



university of
groningen

faculty of spatial sciences

Bachelor's thesis:

The feasibility of a tram in Groningen



*Factors that play a role in the possibility of a
reintroduction of the tram in contemporary Groningen*

Poppe Ytsma

s3233022

p.j.ytsma@student.rug.nl

11 June 2019

Supervisor: Farzaneh Bahrami

6556 words

Table of contents

Preface.....	3
Abstract	4
1 Introduction.....	5
1.1 Background.....	5
1.2 Research Problem.....	6
1.3 Structure of thesis	6
2 Theoretical framework.....	7
2.1 Conceptual model	7
2.2 Literature review	7
3 Methodology	9
3.1 Research method	9
3.2 Ethical considerations	10
4 Results	11
4.1 Spatial & infrastructure	11
4.1.1 Q-link	11
4.1.2 Groningen Spoorzone.....	13
4.2 Policy	14
4.2.1 Coalition agreement.....	14
4.2.2 Grote Markt.....	15
4.3 Support.....	16
4.3.1 Political	16
4.3.2 Public	16
4.4 Finances.....	17
4.5 Other	18
5 Conclusions.....	19
5.1 Main conclusion	19
5.2 Recommendation future research	19
5.3 Reflection.....	19
References.....	20
Attachments	21

Frontpage: impression of a tram in the Oosterstraat (Verkeersnet, 2009).

Preface

This is a research on the factors that play a role in the possibility of a reintroduction of the tram in contemporary Groningen. Personally I have always been very intrigued by the tram. When I moved to the city of Groningen as a kid, I learned that they were planning a tram line right near my house. Sadly this plan was abandoned just before construction would have started, in 2012.

But since the most recent local elections were won by 'tram party' GroenLinks last year, citizens and politicians have restarted the conversations about the tram in Groningen. Since then I keep wondering: will there ever be a tram in Groningen? With this research I attempt to answer this question and I wish to contribute to the discussion about a tram in Groningen.

It was only in the process of writing this thesis that I discovered what the process of writing a theses is actually like. I learned that it is really important to take every step of the process really carefully and well thought. It is especially important that the first few steps are based on adequate research from academic sources. Not making these first steps the right way has resulted in a difficult research process for me and a thesis with perhaps too little academic foundation. I also learned that using semi-structured interviews is a very pleasant and content rich type of research, but that transcribing and analysing the data takes a lot of time. I discovered how important it is to choose a topic that stays interesting during the whole project.

Before I start the thesis, let me thank all the interviewees, who gave me a lot of very interesting input for this research. I want to thank my supervisor, Farzaneh Bahrami, for guiding me through my research and for keeping faith in the subject I wanted to research from the start. I wish to thank my study friend for guiding me through the research with advice and tips. And my final thanks go to my mother, for giving me the discipline to keep working on this thesis.

Poppe Ytsma

10 June 2019

Abstract

After the most recent municipal election the tram is a subject that can be spoken about again in Groningen. In 2012, the city abandoned its plans to reintroduce a tram just before construction would start. This research tries to find out what the chances are that a tram would be reintroduced in Groningen today. This is done by looking at the general advantages and disadvantages of a tram and by diving into the developments that are specific to contemporary Groningen. Mixed interviews are used to explore these developments with specialists, civil servants and politicians. The research will show that the current developments in Groningen do not evidently lead to a reintroduction of a tram. However, this does not at all mean that reintroducing a tram in Groningen is impossible.

1 Introduction

This chapter gives an introduction to the research.

1.1 Background

In Groningen the first electric tram lines were built in 1910 (RTV Noord, 2018). The tram network was expanded up to five tram lines but was eventually abandoned after the second World War in 1949. Since the 1990s politicians started talking about reintroducing the tram, and several studies were conducted. After these studies, plans were presented for a tram that would not only run in the city, but eventually also serve the villages around the city, the so called RegioTram. Figure 1 shows what RegioTram could have looked like in the future.

