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## Executive summary

For this report, we worked on finding a way to reduce the number of cars used to access Kwintelooijen and how a desired modal shift can be steered by park management and other stakeholders. We considered shared and soft mobility alternatives, sustainable options, meaning we focused on non-motorized or shared modes of transportation, such as bikes and buses, respectively. The first section of the report defines the problem situation in Kwintelooijen and explains the relevant theoretical concepts. This is followed by a theoretical framework, which focuses on a behavior change framework. These have formed a literary basis from which we derived our recommendations, which will be summarized in the following paragraph.

### Recommendations

Our first recommendation is changing behavior by making cycling the social norm, through the use of Community-Based Social-Marketing (CBSM). The CBSM framework aims to achieve behavior change through creating/decreasing barriers and incentives for sustainable behavior, and changing perceptions of said behavior. The framework emphasizes community participation as an essential factor to establish behavior change. This should be done by focusing on education, for which we recommend using the visitor center at the entrance of Kwintelooijen as an educational hub, as well as incorporating education regarding sustainable transport in school excursions visiting the park. Additionally, we stress the importance of having an online campaign promoting cycling, consisting of for example a picture complemented by a catchy slogan. This will be an extra prompt which nudges people towards the desired behavior change.

Additionally, our recommendations regarding behavior change focus on dissolving barriers for cycling and creating barriers for car use. First of all, we advise to improve the access road to Kwintelooijen by making it more bike-friendly. This can be done by, for example, adding signs emphasizing that it is a bike-road, or adding a bike lane. Another important aspect is making the biking parking lots more visible, as well as adding bike facilities, such as charging points for e-bikes. Next to that, it is important to create barriers for taking the car. We propose introducing paid parking at Kwintelooijen, as well as reducing the size of the parking lot.

Our second recommendation focuses on information provision. Currently, sufficient information regarding how to get to Kwintelooijen by public transportation is not provided, so in order to push people to access the park by bus, it is essential that this changes, both on the website as well as at the park entrance. This should be done in tandem with highlighting sustainable mobility as the main possibility for getting to the national park.

The last recommendation entails infrastructural adjustments to shorten the last mile mobility. There is one connecting, but private, road from the bus stop to the park entrance. If this road could be opened up by the landowner, it would be very beneficial for public transport-users, as the walk from the bus stop will be significantly shorter. Therefore, our last recommendation focuses on advice to open up conversations with this landowner, to see if there are any possibilities for collaboration in the future, as well as on other recommended infrastructure adjustments.



## ENCOURAGING SOFT AND SHARED MOBILITY OPTIONS AT KWINTELOOIJEN AND NATIONAL PARK UTRECHTSE HEUVELRUG

**RESEARCH QUESTION**

*How can shared and soft mobility options be successfully deployed in the Kwinteloijen area for last-mile mobility for visitors who travel by public transport and for visitors who live at a distance too far to walk or cycle? What shared/soft mobility options are possible and which are most suitable for this particular area?*

1

### CYCLING AS THE SOCIAL NORM

- Mention the importance of cycling during school excursions
- Use the visitor center as an educational hub for behaviour and driving behavioural change
- Use promotional material (flyers, posters) at bus stations, Kwinteloijen entrance, and visitor center
- Frame cycling as part of the nature visit
- Paid parking
- Make the bike parking more visible than the car parking



2

### IMPROVE AVAILABLE INFORMATION

- Website front-page information about how to get to the park should be focused on sustainable mobility
- Centralized information on park entrances, how to get there, and main points of attraction
- Slogans which frame cycling/soft/shared mobility options in a positive way



3

### INFRASTRUCTURE IMPROVEMENTS

- Shortening of the walking route by cooperation with local landowners
- Include Kwinteloijen in a larger network of cycling routes
- Improving the safety of the road leading to Kwinteloijen




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# 1. Introduction

As part of the National Park Utrechtse Heuvelrug (NPUH), Kwintelooijen offers unique recreational possibilities. It is best known for its famous stairs and serves as an entrance point to the NPUH. It is the starting point of many mountain bike routes, and the recently opened visitors center adds to the attractiveness of Kwintelooijen as a doorway to the NPUH. The majority of visitors travel to Kwintelooijen by private car, and while this might be a convenient mode of transportation, excessive car use causes pressure on the surrounding area and natural environment.

In the “Samenwerkingsagenda 2023-2028” the NPUH, together with other stakeholders such as municipalities and educational institutes, voice their ambitions on protecting, maintaining and enhancing the quality and quantity of nature, landscape and (cultural) heritage. One specific point in this agenda is sustainable nature-oriented recreation and mobility (Heemsbergen, 2023). This goal ties in perfectly with the aim of the MONA project in which the NPUH is participating. The project's central objective is to promote a *“Modal shift, routing and nudging solutions in Nature areas for sustainable tourism”* in natural areas in north-western Europe. Together with other natural areas in the Netherlands, Belgium, Germany and France, NPUH has applied for a European subsidy (Interreg North-West Europe). Combining this subsidy with joint investment from all of the participating parks, a total of 6 million euros is available to invest in order to alleviate natural parks from pressures stemming from recreation and to promote a sustainable modal shift (Nationaal Park Utrechtse Heuvelrug, 2023).

## 1.1 Problem statement

The increasing number of visitors and the widespread usage of cars in parks and protected areas has resulted in issues regarding traffic congestion and parking (Spernbauer et al., 2022). This needs to be avoided in the NPUH and the number of cars used to enter the park should be limited (Regnerus et al, 2007). In the Kwintelooijen context, the majority of visitors depends heavily on private cars, as 61% of visitors choose cars as their mode of transportation (KANTAR PUBLIC, 2023). Increased car use in the area will cause environmental deterioration (Chiriboga, 2009) and pollution, which will result in more challenges to conserve, preserve and protect the area. Alongside the negative environmental consequences, the excessive use of private cars causes traffic congestion (Heemsbergen, 2023), highlighting the importance of finding efficient alternatives to this mode of transportation.

## 1.2 Mission and research questions

To address these challenges, we aim to increase soft-mobility and achieve behavioral change to reduce the amount of private vehicles entering the park, by proposing several practical implications. Alternating the mindset of the visitors in choosing a more responsible way to travel is crucial to conserve and preserve the area of the national park. It is therefore essential to promote non-mobilized vehicles as a mode of transportation to the national park. We will do this with the use of the following research questions:

*“How can shared and soft mobility options be successfully deployed in the Kwintelooijen area for last-mile mobility for visitors who travel by public transport and for visitors who live at a distance too far to walk or*



*cycle? What shared/soft mobility options are possible and which are most suitable for this particular area?"*

### 1.3 Methodology

This study has been conducted with the use of two different research methods, both literature study as well as fieldwork have been used. The literature study is aimed at identifying successful sustainable transportation methods, and developing a theoretical framework as a base for our recommendations. We looked into both academic literature as well as grey literature. The inclusion of grey literature was essential to look into similar cases from other national parks. Fieldwork was done on two occasions, once during a self-planned visit as well as during an excursion with all the course participants, using the Peek App to gather data. This fieldwork was an essential part of our research, as we were able to make our own neutral observations about the current accessibility of Kwintelooijen, stepping into the role of a visitor and seeing which barriers they experience when trying to visit the park by using soft or shared mobility transportations modes. This combination of research methods allowed us to create a complete overview of the problem and see how possible solutions can best be adapted to the situation at Kwintelooijen.

## 2. Current state analysis

The following chapter will present a current state analysis of the situation at Kwintelooijen. This will be supported by data gathered from own observations and the Peek App excursion to give insights into the current situation and shortcomings at Kwintelooijen regarding shared, soft, and last mile mobility. A detailed and comprehensive overview of our observations and outcomes of the Peek App excursion can be found in [Appendix B](#).

