

Hub evaluation booklet

A node-place analysis of 57 hubs
 in Groningen and Drenthe

SMiLES research report #1

2021

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A node-place analysis of 57 hubs in Groningen and Drenthe

Research report #1 within the SMiLES research programme work package A.3

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This research was carried out as part of the NWO (Dutch research council) research programme SMiLES that investigates sharing economies in logistics and mobility networks in the north of The Netherlands. The research was designed in collaboration with the OV Bureau Groningen and Drenthe, but was carried out independently by the university research team who takes responsibility for the results. The project commissioner together with the hub programme core team, including province of Groningen, province of Drenthe and municipality of Groningen, provided feedback and support through the research period.

Cover photo and all other photos are taken by the author of this report, unless stated otherwise.

Table of Contents

- Introduction 4
- Methodology 5
- Conclusions & take-aways 8
- Factsheets: hubs in Groningen and Drenthe..... 9
 - Train stations..... 11
 - Park & Rides..... 37
 - Bus stations and village hubs..... 51

- References 71
- Appendices 72



* click on hub name to get to its factsheet

1 Introduction

In the provinces of Groningen and Drenthe, a network of multimodal hubs was opened in 2018, including train stations, Park+Ride locations, bus stations and smaller hubs in the rural areas of the two provinces. These hubs are considered as the most important transfer points in the region that connect people with the high-quality rail and bus network of Groningen and Drenthe. The hubs aim to enable traveling for everyone to their desired destination and with their preferred mode (Provinces of Groningen and Drenthe, 2017).

This hub evaluation booklet presents the results of the re-evaluation of hubs in Groningen and Drenthe, carried out in 2020/2021. The evaluation uses the methodology of the node-place model (Bertolini, 1999) and the results of an earlier evaluation of hubs, carried out in 2017 by students at University of Groningen.

The evaluation is carried out as part of the SMiLES research programme work package A.3 and is one of the three products delivered as part of the project. The booklet answers research question #1:

What is the current situation of the hubs in the hub network of Groningen and Drenthe?

Figure 1 presents an overview of the complete research framework of SMiLES research programme A.3. The part indicated in purple is presented in this document. For other findings, please refer to the other two documents.

The booklet consists of two primary sections. The first section presents the methodology, the conclusions and take-aways for the follow-up research about a new evaluation framework. The second section presents the individual factsheets for each of the 57 hubs.

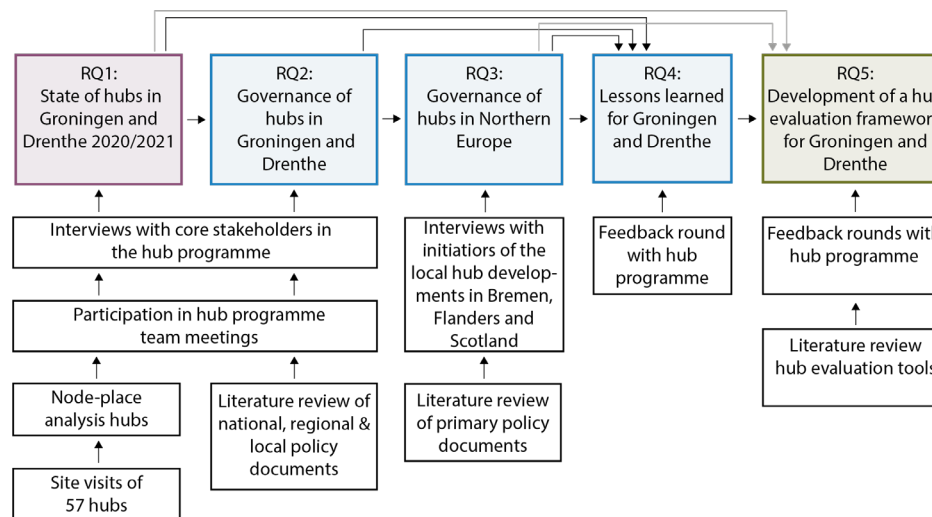


Figure 1: Research process SMiLES work package A.3

2 Methodology

Comparison between 2017 and 2020/21

In the autumn 2017, a base-line analysis of 55 hubs in Groningen and Drenthe was carried out by bachelor students of Spatial Planning and Design at the University of Groningen. The assignment was commissioned by the OV Bureau Groningen and Drenthe.

The base-line analysis was performed prior to the official launch of the hub programme in Groningen and Drenthe. Since the start of the programme in 2018, many developments have taken place across the hub network. The hub programme is now looking for an improved approach to re-evaluate the hubs to learn to what extent the developments of hubs have paid off.

The analysis of hubs with the node-place analysis serves two purposes:

First, the goal is to evaluate the current state of hubs and determine what has changed at hubs since 2017. The node-place analysis is therefore re-applied on hubs in the period between June 2020 and April 2021. Using the same approach enables a simple comparison.

Second, the goal is also to analyze how the changes visible at hubs can be captured in a more comprehensive way than the node-place analysis used in 2017. This contributes to the development of a new evaluation framework for hubs in Groningen and Drenthe.

Node-place analysis

The node-place model (Bertolini, 1999) aims to capture the potential for (re) development of station areas in urban contexts. The model combines potential for physical human interaction (node value) with intensity and diversity of activities corresponding to the realisation of the potential for physical human interaction (place value). The node-place model is visualised in figure 2: any node that falls into the 'balance' section would be considered a good node with sufficient space for different developments and where transport provision corresponds to its demand.

The analysis method presented here is based on a multi-criteria analysis derived from the node-place model. Today, the model is primarily used when discussing transit-oriented developments in the pursuit of supporting increased public transport use coupled with sustainable travel modes (Caset et al, 2020).

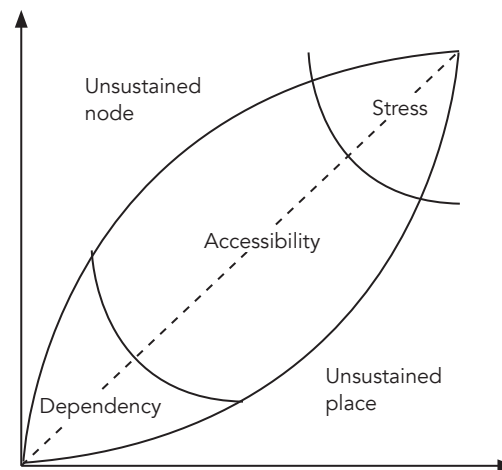








Figure 2: Visualisation of the node-place model (Bertolini, 1999).

The student research

To evaluate the node and place value of hubs, a hub profile was set up to evaluate each of the individual hubs. Node value includes the accessibility and facilities for the personal car and bicycle, and type and frequency of public transport. Place value measures the comfort, safety and surrounding facilities of the hub. For each indicator a score was given between 0 and 9 (see table 1), allowing to draw-up a radar graph for each hub (see example in figure 3). The score for each indicator is the sum of sub-indicators, shown in table 1. The sum of the three indicators for node and place indicates the corresponding node and space value of a hub. The full overview of the analysis can be seen in Appendix 2.

Table 1: The criteria used for the evaluation of hubs

Node criteria			Space criteria			
(1) Car – (2) Public transport – (3) Bike			(4) Comfort – (5) Safety – (6) Facilities			
Sub-indicators		Scale	Sub-indicators		Scale	
	Number of residents reached within 30 min of driving	0-6		Presence of green / nature	0-3	
	Availability of parking spaces	0-3		Presence of waiting areas	0-2	
	Potential for bus transit	0-4		Presence of dustbins	0-2	
	Potential for train transit	0-4		Presence of WiFi	0-1	
	Number of residents reached within 15 min of cycling	0-6		Presence of a water tap	0-1	
	Availability of bicycle parking places	0-4			Presence of street lighting / public lighting	0-3
					Presence of others / 'eyes on the street'	0-3
Presence of activity during day/night/weekend	0-3					
	Types of facilities within 5 min of walking from hub				0-9	

As seen in table 1, specifically under the comfort indicators, the sub-indicators can have different influences towards the total score. For instance, the presence of green weighs more (max score 3) than presence of waiting areas (max score 2) or presence of water tap (max score 1). However, the student reports to not specify why such a weighing has been applied.

The students used different analysis methods to fill in the various scores. For the accessibility indicators, a GIS analysis was carried out. Public transport scores were given based on the information on 9292.nl – the Dutch online journey planning tool. All other indicators were scored based on a site-visit and interviews with the people present at the hubs.

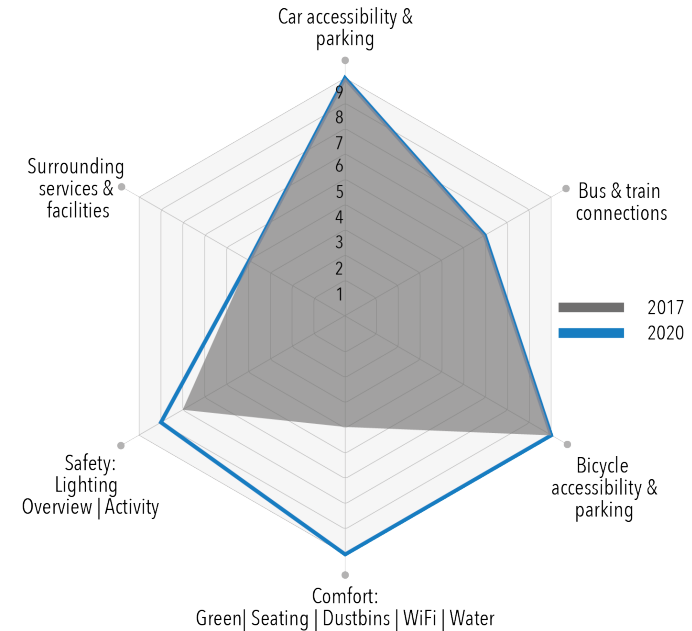


Figure 2: Radar graph for Hub Assen Station

The 2020/21 evaluation is primarily based on hub site visits and interviews (see overview in Appendix 1). GIS analysis is skipped as it is expected that the number of inhabitants has remained similar to 2017. 9292.nl and the latest timetable for the buses on qbuzz.nl is used to score public transport.

In addition to gathering information about the hubs on the current situation, it was also necessary to validate some of the information provided by the students about the 2017 situation. While all student reports included the radar graphs with the scores for the six main indicators, it was not always clear what the individual scores of the sub-indicators were. For instance, the bike indicator had a score of 7, but it was unclear how the score was divided between accessibility and parking places. The validation was performed with street view images from 2017, using the StreetSmart tool that allowed the counting of parking places, but also validate the scores for comfort and safety indicators.

3 Conclusions & take-aways

The node-place analysis designed for this research aimed to capture the developments that have taken place at the hubs in Groningen and Drenthe since the launch of the hub programme in 2017. While the results showcase well the larger scale developments and changes at smaller hubs, it does not manage to capture all changes that have occurred.

Changes in node value

Node value captures accessibility of a hub by car and bike, parking possibilities for car and bike, and public transport connections.

The analysis identified improvements in the node value for six hubs. Bicycle parking capacity has been improved by one or two points at hubs Delfzijl, Rolde, Peize, Leek A7, Leek Centrum, Zuidwolde and Norg. Car parking capacity has been improved at hub Dieverbrug.

At the same time, the analysis fails to capture that bicycle parking capacity has also been significantly improved at hubs Assen Station, P+R Hoogkerk, Zuidhorn Station, Stadskanaal and at Haren Station. The analysis does not indicate this because the highest score for bicycle parking is given when there are more than 100 stalls available. However, at these hubs, capacity was already above 100 in 2017.

Several hubs now also have bicycle lockers that are rented either for individuals (e.g. Ten Boer, Borger) or for businesses (e.g. P+R Haren A7, P+R Kardingje).

Car parking has been improved at hub Dieverbrug where more than 10 parking spots have been added.

Minimal changes have occurred in public transport service. That is because changes in the public transport connections generally occur during the change of a concession. In Groningen and Drenthe, the high-quality public transport connections have been guaranteed for 10-20 years, which means that no major

changes can be expected. Additional express trains are operational between Groningen and Leeuwarden, and express trains are now also operational during rush hour between Groningen and Nieuweschans – Weener and Winschoten.

Changes in place value

Place value measures the comfort, safety and availability of surrounding facilities at a hub. The analysis indicates the increase in space value at all but eight hubs. This excludes hubs Siddeburen, P+R Meerstad and P+R Reitdiep, because the location of hub Siddeburen was different in 2017 and the P+Rs had not yet been developed.

Comfort has been primarily improved by the implementation of free WiFi, a water tap and in some cases, seating and additional dustbins. WiFi is now available at 44 hubs and water taps at 34 hubs. These additions have improved the comfort score of hubs by one point at 15 hubs, by two points at 23 hubs and by three points at four hubs. Implementation of WiFi and water taps is currently one of the main priorities of the hub programme as these are considered basic facilities needed at all hubs.

Hubs Delfzijl (+6), Assen Station (+5) and Leek A7 (+4) have seen the largest improvements in terms of comfort. At the same hubs, safety has also been improved thanks to added street lighting (also in Haren Station). These three hubs have been entirely redesigned since 2017 and these improvements reflect well in the analysis.

However, larger scale developments have also occurred at other hubs, yet do not reflect here. These hubs include Roden, Zuidhorn, Haren Station, Coevorden, Westlaren, Bedum and Siddeburen. At these hubs, one or many of the following developments have occurred – complete redesign of the hub environment (Roden, Coevorden), expansion of the hub area (Zuidhorn), safety improvements (Leek A7, Roden, Coevorden, Haren Station).

In addition to facilities already mentioned, parcel lockers are implemented at an increasingly growing number of hubs.

Take-aways for a new evaluation framework

While the node-place analysis offers a good overview of the state of hubs and recent developments, it has many shortcomings that make the analysis inefficient for a comprehensive evaluation of the hubs in Groningen and Drenthe.

Firstly, the analysis aims to capture and compare the quality of all sorts of hubs, regardless of their size and location. This means that the analysis expects the same from all hubs, yet in a situation in Groningen and Drenthe where hubs vary from a large Groningen Central Station to small village hubs, the desired levels for node and place should be different based on hub characteristics. Thus, instead of calculating the changes on absolute terms, relative terms could be used.

Secondly, the analysis only covers a handful of facilities and conditions that are crucial at a hub. However, considering mobility trends and the importance on accessibility for everyone, there are many more sub-indicators that could receive a place in the hub evaluation framework. These indicators are:

- Car use: availability of electric chargers, car-sharing possibilities, P+R availability.
- Public transport: bus rapid transit connections (Q-link and Qliner)
- Bicycle facilities: capacity of covered / uncovered bicycle stalls, guarded bicycle lockers (manned or unmanned, such as lockers), charging facilities, bike-sharing possibilities.
- Traffic safety: level of safety for reaching the hub and level of safety when transferring between transport modes;
- Accessibility: ease of movement for all passengers (visually or physically impaired, with buggies, etc).
- Availability of travel information for everyone.
- Comfort: waiting areas in terms of seating, cover from rain, wind, sun;
- Facilities and services: availability at the hub itself (e.g. café, kiosk), (accessible) toilet;

Factsheets: Hubs in Groningen and Drenthe

Photo: Leek A7



The factsheet layout explained

The results of the node-place analysis for each individual hubs are presented in the factsheets. Each factsheets includes a short introduction about the hub, the node-place analysis radar graph and key facts. In addition, photos of the hubs give an impression of what the hubs look like.

The key facts section presents information using icons. The icons mean the following:



The main responsible authority of the hub, aka the landowner of the hub.



Key stakeholders involved in the hub



The destination of trains from the hub



Type of buses stopping at the hub. Q-link and Qliner are the names for bus rapid transport in the region.



Average number of bus check-ins on a week day in 2019 (data from OV Bureau Groningen-Drenthe).