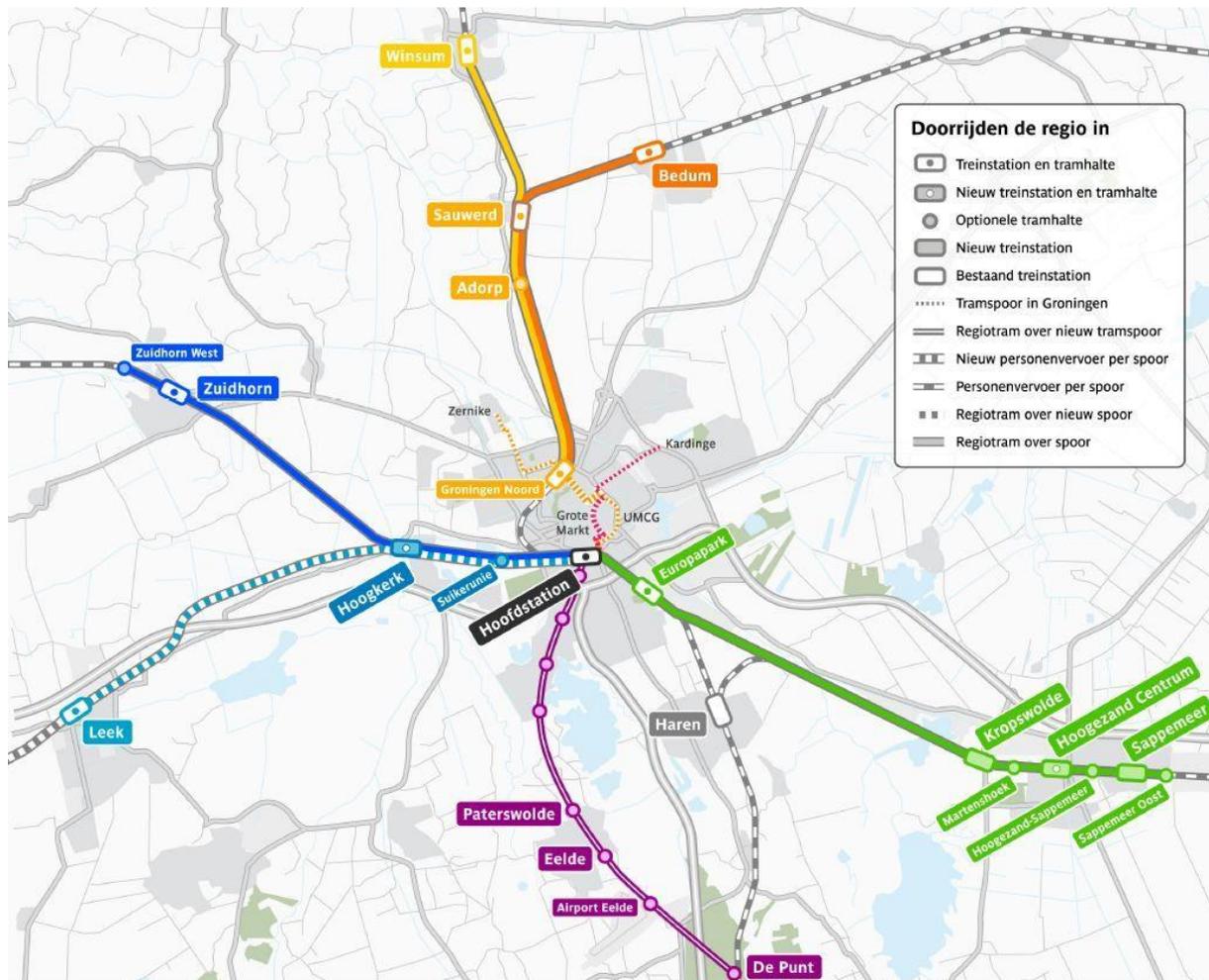


Figure 1: RegioTram, a tram that would drive through into the region (RegioTram, 2012a)

In 2012, even though the tender process for building the RegioTram in Groningen was almost finished and building was planned to start the year after, the project was abandoned when two coalition parties did not want to take the financial risk of the project (RTV Noord, 2012). Since the most recent municipal elections in November 2018 were won by the Green party GroenLinks, which is known to be the ‘tram party’ of Groningen, people have started talking about the tram again (Sikkom, 2018).

Whether a tram will actually be introduced in Groningen is for now just a matter of guessing. The most recent studies to the possibility of a tram in Groningen date back to the period before 2012, so there is a time gap in research which will be filled by this thesis. The research will focus on current

developments and therefore be very relevant for the city of Groningen. This research will contribute to the new political debate of a tram in Groningen with a scientific and up-to-date research.

1.2 Research Problem

The aim of this research is to find out what the feasibility of an actual possible reintroduction of the tram is in contemporary Groningen, and how the advantages of a tram and the current developments in Groningen influence this. Therefore the main research question is:

“In which way do current developments in Groningen lead to a possible reintroduction of the tram in contemporary Groningen?”

Two sub questions are:

- Which general advantages/disadvantages does a reintroduction of a tram in Groningen have?
- Which specific developments in contemporary Groningen influence a possible reintroduction of a tram?

1.3 Structure of thesis

This thesis starts with the theoretical framework in chapter 2, where the relevant literature and the conceptual model are explained, including the answer to the first sub question. The research method will be explained in chapter 3. In chapter 4 the results of the interviews are presented, which will also answer the second sub question. The conclusions and the answer to the main question will be presented in chapter 5, along with a reflection and recommendations for future research.

2 Theoretical framework

In this chapter the theoretical framework for the research is presented, together with the conceptual model, which is based on this. Finally the literature for the first sub question is presented.

There are a lot of other cities comparable to Groningen, that have introduced a tram (relatively) recently. Most of these cities are in France, since in France there were almost no tram networks left after the second World War, but cities were encouraged to introduce a tram from the 1980s onwards (Bouquet, 2017). One of these cities is Montpellier, where a tram was introduced in 2000. Mills (2001) analysed the process leading up to this event. He discussed the general and place-specific advantages that the reintroduction of a tram has had. The general advantages are advantages that are the same in all cities that introduce a tram. The combination of these two advantages is used to argue whether a tram should be implemented. Van der Bijl et al. (2018) argues that “the final choice for a certain mode of transport depends greatly on context: local conditions help make the final decision, for instance bus instead of tram.”

2.1 Conceptual model

This idea is used to create a very simple conceptual model (figure 2) to determine the possibility of reintroducing a tram in Groningen. The conceptual model links the two arguments to the possibility of reintroducing a tram in Groningen. These two arguments have a combined effect, as Mills (2001) underlined. This means that the combination of the general advantages/disadvantages of a tram and the factors that are specific to contemporary Groningen have an effect on the possibility that there will be a tram in Groningen. The factors specific to contemporary Groningen can also be described as the place-specific advantages of a tram in contemporary Groningen.

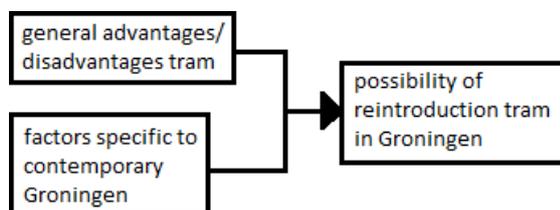


Figure 2. Conceptual model of this research.

The conceptual model is the framework for the research. Both arguments on the left relate to a sub question, and the argument on the right relates to the main research question.

The hypothesis is that the current developments in contemporary Groningen, the place-specific factors, will have both negative and positive effects, but because the general argument favours a tram in Groningen, there is a small possibility for a reintroduction of a tram in Groningen. It is also expected that there will be some developments in Groningen since 2012 that make the possibility of reintroducing a tram smaller.

2.2 Literature review

According to Van der Bijl et al. (2018), there are five essential arguments why a high-quality public transportation system, such as a tram or light rail, should be introduced. These five arguments are known as the five E's. The first is effective mobility, within a certain bandwidth of passengers (20,000) the tram is simply the most efficient mode of transportation. The second is efficient city. Trams and other kinds of fixed infrastructures create conditions which are favourable to the spatial developments of the area. This is because the infrastructure will not be removed for at least 30 years. The third is economy, because the existence of well-served tram stops can stimulate economic

activity. In a case study on the RegioTram, Van der Bijl et al. (2018) point out that poor inner-city streets would especially benefit from an investment like a tram.

The fourth argument for a tram is environment. A tram is less polluting than other modes of transport because of its electric traction. However, Bouquet (2017) argues that trams may not be as environmentally friendly as they appear. The fifth and final argument is equity. Along the route of the tram, that usually crosses the whole city, everybody can take advantage of the tram, and everybody's accessibility is improved, which is good for social inclusion and equality.

Another advantage recognized by Ben-Avika & Morikawa (2002) is that when tram services offer a higher quality service than busses, people have a bias for the tram. Bunschoten et al. (2013) show that travellers have a clear preference for a tram. This is called the tram bonus.