### 2.1 Shared mobility

The concept of shared mobility refers to the practice of using shared vehicles as an alternative to private transport, with the aim of reducing individual vehicle usage on a daily basis (Machado et al., 2018). The objective of sharing mobility is to reduce the expenses associated with personal, societal, and environmental costs, while simultaneously enhancing travel efficiency (Santos, 2018). Public transport is a popular and well-known form of shared mobility (Wang et al., 2022) and it is efficient because it can accommodate a large number of individuals at once. Other (smaller) examples include shared bicycles, e-scooters, and cars (Arendsen, 2019).

The use of shared mobility is strongly influenced by the concept of familiarity. When transportation modes have a low familiarity to the users, it tends to lead to a negative perception (Arendsen, 2019). This negative perception can also be fueled by safety and security concerns, especially for vulnerable groups (Gutiérrez, 2020). Next to keeping social inclusivity in mind, it is important to prioritize modes of transport that are environmentally friendly in shared mobility (Lim et al., 2022). Another important matter to consider is travel time, as reducing travel time will increase the use of shared mobility (Luo et al. 2023). Additionally, providing information either digitally, for example at a bus stop, is important to shape individual travel choices and influence the preferences of the public (Veccio & Tricarico, 2019).

In the Kwintelooijen context, this report will focus on buses as the form of shared mobility. While traveling by bus would greatly reduce the number of cars coming to Kwintelooijen, it is not often used by visitors. Using public transport to travel to Kwintelooijen is not encouraged by the NPUH and the online information provision is lacking. An online observation was conducted. The Google search results for 'Kwintelooijen' varied based on our evaluation, which is presented in detail in Appendix B. The 'Op de Heuvelrug' website has timetables and routes but no directions to Kwintelooijen. 'Visit Rhenen' suggests routes but lacks arrival details. The Utrechtse Heuvelrug National Park website offers information on accessibility and transportation options but redirects visitors to the public transport planner (9292.nl). Next to the lack of information provision online, information on site regarding shared mobility is inefficient. While there is an information pillar at the entrance of Kwintelooijen, it contains very little information on shared mobility and the placement of the information received criticism from participants during the Peek App excursion. It was deemed untimely since it was placed at the entrance of Kwintelooijen, rather than at the nearby bus stop. Additionally, the Peek App excursion provided insights on another barrier for visitors to travel by bus, namely the walk from the bus stop (Koesteeg) to the entrance of Kwintelooijen. This walk is very time consuming due to the closed private road highlighted in Appendix C.

## 2.2 Last mile mobility

Another relevant concept is last mile mobility which refers to a transportation service that connects passengers to their final destinations, such as homes, workplaces, or national parks, after they disembark from a centralized mass transit hub. It is the weakest link in the transportation network and often involves the use of shared vehicles, such as cars, bikes, or scooters, to bridge the gap between public transit and individual destinations (Kanuri et al., 2019; Lim et al., 2022). The main goal of improving last mile mobility is to provide accessible and attractive transportation options that meet the specific needs and preferences of individuals, while also reducing traffic congestion and promoting environmental sustainability (Raghunathan et al., 2018).

Scientific research on last mile mobility often focuses on shared transportation services, vehicles that can be shared by multiple users for a particular part of their journey, as explained in the previous paragraph (Klumpp et al., 2021). Others also emphasize the use of shared transportation to connect to other modes of transportation in urban centers, also as the last part of the journey, as last mile mobility (Lim et al., 2022). This means that the concept of last mile mobility and shared mobility are therefore inherently interlinked. Others have highlighted the importance of providing accessible and attractive transportation systems that coordinate different modes of transportation. Alongside, information and communication-based solutions have shown to be successful in promoting sustainable last mile mobility (De et al., 2018).

The linkage between shared mobility and last mile mobility can be clearly observed at Kwintelooijen. The walking distance from the nearby bus stop to the entrance of Kwintelooijen, which can be seen as the last mile mobility, is very time consuming. As we and participants in the Peek App have observed, there is a closed road, as shown in Appendix C, which causes the walk to be extremely long. The increased length of last mile mobility also reduces the appeal of using shared mobility. As Luo et al (2023) described, when reducing the time of a journey people are more inclined to opt for shared mobility. Again, researchers

also highlight the importance of information and communication-based solutions, which, as shown before, is severely lacking.

## 2.3 Soft mobility

Soft mobility refers to the use of non-motorized forms of transport, including but not limited to cycling, walking, scooters, and skates. Other modes of transportation fall under this concept, as long as they are not using non-renewable energy sources, do not contribute to CO2 emissions and do not produce noise. Soft modes of transportation have gained popularity in, for example, the tourism sector, over the last few years, due to multiple positive impacts, such as the reduction of CO2 emissions, but also a reduction of noise pollution and traffic congestion. Additionally, choosing a soft mobility type of transportation can lead to a higher enjoyment of the landscape, and thus an overall improved visitor experience (Bi & Romão, 2021). An important aspect in increasing the use of soft mobility is providing information on transport choices, through various communication channels. It has been proven that this has a significant influence on people's decision to choose soft modes of transportation. This seems to be especially the case for younger people, as they are most familiar with the internet as a tool to access this information (Bi & Romão, 2021).

The current road-situation surrounding Kwintelooijen raised concerns about (the perception of) safety with participants from the Peek App. The road leading to Kwintelooijen does not have a walking lane. Since the road is quite small considering cars, bikes and pedestrians all use it, it is no surprise that especially for walking, it was not considered unsafe. This could add to why visitors of Kwintelooijen opt for traveling by car, rather than walking or biking. As also shown in the scientific research regarding shared and last mile mobility, providing information plays a big role in promoting more sustainable modes of transportation; the same applies for soft mobility. Looking at the current situation, there is poor information provision. Observations and outcomes of the Peek App show that along the road there were no signs observed leading the way to Kwintelooijen. Again, the information pillar at the entrance of Kwintelooijen was mentioned as it contained no information on soft mobility.

## 3. Theoretical framework

The following chapter includes a theoretical framework for establishing sustainable behavior change, which forms the basis of our recommendations and strengthens the scientific value of our research.

An important aspect of transitioning towards a sustainable society is promoting sustainable behavior. Psychology plays a central role in behavior change, in analyzing what motivates people to engage in certain behavior, and how they can be stimulated to adopt a more sustainable approach. Voluntary behavior change, based on internal motivations, has shown to be way more effective in sustaining pro-environmental behaviors than behavior change due to an external controlling force, such as the government (Haq et al., 2008). Therefore, even though information plays an important role in behavior change, information alone is often not enough (McKenzie-Mohr, 2000). Top-down information sharing strategies, referring to the government disseminating information to the public in order to educate them so they can make their own informed and rational decisions, are often limited in effectiveness. This is mostly due to the fact that the public is seen as passive recipients of information, and their perceptions and motivations to make a sustainable decision are not really taken into account (Haq et al., 2008).



Therefore, an increasingly popular approach is that of Community-Based Social Marketing (CBSM), which is a strategy based on both social psychology as well as social marketing (Cooper, 2007). CBSM is focused on participation and a two-way flow of information, meaning it adopts a more bottom-up approach than merely top-down information sharing. Peer group solidarity is an important factor in achieving pro-environmental behavior change, meaning it is crucial to approach this as a community problem, and make behavioral change seen as socially desirable. Behavior change can be achieved through education, community involvement, decreasing barriers of sustainable behavior or increasing incentives to partake in sustainable behavior, increasing barriers/decreasing benefits of unsustainable behavior and changing perceptions of the benefits and barriers of behavior. The tools used for this are commitment, prompts, norms, communication, and incentives (Cooper, 2007).

This model of establishing behavior change has proven to be effective in areas of transportation. When the feeling of it being a community effort is enforced, the program is even more effective, as people feel that they are involved and engaged with it, rather than it being merely a government campaign (Cooper, 2007). This makes the approach even more relevant for relatively small towns such as Rhenen and Veenendaal, where the community feeling will be stronger than in big cities.

## 4. Recommendations

The following paragraphs entail the proposed recommendations, which are based on the literature study as well as field work experience. All of our recommendations are aimed at behavior change, and the best strategies to make this possible. The first set of recommendations is centered around making cycling the social norm, based on the previously described CBSM framework. This will be followed by recommendations regarding information provisioning and concluded by recommended infrastructure improvements.