Facilities for the bike



Facilities for private car

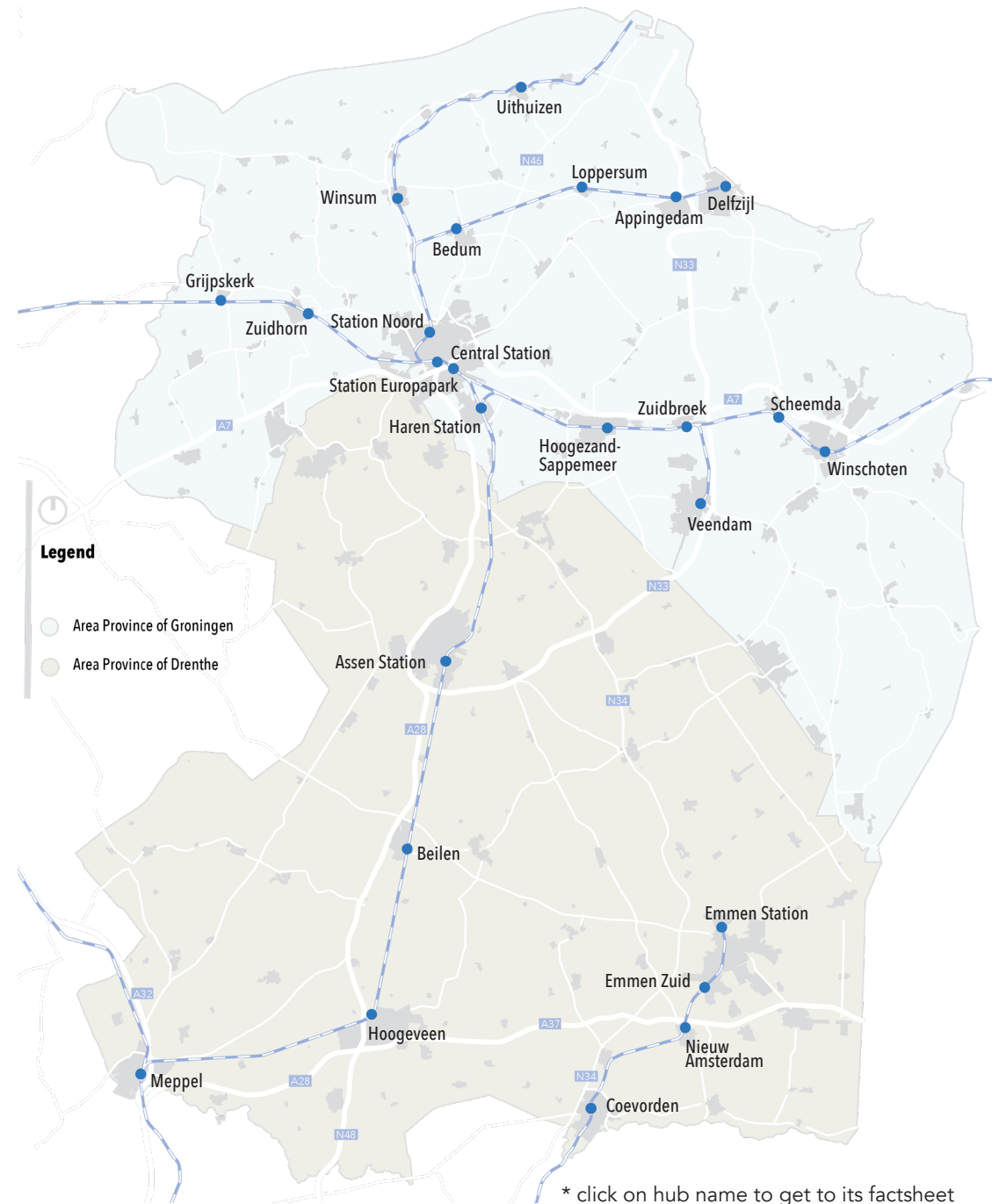


Availability of shared transport. Hub taxi is available at each hub, thus not mentioned individually.



Facilities and services at the hub location

Train stations



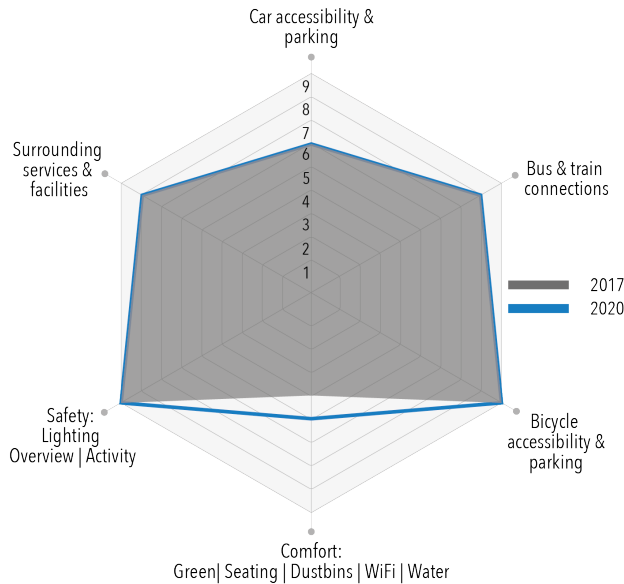


hub Groningen Central Station

Groningen Central Station is the largest train and bus station in Groningen and Drenthe. The station building dates back to 1896 and is a national monument.

The station is under development since 2019 and will be completed in 2023. There will be more rail tracks and platforms, a pedestrian passage and a bicycle tunnel and an underground bicycle storage for about 8.000 bicycles (ProRail, 2019).

Compared to 2017, the addition of a water tap adds to the comfort of the hub.



One of the many train platforms (July, 2021).



Arriva bike&go shared, foldable e-bikes (July, 2021).



Bicycle parking at the front of the station (July, 2021).



Bus station next to the train station (July, 2021).

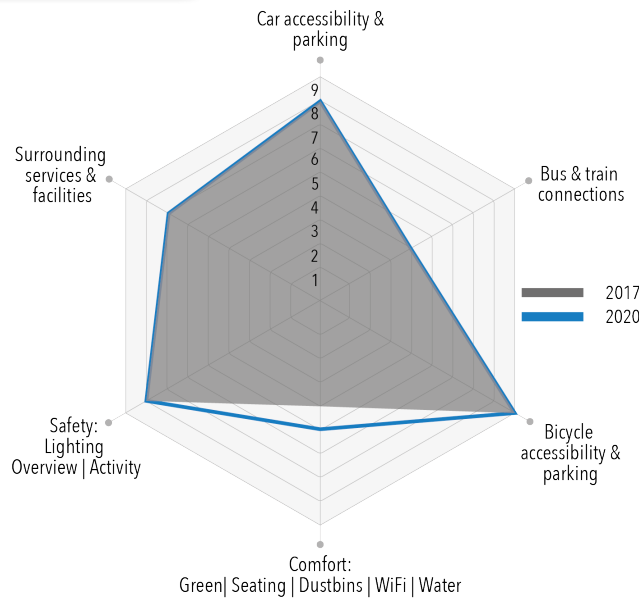
KEY FACTS		
	Municipality of Groningen	Delfzijl Leeuwarden Roodeschool Bad-Nieuweschans Veendam Zwolle Den Haag
	Province of Groningen, ProRail, NS, Arriva	7000+ covered and guarded
	10x Qliner, 10x Q-link, 32x regular	paid parking, K+R
	17.600 daily bus boardings	OV Bike, Arriva Go
		Water tap, WC, shops, restaurants



hub Emmen Station

Emmen is the main train station of the city of Emmen, located at the edge of the city centre. The station is connected to Zwolle by train and a Qliner bus drivers to Groningen. There are many different facilities at the station, including Domino's Pizza.

Apart from the addition of free WiFi, little has occurred at Emmen Station since 2017.



Bus station in Emmen (April, 2021).



Outdoor bicycle parking (April, 2021).



Front of the station with a taxi stop and indoor bicycle parking (April, 2021).

KEY FACTS		
Municipality of Emmen	Zwolle	350 covered + paid parking underground
Province of Drenthe, ProRail, Arriva, NS	2x Qliner, 31x regular	45 parking spots
2600 daily bus boardings	OV Bike	WiFi, WC, restaurant, kiosk

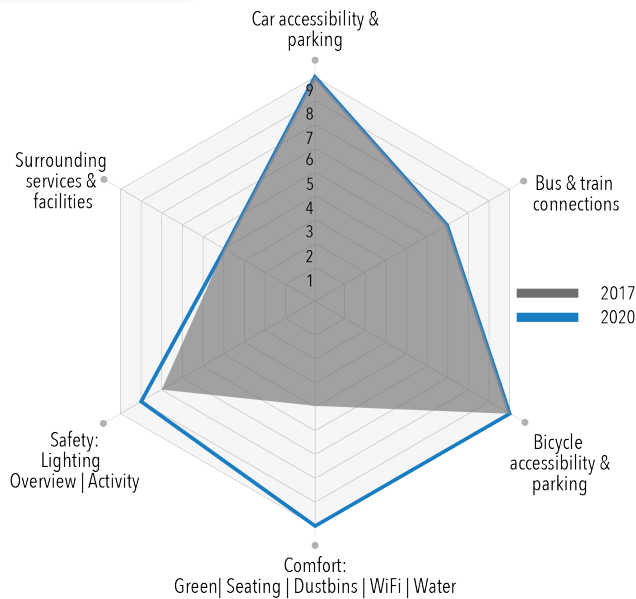


hub Assen Station

Station Assen is a large public transportation node on the railway between Zwolle and Groningen. In 2018, the station was opened with a complete redesign, including a new station building, expansion of the bus station and an underground guarded bicycle parking. In front of the station area, cars are directed into a tunnel (interview #8).

There are plans to add another on-ground cycle parking closer to the bus station (interview #8).

WiFi, water tap, and landscaping have improved the comfort of the hub while additional lighting has improved its safety.



Safer, car-free environment for cyclists and pedestrians (July, 2020).



Underground bicycle parking (July, 2020).



Open bicycle parking on the east side of the station (July, 2020).

KEY FACTS		
	Municipality of Assen	Groningen Zwolle Den Haag
	Province of Drenthe, ProRail, NS	270 parking spots
	2x Qliner, 16x regular	2500 covered and guarded + uncovered
	1150 daily bus boardings	OV Bike
		WiFi, water tap, WC, kiosk



View from the east side of the station (Sept, 2020).



Bicycle parking on the west side of the station (Sept, 2020).

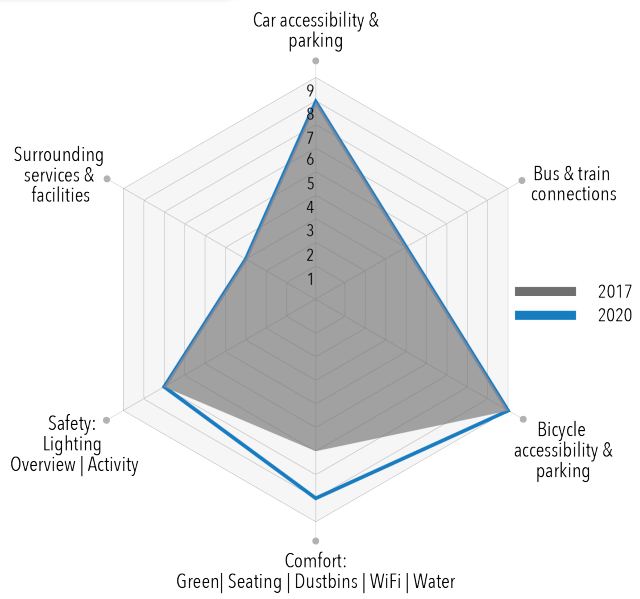


Train platforms at Groningen Noord (Sept, 2020).

Groningen Noord is a train station in the northern part of the city of Groningen, on the railway between Groningen and Delfzijl and Groningen and Roodeschool. Buses connect the station with several neighbourhoods in the city.

According to the 'Uitvoeringsprogramma Fiets 2019-2022' (Gemeente Groningen, 2019), the bicycle parking facilities at Station Noord will be expanded.

Since 2017, WiFi and a water tap have been added to the hub.



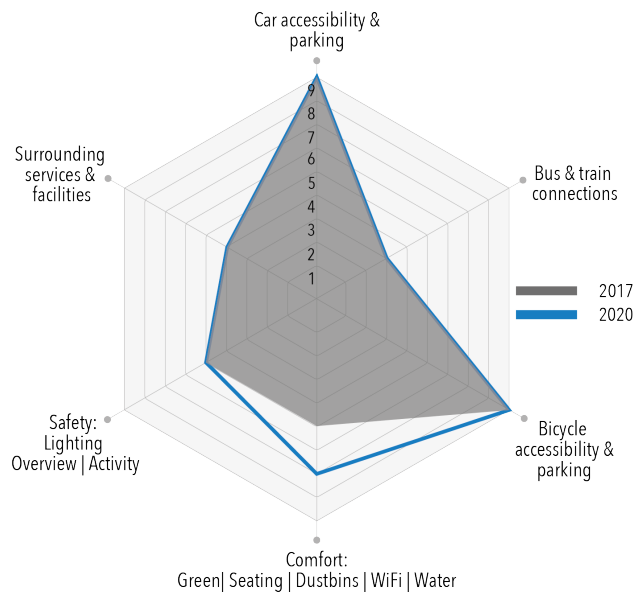
KEY FACTS		
	Municipality of Groningen	Central Station Roodeschool Delfzijl
	Province of Groningen, ProRail, NS, Arriva	K+R
		260 covered stalls, 48 lockers
		4x Q-link, 4x regular
		OV Bike
		WiFi, water tap, restaurant
		690 daily bus boardings



Hub Zuidhorn is a train station on the railway between Groningen and Leeuwarden. The hub is located close-by different organisations and is a strategic transfer point towards the two larger cities.

As new, longer, express trains will travel between Groningen and Leeuwarden, the platforms at Zuidhorn had to be extended. Within the project, many other improvements have also been made - redesign of the bus station, new parking lot, extended bicycle parking, a toilet, water tap and WiFi (interview #2).

As the hub is large, wayfinding is an important element. Parcel lockers will also soon be added.



KEY FACTS	
Municipality of Westerkwartier	Groningen Leeuwarden
Province of Groningen, ProRail, Arriva, NS	920 covered stalls, 20 lockers
500 daily bus boardings	400 parking spots, K+R
	-
	WiFi, water tap, WC, kiosk



Bicycle stalls and water tap (Dec, 2020).



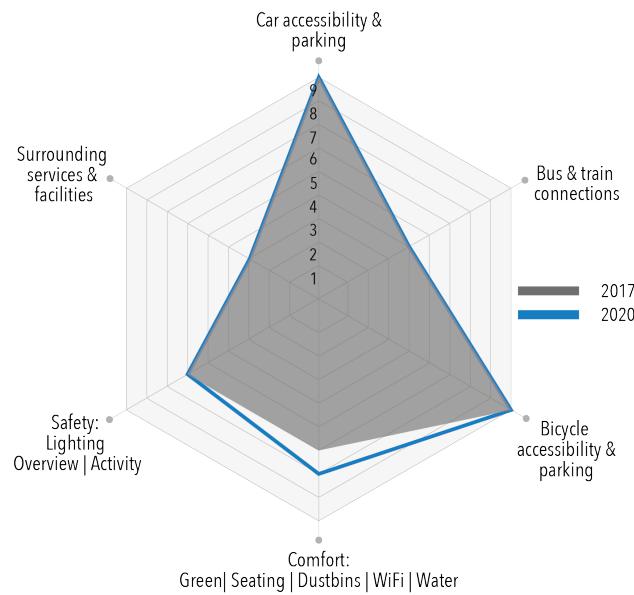
Bus stop from as seen from the station building (Dec, 2020).



Bus stop with the station building on the background (Dec, 2020).

Hub Windschoten is the train station of Winschoten, located on the railway between Groningen and Nieuweschans and close by the town centre.

The station building and the bus station have been upgraded a few years back. Since 2017, a water tap has been added to the hub.



KEY FACTS

<ul style="list-style-type: none"> Municipality of Oldambt Province of Groningen, ProRail, Arriva, NS 	<ul style="list-style-type: none"> Groningen Weener 9x regular 450 daily bus boardings 	<ul style="list-style-type: none"> 448 covered stalls, 64 lockers 114 parking spots OV Bike Water tap, kiosk, WC, walking routes
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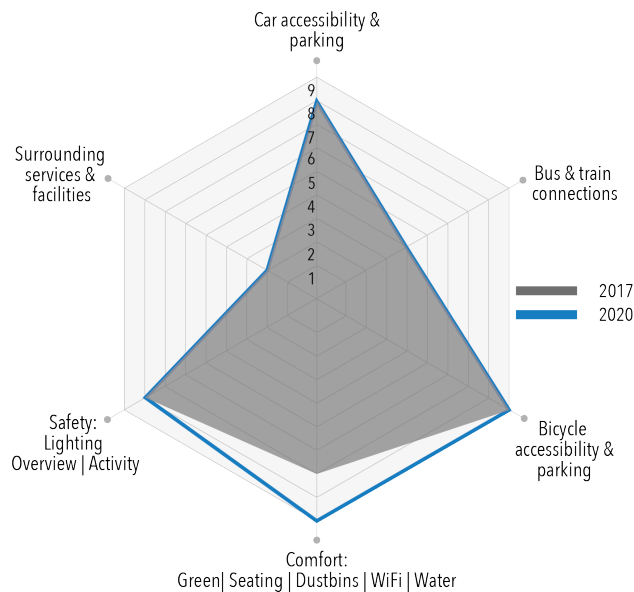


The station building and P+R (July, 2020).

Hub Meppel is the train and bus station at the town of Meppel, located on the railway between Groningen and Zwolle. The station building dates back to 1865.

With the high number of travelers in different directions, the hub provides a large number of bicycle stalls and car parking facilities on both sides of the station. A small shop/café is located inside the station building.

Since 2017, WiFi and a water tap have been added to the hub.



Bicycle stalls behind the station (July, 2020).



Bicycle stalls on a roof (July, 2020).