However, Van der Bijl et al. (2018) argue, investment costs for a tram or light rail are higher than those of a bus, especially when there is no tram infrastructure yet. Also construction takes place slowly and many complications can show up that either delay or stop the project. Bouquet (2017) argues that in medium sized cities, Bus Rapid Transit systems may offer the same transport capacity at much lower costs.

3 Methodology

In this chapter the method of the research will be explained, as well as the ethical considerations.

3.1 Research method

The research was done using semi-structured interviews. These interviews were prepared by research on policy documents and current developments in Groningen. According to Longhurst (2016), semi-structured interviews can be used for a range of research, including this qualitative research type. A quantitative research would not be sensible since that would not give insights into all the factors that play a role in Groningen in the same way that qualitative research would.

With the research done before the interviews, a list was created with factors/developments that appeared to be important to the possibility of a reintroduction of a tram. Based on this list the research questions were formulated (attachment 1). These questions were translated into Dutch to be used by the interviewer during the interview. When the interviewee would ask, they would receive the questions in advance. The interview was semi-structured, therefore every topic that had to be discussed would be discussed, but the interviewee was free to mention everything they regard as relevant. In this way, the developments that were not found in the research in advance could be discussed.

The following people have been interviewed for this research:

- *Rob van der Bijl*: specialist of tram and light rail, former advisor for the RegioTram project. Interviewed on 09-05-2019.
- *Karin Dekker*: former aldermen of transport at the municipality of Groningen (2002-2012), current aldermen at the municipality of Assen. Interviewed on 24-05-2019.
- *Wim Koks*: councillor in the municipality of Groningen (SP, spokesman for traffic). Interviewed on 23-05-2019.
- *Benni Leemhuis*: councillor in the municipality of Groningen (GroenLinks, spokesman for traffic), negotiator and co-writer of the current municipal coalition agreement. Interviewed on 13-05-2019
- *Menno Oedekerk*: policy advisor for (public) transport at the municipality of Groningen. Interviewed on 10-05-2019.
- *Anonymous*: former member of the tram bureau in Groningen, works on public transport at the province of Groningen. Interviewed on 23-05-2019.

These people have been interviewed because they have knowledge on the topic of the tram, because they are or were involved with it in a certain way. Three of the interviewees have worked on the RegioTram project and Leemhuis was councillor in this period. Six people to interview were regarded the minimum amount for a decent research on this issue. Also, the balance between local politicians, civil servants, specialists and former aldermen is good. This would have been disturbed if more politicians or more civil servants were interviewed.

The interviews were on average 59 minutes and 40 seconds long, and were recorded with an Iphone. Before the interview, permission to record the interview was given by the interviewee via e-mail. Afterwards the interview was transcribed using transcription software (Sonix and Amberscript) or other programs (oTranscribe or Audacity). The transcription was sent back to the interviewee, who was given the time to edit or remove certain parts. This edited version was then used to code, using markers and page markers. Figure 3 shows this process. By coding, the similarities between the interviewees can easier be identified. The highlighted quotes were sorted by code/theme and then printed on a large piece of paper. In this way the relations between different quotes could be easily

4 Results

In this chapter the results of the interviews are discussed. The different developments are ordered in five categories: spatial & infrastructure, policy, support, finances and other.

4.1 Spatial & infrastructure

In this category two spatial developments are discussed: Q-link and Groningen Spoorzone.

4.1.1 Q-link

The Q-link scheme was the new bus system as the alternative to the tram, when it was cancelled in 2012. It started in 2013 and currently the scheme is fully operational. Figure 4 shows the current network. The principle of Q-link is that it connects the dynamos of the city, such as the university campus Zernike, the hospital UMCG and the city centre directly with the villages around Groningen, via the P+R facilities on the edge of the city. This is done with high quality and frequent busses. (Qbuzz, 2019)

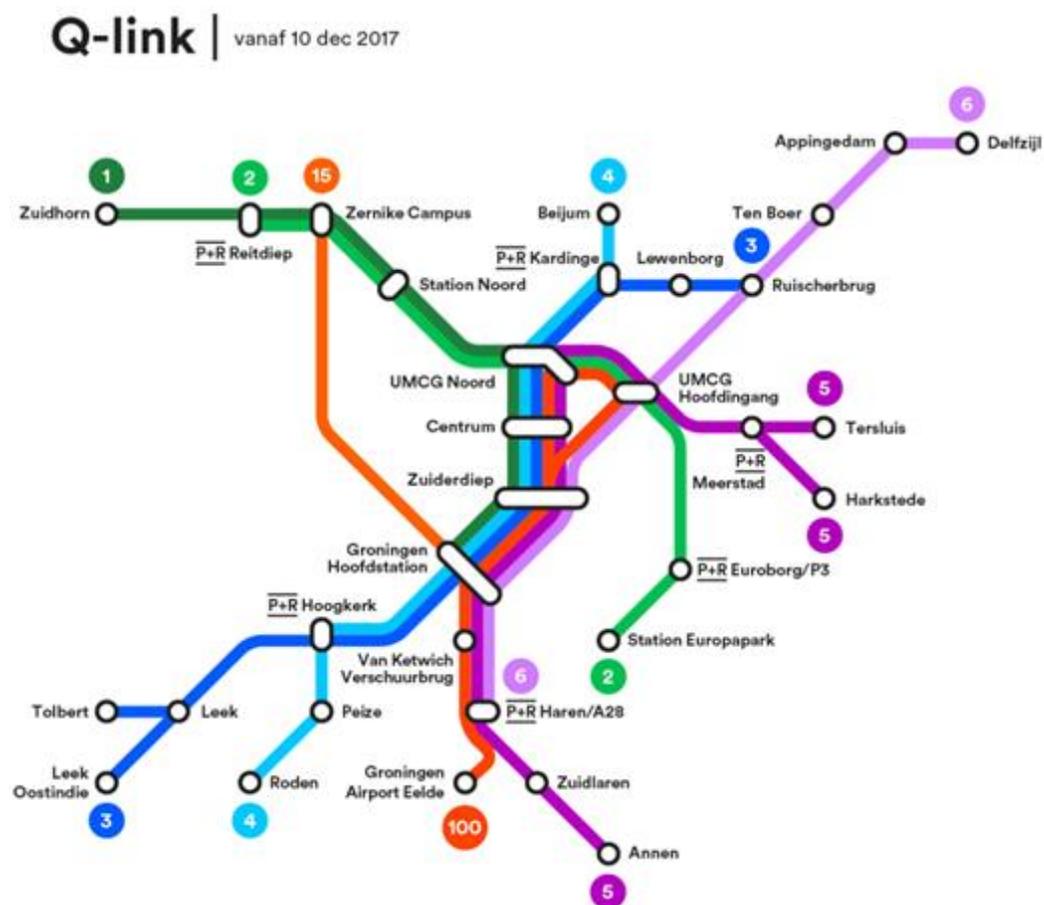


Figure 4: the Q-link network (Qbuzz, 2019).