### 4.1 Behavioral changes

As shown in the section on scientific research, the Consumer-Based Social Marketing (CBSM) has proven to be successful in changing behavior. By following this framework and moving from a top-down to a bottom-up approach by actively involving the community, effective measures can be designed to promote sustainable mobility around Kwintelooijen. An important step in doing so is making biking the new social norm. This is specifically aimed at the residents of Veenendaal since they live within biking distance of Kwintelooijen. Seeing as Rhenen and Veenendaal are both relatively small cities, they are perfect targets for CBSM, as these smaller cities tend to have a bigger sense of community than large cities.

Firstly, the role of education is essential for our desired behavioral change. We recommend using the newly built visitor center at the entrance of Kwintelooijen as an educational hub, where local people can enjoy nature in combination with an educational program about the negative implications of excessive car use, and how this can be changed by opting for more sustainable modes of transportation. A great opportunity here is the involvement of school excursions in Kwintelooijen, so kids can start to learn about their environment and the importance of preserving it at an early age, while paying special attention to Kwintelooijen. Involving children is crucial for extending the reach to the community and creating a

bottom-up approach, as everyone shares the same goal, and the kids will come home and tell their parents and friends about what they have learned.

Next to education during school excursions, we also want to propose putting up posters and putting out flyers in the visitors' center as a part of the campaign, which can be provided with a stimulating picture combined with a catchy slogan, making use of visual prompts to keep emphasizing cycling as the norm. The more exposure the better. We also advise combining this with a picture and slogan on the website, making cycling the first thing that people see when they look up Kwintelooijen online. We want to make cycling part of the trip, emphasizing that this soft mobility mode is already a way to enjoy being outside and in nature, which ultimately improves the overall visitor experience (Bi & Romão, 2021).

The last part of our behavioral change goal is that of decreasing barriers and increasing incentives. We aim to decrease barriers to cycling, while increasing barriers to taking the car, and additionally adding incentives for choosing the bike. We came up with two recommendations that add possible barriers to car use. Firstly, we recommend the introduction of paid parking at Kwintelooijen. When people can no longer park for free at Kwintelooijen, taking the car is suddenly not as attractive anymore. Additionally, this measure is also more likely to reach those who are less open for behavioral change, and not as interested in environmental benefits. An important note to make here is that this only works when paid parking will be introduced at the whole of the NPUH, as people can otherwise just opt for another part of the park to park their car. A connected measure is that of downsizing the parking lot. This will also form a barrier to car use, as there will not be as much space to park anymore. Currently, the parking lot of Kwintelooijen is big and prominent, and downsizing it will decrease the emphasis on car accessibility.

Next to barriers for car use, we want to create some cycling incentives. Currently, there is a parking lot for bikes at Kwintelooijen, but it is not nearly as prominent as the parking lot for cars. This results in an unwanted emphasis on car accessibility, something which we want to change. Making the bike parking lot more prominent, which can be done by enlargement as well as putting up signs at the park entrance, will add to making cycling the social norm, by nudging people towards bikes directly when entering the park. Another incentive would be to create signs with the biking route from Veenendaal and Rhenen to Kwintelooijen. These signs will increase the visibility of the possibility of going by bike. Adding distances to these signs will also show people from Veenendaal that biking to Kwintelooijen is within reasonable distance, which potentially adds to the willingness to go by bike during future visits.

Lastly, we want to decrease the barriers for cycling. One of the main barriers is the fact that the access road to Kwintelooijen feels unsafe to bike on, as cyclists share the relatively small road with cars, which do not leave a lot of room for them. While this road is already a bike road (fietsstraat), cyclists still do not perceive it as a bike-friendly road. Therefore, we propose to focus on making this road even more bike-friendly, which will enhance the feeling of safety for cyclists. This can be done by putting up more signs showing cars that it is a shared road, and by considering creating a special biking lane. Other examples of making bikers feel more welcome are creating spaces to charge electric bikes, making sure materials to fix flat tires etc. are present. The visitors center should consider applying for a "Fietzers Welkom" certificate, which is given to bike friendly cafes and alike places (Nederpelt, 2021).

## 4.2 Information provisioning

As outlined in the theoretical framework, the effective reduction of barriers to sustainable behavior necessitates the provision of comprehensive, yet concise information. Although visitors of Kwinteloijen may want to change their behavior regarding sustainable transportation, this inclination does not guarantee actual behavior shifts, especially when considering the existing barriers at the location. Many European national parks are actively addressing these challenges by providing complete information on different ways of reaching the natural area using soft or shared mobility options. Furthermore, the framing of diverse transportation options plays an important role, as it has the potential to stimulate voluntary behavior, which, according to the theoretical framework (CBSM), often proves to be more effective than a top-down approach. This section uses the main takeaways from other European national parks as a basis for providing applicable recommendations on information provisioning for Kwinteloijen and NPUH.

A first relevant example is Slovenia, a European country with a relatively well-developed and accessible public transport infrastructure (Zlender et al., 2012). In this regard, it can be considered relatively similar to the Netherlands, a country with a well-developed public transport system, though less affordable for users and less reliable in low-density areas (de Jong et al., 2011) such as natural areas. In an attempt to increase accessibility to natural areas for users, Triglav National Park in Slovenia highlights the importance of sustainable mobility on the front page of their section about *Mobility in the park* (THES, n.d.). On this page, visitors can easily find information on how to get to the national park by public transport, with the option of filtering the information based on either type of transportation (by bus, train, car and train, or bike) or by location. In this way, they can easily access timetables or other information relevant for their trip. Moreover, mobility is considered as part of the trip, which can be concluded after exploring the front page of the website. The main focus is on sustainable mobility and how this is beneficial for both the natural area and the visitors, which frames mobility in a manner that is also advisable for Kwinteloijen and the NPUH as a whole. Furthermore, the focus of transportation is clearly focused on sustainable means, with the car being the least emphasized option on the website. This is different for Kwinteloijen, as the main focus is placed on the large car parking lot available. Providing this kind of information will mainly appeal to visitors who come from different regions of the Netherlands, while for the residents of Rhenen and Veenendaal other approaches might be more effective.

Similar approaches to transportation can be seen in the Julian Alps (*Mobility in the Julian Alps*, n.d.). Here, the focus is on the train and the bus, as well as destination cards for each region, which offer discounts for combinations between public transport and visiting attractions in that area. They also distinguish between summer and winter services, something which might not be relevant for Kwinteloijen, unless buses would run more often during the winter due to low temperatures and precipitation; in the summer, cycling should be the focus, as weather restrictions do not really apply. Furthermore, in the Julian Alps, taking your bicycle on the train is promoted. Since this is also a possibility in the Netherlands, it can certainly be included as information on the NPUH website. This will reduce last-mile mobility issues in the Kwinteloijen area and perhaps in the entire national park. Moreover, the mobility web app for the Julian Alps provides users with information about local transport services. This is also the case for Thy National Park in Denmark, which provides its visitors with an interactive facilities and routes map (Nationalpark Thy | GeoGuide, n.d.).

The main conclusion that can be drawn after exploring information provided by other national parks in Europe and comparing it to NPUH, is that the website of NPUH is outdated when it comes to providing information about accessibility and facilities. Providing more information on the website about how to get to the national park by public transport, the main entrances to the park, and the main attraction points (with Kwintelooijen being one of them) might help with attracting visitors who do not live in the immediate surroundings, namely Rhenen and Veenendaal. A facilities' map which includes all this information in a concise and comprehensive way combined with highlighting the importance of sustainable mobility on the main page with information for visitors would be the ideal solution for information provisioning for NPUH. All of these examples can be further explored in Appendix A.

