves or being driven by others. Most people state that they have their own car and that they do not need the service as long as they are able to drive themselves. It is assumed that more elderly people drive even longer in sparsely populated areas than in the city center.





DRT minibus in Nes. Photo: Ruter



### **Cost - benefit**

By looking at transport costs per trip against productivity, we see that the pilot has a transport cost of NOK 740 per trip on average over the months the pilot has been in operation. November 2021 stands out as the best run month with a productivity of 1.65. Due to higher productivity in November, the cost per trip this month is estimated at NOK 406 per trip. With increased use and higher productivity, the cost per trip will decrease.

Compared with ordinary order transport in the Northeast area of Viken county, we saw that the cost per trip is on average approximately NOK 350. For age-friendly transport in Oslo, where productivity is higher, the average price per trip is NOK 233. It is difficult to achieve the same productivity in Nes as in Oslo due to lower population density and smaller customer groups in Nes municipality.

Without funding from the Response project and Viken county, the price for the customer would be high. Hence, such service must be subsidized to be a sustainable business model. On the other hand, Ruter and the local government have a goal that all residents should have the perception that they can travel with public transport when they want and where they want. Also, there is a political goal to have elderly people live at home for a longer time. It is expensive to have people living at nursing homes or have home visits by public caretakers. If individual organized public transport can reduce costs associated with public health care, the benefit might be higher than the cost itself.

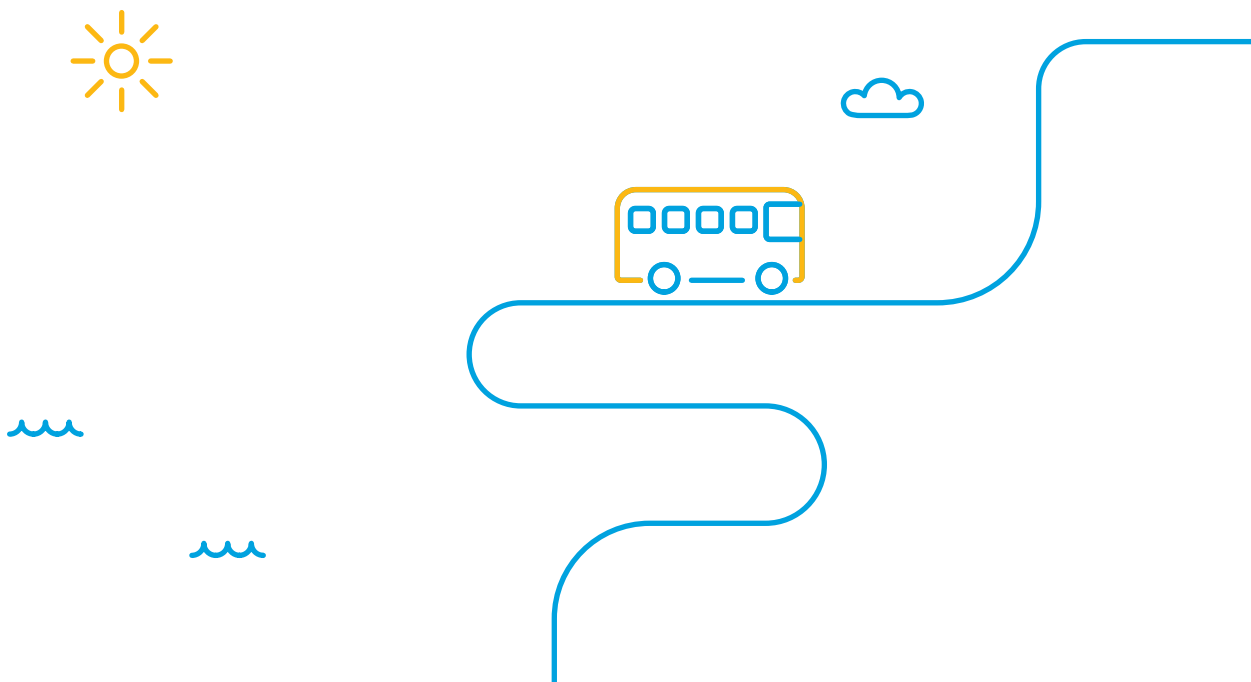
## CONCLUSION

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Although few customers have tested the service, we see that those who have tested it are very satisfied. They say that the service contributes to increased freedom, that they can participate in social activities and manage more on their own. This shows us that the pilot meets some of the main objectives presented initially. To evaluate and conclude whether the service contributes to more elderly people living at home longer and whether this can reduce health budget items in the long term, a study of the elderly's health must be carried out over a longer period of time.

Further data is needed to specifically assess whether the service reduces the use of cars in the municipality. If we look at the answers from the user survey conducted in December, we see that most non-users have not tested the service as they would rather drive their own car, and because they did not receive information about the pilot. This indicates that it should be investigated whether the service contributes to less car use and whether this will lead to an increased environmental benefit at the end of the pilot.

The development of innovative services represents an opportunity to offer customer-oriented value. A structured service development process can ensure that the important tasks will be accomplished in time and that companies reflect on the external factors that may influence the business model. We have learned that it takes time before people start testing new transportation services and that feedback is crucial for developing value for our customers. Our experiences with working on developing innovation models is presented in the Response report called Innovation process.



# Response



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**RESPONSE** project here:  
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