Q-link is considered to be the best, but according to some also the only alternative to the tram. According to Oedekerck, the strength of Q-link is that the coupling with the P+R facilities is better than perhaps with the tram could have ever been. The quality of the Q-link busses are better than the busses that existed before, and they near the quality of the tram. According to Oedekerck, the advantages of Q-link are that it is very adaptive, it is flexible and the initial investments were much cheaper than with the tram. Also, for towns like Leek, Roden and Zuidlaren, Q-link provides much

better services than the tram would have done. However, according to all interviewees, while the Q-link system can approach the quality of the tram, it will never be as good as a tram system.

According to Oedekerk, Q-link is a really good concept, people are smart when they use Q-link. *Anonymous* states that the choice for Q-link is pleasing, and you should not cut it when it is not necessary, because that would be throwing out the good you have, and van der Bijl argues that, because the bus network has improved so much, it is even harder than it already was to justify a tram. These arguments show the difficulty of introducing a tram into Q-link

Introducing a tram into Q-link

According to several experts, the Q-link system is on the edge of its capacity, at least in its current form. Especially line 15, Q-link orange, the express line from the main station to Zernike. Since the start of the Q-link scheme, this line was meant to be a temporary line (Regio Groningen-Assen, 2013). According to *anonymous*, when the measures at the main station are finished, and the regional trains will run directly between the train stations Noord and Europapark, the Q-link line green, that connects these stations with Zernike, will provide the future solution to the transportation issue to Zernike.

Even still, the Q-link system is on the edge of its capacity. This is why some have argued that a tram should be introduced in Groningen. But the Q-link program has been very successful, and the interviewees agree that it should not be cut apart. According to van der Bijl, Oedekerk and *anonymous*, the only way to introduce a tram in Q-link is to make one whole Q-link line/corridor a tram, including the extensions to the villages surrounding Groningen.

Van der Bijl takes Q-link green (line 1 and 2) as an example, but states that making this entire line a tram would be unfeasible. *Anonymous* takes Q-link blue (line 3 and 4) as an example, but states that, cost wise only the central section would be feasible, which would mean cutting up a Q-link line. *Anonymous* therefore wonders whether you would want to spend so much money on cutting up a good running system in order to have a tram. However, Oedekerk argues that it is feasible to have some Q-link corridors be a tram, and that this could fit quite well into the Q-link system. He states that Q-link is a kind of brand name, and both busses and trams could fit into this.

In any case, the tram plans of 2012 cannot be reused again, the world has changed, as Leemhuis put it. Figure 5 shows the exact route of tram line 1 as it was proposed in 2012.

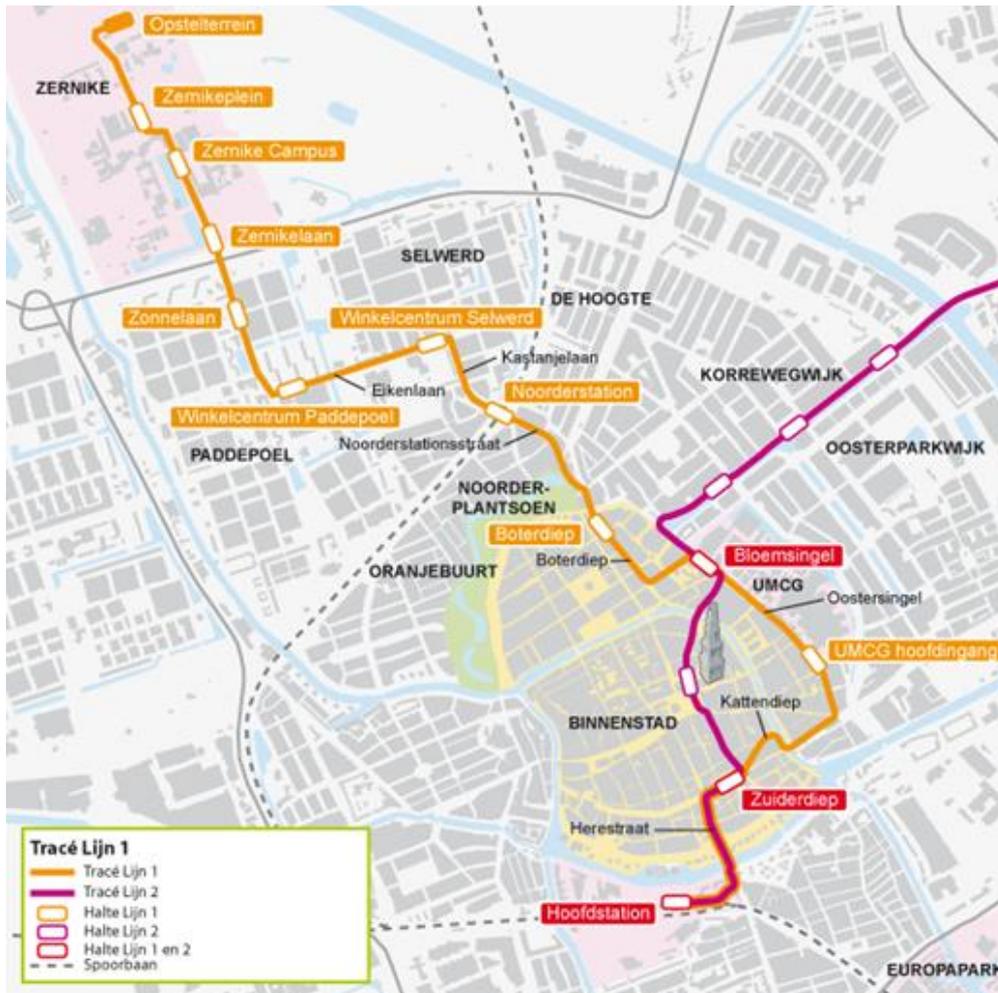


Figure 5: the proposed tram line 1 and part of line 2 (RegioTram, 2012b).