### 4.3 Infrastructure Improvements

To ensure that an optimal situation is created to make behavior change possible, complementary measures need to be taken, such as a few infrastructure adjustments. There is currently an opportunity to decrease the last mile mobility from the bus stop to the entrance of the park, by involving the landowners around Kwintelooijen, and exploring the possibilities of opening the gate to the private road (Appendix C) connecting Kwintelooijen to the bus stop. Stakeholder involvement is therefore a crucial aspect in improving the use of public transportation to the park. There are several conditions which need to be taken into account in collaborating with the landowners (Howley et al., 2012). Firstly, no permanent right of way should be established, meaning the landowner keeps their right to close off the road if they wish to. Secondly, there should be full coverage for public liability insurance indemnification, and lastly, the costs associated with the walking route should be taken care of by the park. Meeting these conditions is essential to create an optimal stakeholder collaboration. Additionally, it is essential to consider how to approach the landowner and make clear and fair agreements regarding the use of their road.

Another infrastructural adjustment that could contribute to a positive change in visitors' behavior towards sustainable mobility would be creating a more integrated bike routes system, by using the already existing cycling infrastructure. The purpose of this measure is to integrate Kwintelooijen into a well-known cycling routes system, therefore encouraging visitors to cycle rather than going there by car. Including Kwintelooijen as an element in these cycling routes can be a useful step towards achieving the desired behavior change. For instance, a popular cycling route is *Fietsroute Veenendaal-Rhenen-Prattenburg* (*Fietsroute Veenendaal – Rhenen Prattenburg (24,7 Km), 2021*). The starting point of this cycling route is the parking lot of Kwintelooijen, but this could be emphasized more, as it is not very prominent on the website. Putting more of a focus on the cycling culture in and around Kwintelooijen goes in tandem with switching the focus from the large car parking lot to the cycling parking lot, and contributes to the larger goal of making cycling the social norm for accessing Kwintelooijen.

Additionally, the bike route to Kwintelooijen needs adjustments. The Oude Veensegrindweg, which is the main entrance to Kwintelooijen, is perceived unsafe by us as well as the excursion participants, an issue which was also mentioned during the discussion at the Municipality of Rhenen. Despite the speed limit of 30 km/h, cars tend to drive faster creating an unsafe gateway to Kwintelooijen for pedestrians and bikers. Therefore, we suggest putting down more signs and other measures to make the street safer for everyone.

A sidewalk as well as a biking lane would also be useful improvements to enhance the safety perception of pedestrians and cyclists, respectively.

## 5. Conclusion

This research includes a literature study complemented by fieldwork, with the aim of increasing the use of sustainable transportation modes to access Kwintelooijen. Based on our findings, we came up with the following recommendations. Firstly, we emphasize the importance of a new social norm surrounding cycling to Kwintelooijen. Behavioral change is of crucial importance to achieve a decrease in car use and an increase in bike use. We found that behavioral change in this case might best be achieved by using the CBSM framework, which focuses on creating a collaborative sense of responsibility in the community. Through this framework we want to increase cycling incentives, and decrease cycling barriers, whilst putting up barriers for car use. This should be complemented by educational measures, aimed at changing people's perspectives of the desired behavior, and increasing environmental awareness.

Secondly, we found that there is room for improvement at Kwintelooijen's information provision. Even though it has been shown that information availability has a significant influence on the likelihood that people opt for soft mobility modes (Bi & Romão, 2021), Kwintelooijen's online and offline information availability regarding both cycling as well as public transportation is not sufficient. Therefore, our second set of recommendations focuses on improving available information, mostly on the bus connections with the park. This will create awareness about the option of public transport, while at the same time framing public transport as the socially desirable option by putting an emphasis on it.

Lastly, we explored the option of shortening the last mile mobility from the bus stop to Kwintelooijen, by looking at the private road connecting the bus stop to the park. There is still a lot of uncertainty regarding this, as we are not quite sure of who owns the land and why they choose to put up gates at both ends of the roads. However, seeing as this road would make a significant cut in the distance people have to walk from the bus stop to the park, as well as making this walk a lot safer, it is certainly an important option to explore further.

## 6. Discussion and limitations

Building on our proposed recommendations, we have some points that require more research. A first topic would be the proposition of introducing paid parking. While implementing paid parking will reduce the number of cars coming to Kwintelooijen, it will most likely relocate the problem if not done correctly. Car users will move to other parts of the NPUH or create unsafe situations by parking on the road adjacent to Kwintelooijen. The former could most likely be avoided by implementing this measure in the entire national park. The latter forms more of a problem, seeing as it also creates a new issue by making the road even more unsafe for bicycle users. However, we still deem introducing paid parking an effective and useful tool in creating barriers to car use, as it is one of the harder measures that will also target those less willing to leave their cars at home.

Another, even more fundamental, point of discussion is the lack of information on the visitors of Kwintelooijen. Due to the scale of our research, we were not able to investigate this in more depth, but to create even more specific and targeted recommendations it is essential to know your target group.

Visitor characteristics such as age and visiting motivations can make a big difference in the effectiveness of a certain recommendation. Therefore, to provide the most effective recommendations it is important to combine this with a visitor study. Consequently, we recommend setting up a bigger study including more variables in a future research project. However, we consider this report as a good first exploration on how to promote soft and shared mobility in Kwintelooijen.

An additional concern to include in future studies is possible negative complications of our recommendations. Again, considering the scale of our project we were not able to include this, but it is important to consider negative consequences that some recommendations could have, such as disturbing biodiversity at Kwintelooijen. The park is home to a beautiful variety of flora and fauna, and some measures such as moving parking spots, or increasing bike usage in the park, might upset the ecological balance, so we recommend that this is explored prior to implementation.

Lastly, we want to emphasize that when collaborating with around 70 landowners it is important to use precise strategies and customized approaches. The implementation of initiatives like paid parking necessitates careful negotiation and special attention to ensure that agreements are fair and mutually beneficial. It is also important to address potential challenges, such as preventing illegal parking on neighboring private properties. As we take on the task of opening gates and creating new routes, we acknowledge the complexities involved, including any reservations from landowners or the concerns about biodiversity. In the context of changing routes, our focus remains on public roads, especially those that are crucial for connecting the bus stop to Kwintelooijen. Additionally, our recommendations explore the integration of public transportation into cycling routes, embracing innovative concepts like interconnected routes between different stations.



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## Appendix

### Appendix A: Information provisioning

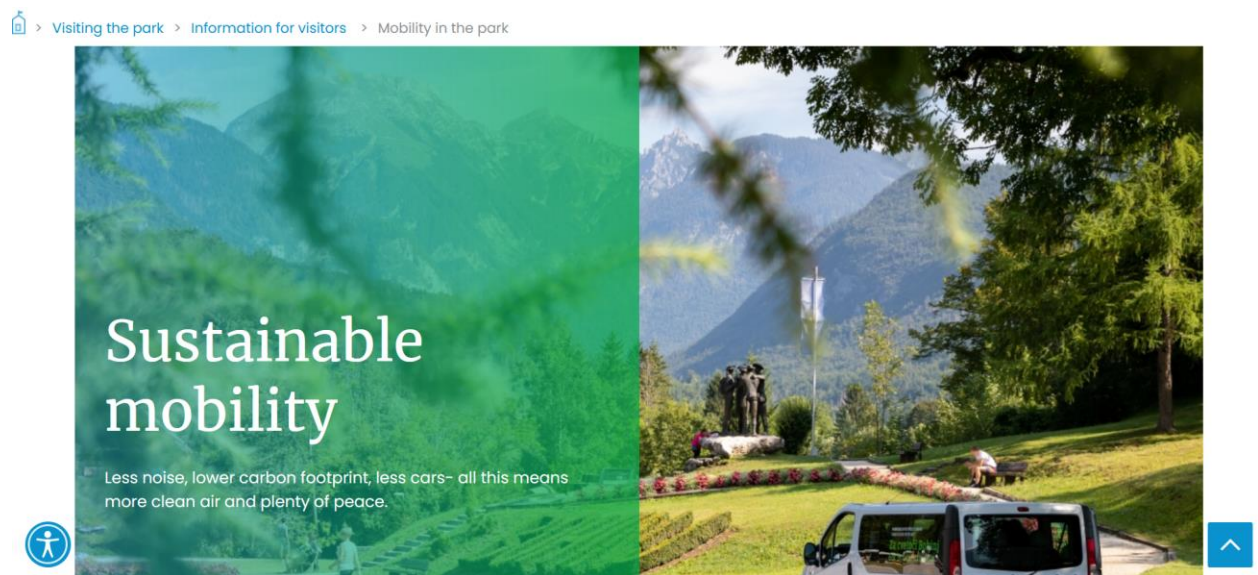
This appendix aims to provide an overview of how other national parks in Europe provide and frame information about sustainable mobility. These can be used as examples when creating an improved information infrastructure for NPUH and Kwintelooijen (e.g. improved information on the website).