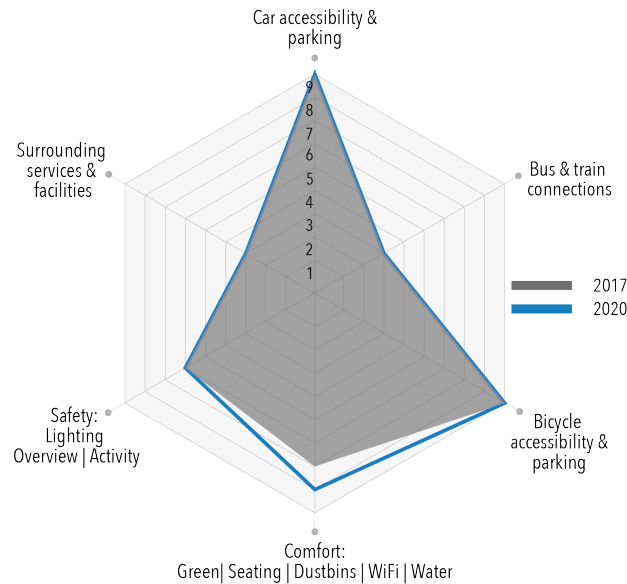
Large parking lot behind the station (July, 2020).

KEY FACTS		
Municipality of Meppel	Groningen Leeuwarden Zwolle Den Haag Rotterdam	150+ (covered) stalls
Province of Drenthe, ProRail, NS	7x regular	200 parking spots, P+R
	430 daily bus boardings	OV Bike
		WiFi, water tap, WC, kiosk



Hub Winsum is the train station of Winsum, located on the railway between Groningen and Nieuweschans and a short walking distance from the centre of the town.

In 2017, the hub already had several facilities that added to the comfort and accessibility of the hub. Since then, WiFi has been added.



KEY FACTS		
Municipality of Het Hogeland	Groningen Roodeschool	400 (covered stalls), 4 lockers
Province of Groningen, ProRail, Arriva, NS	2x	90 parking spots
	420 daily bus boardings	OV Bike
		WiFi, WC, water tap, restaurant, walking routes



The station, green infrastructure and a bicycle path leading to the tunnel (Sept, 2020).



Bicycle parking next to the station (Sept, 2020)

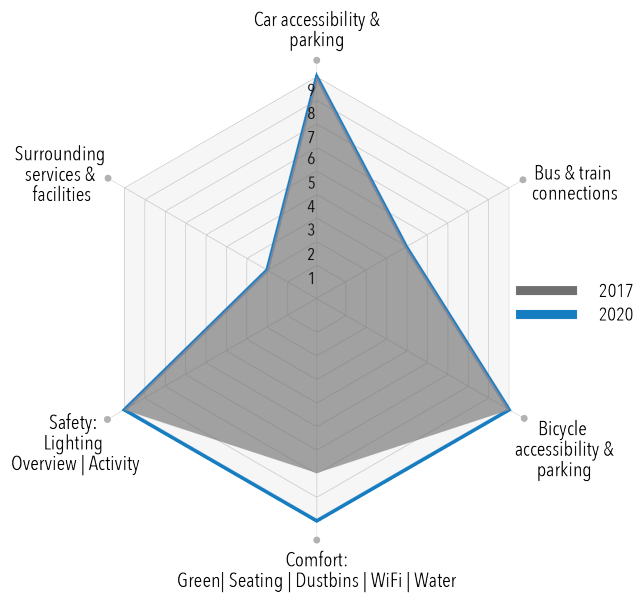


Guarded bicycle parking below the station (Sept, 2020).

Groningen Europapark is a train station at the south-east of the city of Groningen, built in 2012.

From the start, the station has been designed not only as a place to transfer, but also as a place to be. Therefore, the station is located near-by facilities and businesses and offers a comfortable and green place to travel from. As part of the project Groningen Spoorzone, an additional rail track and an extra platform were added to the station in 2020 (ProRail, 2021a).

Since 2017, WiFi and a water tap have been added to the station, which have increased the comfort of the hub.



KEY FACTS	
Municipality of Groningen	Groningen Winschoten Veendam Weener Zwolle
Province of Groningen, ProRail, NS, Arriva	1x Q-link, 5x regular
	350 daily bus boardings
	1000+ (partly covered and guarded)
	Paid parking at Euroborg
	OV Bike
	WiFi, WC, water tap, kiosk



Bicycle parking at the side of the station (July, 2020).



The front of the station area (July, 2020).

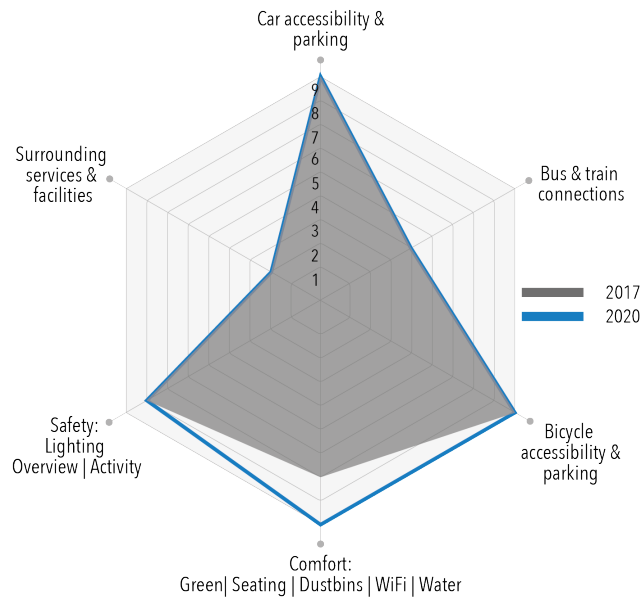


The bus station at Hoogeveen (July 2020).

Hub Hoogeveen is the train and bus station of the city Hoogeveen, on the railway between Zwolle and Groningen.

Since 2017, WiFi and a water tap have been added to the hup. Next, parcel lockers will be placed.

Looking further, the province and municipality are in discussion about future developments involving the hub. Once of such projects in a potential ICT centre, which could be built next to the hub. The location would be a strategic choice as the students would have good access to the centre by various transportation modes (interview #3).



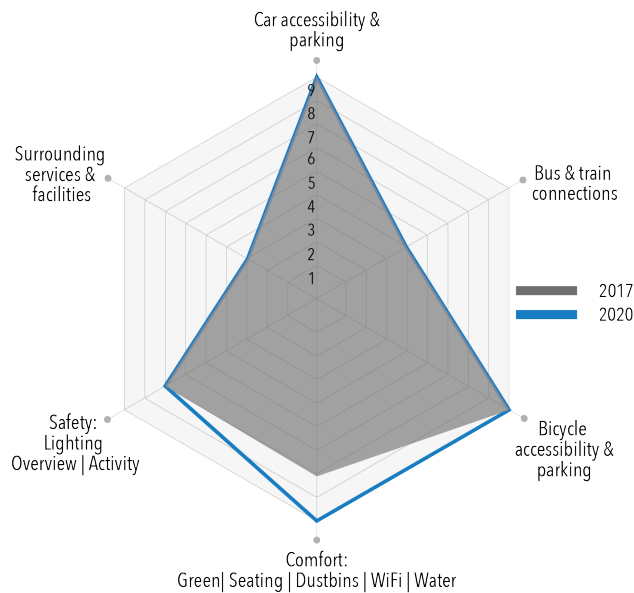
KEY FACTS	
Municipality of Hoogeveen	Groningen Zwolle
Province of Drenthe, ProRail, NS	400 uncovered stalls
9x regular	370 parking spots, K+R
310 daily bus boardings	OV Bike
	WiFi, water tap, WC, kiosk



hub Veendam

Hub Veendam is the train station of the town of Veendam, the final stop on the railway between Groningen and Veendam. The railway was reopened in 2011, after being unused for almost 60 years. The old station building is not in use anymore and functions as a museum.

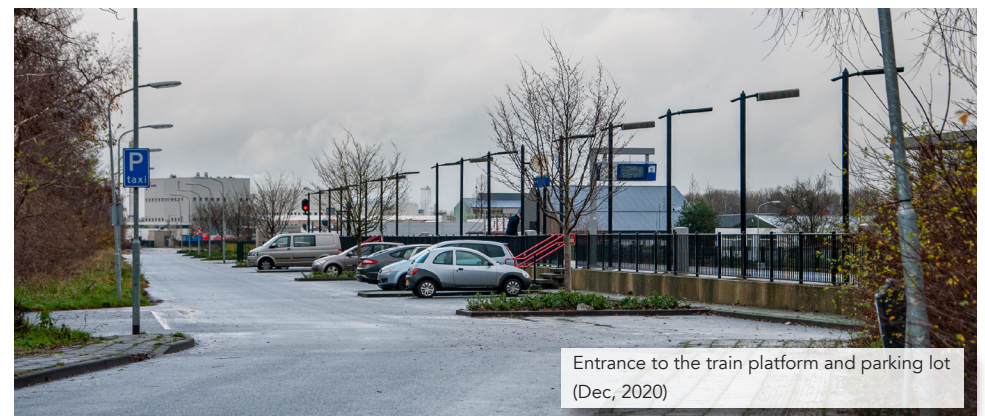
The hub also has a large, covered bus station, located in a historical warehouse. The bus station includes various facilities for travellers. Since 2017, WiFi and a water tap have been added to the hub.



Covered bus station with facilities (Dec, 2020)



Bicycle parking (Dec, 2020).



Entrance to the train platform and parking lot (Dec, 2020)

KEY FACTS	
Municipality of Veendam	Groningen
Province of Groningen, ProRail, Arriva, NS	2x Qliner, 8x regular
	280 daily bus boardings
	468 covered stalls, 20 lockers
	100 parking spots
	OV Bike
	WiFi, water tap, WC, kiosk

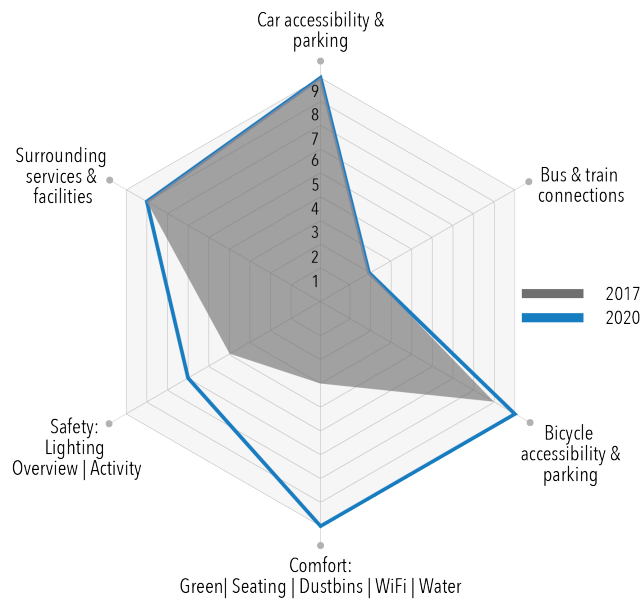


The new bus station at Delfzijl (July, 2020).

Hub Delfzijl is the train station at Delfzijl, the final stop on the railway between Groningen and Delfzijl.

Through financing from the 'livability programme', the station area has been completely renovated. The bus station was relocated to the side of the station and a park-like environment was created at the front of the station.

The train platform was made more easily navigable for the visually impaired or handicapped. The old station building was renovated, and it now hosts different social activities, including a cafe. There is a toilet, a water tap and WiFi (interview #2).



The front of the station (July, 2020).



Bicycle facilities and K+R at the side of the station (July, 2020).

KEY FACTS		
Municipality of Delfzijl	Groningen	80 covered stalls, 16 lockers
Province of Groningen, NS, ProRail, Arriva	1x Q-link, 3x regular, 1x schoolbus	9 parking spots, K+R
210 daily bus boardings	OV Bike	WiFi, water tap, WC, cafe

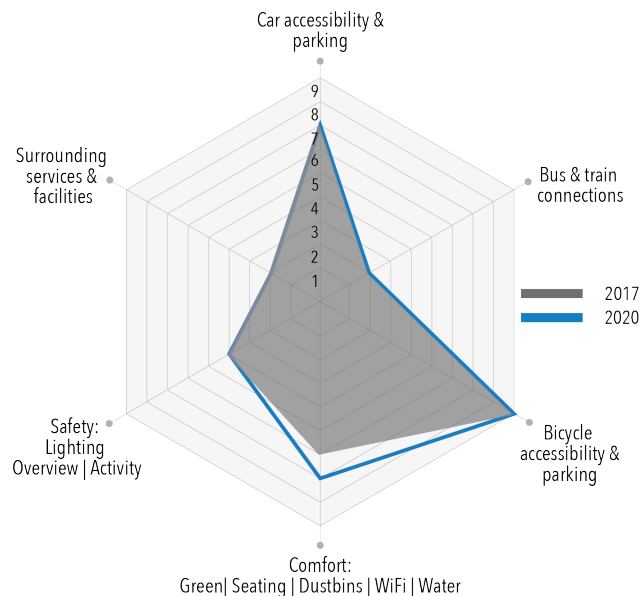


Hub Appingedam is a train station on the railway between Groningen and Delfzijl.

The station area was redesigned in 2015 which involved replacement of the different facilities, expansion of car and cycling parking, implementation of kiss+ride, an art installation and some landscaping.

Discussions are underway to improve connectivity between hub Appingedam and near-by school campus (hub core team, 2021).

Since 2017, WiFi and a covered waiting area have been added.



KEY FACTS	
Municipality of Appingedam	Groningen Delfzijl
Province of Groningen ProRail	2x Q-link, 2x regular, 1x schoolbus
	100 daily bus boardings
	408 covered, 16 lockers
	20 parking spots, K+R
	OV Bike
	WiFi



Bus stop and K+R at hub Beilen (June, 2020).



Extensive bicycle parking facilities (June, 2020).

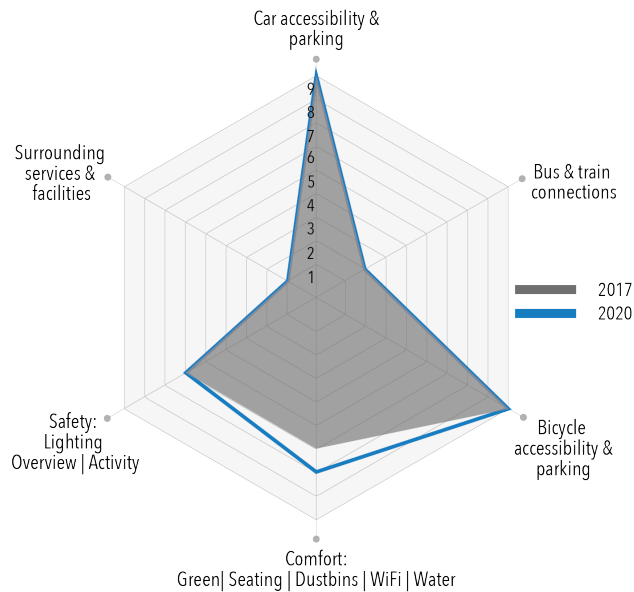


Large P+R next to the station (June, 2020).

Hub Beilen is a train station on the railway between Groningen and Meppel. The station is located right next to the grounds of Friesland Campina.

The station offers bicycle parking for more than 600 bikes and lockers for 60 bikes. A bus stop and kiss and ride are located right across the station. The station has a snack bar, bicycle repair and a large P+R terrain.

Since 2017, a WiFi connection and a NS water tap has been added, which improve the comfort of the hub.



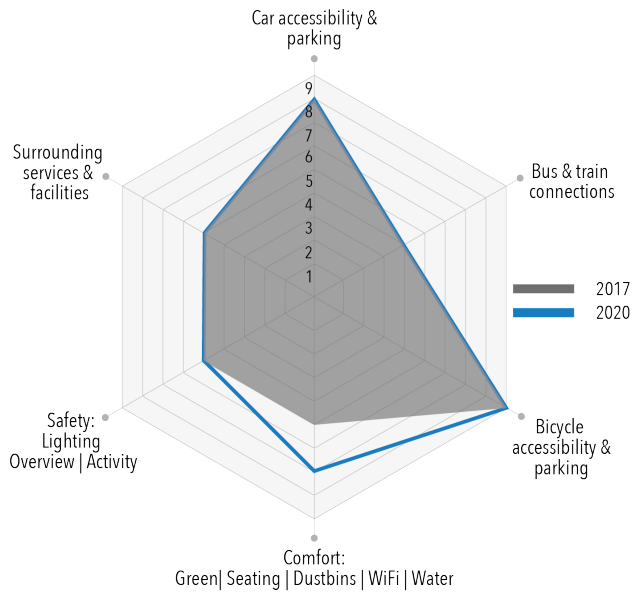
KEY FACTS	
Municipality of Midden-Drenthe	Groningen Zwolle
Province of Drenthe, ProRail, NS	624 covered stalls, 60 lockers
2x regular	210 parking spots
100 daily bus boardings	OV Bike
	WiFi, water tap



hub **Coevorden**

Hub Coevorden is a train station on the railway between Zwolle and Emmen. The station area has been under development since 2018, financed by the compensation fund of the Zuiderzeelijn (interview #8).

The station has a new green pedestrian tunnel which allows better and safer connection to the shopping area on the west side of the station. Bicycle facilities have been expanded on both sides of the railway. The station building has a Domino's restaurant that also sells coffee and snacks and can be used as a waiting area without having to make a purchase. A toilet has also been built (ProRail, 2020a).



New pedestrian tunnel with landscaping (June, 2020).



P+R on the west side of the station (June, 2020).



Extension of bicycle parking at the front of the station (June, 2020).

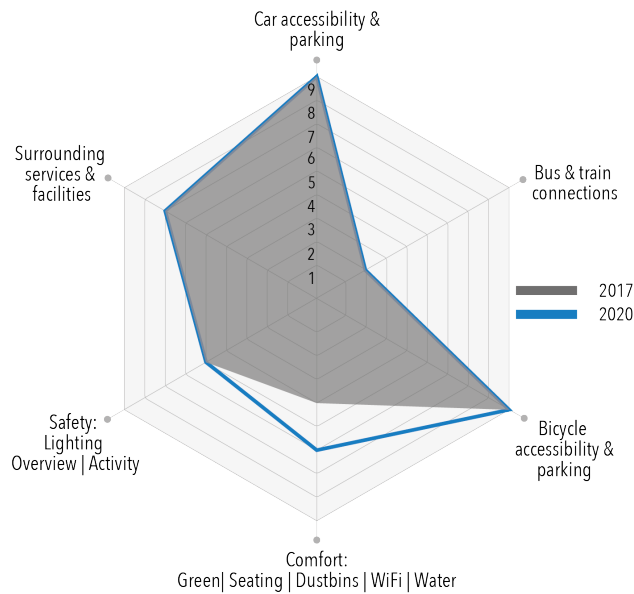
KEY FACTS			
	Municipality of Coevorden		Zwolle Emmen
	Province of Drenthe, ProRail, Arriva, NS		4x regular
			70 daily bus boardings
			800 covered stalls, 28 lockers
			64 parking spots, K+R
			WiFi, water tap, WC, kiosk



hub Uithuizen

Hub Uithuizen is the train station of the village of Uithuizen, located on the railway between Groningen and Roodeschool-Eemshaven.

The hub is located close by the village centre and includes a P+R, bicycle stalls and bicycle lockers. Since 2017, WiFi and a water tap have been added to the hub.



Entrance to the platform and bicycle stalls (July, 2020).



Bus station (July, 2020).



The road towards the hub, with a parking lot on the left (July, 2020).

KEY FACTS		
Municipality of Het Hogeland	Rodeschool Groningen	300 (covered) stalls 4 lockers
Province of Groningen, ProRail, Arriva, NS	4x regular	60 parking spots, K+R
	70 daily bus boardings	-
		WiFi, water tap



Entrance to the train platforms (Dec, 2020).



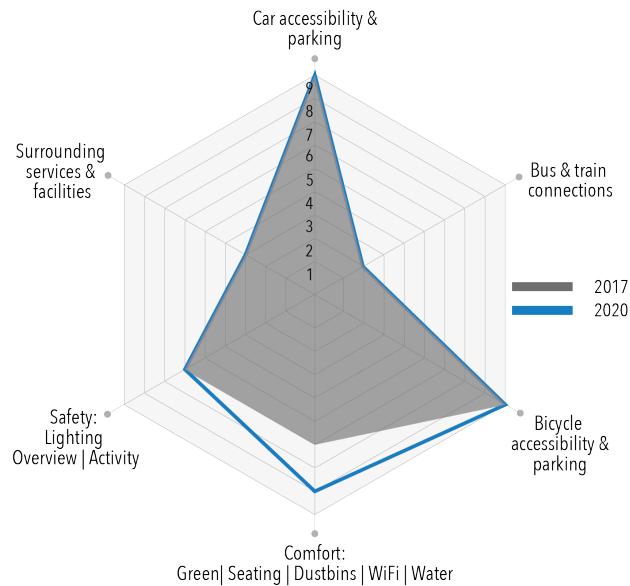
Bicycle stalls (Dec, 2020).



Parking lot (Dec, 2020).

Hub Zuidbroek is the train station of Zuidbroek, located on the railway between Groningen and Nieuweschans. The hub is close by the city centre. The station buildings hosts a rail and train museum, and a grain and fertilizer company is located across the railway.

Since 2017, WiFi and a water tap have been added to the hub. Bicycle stalls were expanded shortly before the previous evaluation.



KEY FACTS	
Municipality of Midden-Groningen	Groningen Veendam Weener
Province of Groningen, ProRail, NS, Arriva	1x regular
	320 covered stalls
	55 parking spots
	WiFi, water tap
	50 daily bus boardings



Bus stop along the road (Dec, 2020).



Station building and bicycle parking (Dec, 2020).

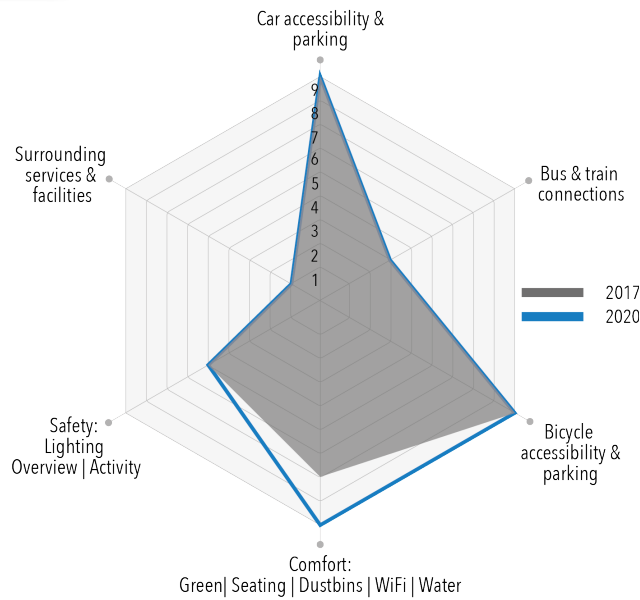


Parking lot and additional bicycle parking (Dec, 2020).

Hub Scheemda is the train station of Scheemda, located on the railway between Groningen and Nieuweschans. The station building is a national monument.

Since the end of 2020, additionally express trains travel on the railway, which asked for the expansion of the train platforms. Consequently, also the bicycle stalls had to be moved. As a follow up, more developments will take place at the hub to make it a nicer place to be.

Most recently, WiFi and a water tap has been added to the hub.

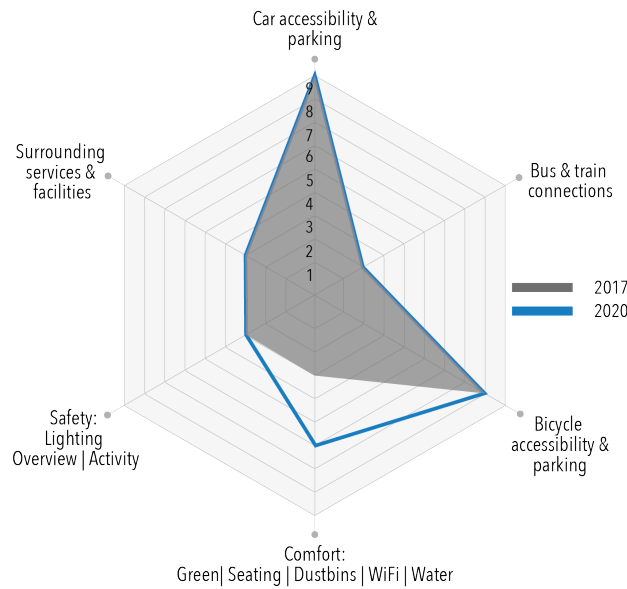


KEY FACTS	
Municipality of Oldambt	Groningen Weener Winschoten
Province of Groningen	3x regular, 2x schoolbus
	210 (covered) stalls
	30 parking spots
	WiFi, water tap, WC
	50 daily bus boardings



Hub Loppersum is the train station of the village of Loppersum, located on the railway between Groningen and Delfzijl. The station building dates back to 1883.

Since 2017, some seating has been added to the hub, including a hub bench. Together with WiFi and a water tap, the comfort of the hub has been improved.



KEY FACTS	
Municipality of Loppersum	Delfzijl Groningen
Province of Groningen, ProRail	192 covered stalls 4 lockers
1x regular	65 parking spots
20 daily bus boardings	WiFi, water tap





Water tap with bicycle facilities in the background (Sept, 2020).



The front of the station (Sept, 2020).

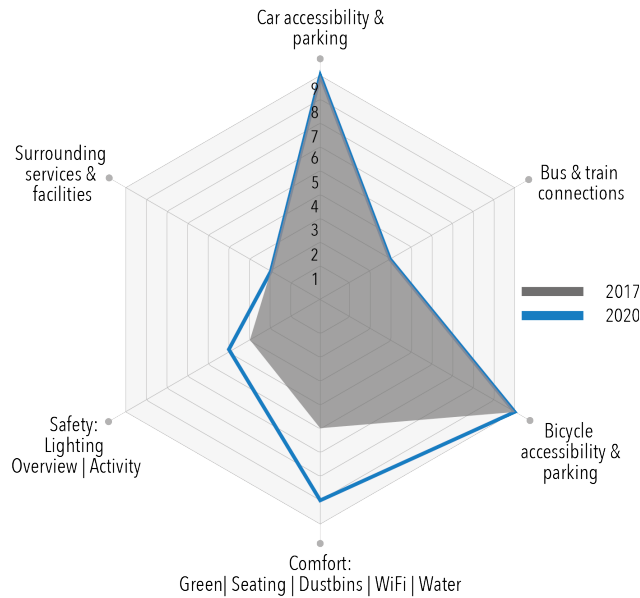


East side of the station with cycle parking (Sept, 2020).

Hub Haren Station is the trainstation in Haren, on the national railway between Groningen and Assen.

Compared to 2017, the station area has been redeveloped, including a pedestrian and cyclist tunnel under the railway, allowing a better connection between east and west part of the town. On the east side, there are now also additional bicycle stalls.

The front of the station area has been relandscaped. Additionally, a water tap and WiFi have been added.



KEY FACTS	
Municipality of Groningen	Groningen Zwolle
Province of Groningen, ProRail, NS	425 covered stalls, 95 lockers
2x regular	200 parking spots, K+R
10 daily bus boardings	OV Bike
	WiFi, water tap, WC

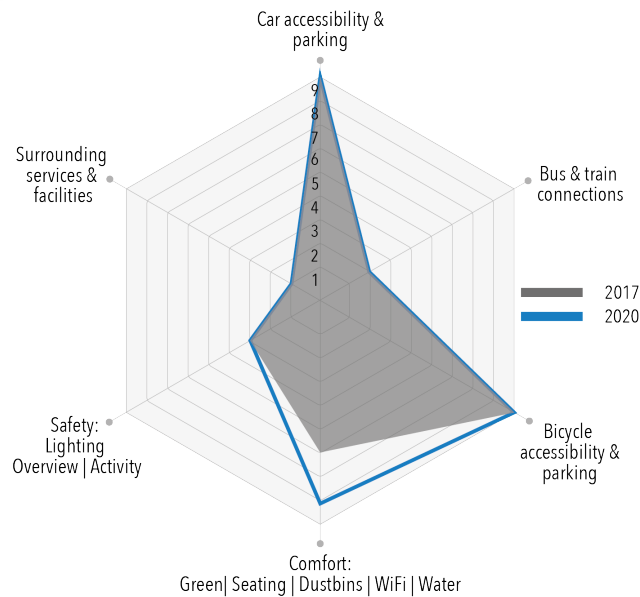


Hub Bedum is a train station between Groningen and Delfzijl (July, 2020)

Hub Bedum is a train station in Bedum on the railway between Groningen and Delfzijl.

Recently, the front of the hub / station area has been made more attractive with a new landscape design. Car parking has been replaced from the front of the station to the side of the station. Additionally, a hub bench and a water tap has been added.

Next, electric car charging and WiFi will be added. However, due the lack of a stable electricity connection makes this challenging. There are also plans to expand bicycle parking facilities (interview #2).



A pleasant and green entrance to the hub (July, 2020)



Bicycle parking and lockers (July 2020).

KEY FACTS	
Municipality of Het Hogeland	Groningen Delfzijl
Province of Groningen, ProRail, Arriva	200 covered stalls, 4 lockers
	54 parking spots
	Water tap



Greenery, seating and bicycle stalls (April, 2021).



Gas station and stops for the taxi (April, 2021).

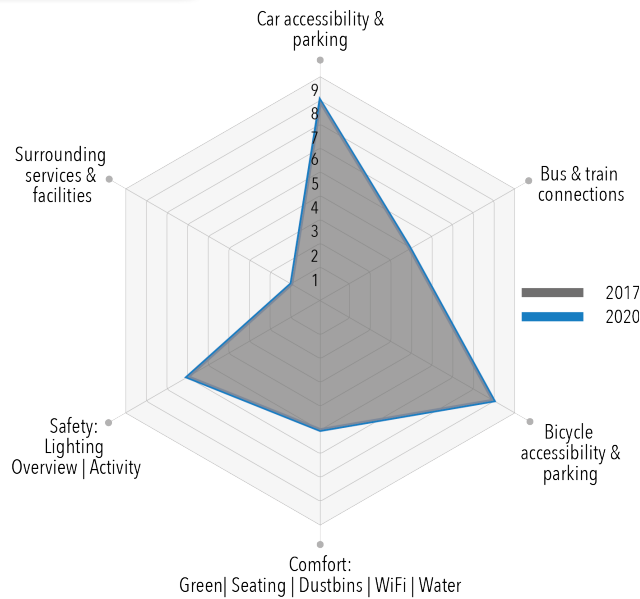


The front of the station - bicycle parking, lockers Kiss&Ride and a large parking lot (April, 2021).

Emmen Zuid is a train station in the south of the city of Emmen, on the railway between Zwolle and Emmen.

It is a relatively new station, built in 2011 (Moen, et al., 2017). Thus, the facilities are relatively new and expansive for both cyclists and car users. More recently, a gas station with a shop has been built next to the station.

The station is currently under development and will receive an additional platform which will allow a faster train connection between Emmen and Zwolle. A new waiting area will be added to the new platform (ProRail, 2020b).



KEY FACTS	
Municipality of Emmen	Zwolle Emmen
Province of Drenthe, ProRail, Arriva, NS	120 covered stalls, 40 lockers
	210 parking spots, K+R
	WC, kiosk



Bicycle parking along the railway (July, 2020)



P+R at Grijpskerk (July, 2020)

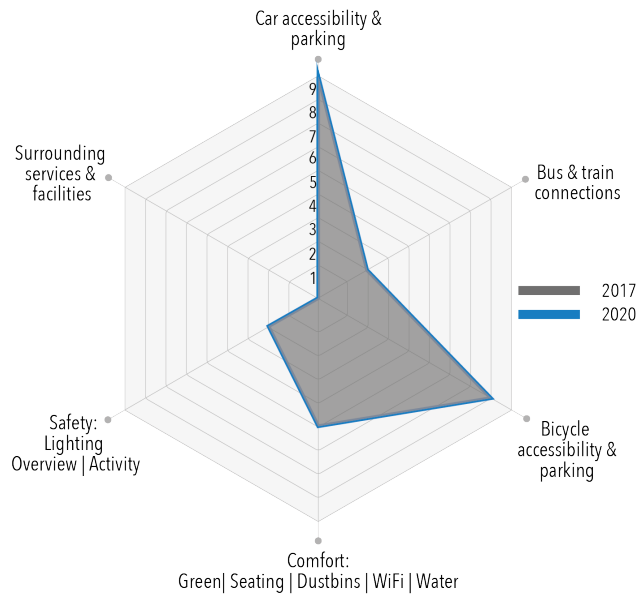


Train platforms at Grijpskerk (July, 2020)

Hub Grijpskerk is a train station on the railway between Groningen and Leeuwarden. The station is about 5 min walking distance from the village of Grijpskerk and has little to no facilities in its surroundings.

Since 2017, some bicycle stalls have been removed from the station. No other developments have occurred.

Additional express trains will soon be riding between Groningen and Leeuwarden. Some of these trains will also be longer, which means that the train platforms of the stations between Groningen and Leeuwarden have to be extended. This will also take place in Grijpskerk (ProRail, 2021b).



KEY FACTS	
Municipality of Westerkwartier	Leeuwarden Groningen
Province of Groningen, ProRail, Arriva	232 covered stalls, 16 lockers
	46 parking spots
	-
	-

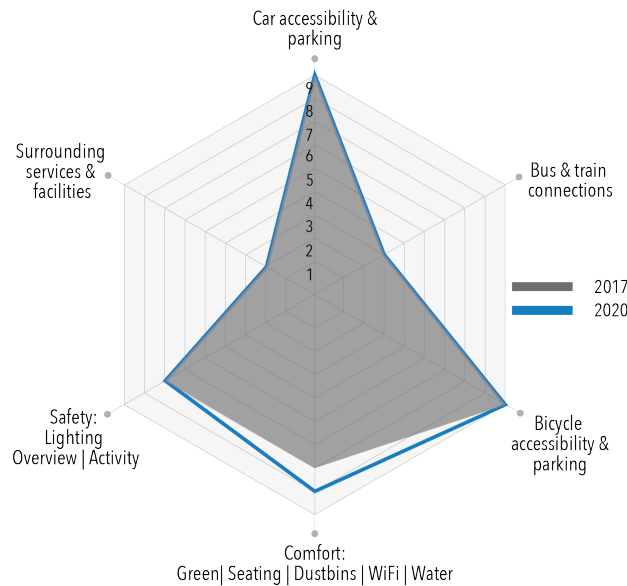


hub Hoogezand - Sappemeer

Hub Hoogezand-Sappemeer is a train station on the railway between Groningen and Nieuweschans.

Since the end of 2020, extra express trains are traveling on the railway, which brought along the closing of near-by train station Sappemeer-Oost. Thus, due to higher capacity of travellers, parking for both cars and bikes has been expanded. Additionally, a water tap has been placed.

Discussions about further developments at the hub are ongoing. There are plans to either renovate or tear down the station building and to allow access to the station from the south of the railway (interview #2).



Bicycle facilities (Dec, 2020).



The front of the station (Dec, 2020).



Parking lot along the railway (Dec, 2020).

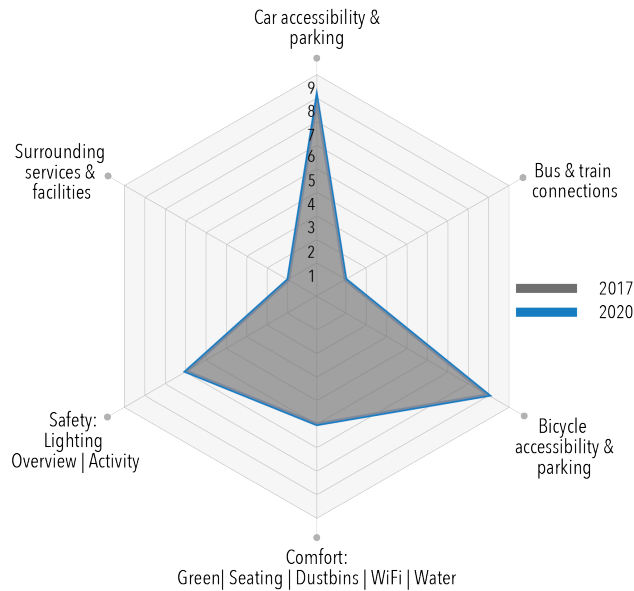
KEY FACTS	
Municipality of Midden-Groningen	Groningen Zwolle
Province of Groningen, ProRail, Arriva, NS	372 covered stalls, 16 lockers
	40 parking spots, K+R
	OV Bike
	Water tap



hub Nieuw-Amsterdam

Hub Nieuw Amsterdam is the train station of the village Nieuw Amsterdam, located on the railway between Zwolle and Emmen.

The hub provides a P+R for cars and covered bicycle stalls and bicycle lockers for cyclists. Nos buses connect to this hub.



Parking lot (April, 2021).



Bicycle stalls and lockers (April, 2021)



Hub taxi stop with the platform on the background (April, 2021)

KEY FACTS	
Municipality of Emmen	Zwolle Emmen
Province of Drenthe, ProRail, Arriva, NS	150 covered stalls 16 lockers
	26 parking spots
	-
	-

Park & Rides



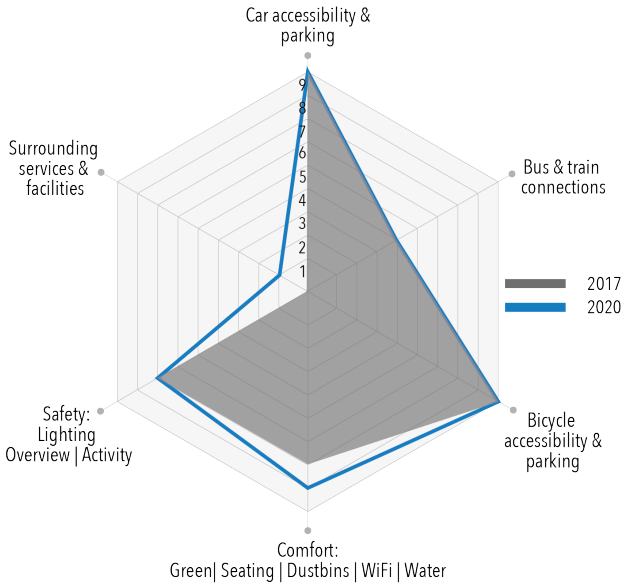


hub Groningen P+R Hoogkerk

Hub Hoogkerk is a large P+R at the edge of Groningen, close by highway A7. It is extensively used by commuters.

Hub Hoogkerk is constantly in development. Since 2017, the bicycle facilities have been expanded with more covered stalls, large sheds for businesses and most recently, with shared e-bikes. The latter is carried out as a pilot project in the region. Next, parcel lockers will be placed at the hub.

A water tap adds to the comfort of the hub and the new hotel close by adds to the place value of the hub.



Waiting area with the bus stops (July, 2020)



Shared e-bikes (June, 2021)



Bicycle parking with the hotel in the background (July, 2020).

KEY FACTS	
Municipality of Groningen	-
Province of Groningen, Groningen Bereikbaar	4x Q-link, 3x Qliner, 3x regular
	1150 daily bus boardings
240 covered stalls, 44 lockers, 4 business sheds	1215 parking spots
OV Bike, e-bikes, e-scooters	Water tap



Varieties for cycle parking: covered stalls, bicycle lockers and sheds for businesses (July, 2020).

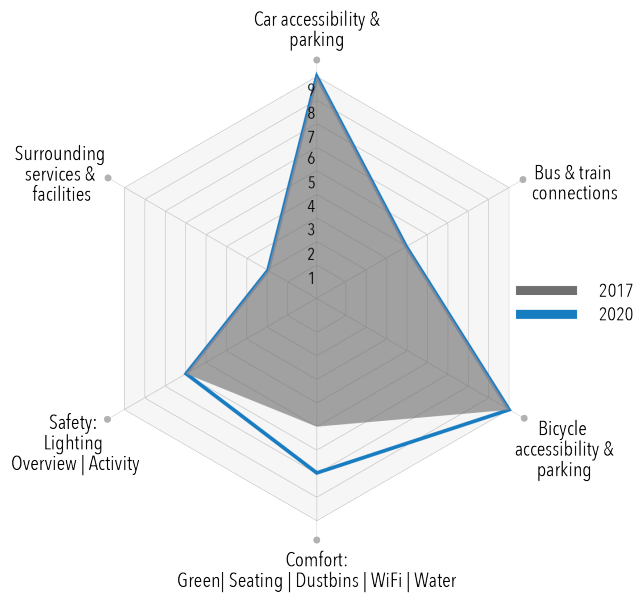


hub Haren A28

Hub Haren A28 is a P+R in the south of the city of Groningen, located next to the highway A28. The hub is an important transfer point for commuters and visitors traveling towards the city of Groningen.

The P+R provides free parking and affordable transfer to the city centre by bus. Next to public transport, also other modes of transport are facilitated, including shared e-scooters and various parking possibilities for the bike.

Since 2017, WiFi, water tap and a hub bench have been added to the hub. Additionally, the landscaping at one of the bus stops has been upgraded.



Bicycle shed for businesses and shared scooters (Sept, 2020).



Bus stop with a charging station (Sept, 2020).



Parking lot for more than 800 cars (Sept, 2020).

KEY FACTS	
Municipality of Groningen	150 (covered) stalls, 8 lockers, 1 business shed
Province of Groningen, Groningen Bereikbaar	825 parking spots
2x Q-link, 2x Qliner	OV Bike, e-scooters
440 daily bus boardings	WiFi, walking routes

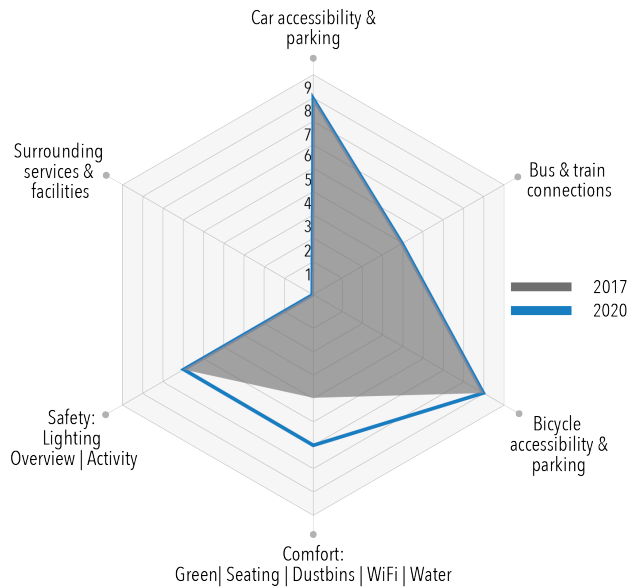


hub Groningen P+R Kardinge

Hub Kardinge is a P+R at the edge of the city of Groningen, surrounded by several regional sports facilities and the Alfa College.

The hub is connected well to the city and its surroundings thanks to the Q-link buses.

Since 2017, WiFi and a water tap have been added. The bus waiting area has been redesigned and now provides shelter from rain and wind. Additionally, the bicycle shed for businesses has been added.



Sports facilities in the background (June, 2020).



Bus waiting areas (June, 2020).



Bicycle facilities (June, 2020)

KEY FACTS	
Municipality of Groningen	-
Province of Groningen, Groningen Bereikbaar	4x Q-link, 8x regular
	1080 daily bus boardings
32 covered stalls, 8 lockers, 1 business shed (32 stalls)	
780 parking spots	
OV Bike, e-scooters	
WiFi, water tap	

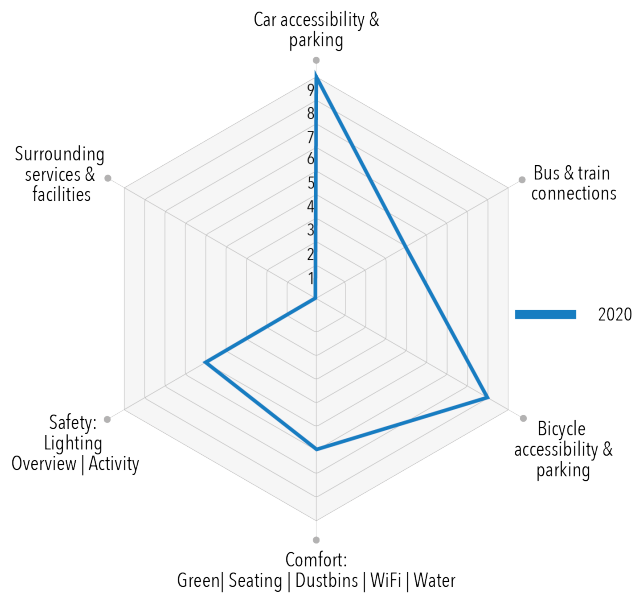


hub Groningen P+R Meerstad

Hub P+R Meerstad is one of the newest P+R locations in Groningen, opened in 2018. The hub is in the east of the city of Groningen.

The strategic location of the hub provides commuters and visitors a convenient spot to park for free and take a bus to the center of the city. From Meerstad, travellers can go directly to the city centre, the University Medical Center, and the central station.

In coming years, residential neighbourhoods will be built in close proximity of the hub, which will make the hub increasingly more important for daily commute.



Bus stop and waiting area (June, 2020).



Different facilities for the bike (June, 2020).



Large parking lot (June, 2020).

KEY FACTS	
Municipality of Groningen	-
Province of Groningen, Groningen Bereikbaar	2x Q-link
	170 daily bus boardings
	40 covered stalls, 16 lockers, 1 business shed
	400 parking spots
	e-scooters
	Water tap

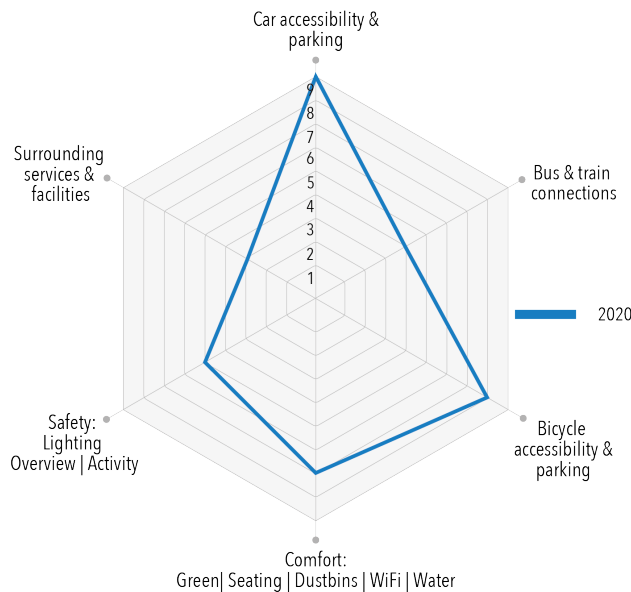


hub Groningen P+R Reitdiep

Hub Reitdiep is a spacious P+R in the north of the city of Groningen, close by the Zernike campus.

The hub is a recent addition to the P+R locations in Groningen and was not identified as a hub yet in 2017.

The P+R has fast bus connections to the city of Groningen. The Reitdiep shopping centre across the street provides proximity of different services.



The covered bicycle facilities and a toilet (Sept, 2020).



Bicycle stalls and lockers (Sept, 2020)



A spacious parking lot, including chargers, with the Reitdiep neighbourhood in the background (Sept, 2020).

KEY FACTS	
Municipality of Groningen	-
Province of Groningen, Groningen Bereikbaar	4x Q-link
130 daily bus boardings	48 covered stalls, 16 lockers, 1 business shed
300 parking spots	e-scooters
WiFi, WC	

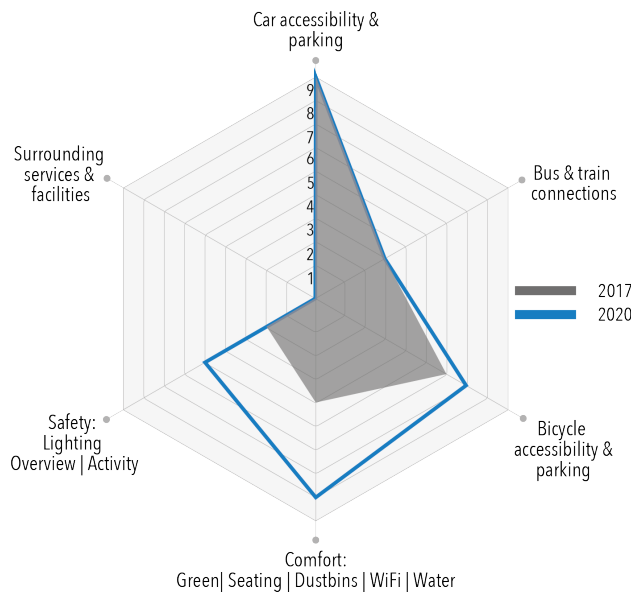


hub Leek A7

Hub Leek A7 is a P+R along the highway A7 towards the city of Groningen.

The hub has been recently fully upgraded from what used to be a collection of bus stops and parking lots along the road. Now, travellers can easily transfer between travel modes at one central location.

The hub includes a large parking lot, bicycle stalls and bicycle lockers and two water taps. The bus platform has a covered waiting area and hub benches.



Covered bicycle stalls and bicycle lockers (Aug, 2020).



Bus stop and waiting area (Aug, 2020).



Large parking lot (Aug, 2020).

KEY FACTS		
Municipality of Westerkwartier	-	32 covered stalls, 4 lockers
Province of Groningen, Groningen Bereikbaar	2x Q-link, 2x Qliner, 4x regular	200 parking spots
	120 daily bus boardings	WiFi, water tap

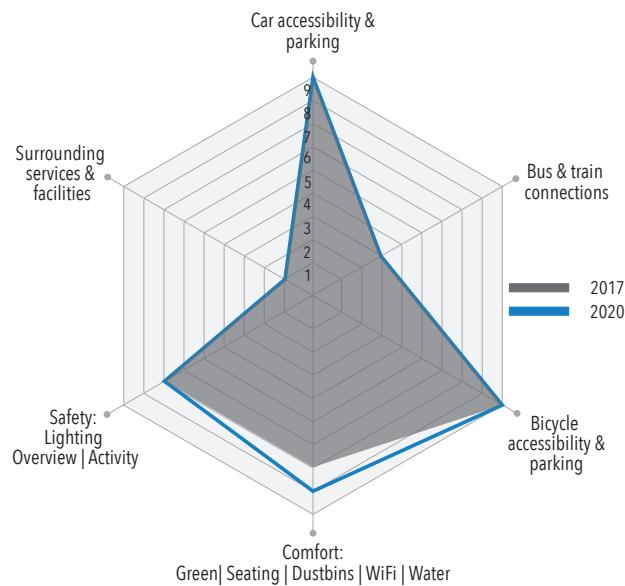


hub Gieten

Hub Gieten is an important bus station that connects the rural and urban areas of Groningen and Drenthe.

The hub was opened in its current state in 2013. Later, a water tap, WiFi, more outdoor seating, fitness equipment and a parcel locker has been added.

The kiosk at hub Gieten does not only function as a place that sells snacks for travellers, but also provides a toilet and 'eyes on the hub'. Next to multimodal travellers, also other people who simply drive by, sometimes take a break at the hub and have a drink at the kiosk. The kiosk is partly subsidised by the province (interview #3).



Covered bicycle parking (June, 2020).



Parcel lockers (April, 2021)



Parking lot (June, 2020).



Kiosk, surrounded by waiting areas and the fitness equipment on the right (June, 2020).

KEY FACTS	
Province of Drenthe	-
Municipality of Aa en Hunze	6x Qliner, 1x regular
880 daily bus boardings	300 covered stalls, 12 lockers
90 parking spots	-
WiFi, water tap, kiosk, WC, parcel lockers, fitness equipment	



Central view from the hub with a hub bench (March, 2021).



The old *steunpunt* will be repurposed and connected to the hub (March, 2021).

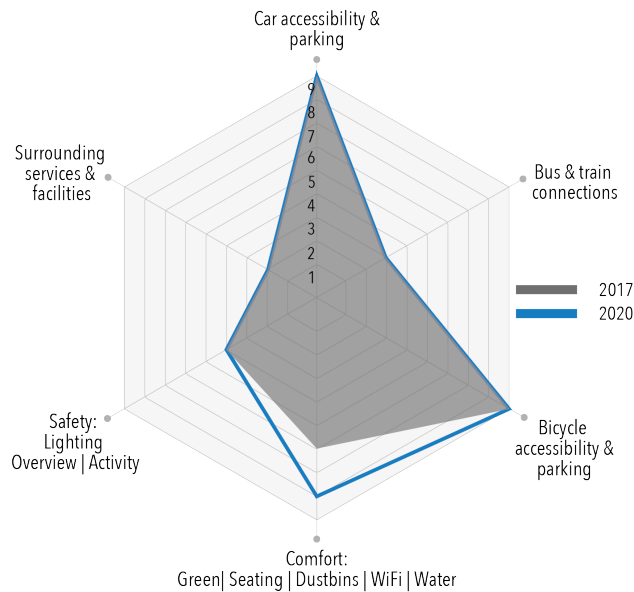


Bicycle parking and bicycle lockers in Borger (March, 2021)

Borger is a bus station on the road N34 between Emmen and Gieten.

Bicycle lockers, hub bench, WiFi, water tap and a stop for on-demand transport have been recently added to the hub. Shortly, car-sharing will also become available.

Next, the province is looking at how to connect upcoming developments with the hub. Repurposing the old provincial building (*steunpunt*), sharing facilities with a new school building and connecting to a solar farm to produce hydrogen for buses and trucks are some of the developments related to the hub (interview #3).



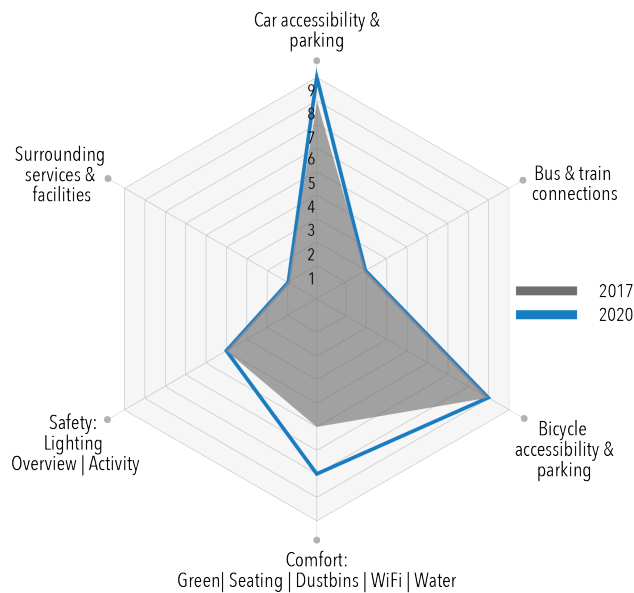
KEY FACTS		
Province of Drenthe	-	270 covered stalls, 4 lockers
Municipality of Borger - Odoorn	2x Qliner, 4x regular	70 parking spots, K+R
	270 daily bus boardings	WiFi, water tap



The surroundings of the hub (June, 2020).

Hub Westlaren is a small bus station on the N34, close by the villaged of Zuidlaren and Tynaarlo. Next to commuters, the hub is also a popular starting point for hikers.

Plans to renovate Westlaren were already underway prior to the start of the hub programme. The initial project mainly included enlarging the parking lot and expanding bicycle stalls. The hub programme then joined in to elevate the quality of the hub by applying different materials, adding more lights, bicycle lockers and the hub seating element. Additionally, WiFi has been added (interview #3).



Bus waiting area (June, 2020).

KEY FACTS	
Province of Drenthe	-
Municipality of Tynaarlo	2x Qliner, 2x Q-link
	200 daily bus boardings
200 covered stalls, 4 lockers	60 parking spots
	-
	WiFi



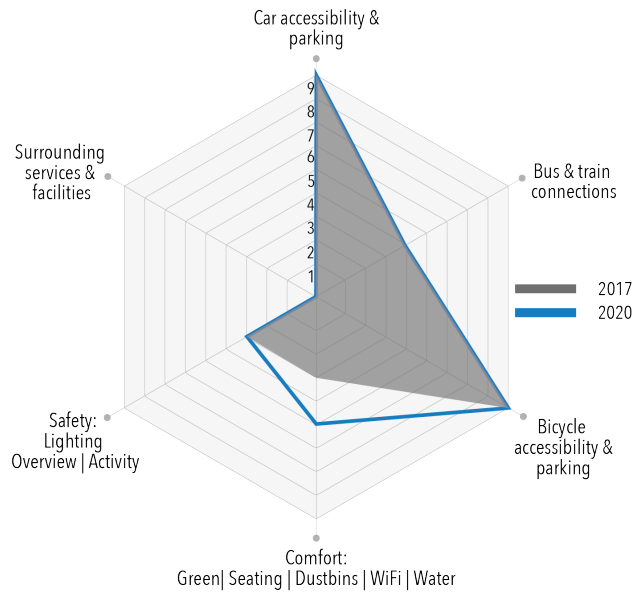
Parking lot and bicycle stalls (June, 2020).



hub Marum

Hub Marum is a collection of bus stops and parking lots along the highway A7.

Car parking is available at two carpools and bicycle stalls are located close-by all bus stops and under the highway. Since 2017, a water tap and WiFi have been added. Additionally, a couple of walking routes start from the hub.



Bicycle parking below the road (Aug, 2020).



One of the two parking lots (Aug, 2020).



The largest bicycle parking area next to a bus stop (Aug, 2020).

KEY FACTS	
Municipality of Westerkwartier	-
Province of Groningen	2x Qliner, 2x regular
	74 parking spots
	208 covered stalls
	WiFi, water tap, walking routes
	40 daily bus boardings



Covered bicycle parking (Sept, 2020).



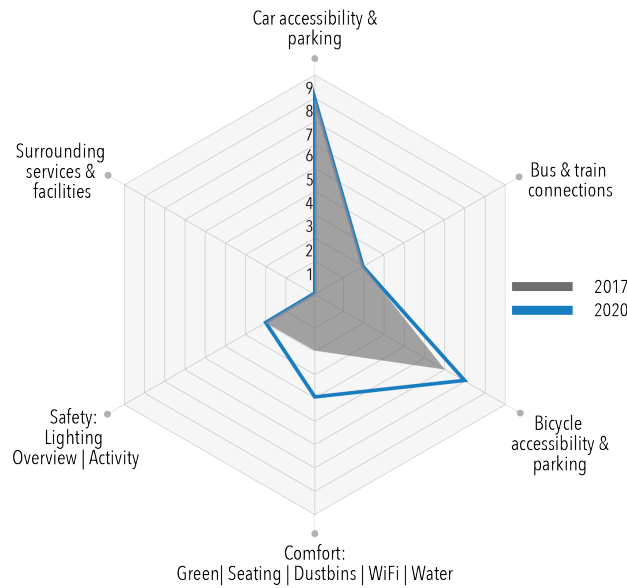
One of the bus stops (Sept, 2020).



Parking lot, more bicycle parking and bicycle lockers at the back (Sept, 2020).

Hub Peize is the primary bus stop of the village of Peize. The responsibility for the hub is shared between the municipality of the province – the bus stops lay on the grounds of the province while the parking lot and bicycle stalls belong to the municipality.

The hub has a small P+R and bicycle stalls and lockers for cyclists. The number of bicycle stalls has recently been expanded, together with the addition of WiFi and extra dustbins.



KEY FACTS	
Municipality of Noordenveld / Province of Drenthe	-
Municipality of Noordenveld / Province of Drenthe	2x Q-link
Municipality of Noordenveld / Province of Drenthe	unknown
210 (covered) stalls, 4 lockers	16 parking spots
WiFi	-



Hub bench and DRIS panel at one of the bus stops (June, 2020).



Bicycle parking under the bridge (June, 2020).

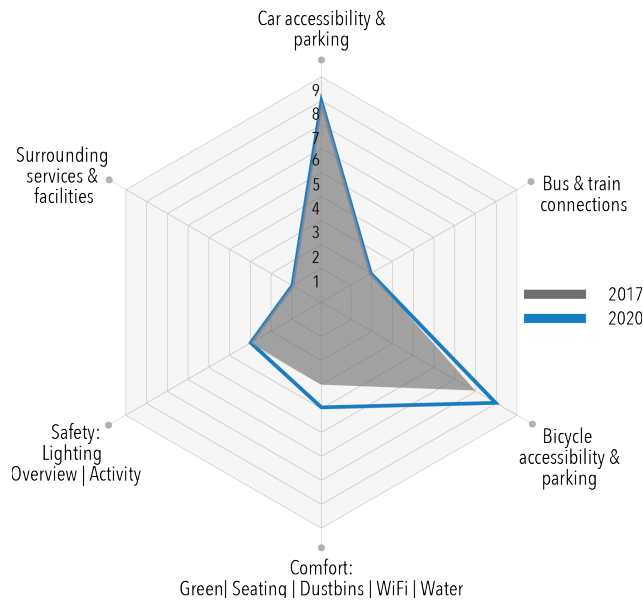


Bus stop on the entrance of road N33 (June, 2020).

Hub Rolde is a collection of bus stops at the intersection of a national motorway N33 and a provincial road. Due to the spread of bus stops, the hub lacks cohesion and can be unsafe for passengers to navigate.

Since 2017, bicycle parking has been expanded with additional 40 spots, and WiFi and parcel lockers have been added.

The province is working closely with vacation park Hof van Saksen to provide good commute for their workers and in the future, for clients. Collaboration for further developments is also needed with RWS as they are responsible for some of the surrounding land (interview #3).



KEY FACTS	
Province of Drenthe	-
Gemeente Aa en Hunze, RWS, Hof van Saksen	2x Qliner, 4x regular
	50 daily bus boardings
	84 covered stalls
	10 parking spots
	WiFi, parcel lockers

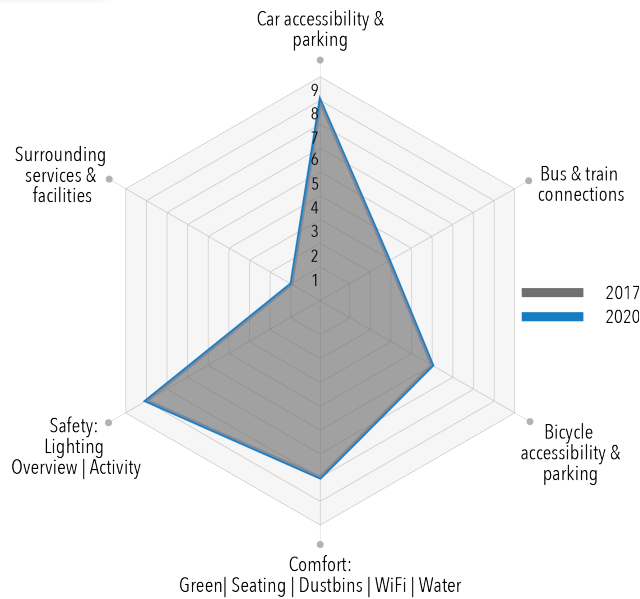


hub Lauwersoog

Hub Lauwersoog is the bus stop Veerhaven at the ferry terminal of Lauwersoog. From here, ferries depart to the island of Schiermonnikoog. The hub is primarily used by the island visitors and thus the facilities at the hub are different from typical hubs, including paid long-term parking and no bicycle facilities.

In the terminal building, there is a toilet and a coffee machine and a restaurant is built close-by.

In the coming years, the Wadden Sea World Heritage centre will be opened close by the hub. Further developments at the hub may also come about as the new concession period for the ferries starts in 2030.



Bus stops at Lauwersoog (July, 2020).



Ferry terminal building (July, 2020).



Parking lot (July, 2020).

KEY FACTS	
Municipality of Het Hogeland	-
Province of Groningen, Wagenborg	Paid parking for island visitors, P+R
2x regular	-
40 daily bus boardings	WiFi, WC, coffee

Bus stations & village hubs



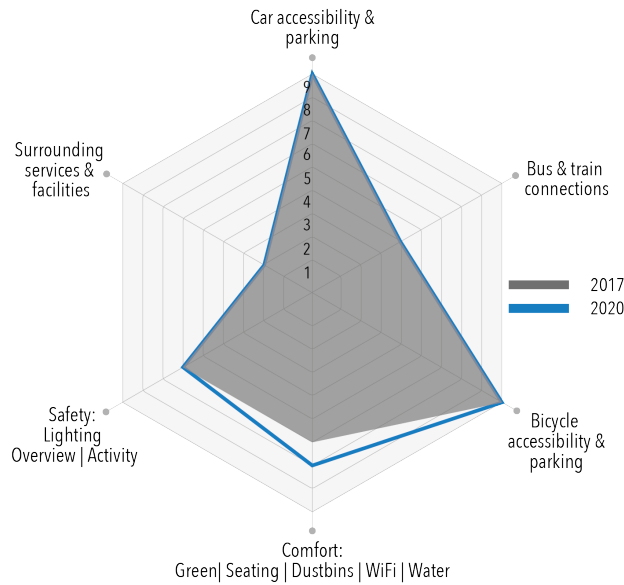


hub Assen Marsdijk

Assen Marsdijk is a bus station and an important public transport transfer point in the north of Assen. Many people use the hub to commute to work or school in Groningen using the direct bus line.

Due to the organic growth of the number of travelers, new waiting areas and bicycle parking has been added in recent years, financed by provincial subsidies (interview #8). In 2021, a parcel locker will be placed at hub Marsdijk (hub core team, 2021).

The analysis shows that comfort has been improved thanks to the addition of WiFi.



Covered bus stop with a DRIS panel (April, 2021).



Bicycle parking facilities (April, 2021)



Additional bicycle parking facilities, shared with the adjacent sports complex (April, 2021)

KEY FACTS	
Municipality of Assen	-
Province of Drenthe	800 uncovered stalls
2x Q-link, 3x regular	60 parking spots
800 daily bus boardings	WiFi



Hub location close to facilities (June, 2020).



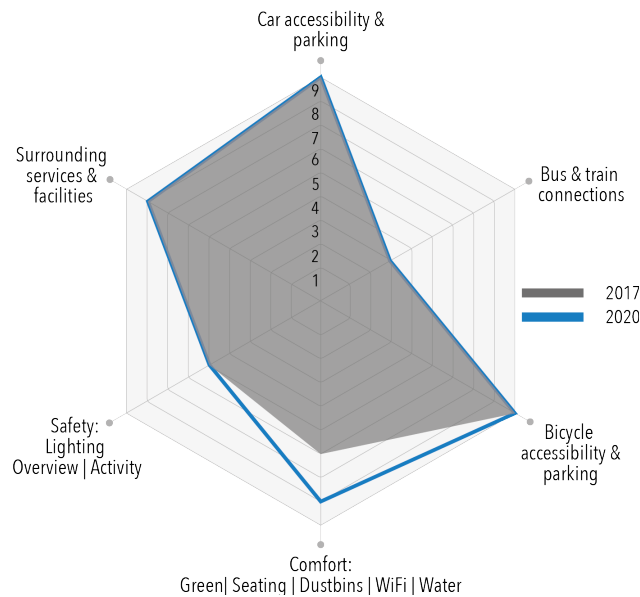
Bus stops (June, 2020).



Bicycle parking and lockers (June, 2020).

Hub Stadskanaal is the bus station of the city of Stadskanaal, located at the centre of the city, close by different shops and facilities.

Since 2017, WiFi and a water tap have been added to the hub. Additionally, bicycle lockers are available as part of a pilot project from the province of Groningen.



KEY FACTS	
Municipality of Stadskanaal	-
Province of Groningen	1x Qliner, 7x regular
	500 daily bus boardings
	130 (covered) stalls 4 lockers
	110 parking spots, P+R
	WiFi, water tap

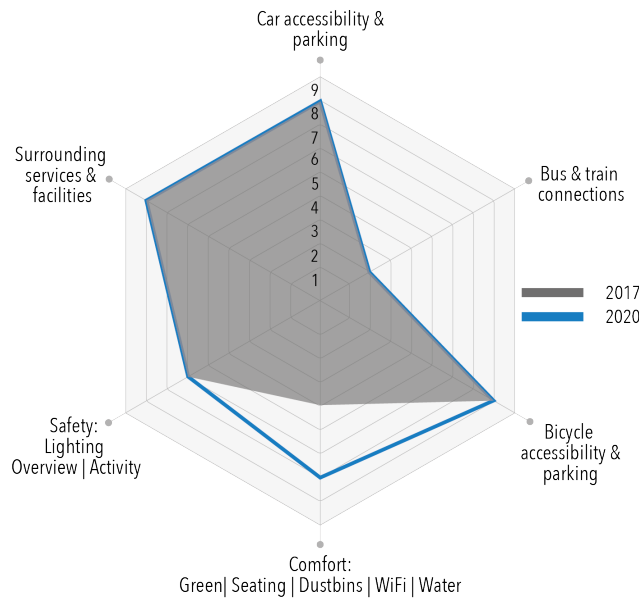


hub Roden

Hub Roden is a bus station at the centre of the town Roden, close by different shops, facilities and right next to the library.

The bus station has recently been redesigned with a central square for pedestrians. The outdoor waiting area has plenty of seating and some cover. A water tap has also been added.

Next, the hub will be connected with the library, where travellers can wait indoors, get a coffee, send a parcel or use any of the services provided by the library (interviews #1, #3).



The library next to the hub (April, 2021).



Bicycle parking (April, 2021).



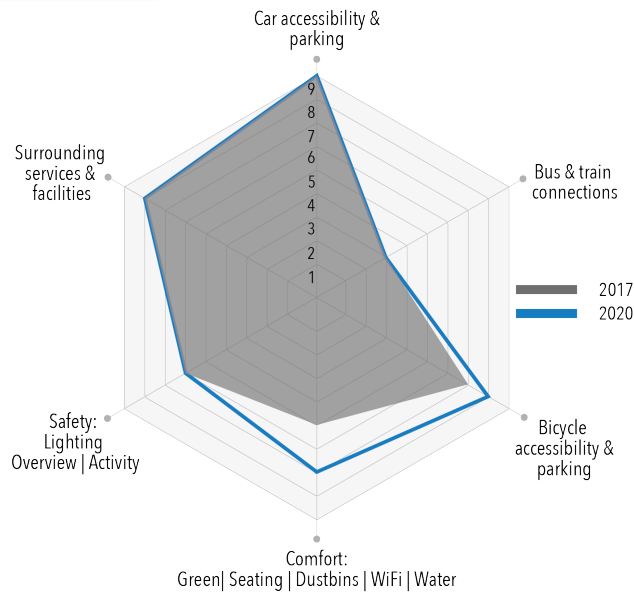
Bus stop, water tap and the library on the background (April, 2021).

KEY FACTS			
	Municipality of Noordenveld		-
	Province of Drenthe, Biblionet Drenthe		2x Q-link, 2x regular
			250 daily bus boardings
			96 covered stalls
			-
			WiFi, water tap



Hub Leek centrum consists of two bus stops at a central location in the town of Leek.

The hub has recently been upgraded with additional bicycle stalls at both of the bus stops. WiFi and water tap have also been added. Furthermore, the hub has been connected to the regional walking network which means that hikers can easily take a bus to the hub and start their walking route from the hub.



KEY FACTS	
Municipality of Westerkwartier	100 uncovered stalls
Province of Groningen	66 parking spots
2x Q-link, 4 regular	WiFi, water tap, walking routes
250 daily bus boardings	

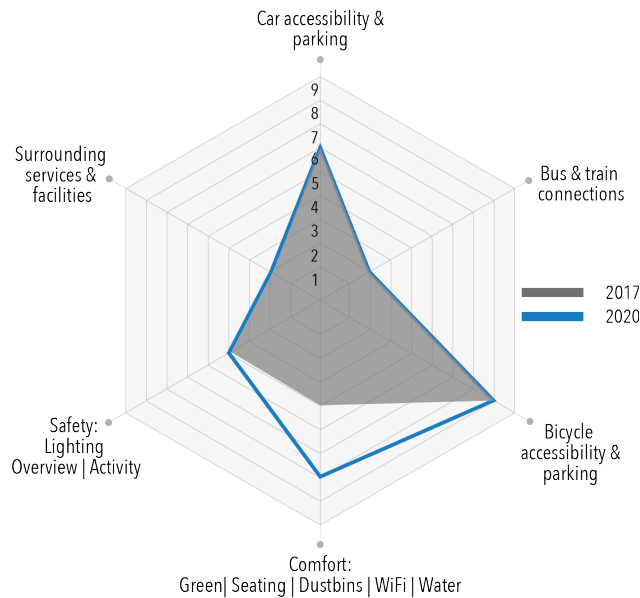


Hub location on a provincial road (July, 2020).

Hub Ten Boer is a bus stop located on the edge of the village of Ten Boer, close to various restaurants and facilities.

The hub was upgraded as part of an infrastructure project that changed the entrance to the village. The bicycle stalls have been expanded and bicycle lockers have been placed. Additionally, more seating, a water tap and WiFi have been added.

P+R and additional bicycle parking is available close to the next bus stop, where more space was available for these facilities (interview #2).



Bicycle parking and water tap (July, 2020).



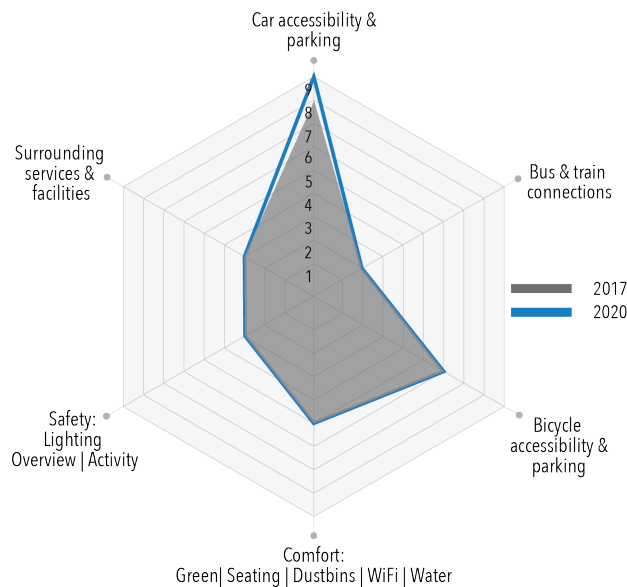
Facilities around the hub (July, 2020).

KEY FACTS			
Province of Groningen	-	80 covered stalls, 4 lockers	
Municipality of Groningen	2x Q-link	-	
	190 daily bus boardings	-	WiFi, water tap, kiosk, restaurant



Hub Dieverbrug is a small bus station at the village of Dieverbrug, located close by the Dieversluis and a harbour. The hub is an important transfer point for tourists who enjoy walking, cycling or sailing.

The parking lot, shared with the close-by restaurant, has been expanded with about 15 additional places. A parcel locker was added in early 2021 which use is closely monitored in collaboration with RUG researchers.



KEY FACTS		
Municipality of Westerveld	-	35 (covered) stalls
Province of Drenthe	4x regular	37 parking spots
	140 daily bus boardings	WiFi, parcel lockers



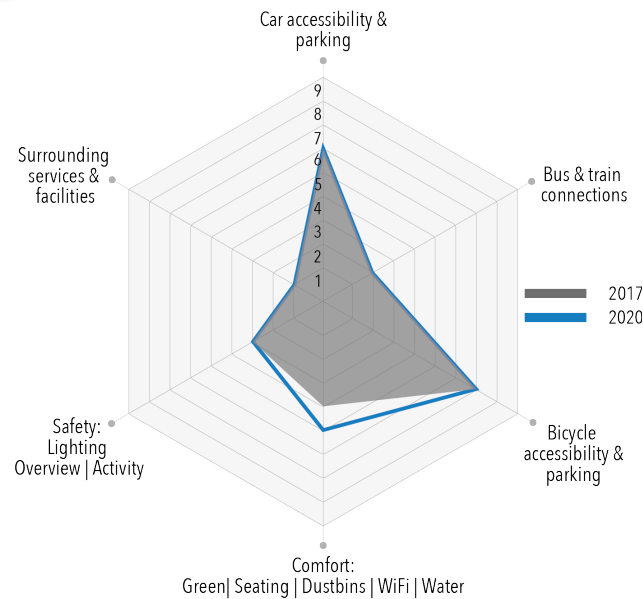


North-facing view of the hub (June, 2020).

De Punt is a small bus station that lays on the border between the provinces of Groningen and Drenthe. Car parking is not available at the hub.

In the future, a new P+R location is planned closer to the road N28. The hub will then also be relocated (reisviahub.nl).

Since 2017, little changes have occurred at the hub. A charging station for electric buses and a WiFi connection have been added.



Bicycle parking at De Punt (June, 2020).



South-facing view of the hub (June, 2020).

KEY FACTS	
Municipality of Tynaarlo	-
Province of Drenthe	48 (covered) stalls
3x regular	-
140 daily bus boardings	-
	WiFi



The two bus stops (July, 2020)



Hub bench and bicycle stalls (July, 2020).

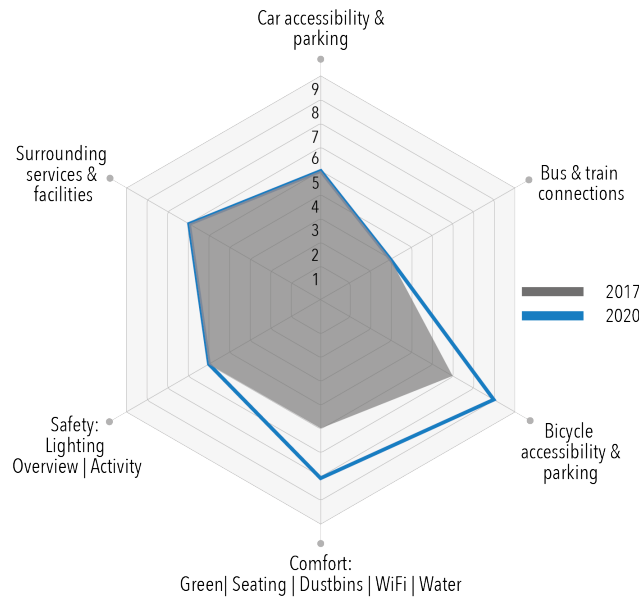


Snack bar right at the hub (July, 2020).

Hub Zuidwolde is a bus station at the center of the village Zuidwolde. Many facilities are within a short walking distance from the hub.

A snack bar is located directly at the hub. The hub does not provide car parking but does offer plenty of space for bicycles. The bicycle parking has been recently considerably expanded.

Additionally, WiFi and a water tap have been added, and a walking route start from the hub.



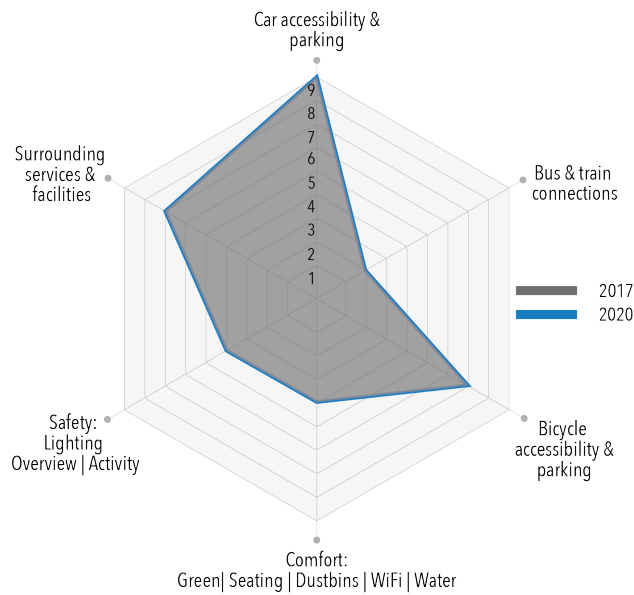
KEY FACTS	
Municipality of De Wolden	-
Province of Drenthe	-
4x regular	54 uncovered stalls
90 daily bus boardings	WiFi, water tap, kiosk, walking routes



hub Ter Apel

Hub Ter Apel is the bus station of the town Ter Apel, located at the centre of the town, close to various shops and facilities.

Upcoming developments in the centre of Ter Apel will mean that the location of the hub will slightly change, and potentially bring improvements for the hub facilities.



Surroundings of the hub (June, 2020).



The bus station is located close to the shopping centre (June, 2020).

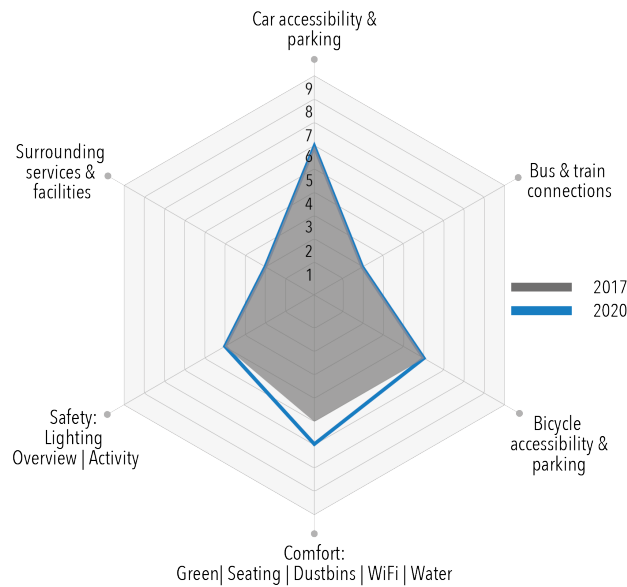
KEY FACTS	
Municipality of Westerwolde	-
Province of Groningen	48 covered stalls
	52 parking spots
	3x regular
	-
	90 daily bus boardings
	-



Hub Zweeloo is a small bus station at the village of Zweeloo. Next to commuters, the hub is also used as a resting place for cyclists and hikers.

The hub has covered waiting areas, benches, and some bicycle parking. Car parking is not provided. Since 2017, WiFi has been added.

The hub programme is working with the municipality to develop the hub and make it also more attractive for tourists. A water tap is also desired (interview #1).



Bus stop, benches and bicycle stalls (June, 2021).



DRIS panel (June, 2020).

KEY FACTS	
Municipality of Coevorden	22 uncovered stalls
Province of Drenthe	-
5x regular	WiFi
110 daily bus boardings	



Bus stop and bicycle stalls across the street (Sept, 2020).

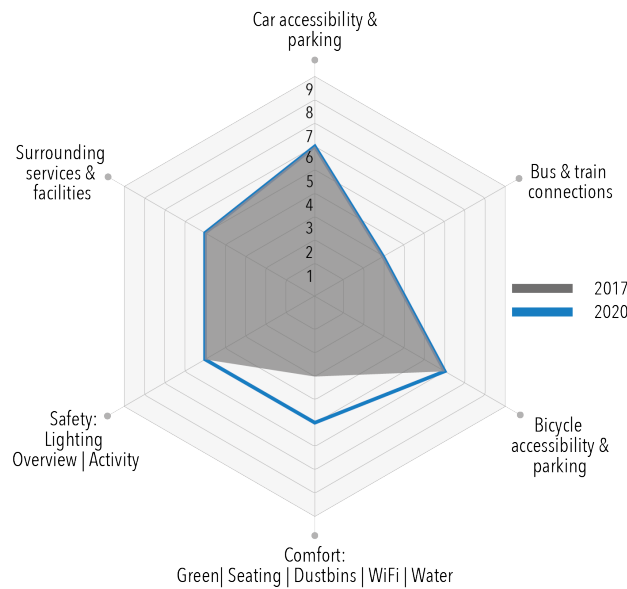


Hub location on the main shopping street (Sept, 2020).

hub Grootegast

Hub Grootegast is the primary bus stop in the village of Grootegast, located centrally on the shopping street. The village centre has recently been renovated, including the bus stops.

Since 2017, WiFi and a water tap have been added to the hub. The latter is especially important for hikers who start or end a walking route from the hub.

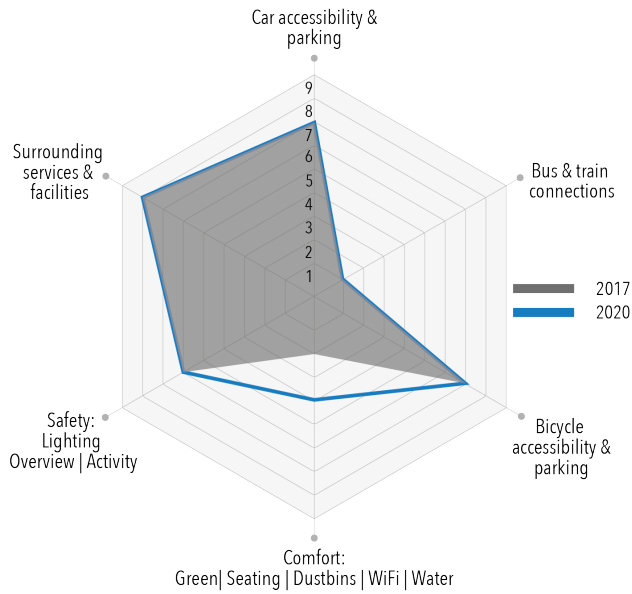


KEY FACTS	
Municipality of Groningen	-
Province of Groningen	4x regular
	80 daily bus boardings
	20 uncovered stalls
	-
	-
	WiFi, water tap, walking routes



Hub Leens is the main bus stop at the village of Leens at close proximity to different shops and services.

Due to its location, no parking is available at the hub, however, parking is available closer to the shops. The hub does provide parking for bicycles, WiFi and a water tap, the latter two added after 2017.



KEY FACTS	
Municipality of Het Hogeland	-
Province of Groningen	-
4x regular	30 uncovered stalls
80 daily bus boardings	WiFi, water tap, walking routes



Bus stop and bicycle stalls on the left (June, 2020).



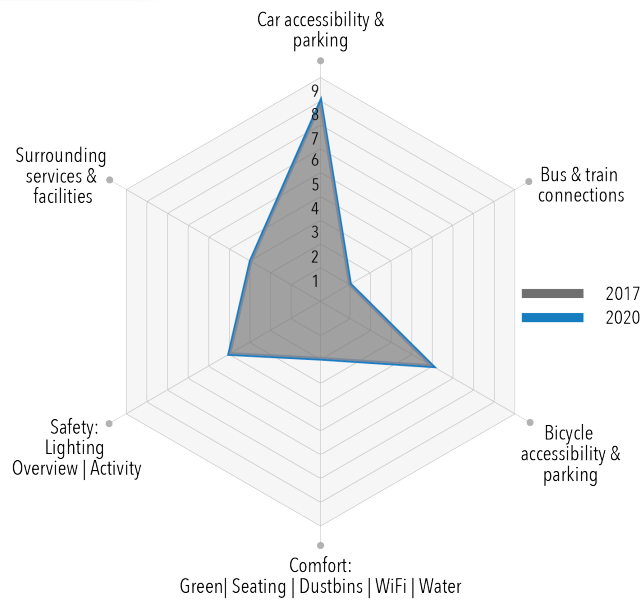
Shopping centre close by (June, 2020).

hub Klazienaveen

Hub Klazienaveen is located at the bus stop Dordsebrug at the town of Klazienaveen. From here, travellers can take the bus towards Emmen and Coevorden.

The hub is at close proximity to the centre and shopping street of Klazienaveen. Travellers can use the near-by parking lot as a P+R and bicycle stalls are available next to the station.

Further developments are yet to take place at the hub.



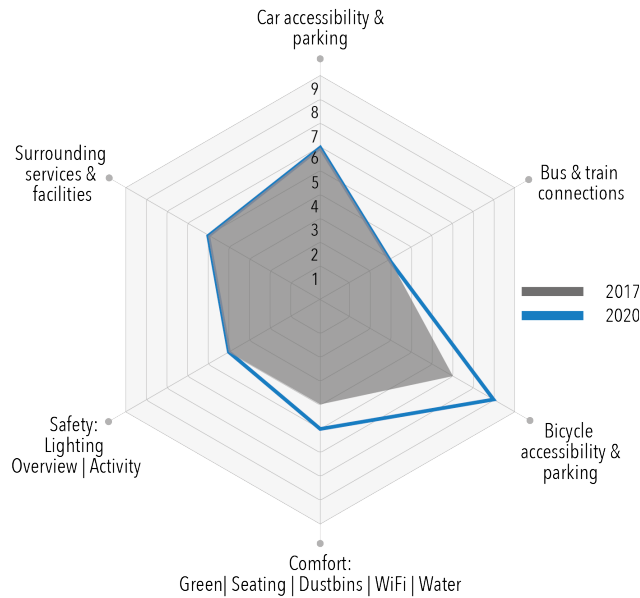
KEY FACTS		
Municipality of Emmen	-	50 uncovered stalls
Province of Drenthe	6x regular	34+ parking spots
	70 daily bus boardings	-
		-



hub Norg

Hub Norg is the central bus stop at the village of Norg, located across the street from a grocery store and close-by various local shops and facilities.

The hub has recently been redesigned, including a new bus pavilion and new bicycle stalls which also provides a spot for more bicycles than previously. Additionally, WiFi has been added.



Bicycle parking (April, 2021)



Location close to many facilities (April, 2021)



New bus pavilion (April, 2021)

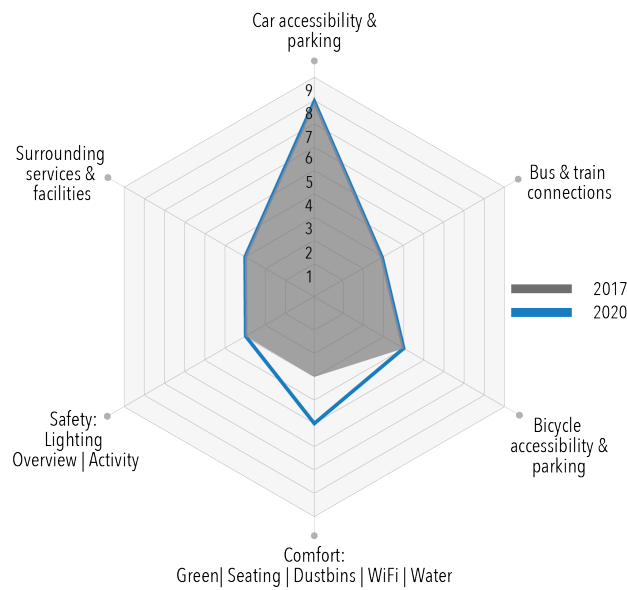
KEY FACTS	
Municipality of Noordenveld	72 uncovered stalls
Province of Drenthe	-
3x regular	-
70 daily bus boardings	WiFi



hub Vlagtwedde

Hub Vlagtwedde is the main bus stop of the village of Vlagtwedde, located in the centre with various shops and facilities.

Since 2017, a water tap and a covered bus stop have been added to the hub. Additionally, four bicycle lockers are available as part of a pilot project.



Bicycle lockers (June, 2020).



Large parking lot (June, 2020).



Parking for on-demand transport (June, 2020).

KEY FACTS	
Municipality of Westerwolde	-
Province of Groningen	2x regular
	60 daily bus boardings
	56 uncovered stalls, 4 lockers
	50+ parking spots
	water tap



Covered waiting area surrounded by green (June, 2020).



Bicycle parking (June, 2020).

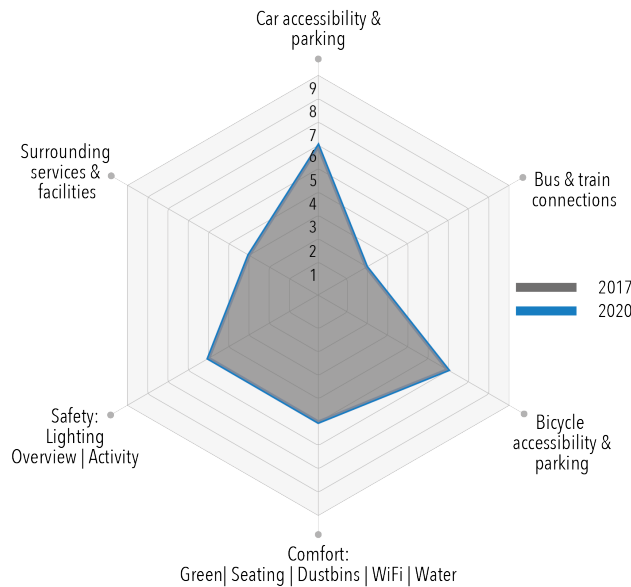


Location at the main road in the village, with visual access from residents (June, 2020).

Hub Annen is the central bus stop of the village of Annen. The hub is located 200 metres from the main shopping centre with a large parking lot. The hub is in a green neighbourhood, surrounded by local shops and residential buildings.

In the future, the hub might be moved closer to the shopping centre to ensure proximity to services and adjacent car parking (interview #1).

No developments have occurred at the hub since 2017.



KEY FACTS	
Municipality of Aa en Hunze	-
Province of Drenthe	-
2x Q-link, 4x regular	20 covered stalls
60 daily bus boardings	-
	WiFi

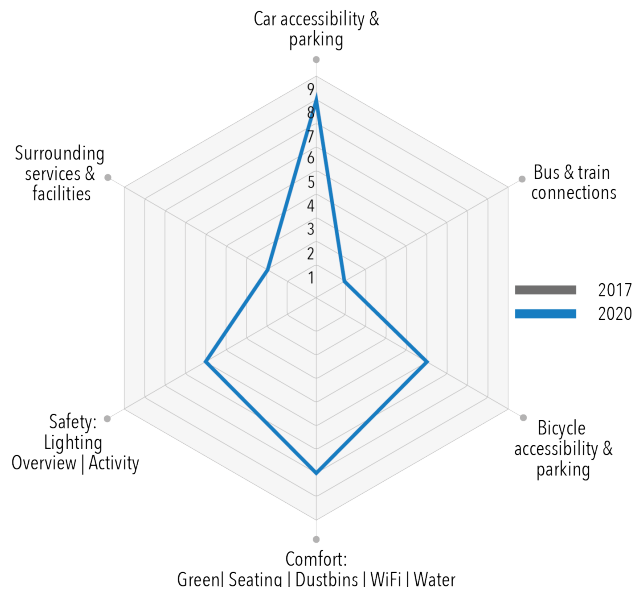


Walking routes start at the hub (April, 2021)

Hub Siddeburen is the main bus stop at the village of Siddeburen, located close by the centre.

In 2017, a different location was considered for the hub. However, due to the development of the multifunctional centre (MFC), the hub was relocated to its current spot. The MFC has recently been finalized and houses a library and a health centre. The MFC can also be used by the travellers to get a coffee, use the toilet or simply wait under cover.

Shortly, the bus pavilions will be updated and wayfinding will be implemented for travellers to find their way to the MFC for its facilities (interviews #2, #9).



The multifunctional centre (April, 2021).



Old bus stop, bicycle parking with the church, MFC and parking lot in the background (April 2021)

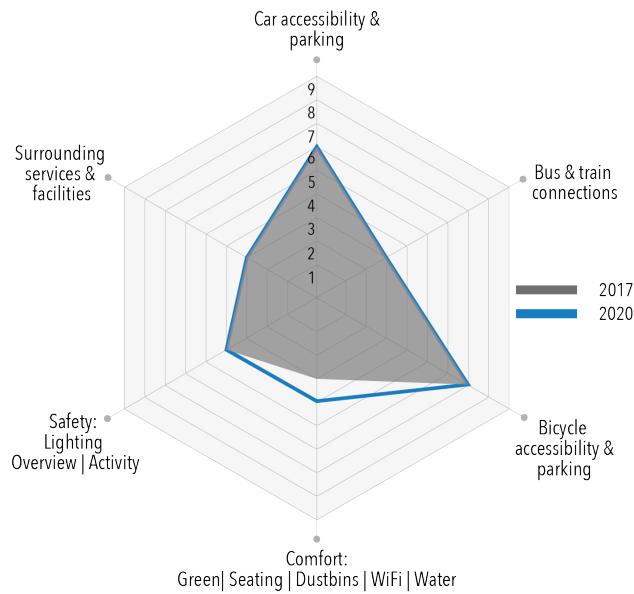
KEY FACTS	
Municipality of Midden-Groningen	-
Province of Groningen	2x regular, 2x schoolbus
	50 daily bus boardings
	12 uncovered stalls
	14 parking spots
	WiFi, water tap, kiosk, walking routes



hub Pekela

Hub Pekela is the bus stop Raadhuislaan at the village of Oude Pekela that provides a parking spot for a taxi, covered waiting area and bicycle parking.

Since 2017, WiFi has been made available at the hub. In the future, the hub will be relocated to the centre of the town, which at the moment lays 500m from the hub.



One of the two bus stops (March, 2021)



Parking for the hub taxi (March, 2021).

KEY FACTS	
Municipality of Pekela	-
Province of Groningen	12 uncovered stalls
4x regular	-
40 daily bus boardings	WiFi



Bicycle parking (July, 2020).



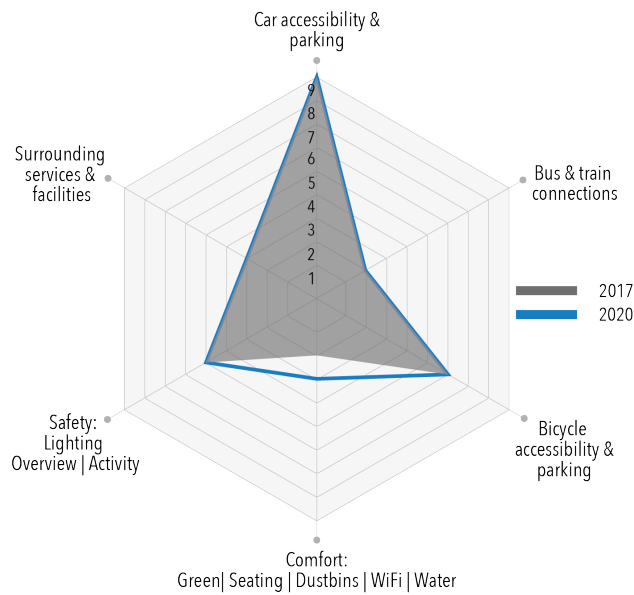
Bus stop along a provincial road (July, 2020).



Parking lot shared with the shopping centre (July, 2020).

Hub Smilde is the bus stop at the centre of Smilde, located next to a shopping centre. The hub is located on a provincial road and thus managed by the province.

The hub provides bicycle parking for travellers, car parking is shared with the shopping centre. Since 2017, WiFi has been made available at the hub.



KEY FACTS	
Province of Drenthe	-
Municipality of Midden-Drenthe	14 covered stalls
4x regular	140 parking spots
30 daily bus boardings	WiFi

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Appendices

Appendix 1: List of interviews

#	Organisation	Position
1	Reis via hub	Hub advisor
2	Province of Groningen	Project manager mobility
3	Province of Drenthe	Project manager traffic and transport
4	Publiek Vervoer Groningen Drenthe	Project and contract manager
5	OV Bureau Groningen Drenthe	Manager network development
6	Groningen Bereikbaar	Strategic advisor traffic management and smart mobility
7	Municipality of Groningen	Policy maker public transport
8	Municipality of Assen	Advisor traffic and mobility, and policy advisor mobility
9	Province of Groningen	Programme officer Smart and Green Mobility and Mobility hubs

Appendix 2: Full overview node-place analysis

Network (node) Criteria		SCORE / NOTES				Ruilme (Place) Criteria		SCORE / NOTES			
CAR		0	2017	0	2020	COMFORT		0	2017	0	2020
<i>Car accessibility</i>	Amount of residents reached within 30 min. of driving					<i>Green</i>	Presence of green/nature				
	0. none 1. 1-499 2. 500 - 1699 3. 1700 - 4999 4. 5000-9999 5. 10000 - 250000 6. > 250.000						0. none 1. A few trees/bushes/grass patches, not well kept 2. Trees/bushes/grass, well kept 3. Trees/bushes/lawn, landscaped and very well maintained.				
<i>Parking</i>	Availability of parking spaces					<i>Seating</i>	Presence of waiting spaces (seats, benches, etc)				
	0. none 1. 1-10, uncovered 2. 11-30, uncovered 3. >30, uncovered, OR >10 covered						0. none, no cover 1. Yes (1-4), no cover/cover 2. Yes (>=5), cover				
OV		0	2017	0	2020	<i>Dustbins</i>	Presence of dustbins				
<i>Bus</i>	Potential for bus transit						0. none 1. Yes				
	0. none 1. 1-4 routes at min 1x per hour 2. 1-4 routes at min 2x per hour 3. >4 routes at min 1x per hour 4. >4 routes at min 2x per hour					<i>WiFi</i>	Presence of internet (WiFi)				
<i>Train</i>	Potential for train transit						0. none 1. Yes				
	0. none 1. 1-3 routes at min 1 per hour (stoptrein) 2. >3 routes at min 2 per hour (stoptrein/sneltrain) 3. >3 routes at min 4 per hour (sneltrain/intercity) 4. >3 routes at min 6 per hour (intercity/interational)					<i>Water tap</i>	Presence of water tap				
BIKE		0	2017	0	2020		0. None 1. Yes				
<i>Bike accessibility</i>	Amount of residents reached within 15 min of cycling					SAFETY		0	2017	0	2020
	0. none 1. 1 - 249 2. 250 - 849 3. 850 - 2,499 4. 2,500 - 4,999 5. 5,000 - 125,000 6. >125,000					<i>Lighting</i>	Presence of street lighting / public lighting				
<i>Bicycle parking</i>	Availability of bicycle parking spaces						0. none 1. Yes, ambient 2. Yes, average 3. Yes abundant				
	0. none 1. Minimal, 0-30 spaces, open/uncovered 2. Average, 30-50 spaces, open/uncovered 3. Average, 51- 100 spaces, open/uncovered 4. Abundant, >100 spaces closed, covered/monitored					<i>Overview</i>	Presence of others / 'eyes on the street'				
							0. none, no visual access/camera 1. minimal, some visual access/camera 2. average, visual access and cameras 3. abundant, visual access (residents), multiple cameras				
						<i>Activity</i>	Presence of activity (day/night/weekends)				
							0. None during day/night/weekends 1. Minimal, light activity during the day/weekend 2. Average, activity during day and night 3. Abundant, heavy activity during day, night and weekend				
						SERVICES		0	2017	0	2020
						<i>Services</i>	Types of facilities/shops within 5 min walking distance				
							0. none. No facilities at all 1. Minimal, 1-3 local facilities 2. Minimal, 3-10 local facilities 3. Minimal, 10-30 local facilities 4. Average, >30 local facilities 5. Average >30 local and 0-2 regional facilities 6. Average, >30 local and 3-10 regional facilities 7. Abundant, >30 local and 10-30 regional facilities 8. Abundant, >30 local and 10-30 regional facilities 9. Abundant, >30 local and >30 regional facilities				