In short, a tramline could technically be implemented in the current Q-link system, replacing most likely the Q-link green or blue line. The feasibility of this depends on the costs and the choice whether a whole line will be made a tram, which is preferable, or only a part.

4.1.2 Groningen Spoorzone

‘Groningen Spoorzone’ is the name of the project to renovate the main station of Groningen. This will be finished in 2023 (Groningen Spoorzone, 2019). With this project, the bus station will be moved to the south side of the train station, and a new bus tunnel will connect the new bus station with the north side of the city.

In this plan, there is no space reserved for a tram. According to Dekker, this is very logical, because up to now there have been no tram plans, so there was no political justification to do this. However, there will not be an issue for a tram, because according to *anonymous*, the bus tunnel can in the future be adapted to fit a tram. The tunnel is high enough, only the slopes need to be adjusted. Also, according to Oedekerck, introducing one tram line would make several bus lines superfluous, so there will also be enough space at the new bus station for trams to stop. In any case, there would be unused space at the location of the current bus station, Leemhuis states. So the only real threat of the Spoorzone project to the tram would be that it increases the costs, which makes choosing for a tram harder, Koks argues.

Regional railways

One of the key elements of Groningen Spoorzone is the linking of the regional railways. Currently, half of the regional trains terminate at the west side of the station and the other half terminate at the east side of the station. With Spoorzone, these two lines will be connected and the new train services will run through the main station instead of terminating there.

Four of the interviewees mentioned the possibility of an S-bahn like service on the regional railway lines around Groningen. This would mean that light rail, tram like vehicles would run on the regional rail lines and stop at all stations including some new stops that could be built. This way a larger number of people can travel to the city. The regular trains would then skip some stations where the light rail stops, and reach the towns further away from Groningen faster. The linkage of the regional rail lines will make it possible to introduce S-bahn like services around Groningen.

In the RegioTram project, this light rail regional aspect would be included in the later stages of the project, as figure 1 shows. According to van der Bijl, the initial idea of the tram in Groningen in the 1990s was to start this regional tram system around Groningen, and later on start constructing lines that also go (partly) into the city. This is opposite to what was proposed with RegioTram. The linking of the regional lines would now make such an approach possible. Oedekerck mentions that when doing this, a tram network within the city itself can be slowly expanded.

In short, when the main station of Groningen will be renovated, a tram can still be constructed there, but the costs might be higher. The linkage of the regional train lines makes it possible to provide S-bahn like tram services in the region, which could eventually be expanded into the city.

4.2 Policy

In this category two policy areas of the municipality are discussed: the coalition agreement with the new OV-visie, and the new inner city vision Ruimte voor jou.

4.2.1 Coalition agreement

In February 2019 the new coalition agreement for the municipality of Groningen for 2019-2022 was announced. Regarding public transport it states:

“We prepare for a leap of scale in public transport [...]. Apart from continuing the current model we look at high quality alternatives like a tram, light rail, Non-Rail SuperCapacitors [large (guided) electric buses], Autonomous Rapid Transit [tire tram] and other innovative and sustainable transport concepts.”
(Gemeente Groningen, 2019)

The municipality will also make a new public transport vision (OV-visie) later this year, in which this will probably be elaborated.

According to Oedekerck, a ‘leap of scale in public transport’ can be realised in three different ways:

1. Changing the vehicles that are used on the current network to new and better types of vehicle, for example a tram or guided busses.
2. Make a leap of scale in the current public transport network, for example by making Q-link lines faster and with less stops.

3. A new network concept can be made, for example by introducing new ring bus lines or tangent bus lines.

Number 1 mentioned above is according to Leemhuis also the reason why in the coalition agreement the four different terms were used. According to him this gives an idea on how enthusiastic each party in the coalition will be for each type of modality.

Van der Bijl argues that, as long as there will not be regional connections with tram/light rail, there is not a leap of scale, and Dekker states that a tram is the only way to reach a leap of scale. On the other hand, *anonymous* argues that the best way to have a leap of scale is to upgrade and expand Q-link further instead of introducing a tram, and Oedekerk states that a leap of scale can also be realised using for example guided busses.

With the coming OV-visie, new research is needed. Both local politicians, Leemhuis and Koks, acknowledge the need for proper and fair research regarding this OV-visie on which way is the best way to have a leap of scale. While Leemhuis mentions that his political party (GroenLinks, coalition) thinks the tram is the best way to realise a leap of scale, he cannot rule out that other systems can also make the leap of scale. On the other hand, Koks (SP, opposition) states that he cannot yet decide this. He argues that when the research is done, they will check if it meets the standards which they believe public transport should meet. Effectively, he does not rule out that the tram could be the best option.

All interviewees assess the chance that a tram will be part of the new OV-visie low. *Anonymous* argues that there will be enough ambition to state the ambition for a tram, because saying you see a future with a tram is always possible. Dekker thinks that this municipal period there will not be a decision to build a tram. Leemhuis argues that it depends on what the research will show and how evident the advantages of the tram will be compared to other possible systems.

In short, there are three ways to reach the 'leap of scale' that the municipality wrote in the coalition agreement, one of which can be done with a tram. The research for the new OV-visie will show whether a tram is the best solution and if so, how evident its advantages are.

4.2.2 Grote Markt

With the new inner city vision 'Ruimte voor jou' (translation: space for you), the municipality plans to enlarge the pedestrian areas in the inner city. As a consequence the public transport routes that pass the inner city, along the Grote Markt which is considered the heart of the city, will be moved to a route on the edge of the inner city (Gemeente Groningen, 2016).

Therefore it would be logical to state that a tram should not pass the Grote Markt either. However, van de Bijl argues that with a tram it is easier to run through narrow streets, even with many pedestrians, because the width is smaller than with a bus. Oedekerk claims it is easier to get a tram on the Grote Markt than a bus. Therefore it could be logical to make this decision. The RegioTram line 2 would have also passed the Grote Markt (see figure 5), while all busses would have been relocated to other routes.

Transport wise it is very advisable to have a tram go through the Grote Markt. *Anonymous* states that the Grote Markt is one of the best public transport stops of the province. Leemhuis claims that letting a tram run along the edge of the inner city would not have a large effect to the passenger numbers, as is the case with the bus. But other interviewees doubt this. Koks does not see a way to

improve the accessibility of the inner city, once the busses will be gone, without a tram, and Dekker argues that when you want to keep the inner city lively, people from all over Groningen need to be able to get there. *Anonymous* states when a tram would be planned through the Grote Markt, chances are larger that travellers want a tram.