#### Example of positive framing for sustainable transportation

***“Moved by nature:*** Owing to its uniqueness and importance, the Triglav National Park requires and deserves respectful visitors. Less noise, fewer cars, and lower carbon footprint are a guarantee for more clean air and peace. Enjoy the abundance of fresh air and hit the trail in a different way: by bike, train, bus or on foot. Be friendly to nature and preserve it just the way it is.” (Triglav National Park, Slovenia)

#### Examples of front pages for visitor mobility information

Triglav National Park (<https://www.tnp.si/en/visiting-park/information/mobility/>)



Whether on foot, by bike, by bus or by train, make your trip through the valleys and over the passes of the Julian Alps more enjoyable. We therefore recommend you make use of the many eco-friendly mobility options.

**Select the type of sustainable mobility by clicking on the icons for more information on timetables and other information:**

With bus

With train

With car-train

With bike

Information on sustainable mobility on the destinations' official websites:

Bled	
Bohinj	
Valley of Soča	
Kranjska Gora	
Whole area of Julian Alps	

*Julian Alps* (<https://julian-alps.com/en/p/mobility-in-the-julian-alps/36128892/>)

Mobility app - could be developed with funds from the MONA project for the entire NPUH (or maybe even a larger collaboration with all parks in the Netherlands).



#### TIMETABLES IN THE JULIAN ALPS

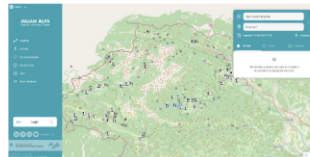
##### New mobility web app

We are excited to show you a step forward in digitising destinations in the Julian Alps. We are the first in Slovenia to introduce an innovative mobility solution, an integrated **web application with public transport timetables**, dedicated to providing the best possible passenger information everywhere, at all times.

In the current phase, the app includes all extra local transport services provided by destinations in the Julian Alps during the summer season, but not yet the public passenger transport lines of Slovenia.

The integration of public transport providers is planned for the end of this year. We are also working on implementing real-time data, to display possible delays. As soon as the project's last phase is finished, a mobile application will be released as well.

The operation is co-financed by the Climate Fund of the Republic of Slovenia.





## TRAVEL BY BUS

### Timetables and general information

Help keep the environment clean by opting for a public transport option. Destinations in the Julian Alps organize additional lines during the summer and winter season and thus further increase the accessibility of some most visited starting points.

- Looking for the regular timetables between destinations?  
See timetables on [Arriva.si](#) and [Nomago.si](#).
- Timetables for arrivals from [Ljubljana Bus station](#).
- See each destination for details on seasonal lines.



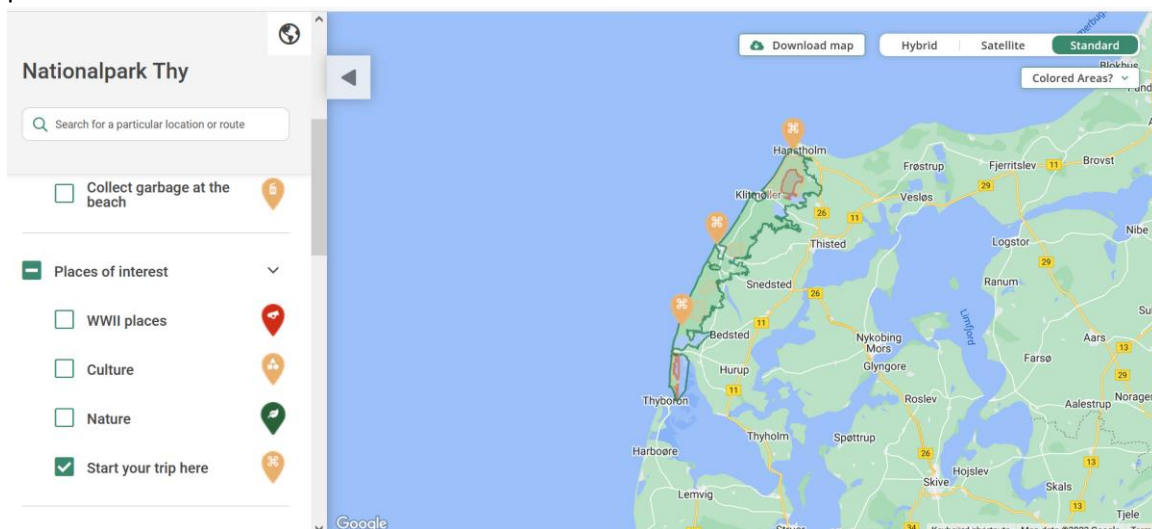
Photo: Mitja Sodja, Turizem Bohinj

Promoting taking the bicycle on the train; this could be done by NPUH as well, perhaps in collaboration with NS for a better deal to encourage sustainable mobility.

### Take your bicycle on the train

To [take your bicycle with you on the train](#), you need to pay a flat-rate charge of €1.50 (€3.00 for an electric bike), irrespective of the distance travelled. The number of bicycles the train can carry depends on train type and occupancy. Groups of more than ten passengers travelling with accompanied bicycles need to place a reservation for their journey at least 8 working days in advance.

*Thy National Park, Denmark* - Interactive map including information about park entrances and main points of interest.





## Appendix B: Observations and Peek Excursion Outcomes

### Observation | 23 November 2023

The Kwinteloijen section of the Utrechtse Heuvelrug National Park, located between Rhenen and Veenendaal, offers a unique combination of a motocross circuit and peaceful natural surroundings. Kwinteloijen is particularly popular on weekends and Wednesday afternoons, attracting visitors with a range of activities such as mountain biking, horseback riding, and two picturesque walking routes.

However, a significant issue highlighted in the problem statement relates to the inadequate connections to the local public transport system. Despite Kwinteloijen's claim of well-connected walking routes on their information pillar, our assessment on Thursday, November 23, 2023, revealed a discrepancy. It takes approximately 45 minutes to walk from the nearby bus stop to Kwinteloijen due to privately owned streets, which emphasizes the lack of connectivity. In addition, the limited space around the small bus stop hinders development. Our observations during this visit confirmed these challenges.

We found that the roads obstructing connectivity are privately owned, requiring the involvement of landowners to address this issue. At the entrance of Kwinteloijen, an information pole displays walking routes, including the mention of the Koesteeg bus stop (Cuneraweg) under the 'Public Transport' section. However, the bus stop is not visible in the accompanying picture, and there is no information about walking routes available at the bus stop. This lack of visibility and information undermines the visitor experience.



Furthermore, Google Maps suggests a walking route that we consider neither safe nor enjoyable, as it involves walking along a provincial road with fast-moving cars and trucks. This unsafe condition persists for most of the route, and there is no dedicated walking path in the final route, forcing pedestrians onto a shared bike and car road.

Although the street is a 'bicycle road', implying that biking is a viable mode of transportation, personal observations on Thursday, November 23, 2023, indicate otherwise. Despite the availability of bike parking spaces with secure locking options, they are not being fully utilized, which highlights the unappealing

nature of biking as a preferred means of transportation to Kwintelooijen. They are situated on the grass and are further from the visitor centre than the carparking space is, which makes them not as visible.

#### *Online observation*

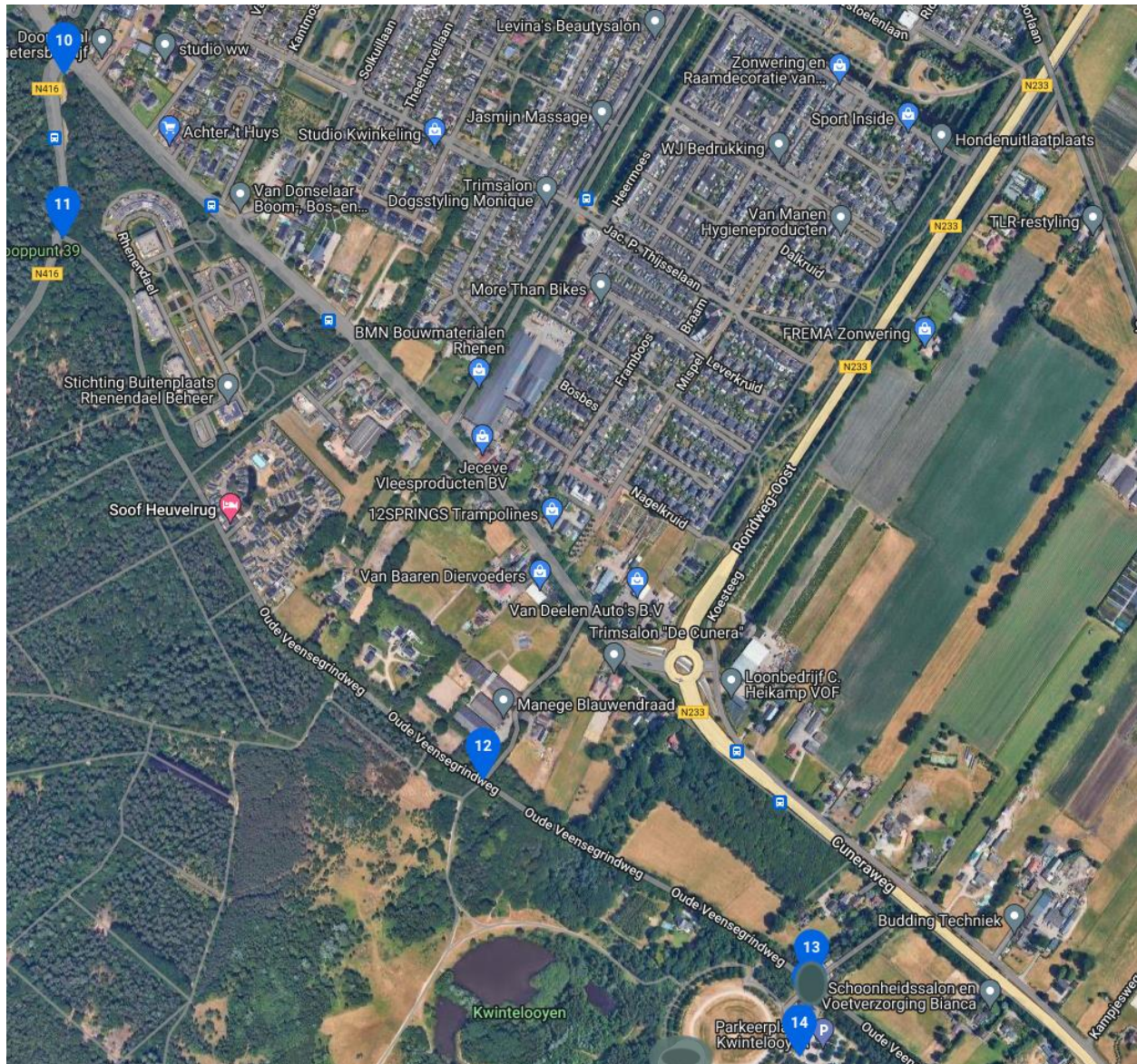
We also conducted an online evaluation of the Kwintelooijen area. If you enter 'Kwintelooijen' in Google, you will receive different search results. The first website is the ['Op de Heuvelrug'](#) website. We discovered that the opdeheuvelrug site introduces Kwintelooijen, showcasing their schedule, walking, mountain biking, and biking routes. If you want to know how to get to Kwintelooijen, there is no information provided other than the text 'plan je route,' which directs you to Google Maps. The second website is ['Visit Rhenen'](#), which introduces you to the Kwintelooijen area, suggests walking and mountain biking routes, and offers suggestions on where to stay overnight. However, there is no information about how to arrive there. If we examine the website of the [Utrechtse Heuvelrug National Park](#), which does not appear on the first page when searching for Kwintelooijen, you can visit the 'Bezoek het Nationaal park' section and click on 'Plan je bezoek.' Here, they mention the accessibility of the area, its convenient location near major highways, ample free parking, and the option to plan your visit using public transportation via 9292.nl. They also mention the presence of 'green entrances' and 'TOP's,' although these are not further elaborated upon on this page.

#### *Peek Excursion outcomes | 13 December 2023*

On December 13<sup>th</sup> 2023, our class, of the course Governance of Tourism & Natural Resources, organized a trip to Veenendaal and Kwintelooijen in order to gather more information for our project. To facilitate this excursion, we used PeekApp, a platform where we placed questions in specific locations for the participants to answer. We had a total of 4 locations and 16 questions related to the last mile mobility to Kwintelooijen. In total 16 respondents filled in the questions and there were participants who joined a respondent due to problems with their cellphone by using the PeekApp. This appendix presents all the results from the excursion, organized by location and question.



### Location overview Peek Excursion



#### Location 10: Crossing

At this location the participants had to cross a busy road which connects Veenendaal to the road to Kwinteloijen. This stop revealed concerns about safety, especially for pedestrians, and highlighted the absence of infrastructure for soft mobility. Improved signage and safety measures were suggested to enhance the crossing's accessibility for all modes of sustainable transportation.

- **Participant Quotes:**

- "Busy, unpleasant for bikers, but walking would be horrible."
- "Unsafe for pedestrians, quite safe for cyclists, but no artificial lights."
- "Not so safe, cyclist okay, but for pedestrians less safe."
- "Yes, but to visit Kwinteloijen, we would go by bike instead of walking."

- "Yes, definitely. The car is dominating this crossing."
- **Existing Safety Measures:**
  - Participants unanimously agreed that there were no existing safety measures like crosswalks or traffic signals for pedestrians. One participant suggested improvements were needed.
- **Safety Perception:**
  - Participants had mixed perceptions of safety, with some stating it was unsafe for pedestrians but fine for cyclists. The absence of artificial lights was highlighted.
- **Barrier to Soft Mobility:**
  - Most participants perceived the crossing as a barrier to using soft mobility options, especially for walking. Some mentioned they would choose biking instead of walking to Kwintelooijen.
- **Signage for Kwintelooijen:**
  - Few participants noted the presence of small signs for cars but no visible signs or information for pedestrians or cyclists indicating the way to Kwintelooijen.

#### Peek app output

No traffic light or zebapath for pedestrians.. no pedestrian routes

Hello

BusyUnpleasent for bikers, but walking would be horrible

no walking pathgeen kwintelooijen op de bordjes

Not that much convincing

Not for walking

Scary

Veilig de overkant bereikt.

Almost died.

Nog even good for walking route

Heel druk, lawaaiig. Geen wandelaarsstoplicht.

Nice to walk but no too safe

#### Are there any existing safety measures in place, such as crosswalks or traffic signals?

No!!!!

Improvements needed

Yes

safe enough in my opinion

Not for walkersBikes can pass safely

Yes lights

Not for pedestrians

No crosswalk

Yes

Just for bikes.

---

Yes but only for cyclers

a bit, but its for bikes

Yes there are

---

**How safe is the crossing for pedestrians and cyclists?**

Unsafe for pedestrians, quite safe for cyclist.. but no artificial lights

Not really safe

Crossing is fine

safe enough

I'm not sure

Could be better

Good for cyclists bad for pedestrians

Very unsafe for pedestrians

It is ok.

Not at all.

Not so safe

cyclist okay, but for pedestrians less safe

Yes it's safe

---

**Imagine you want to visit Kwintelooijen, coming from Veenendaal do you perceive this crossing as a barrier to using soft mobility options?**

Yes, but to visit Kwintelooijen we would go by bike instead of walking

Yes

Yes

no

Yes but not by walking

Yes

No

Yes

Not me personally but with children perhaps yes.

Yes.

Yes it is

Yes, definitely. The car is dominating this crossing

Yes cause it's too crowded

---

**Did you come across any visible signs or information indicating how to get to Kwintelooijen by bike/foot? Which ones?**

Yes, some small signs for cars

No

No

foot

---

Not at the beginning But at the road

No

Not at the intersection (only prattensburg) but before there was one sign but not very cleae

No only for cars

No

Nope. Just a simple sign that the place exists somewhere nearby.

No nothing yet

No

No

#### *Location 11: Start of road to Kwintelooijen*

This location is the entrance of the final road to Kwintelooijen. At this location are many signs and will start the final journey of visitors coming by all means of transport: car, public transport (walking), walking, cycling. This location highlighted challenges related to road safety, the absence of walking paths, and the importance of clear signage for promoting soft mobility options. Participants provided valuable insights into potential improvements to enhance the road's suitability for walking and cycling.

- **Participant Quotes:**

- "Yes, there is a sign (max. 30) but cars are driving way harder... also no walking paths."
- "Feels unsafe as there are no walkways, and no signs."
- "This road is not nice for walking, but for cycling, it is fine. They should make the road in a red theme so that it is clear that it is for bicycles and maybe walking fast next to it."
- "No, there are none. Not really clear."
- "No, it feels unsafe, and without internet, you do not know where to go."

- **Obstacles and Challenges:**

- Participants expressed concerns about obstacles and challenges for walking and cycling, including the absence of walking paths, fast-moving cars, and the lack of clear indications for soft mobility.

- **Signage to Kwintelooijen:**

- Participants reported a lack of visible signs or information indicating the way to Kwintelooijen by bike or foot. Some mentioned seeing signs for car lanes and bikes, but the overall clarity was questionable.

- **Suitability for Soft Mobility:**

- Participants had mixed opinions on the road's suitability for soft mobility. While some believed it could be suitable with improvements, others expressed concerns about safety, especially for walking.

- **Suggestions for Improvement:**

- Participants suggested making the road more pedestrian-friendly, potentially by using red-themed markings to indicate it's suitable for bicycles and walking. The need for clearer signage and indications for soft mobility options was emphasized.



#### Peek app output

##### **Are there any obstacles or challenges that may discourage walking or cycling?&nbsp;**

YES there is a sign (max. 30) but cars are driving way harder... also no walking paths..

Yes

The carsNo walking paths

no space for walking

Walking not favouring Bikes and cars okay

No walking path

No path for walking

Feels u safe as there are no walkways, and no signs

60 km/u is veel

Cars. Lots of them.

Yes no walking way

Yes, it feels unsafe and without internet you do not know where to go.

There is no walking or cycling path

##### **Are there any visible signs or information indicating how to get to Kwintelooijen by bike/foot?**

No, there are none

Not really clear

No

no

I saw park name with direction signSign for car lane Sign for bikes

No

Yes there was one sign on the big road but people wouldn't walk on the main road because there is no pedestrian path

No

No

Nope.

No only by bike

No!

##### **Do you think this road leading to Kwintelooijen is suitable for soft mobility options (unmotorized transport options, bikes, walking)?**

Well, not yet.. could be suitable but as there is no indication that this could be the case.. very unsafe rn

Could be but improvements are crucial

If you are really careful

doesnt look like it

Good for bikes only and caras

Bikes yes

This road is not nice for walking, but for cycling, it is fine they should make the road in red themed so that it is clear that it is for bicycles and Mayke are walking fast next to it

---

No

More or less

Just bikes maybe.

Yes it can be

A bit, but at the beginning you can drive 60 with your car, which feels unsafe when walking

I don't think so

---

#### *Location 12: Horse riding school pathway*

This location is a road adjacent to a riding school, serving as a direct route to the nearest bus stop and effectively reducing travel time on foot by approximately 15 minutes. Despite its apparent convenience, the entrance to this road is marked with a sign indicating that entry is prohibited. The question arises from the lack of clarity regarding the ownership of this road—whether it is a publicly owned thoroughfare or a private access route. Furthermore, the identity of the entity imposing the prohibition remains unclear.

This location highlighted the tension between the perceived convenience of a shortcut and the ambiguity surrounding its accessibility. Participants expressed a willingness to take the route, citing reasons such as time savings and a lack of visible barriers, despite the presence of a no-entrance sign. The varying interpretations of the sign's explanations and the uncertainty about ownership added complexity to the decision-making process.

- **Participant Quotes:**
  - "Yes. 'Only people who have a purpose' bestemmingsverkeer."
  - "Yes if allowed."
  - "Yes, because there is no physical barrier in the window and it looks like you can just go there, and there are nice horses on the road."
  - "Yes, to save time... if someone would ask me what my purpose is, I would simply say that I have a meeting with someone... however, it does make sense that this route is closed."
- **Explanation for No-Entrance Sign:**
  - Participants observed and acknowledged the presence of a no-entrance sign. Some noted that there were explanations related to the purpose of entry, mentioning terms like "bestemmingsverkeer" (traffic with a purpose) and "aanwonenden" (residents). However, the clarity and understanding varied among participants.
- **Consideration of Taking the Route:**
  - Participants expressed willingness to take this route despite the no-entrance sign. Reasons included saving time, having no other viable options, and perceiving the route as accessible, especially when there appeared to be no physical barriers.
- **Reasoning for Taking the Route:**
  - Some participants mentioned specific reasons for considering the route, such as the absence of visible barriers, the presence of horses making it an attractive path, and the desire to save time.
- **Awareness of Route Closure:**

- Participants demonstrated an awareness of the potential closure of the route but weighed the benefits of reduced walking time against the restrictions.
- **Ambiguity about Ownership and Prohibition Entity:**
  - There was a common theme of uncertainty regarding the ownership of the road and the entity imposing the prohibition. This lack of clarity contributed to varying interpretations of the purpose-based restriction.

#### Peek app output

##### Are there any signs or information explaining the reason for the no-entrance sign?

Yes. "Only people who have a purpose" bestemmingsverkeer

No

yes kinda. property rights

No

Aanwonenden

No, there is no explanation. It says that it's for residents

No explanation

No.

No only for residents and people who need to be there

no

No

##### Since you know that this would reduce the walking time, would you take this route, why?

Yes, to save time... if someone would ask me what my purpose is I would simply say that I have a meeting with someone .. however it does make sense that this route is closed ...

No other options left so yes

yes

Yes, reduce my time

Yes if allowed

Yes, because there is no physical barrier in the window and it looks like you can just go there and there is nice houses on the road

Yes my legs hurt.

Yes because it is shorter

yes, maybe. depends on my state of mind at the day

Yes because there is no other way

#### Location 13: Road with a closed gate

This particular location is situated at the entrance of Kwintelooijen, and it represents a pathway that has great potential for enhancing last-mile mobility. However, this potential is hindered by the presence of gates that are securely locked at both ends. These imposing barriers transform what would have otherwise been a short 5-minute walk to the bus stop into a challenging 45-minute journey to Kwintelooijen. The fact that the gates are locked raises concerns regarding the accessibility and utilization of this pathway.

This location highlighted the significant impact of a closed gate on participants' perceptions and experiences. The frustration and desire for improved accessibility were evident, with suggestions ranging from opening the gate to implementing specific measures for soft mobility. Participants also expressed concerns about potential traffic issues and emphasized the need for careful planning to ensure safety and order on the road.

- **Participant Quotes:**

- "To simply open it! Make a bus-car stop so only pedestrian... And make it more attractive."
- "Still a long way of walking: could be reduced."
- "I knew the reasons of preferring cars over other transportation tools."
- "Weg met barriere" (Away with the barrier).
- "I am feeling angry... Why do you put instructions when people are still in your car rather than where people have parked?"
- "Sadness."
- "I think it is ridiculous."
- "STUPID BARRIER. Open the gate."

- **Reaction to Barrier and Suggestions:**

- Participants expressed frustration and disappointment upon encountering the closed gates. Suggestions included opening the gate, creating a bus-car stop exclusively for pedestrians, and making the area more attractive. Some participants mentioned the impracticality of the barrier and the desire for a reduction in walking time.

- **Perception of Soft Mobility Options:**

- Participants viewed the road as unsuitable for soft mobility options. Suggestions to enhance the road for soft mobility included bike lanes, walkways, signs, limiting car usage, providing a free shuttle, and creating specific entrances for biking and walking.

- **Concerns About Potential Traffic Issues:**

- Some participants expressed concerns about potential traffic congestion and safety issues if the road became a primary route for various modes of transportation. They emphasized the need for order, smaller entrances for biking and walking, and limitations on car usage.

- **Emotional Responses:**

- Emotional responses varied, including anger, sadness, frustration, and the perception of the barrier as "ridiculous" or "stupid."

#### [Peek app output](#)

**Since you know now, that this route would reduce the walking time by 40 minutes, what comes into your mind when seeing this barrier?**

To simply open it! Make a bus-car stop so only pedestrian.... And make it more attractive

Still a long way of walking: could be reduced

Private road

its climbable, but such bullshit

I knew the reasons of preferring cars over other transportation tools

Weg met barriere

I am feeling angry I don't like this sign I have no logo there's no a character yeah also is it just continuing yeah alright excellent the barrier is not that special to make me feel ready exceptionally because whatever is behind the barrier just looks like garbage and should be cleaned up and you can make a noise of green entrance pathway to watch going to lawyer. Also you didn't ask for der Bijl say it nonetheless the new building is nice but decided to concrete and kindly sign is a bit hidden behind these traffic signs also, it doesn't say anything special and why do you put instructions when people are still in your car rather than where people have parked of time to read this and there is no lies logo or something they could really do with the Brendon thanks for taking into consideration

Sadness

Useless.

I think it is ridiculous

STUPID BARRIER

Open the gate

**Having walked the way coming from Veenendaal to visit Kwintelooijen how do you perceive this road in terms of to using soft mobility options? Do you have suggestions to improve this road?**

Bycicke Gates, only bikes pedestrians are allowed

Provide free shuttle

Second part was ok

no space for walkingvisitors. for cycling its not bad

May be ehance the roads to look more beautiful and safer

More safe crossing walking really bad

I quite frankly okay, I find it very hard because this is way too big and this creates a lot of potential highest peak traffic to Sandu Green that could be risky, 50 S. mobility things and also some gangster Smid coming now to like make those reels or something that will be crazy. Why is there not like an order in nicer smaller entrance for biking or at his walking? Baets will be fine but is there another secret wayg for your Plattenburg? It will be no this is really if you're here it's really me to come by car and then get out

Bikelanes, walkways, signs

A trolley...

Well not good, make a bicycle and walking path

No cars, sidewalk, fietsstraat

Limit the car using the road

#### *Location 14: Information pillar*

This location is an information pillar located at the parking lot of Kwintelooijen. The information pillar shows a guiding route and has a heading about public transport saying the bus stop is connected to the route, but it isn't shown at the route. Als this information pillar is at the destination and not at for example the bus stop.

This location revealed a consensus among participants about the inadequacies of the information pillar in promoting sustainable transportation options. The need for clearer, earlier information and better infrastructure to support soft mobility was emphasized. Participants also highlighted the challenges and shortcomings of the last-mile mobility experience to Kwintelooijen.

- **Participant Quotes:**

- "Not effective for soft mobility... we are already here... also PT is not connected with stop KOESTESG."
- "The information is a bit late."
- "Not really effective."
- "It has nothing to do with sustainable mobility. It shows some walking roads, but it doesn't suggest that you should come here by bike."
- "There is no specific information about soft mobility."
- "Not useful anymore."
- "There was a one sentence about checking the app to plan your trip, but this should be put at the bus stop."
- "Vague."
- "Very badly managed, poorly provided information."
- "Looooooooong."
- "I would love to visit with the bus, not walk, not bike."

- **Effectiveness of Information Pillar:**

- Participants generally found the information pillar ineffective for promoting last-mile mobility. The placement of the pillar at the destination rather than at key points like the bus stop was criticized. Lack of information on soft mobility and its focus on internal park details were highlighted as shortcomings.

- **Details or Features Regarding Soft Mobility:**

- Participants noted the absence of specific details about soft mobility on the information pillar. The information provided was perceived as late, not relevant, and lacking in promoting sustainable transportation choices.

- **Suggestions for Improvement:**

- Suggestions for improvement included earlier placement of information, making the pillar more welcoming with images of cycling or buses, providing clearer information about soft mobility options, and including infrastructure improvements.

- **General Thoughts on Last-Mile Mobility to Kwintelooijen:**

- Participants expressed a need for improvements in last-mile mobility, with some describing it as poorly managed and badly provided. Concerns were raised about safety for walking and the desire for better options, such as bus accessibility or improved gate management.

[Peek app output](#)

**How effective is the information pillar in guiding sustainable last-mile mobility options?**

Nog effective for sof mobility.. we are already here... als PT is not connected with stop KOESTESG

Not really effective



The information is a bit late

busstop is mentioned. but it doesnt make sense to provide info at the destination itself

Not effective

Niet zo veel

It has nothing to do with sustainable mobility. It's shows some walking roads, but it doesn't suggest that you should come here by bike and there is a QR code from research from University.

It could be better.

Well quite alright

Super nice QR-code!

There is no specific information about soft mobility

**Are there specific details or features that you find most helpful or surprising on the information pillar regarding soft or shared mobility at Kwintelooijen?**

Same answer

So far, improvements are necessary

The info for public transport is a bit late

no, its only about inside the park

Typical

Bushalte

There is nothing

No

Yes.

Only says public transport very briefly

Not really unfortunately...

No

**Did you come across any other information pillar on the way to this area on how to arrive here?**

Quite useless signs

No

No

i dont think so

Yes

No

No, they should put these things more at the front of the entrance, and also the big sign of the national park. Should be at the entrance of the area, not at the entrance of the car parking because then you're just like her if you come back you don't really see anything until you go next to

No

No.

No nothing

yes, a warning sign for forest fires

Nope

**Knowing there is no pillar or any form of information at the bus stop, what do you think about the information about public transport on this pillar?**

Same answer

I have no comment to this regard

Not useful anymore

poor and uninsiring

I would prefer making a bus station near here

More but still too little

There was a one sentence about check the app to plan your trip, but this should be put at the bus stop

Vague

Yes.

Well it needs to include it

bad. there is not mentioned how far it is. also the location is unclear.

I need to translate it. There is no specific information about soft mobility

**How could the information pillar improve to better contribute to promoting soft mobility and sustainable transportation choices?**

Infrastructure and information

Earlier

be more welcoming and images of cycling of the bus

No idea

Times, locations

Directly next to the house of birds, there should be nice E bike facilities rather than this kind of machine. Moody Forestwood situation. Make a nice charging point that looks inviting at a point where you gonna rinse off your bike maybe and and what and I think generally it makes sense to put the information more earlier on when you enter the area or even like small small gates to show that you're in the national park also

More information

No.

Include more information options

Better route info provision to bus stop. but i think more important is to change the route structure to the bus stop

Putting other information pillar and give specific information about soft mobility

**Having experienced last-mile mobility to Kwintelooijen, what is your general thought about last-mile mobility to Kwintelooijen?**

Very badly managed, poorly provided information

Improvements needed !

Looooooooong

i liked it but not safe for walking

I would love to visit with bus Not walk not bike

Enough to develop

Horrendous, but not for bikes gate mate

Its not very accessible

More signs.

Well it needs to be better

bad last mile mobility

It's shorter if the gate open from last mile mobility

## Appendix C