Even still, deciding to have a tram pass the Grote Markt while it has just been decided that the current public transport routes will leave the Grote Markt is not logical. Leemhuis also argues that it would be strange to construct a tram over a space that has just been redesigned, especially when trees will have been planted on the Grote Markt. Dekker states that when she left as aldermen, transport has become subordinate to spatial quality in Groningen. But both Dekker and Leemhuis have doubts on whether the route along the edge of the city centre would be feasible for a tram.

In short, the municipality plans to remove the busses from the Grote Markt, and with this policy direction it is not logical or probable for a tram to pass on the Grote Markt. However, there are a lot of valid and convincing arguments to this anyway.

4.3 Support

In this category both political and public support are discussed.

4.3.1 Political

The most recent municipal election in 2018 were won by the so called 'tram party' GroenLinks, which got 11 of the 45 seats. As a result, GroenLinks is the largest party in the coalition, and the tram is mentioned in the coalition agreement (see 4.2.1). According to Dekker (member of GroenLinks) however, the victory of GroenLinks has little to do with the tram, it is purely an effect of national politics.

Oedekerck states that the chances of the tram have increased a lot, and Koks says that the elections have brought a broadening of perspective. Leemhuis believes that the minds of the people are open again to the idea of a tram, while Dekker argues that it is not realistic to speak of a tram while certain people who have killed the RegioTram are still in place. Koks states that currently large parts of the municipal council are aware that something needs to happen, but by far not everyone agrees whether that should be a tram. Leemhuis sees a potential support of 31 out of the 45 seats of parties that are open to look at the possibility of a tram to solve the current problems. Koks, councillor for a party that is not included in this 31, says they are not in principle against a tram, if it proves to be the best solution and the municipal share of the costs can be reasonably brought up compared to other municipal expenses.

In short, the most recent local elections have brought a change in politics and a wide majority of the council will be able to look with an open view to the possibility of introducing a tram, if it appears to be the best solution to solve the current public transport problems.

4.3.2 Public

A large project like the tram needs to have support from the public. Figure 6 shows the lack of support during the RegioTram project. The most important thing to be able to gain support is to have a good story that is convincing. This story needs to show that a tram is no goal in itself, but rather the best medium to solve the problems in Groningen. Both Oedekerck and Koks underscore this, and

Leemhuis argues that when you have a good plan and you can point the advantages, it is possible to gain public support. On the other hand, van der Bijl argues that the public will remember the municipality saying 6 years ago that the public transport will not work without a tram, while Q-link has now disproven that. He argues that they will also remember that the municipality already spent a lot of money on the RegioTram until it was cancelled.

In short, support can be realised by the general public when there is a good story that is also convincing, but this will be very hard.

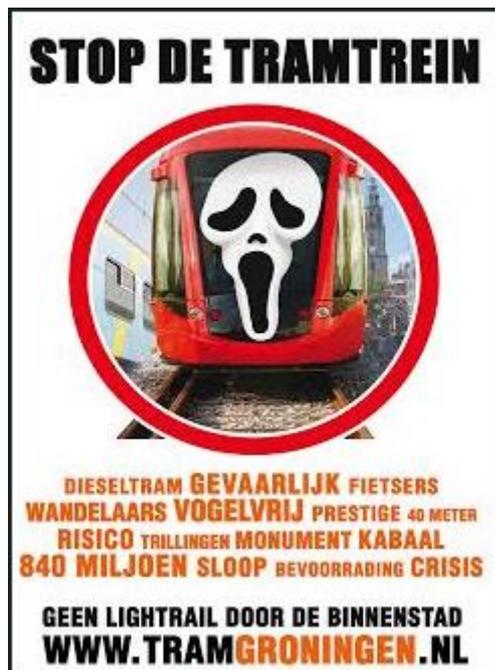


Figure 6: posters against the tram in Groningen (TramGroningen, 2018).

4.4 Finances

In this category the finances are discussed.

Currently finances are not the obstacle to a tram in Groningen. First the municipal council needs to be convinced that a tram is the best choice, according to Oedekerk, *anonymous* and Koks. However, when a tram appears to be the best solution, according to the research done with the new OV-visie, money does become one of the largest, if not the largest obstacle for a tram, all interviewees agree. According to Leemhuis, municipalities currently have very little financial room and van der Bijl adds that municipalities barely have their own source of income to finance such projects.

With the RegioTram project, even though it was cancelled because too many political parties found it too expensive, all of the money was reserved and taken care of, according to Dekker, around 300 to 400 million euros. Van der Bijl states that different kinds of finances were invented in such a way that almost no money from the national government was needed. However, he argues, this trick cannot be simply repeated. Therefore it would currently be very hard to find the money to build a tram.

In short, as long as the municipality does not have the ambition to introduce a tram, money is not yet to be discussed, but when such a decision would be made, money is one of the largest if not the largest issue.

4.5 Other

In this category, other minor developments that came up at the interviews are discussed.

The development of passenger numbers for public transport in Groningen is important, states Oedekerk. According to *anonymous*, when the number of travellers grows more than is currently anticipated, perhaps in 5 years a completely different conclusion needs to be drawn compared to now.

Another important development is a regional one. Groningen is known to have a large regional function, and according to van der Bijl, Leemhuis and Koks this will only increase. More services will disappear from the region around Groningen and more people are therefore dependent on the services in Groningen. It is more important than ever, therefore, that the city centre of Groningen stays accessible from the region, also by public transport.

A third important development is less specific to Groningen: the technical abilities of public or shared transport in the future. It can very well be that in the future other concepts than the tram have the same advantages as a tram, *anonymous* argues, although he adds that even still, in city centres the traditional modes of public transport will still prevail because of their space efficiency. But Leemhuis argues that when a lot of people in Groningen get excited about a new transportation mode that is not a tram, then suddenly it is possible that a tram will be excluded.

A final important development is the influence of the municipalities in the promotion of car-use. Leemhuis points out that the municipality can steer on the parking policy and the difficulty for a car to enter the city. Koks mentions that the municipality will investigate the possibility of a new traffic circulation plan for a large part of the city, and argues that this development should be aligned with new developments in public transport.

5 Conclusions

In this chapter the conclusion of the results from chapter 4 are presented and an answer is given to the main research question. Also recommendations for future research are made and finally a reflection on this research is given.

5.1 Main conclusion

The theory suggested that the factors specific to Groningen would be as important as the general advantages/disadvantages of a tram. This is outlined in the conceptual model. It is indeed the case that current developments have a great impact on the possibility of a reintroduction of the tram in contemporary Groningen. The hypothesis is partly true, as explained below.

The current developments in Groningen do not evidently lead to a reintroduction of a tram. For example, the current developments with Q-link as well as at the plans for the Grote Markt make it less likely that the tram will be preferred. There are a lot of alternatives regarding public transport in Groningen, some of which are more likely than a tram.

However, this does not at all mean that reintroducing a tram in Groningen is impossible. The advantages of a tram, as discussed in chapter 2, are still valid. The new coalition agreement will lead to new research on how a leap of scale can be realised in public transport. If the tram will appear to be the best solution, there is now a wide majority in the municipal council that will be able to look at the tram with an open view. If the decision would be made for a tram, it is also possible (though hard) to create public support, by presenting a good and convincing argument. In this case, the largest obstacle would be money. The municipality would need to search for money from other governments and subsidies, because its own financial situation is not adequate. As long as no political decision has been made, money is no issue.

5.2 Recommendation future research

Some recommendations for future researches include:

- Research focussing on the political support with multiple local politicians from different political ideologies.
- Full research or opinion poll on the public support for a tram in Groningen.
- Research to find out exactly in which way a tram most likely can be implemented in the Q-link program.
- Research into what the future of the tram will be for cities without a tram, with all the new innovative transportation concepts.

Of course, research is needed to find out in what ways a leap of scale in public transport can be realised in Groningen, but this will be done with the OV-visie.

5.3 Reflection

Both the theoretical framework and the literature research might have been based on too little academic work, since only a handful of academic papers were used. Therefore it is questionable whether the conceptual model has an adequate foundation. The methodology has been well devised, although more interviews could have made the research more convincing. The interviews could have taken place earlier so more time could have been spend on the analysis, however, the results do have enough dept and are sufficiently extensive, which has led to a conclusion that is substantiated. Therefore the research has brought a satisfactory answer to the research question.

References

- Ben-Avika, M. & Morikawa, T. (2002). Comparing ridership attraction of rail and bus. *Transport Policy*, 9(2), 107-116.
- Bijl, R. van der, Oort, N. van & Bukman, B. (2018). *61 Lessons in Sustainable Urban Development*. Elsevier.
- Boquet, Y. (2017). The renaissance of tramways and urban redevelopment in France. *Miscellanea Geographica*, 21(1), 5-18.
- Bunschoten, T., Molin, E. & Nes, R. van. (2013). Tram or bus; does the tram bonus exist? *European Transport Conference 2013*.
- Gemeente Groningen (2016). *Bestemming binnenstad, 01/2016*. Groningen: gemeente Groningen.
- Gemeente Groningen (2019). *Coalitieakkoord 2019-2022*. Groningen: gemeente Groningen.
- Groningen Spoorzone (2019). *Over Spoorzone*. Accessed on 09-06-2019 at <https://www.groningenspoorzone.nl/over-spoorzone>.
- Longhurst, R. (2016). Semi-structured Interviews and Focus Groups. In Clifford, N., Cope, M., Gillespie, T. & French, S. (Red.), *Key Methods in Geography* (143-156). Third edition. London: Sage.
- Mills, G. (2001). *New tramways in France: The case of Montpellier*. *Transport Reviews*, 21(3), 337-352.
- Qbuzz (2019). *Q-link*. Accessed on 07-05-2019 at <https://www.qbuzz.nl/gd/reis-plannen/soortenbussen/q-link>.
- Regio Groningen-Assen (2013). *HOV-visie. Bouwsteen van de Actualisatie Netwerkanalyse 2013*. Groningen: Regio Groningen-Assen.
- RegioTram (2012a). *De regio in*. Accessed on 02-05-2019 at <http://www.regiotram.nl/de-regiotram/de-regio-in/>.
- RegioTram (2012b). *Lijn 1*. Accessed on 02-05-2019 at <http://www.regiotram.nl/het-trace/lijn-1/>.
- RTV Noord (2012). *Regiotram definitief stilgezet*. Accessed on 20-05-2019 at <https://www.rtvnoord.nl/nieuws/116157/Regiotram-definitief-stilgezet>.
- RTV Noord (2018). *Groningen en de tram: een roerige geschiedenis*. Accessed on 20-05-2019 at <https://www.rtvnoord.nl/nieuws/202439/Groningen-en-de-tram-een-roerige-geschiedenis> date 27-5-2019.
- Sikkom (2018). *Tram naar Zernike weer op agenda na monsteroverwinning GroenLinks in Groningen*. Accessed on 20-05-2019 at https://www.sikkom.nl/tram-naar-zernike-weer-op-agenda-na-monsteroverwinning-groenlinks-groningen/?harvest_referrer=https%3A%2F%2Fwww.google.com%2F.
- TramGroningen (2018). *OOK GEEN TRAM DOOR BINNENSTAD GRONINGEN IN 2018!* Accessed on 20-05-2019 at <http://tramgroningen.nl/>.
- Verkeersnet (2009). *Groningen krijgt trams naar Grote Markt/Zernike en UMCG/Kardinge*. Accessed on 20-05-2019 at <https://www.verkeersnet.nl/parkeren/999/groningen-krijgt-trams-naar-grote-marktzernike-en-umcgkardinge/?gdpr=accept>.

Attachments

- Attachment 1: Interview questions
- Attachment 2: Information sheet
- Attachment 3: Agreement to participate

Interview questions

General questions

First I want to ask some general questions about the advantages and disadvantages of introducing a tram in any city.

- *What are in your opinion the important advantages of introducing a tram in any city?*
- *What are in your opinion the important disadvantages of introducing a tram in any city?*

Qlink

When the RegioTram project was abandoned in 2012, Qlink became the alternative high quality bus system. Currently the Qlink-scheme is complete and it has attracted many passengers. The ambition of Qlink is to eventually provide tram-like services in Groningen (Regio Groningen-Assen, 2013).

- *Do you think that Qlink is a good alternative for the tram plans of 2012?*
- *Does Qlink in your opinion give the same quality of public transport as the tram would have? How can this be further improved?*
- *Do you think that, now Qlink is near the edge of its capacity, the logical next step would be to introduce a tram in Groningen? Why/why not?*

Qlink connects the main destinations within Groningen via P+R's on the edges of Groningen with the villages surrounding Groningen. A lot of these villages and some P+R's would not be served by the earlier proposed tram network (RegioTram, 2012).

- *In what way do you think this could be an obstacle for implementing a tram?*
- *In which way would you see a tram being implemented in the Qlink program? Should a tram be part of Qlink?*

OV-visie

In the new coalition agreement the ruling parties state that they will prepare a leap of size in the public transport in Groningen. Apart from continuing the current system, they will also look at alternatives like tram, light rail, Non-Rail Super Capacitors, Autonomous Rapid Transit and other innovative and sustainable alternatives (Gemeente Groningen, 2019). This year, a new high quality public transport vision (OV-visie) will be made for the municipality for the coming years.

- *In which ways can a leap in size be realized in Groningen's public transport?*
- *Which kind of public transport would in your opinion be the most suitable for Groningen?*
- *What do you think are the chances that a tram will be part of the new HOV-visie?*

Developments in Groningen

In Groningen there is a large need for more houses, which are mainly being built within the urban areas. A tram is known to be a driver of urban development.

- *In what way can a tram have an influence on urban development in Groningen? Could this be a reason to implement a tram?*

A big project like introducing a tram needs good support, both in politics as in society.

- *In what way do the recent local elections influence the chances of implementing a tram?*
- *Do you think the public can be convinced again of the necessity of a tram, and how?*

Currently most Qlink busses stop at the heart of the city centre, the Grote Markt. Next year these busses will move to a route along the edge of the city centre. The Grote Markt will then become a pedestrian area. If a tramline would be introduced, it will likely stop at the Grote Markt (Gemeente Groningen, 2016).

- *In your opinion, should a tram run on the Grote Markt?*

- *In what way will the inner city be affected if only trams stop at the very centre?*
- *Currently there are also plans to rebuild the main station. In these plans there is no space reserved for trams. What is your opinion on this?*

Introduce the end of the interview.

- *Which other current developments in Groningen do you think influence the possibilities of implementing a tram?*
- *Which main obstacles do you see for implementing a tram in contemporary Groningen?*
- *Do you think that a lack of money would be the main obstacle for implementing a tram? Do you think it would be the only obstacle?*

References

Gemeente Groningen (2016). *Bestemming binnenstad, 01/2016*. Groningen: gemeente Groningen.

Gemeente Groningen (2019). *Coalitieakkoord 2019-2022*. Groningen: gemeente Groningen.

Regio Groningen-Assen (2013). *HOV-visie. Bouwsteen van de Actualisatie Netwerkanalyse 2013*.

Groningen: Regio Groningen-Assen.

RegioTram (2012). *De regio in*. Accessed on 02-05-2019 at <http://www.regiotram.nl/de-regiotram/de-regio-in/>.



Information sheet – Research Ethics Committee (REC)

for (doctoral) research project:

Title:

Subtitle:

Thank you very much for taking the time to consider getting involved in my (doctoral) research project.

The reintroduction of a tram in Groningen has always been an interesting and relevant subject, especially up to 2012 when plans for a tram were cancelled even though they were in a very advanced stage. Now, 7 years later, with a pro-tram party winning the local elections and with crowded public transport, the tram is a topic that can be talked about again.

This research therefore tries to find out what the chances are of an actual possible reintroduction of a tram in contemporary Groningen, with a study on both the general advantages and disadvantages of a tram in Groningen and the factors that are specific to Groningen and its development since 2012.

Confidentiality and participant rights

- The interviews will be audio-recorded and notes will be taken during the interview.
- You have the right to ask to have the recording turned off whenever you decide and you may also end the interview at any time.
- If you wish so you will be sent a copy of the interview notes, and you will have the opportunity to make corrections or request the erasure of any materials you do not wish to be used.
- The information you provide will be kept confidentially in a locked facility or in a password protected file on my computer up to five years upon completion of my research.
- The main use of the information you provide will help me towards my doctoral thesis (for PhD candidates), which upon completion will publicly be available on Internet.
- The data may also be used for articles, book chapters, published and unpublished work and presentations.
- Unless you have given explicit permission to do so, personal names or any other information which would serve to identify you as an informant will not be included in this research or in any future publication or reports resulting from this project.

As a participant you have the right to:

- decline to participate;
- decline to answer any particular question;
- ask for the audio-recorder to be turned off at any time;
- end the interview at any time
- withdraw from the study up until three weeks after participating in the research;
- ask any questions about the study at any time during participation; and
- ask for the erasure of any materials you do not wish to be used in any reports of this study.

Once again I thank you for taking the time to find out more about my (doctoral) research. I am at your disposal for any questions you might have. You can also contact my supervisors at the address below.

Yours sincerely,

Researcher contact details : Poppe Ytsma p.j.ytsma@student.rug.nl +31 6 10478491	Main Supervisor contact details: Farzaneh Bahrami f.bahrami@rug.nl
---	--

This research project has been approved by the Research Ethics Committee of the Faculty of Spatial Sciences. Any questions about the ethical conduct of this research may be sent to the Secretary of the Committee Ms. Alida Meerburg: email a.meerburg@rug.nl Physical address: Faculty of Spatial Sciences, University of Groningen, Landleven 1, 9747 AD Groningen, The Netherlands.



Agreement to participate - Research Ethics Committee (REC)

in (doctoral) research project:

Title:

Subtitle:

The purpose of the research is to find out in what way both general and specific factors lead to a possible reintroduction of a tram in contemporary Groningen.

- I have read and I understand the information sheet of this present research project.
- I have had the opportunity to discuss this study. I am satisfied with the answers I have been given.
- I understand that taking part in this study is voluntary and that I have the right to withdraw from the study up to three weeks after interview, and to decline to answer any individual questions in the study.
- I understand that my participation in this study is confidential. Without my prior consent, no material, which could identify me will be used in any reports generated from this study.
- I understand that this data may also be used in articles, book chapters, published and unpublished work and presentations.
- I understand that all information I provide will be kept confidentially either in a locked facility or as a password protected encrypted file on a password protected computer.

Please circle YES or NO to each of the following:

I consent to my interview being audio-recorded YES / NO

I wish to remain anonymous for this research YES / NO

If YES

My first name can be used for this research YES / NO

OR

A pseudonym of my own choosing can be used in this research YES / NO

“I agree to participate in this individual interview and acknowledge receipt of a copy of this consent form and the research project information sheet.”

Signature of participant: _____ Date: _____

“I agree to abide by the conditions set out in the information sheet and I ensure no harm will be done to any participant during this research.”

Signature of researcher: _____ Date: _____

Please fill in the following information. It will only be used in case you want to be sent a copy of interview notes so that you have the opportunity to make corrections.

Address:

Email: