Physical Aspects

Figure 1: Map showing the location of our two chosen areas.

Historical Background

Malmö is an old city with a rich history that is shown in its urban shape, or rather diversity of shapes. From its oldest medieval parts in the city centre to the post-modernity of Hyllie. The areas chosen for this analysis, Ribersborg and Hyllieby, were both planned in a relatively close time to each other in the mid-1900s, but their shapes, uses and functions differ greatly. The 1966 general plan for Malmö had a focus on remodeling the city for automobile use which coincides with the trend of 'carchitecture' in the 20th century; the plan specifies Hyllieby as the first area that would be built completely with these ideals in mind (general plan, 1968. Schiller, Brunn, Kenworthy, 2010:41)

Ribersborgs first detailed developmental plan was proposed in 1936. The description for the plan states that the area should be residential but able to sustain its own needs, a modernist idea of the 'superblock' of the 1930s onward (PL120, 1936. Kostof, 1991:154). Hyllieby was a rural village that in the 1960s expanded. It's a low density detached single-family homes area with a quite clear garden city ideal (Kostof, 1991: 75-76).

Street pattern and Morphology

Ribersborg is a very central and densely populated area with 9118 inhabitants in 2020 (Stadskontoret Malmö stad, 2021). The area street pattern is in a semi-grid formation. Regementsgatan, a mixed-use street lined with trees on the border closest to the city centre together with Tessinsväg, that runs diagonally through the area, are the major streets for social interactions. The street network has looked largely the same since the 1930s with some streets added or reworked to accommodate for added buildings in the 1950s onward. Ribersborg is composed mainly of apartment buildings, some with commercial spaces on the bottom floors.

Hyllieby on the other hand is a fairly remote and low-density area with 1276 inhabitants in 2020 (Stadskontoret Malmö stad, 2021). The area has a clear garden city cul-de-sac street network. The major street Elinlundsvägen is where all public transport connections and the only grocery store within the area are located. The car-centric urban design of Hyllieby can be seen in the street pattern and that essentially every house has a garage and/or driveway. The old core of the rural village sticks out in the modernistic sea that is Hyllieby.

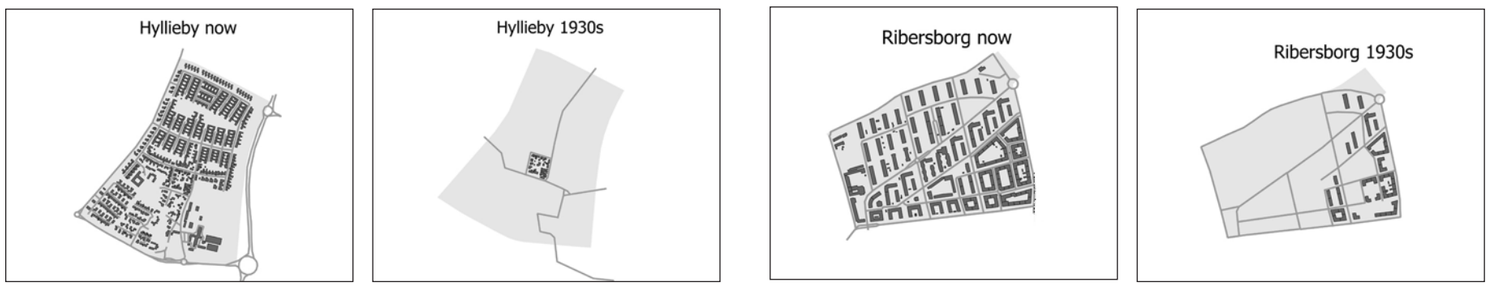


Figure 2-5: Morphological change from the 1930s until today. Data collected from Malmö stadsatlas 2022.

Figure 6: Map showing Street pattern change from the 1930s until today with an overlay of change. Data from Malmö stadsatlas 2022.

Network Patterns

Street Hierarchy

The maps show the street hierarchy in the two districts. The main roads have the highest frequency of traffic and usually define the district borders. The main local roads are the roads with high frequency within the district which usually leads to minor streets which connect the blocks to the main local streets. Separate walking / bicycle lanes are also displayed, this does not mean that these are the only walking / bicycle lanes in the area, as most roads contain walking or bicycle paths, the purpose of these diagrams is the hierarchy of the street network.

The diagrams show that Ribersborg has better vehicle connectivity throughout the area where the main roads and the main local roads usually connect to one another or a minor local street. The minor local streets of Ribersborg pass through the neighborhoods which increases the vehicle connectivity. In Hyllieby, the main roads and the main local roads usually lead to minor roads with lower connectivity or cul-de-sacs, this is further explained in the link-node ratio diagrams.

Link-node ratio

In the paper Measuring Network Connectivity for Bicycling and Walking by Jennifer Dill (2004). She explains that nodes are intersections or the end of a cul-de-sac. For bicycling and walking, she suggests that a perfect, connected grid has a link-node ratio of 2,5, while a ratio of about 1,4 is a good target for network planning purposes.

The pedestrian link-node ratio is similar in the areas: Ribersborg 1,76, Hyllieby 1,7. This means that the pedestrian connectivity is high in the two districts. Though some residential areas in the southern park Ribersborg have private courtyards which in theory could be used as a pedestrian link but it is not usable for the public.

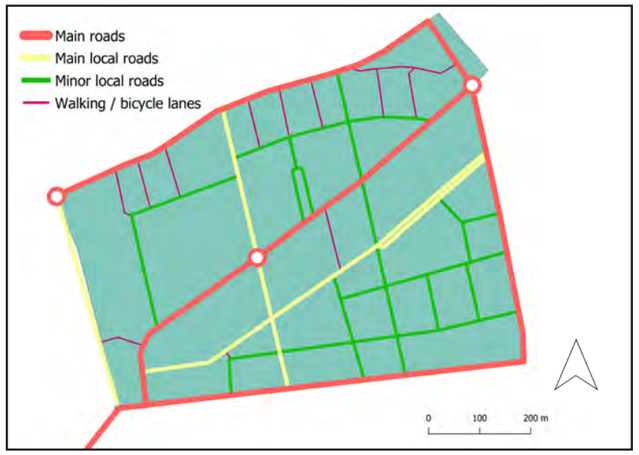
Ribersborg has a higher ratio of vehicle bound links-nodes (1,43) than Hyllieby (1,22) because of the increased connectivity in the district's grid like blocks while Hyllieby's car bound nodes often end in cul-de-sacs.

Parking

The parking places in Hyllieby are mostly on the outskirts or outside of the district. Public parking spaces only exist in the southern part. The area is dominated by private parking, especially private on-street parking in the northern, more dense part of the district. This on-street parking takes up a large area on the local, cul-de-sac streets. In the southern areas the on-street parking is not as prevalent due to the in general larger houses and driveways which doesn't encourage on-street parking in the same ways as the denser, townhouse area.

In Ribersborg there is on-street parking throughout the district. But unlike Hyllieby it is both private and public. This takes up a large area in the district, especially on the minor local streets. Parking areas exist usually in connection with the school area or by the grocery stores.

Ribersborg



Hyllieby

Figur 7-8: The maps display the configuration of the street network in an analysis of the network patterns. Data collected from Malmö stadsatlas 2022.

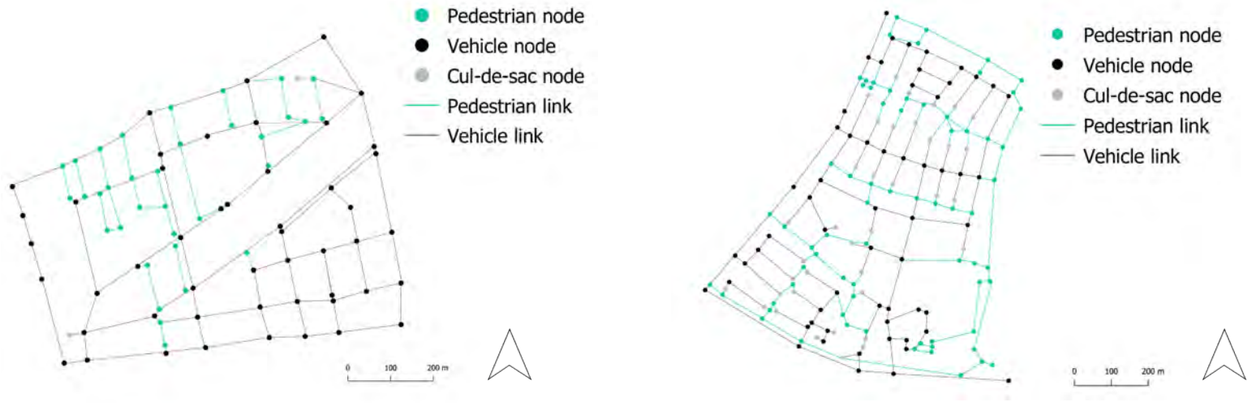


Figure 9-10: The diagrams created display the street hierarchy and link to node ratio in the two areas. Created from observations.

Figure 11-12: The maps display parking areas as well as on street parking. Data collected from google maps, observations and Malmö stadsatlas 2022.

Public Transportation

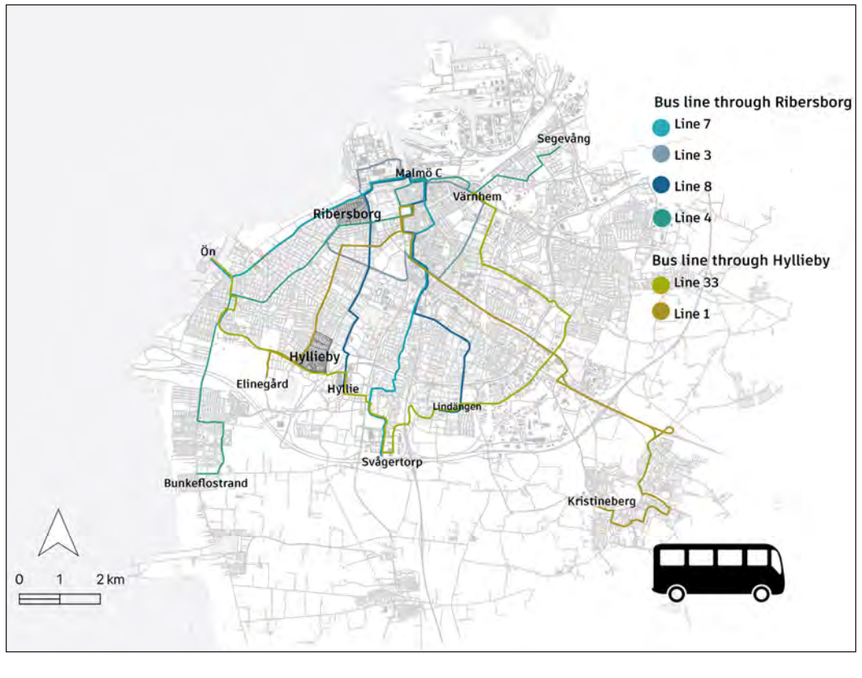
The main mode of public transport in both of the areas are the bus lines. These further connect to other lines and train stations in the city of Malmö. Ribersborg has four bus lines running through the surrounding streets, as well as one bus line that goes through Ribergsborgs diagonal main street. In Hyllie there are two bus lines that run at the outskirts of the residential area.

Accessibility and Connectivity in the Areas

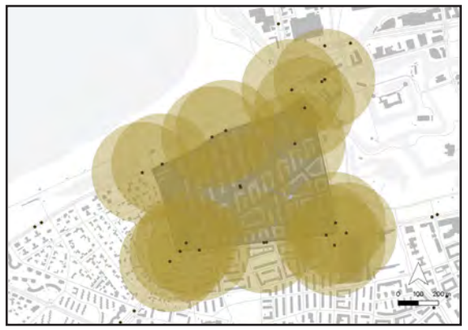
In Ribersborg a bus stop is within a 500 meters walking distance of every corner which indicates that accessibility to public transport is high in this area(Sarkheyli, 2022) Although every line is not as accessible from everywhere, all of them have good connectivity to the central station. Furthermore the bus line's average headway and how they connect to larger bus stations in the city suggest that Ribersborg has a high connectivity in comparison to Hyllieby where the connectivity and service is lower. Because of the Hyllieby's morphology, the bus line is located to the road on the side of Hyllieby. The smaller roads and Hyllieby's cul de sac makes public transit in the area far from ideal. As shown in the maps the walking distance to the bus stops is not covered by the entire area. This means that people who are living at the other end of the area will likely find it troublesome to use public transport.

Service covereage

Ribersborg has a high service coverage with buses leaving at least every five to ten minutes in peak hours and otherwise an average headway of seven to ten minutes on all lines in the areas. They run from around 5 am and stops around 12 pm-1 am leaving a nightly gap of aproximatly 4-5 hours. In Hyllieby the buses starts running at around 5.30 with the latest bus around 12 pm, with a nightly gap of around five and a half to six hours. Peak times are on par with Ribersborg but the average headway is slightly lower. Connecting by bus to trains or other buses in the nearby located Hyllie is not optimal since the average headway on line 33 is 20 minutes. Line 1 goes through other important stations such as triangeln, but there is no connection to Malmö C.



Figur 13: Map of buslines that connect to each areas. The blue colour respresent lines connected to Ribersborg and the yellow lines are the two buses connected to Hyllieby. The information is gathered from Skånetrafikens line maps 2022.



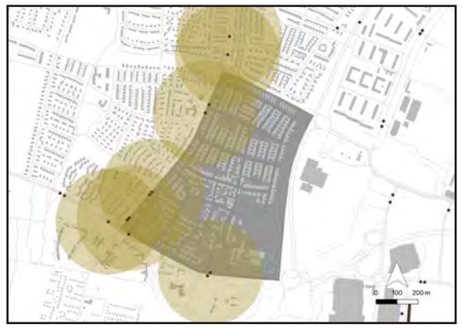
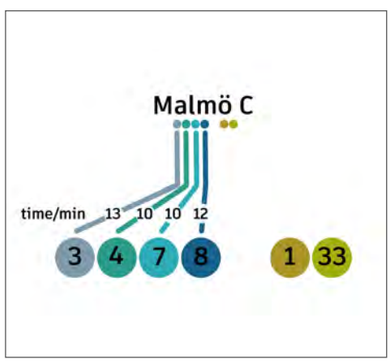
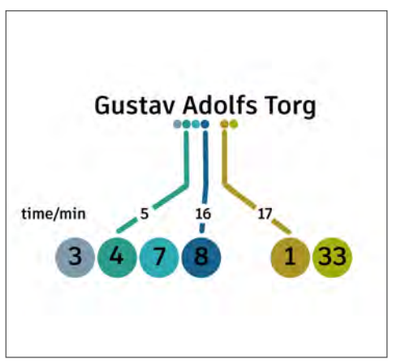


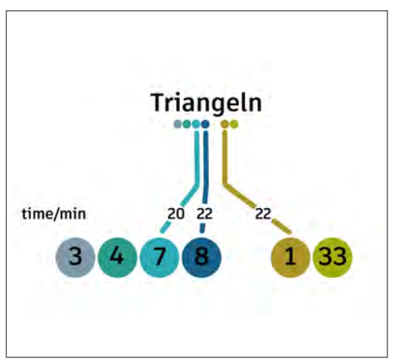
Figure 14 -15 : Map displaying bus stops in Ribersborg to the left and Hyllieby to the right. The circle indicates a 500 m radius which symbolises the five minute walk an average person is prepared to walk to the bus. Bus stops where the walking radius doesnt reach the area are also visible but only as dots for locational purposes

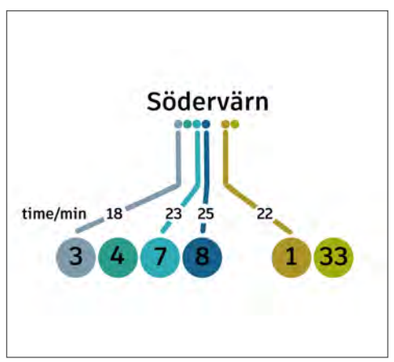
Ribersborg	Hour of Service	Service frequencies during peak hours 7-8	Average Headway
Linje 3	4.50 am - 00.50 am	every 7 minutes	7 minutes
Linje 4	5.10 am - 00.45 am	every 5 minutes	8 minutes
Linje 7	4.40 am - 00.40 am	every 5 minutes	10 minutes
Linje 8	5.15 am - 00.10 am	every 10 minutes	10 minutes
Hyllieby	**Hour of Service**	**Service frequencies during peak hours**	**Average headway**
Linje 1	5.20 am - 23.50 am	every 8-12 minutes	10 minutes
Linje 33	5.20 am - 23.10 am	every 5-10 minutes	20 minutes

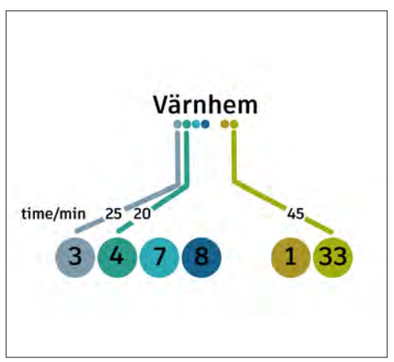
Figure 16: The diagram shows hours of service for the different lines in the areas network, as well as peak hour service and average headway through out the day. The times realates to week days, to give a better understanding to commuting possibilties. Times are collected from Skånetrafiken 2022.











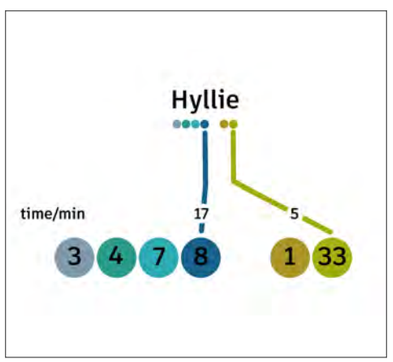


Figure 17-22 : These analysis show how the line connect to some of the main bus stations in Malmö to give an idéa about connectivity in regards to the rest of Malmö. The example stations have four or more lines running through them and in some cases trains. The time displayed may vary but is an aproximation gathered from Skånetrafiken 2022.

Bike- and Pedestrian Paths and Alternative Modes of Transport

According to the inventory of pedestrian paths and bicycle paths in Ribersborg, it appears that there is mainly mixed use for these paths, they are located at the major roads and provide good connectivity through the area. The map shows blue lines for the official cycle paths, green lines where pedestrian access is considered most convenient and orange lines for mixed use paths where bicycle paths are separated from pedestrian paths.

In the area/neighbouring areas there are 6 bicycle rental stations (Malmö By Bike) and two bicycle pump stations. This contributes to more people in the area having the opportunity to use bicycles as a means of transport.
The inventory in Hyllieby shows that cycle paths and footpaths are positioned to add good accessibility through the area and adjacent areas. Most roads in the area are bicycle/pedestrian friendly because the speed limit for cars is low, allowing bicycle and pedestrian traffic to move safely. The roads marked as mixed use (Elinelundsvägen and Annetorpsvägen) are planned for higher car use combined with separated bicycle and pedestrian paths.

There are no rental bike stations (Malmö By Bike) or bike pumping stations in the area of Hyllieby, the map shows the two Malmö By Bike stations that are located closest. The inventory has shown that there are scooters stationed in the area that are used by residents.
The map shows the official bicycle lines in the city of Malmö where three of the lines go through or past Ribersborg, Ringlinjen, Klagshamn - Malmö C and Oxie - Västra Hamnen. This makes Ribersborg one of the most accessible areas in Malmö by bike. The official cycle routes are not directly connected to Hyllieby, the closest official cycle route is Tygelsjö - Malmö C. Even though the map does not show Hyllieby as an accessible area, there are good connections to the official bicycle routes and therefore this makes the area relatively accessible.

Public bicycle parking is available in the districts of Ribersborg and Hyllieby. However, it is allowed to park your bicycle outside an official bicycle parking area for 24 hours as long as it does not disturb other traffic or is otherwise inappropriately placed(Malmö, 2021).

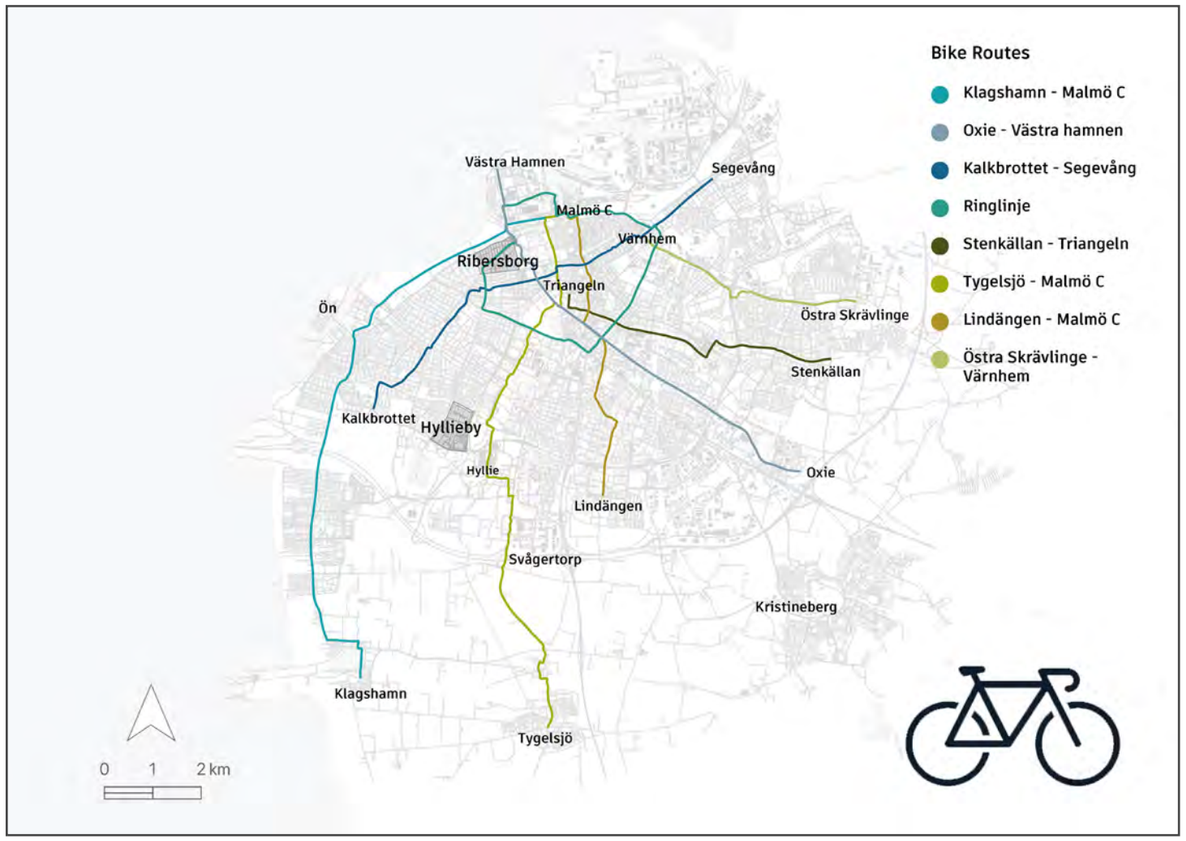
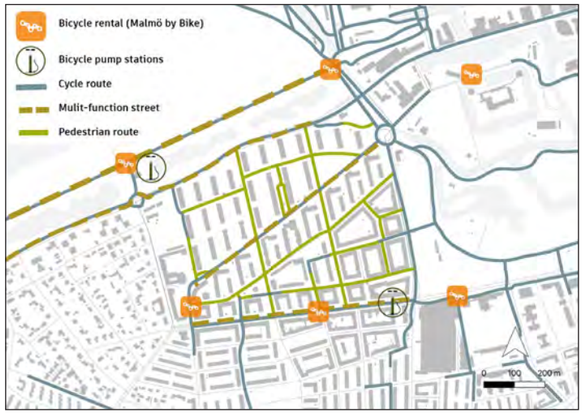


Figure 23: Map represents offficial commuting lane for bikes in Malmö. Data collected from Malmö stad, 2022.

Ribersborg



Hyllieby

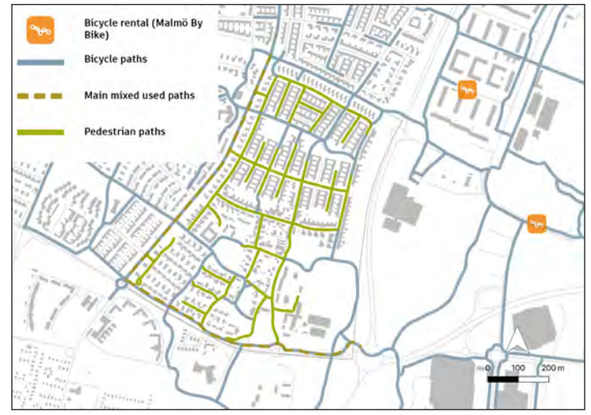
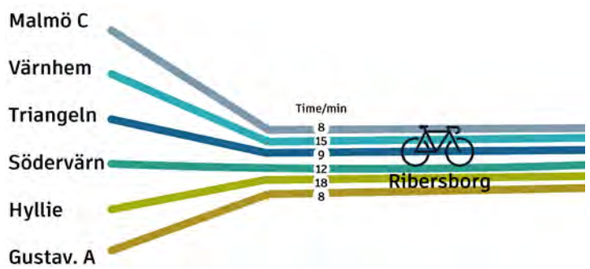


Figure 24-25: Map shows bike paths in the areas, as well as bike rental (Malmö By Bike), information is gathered from Malmö By Bike and Malmö stad, 2022.



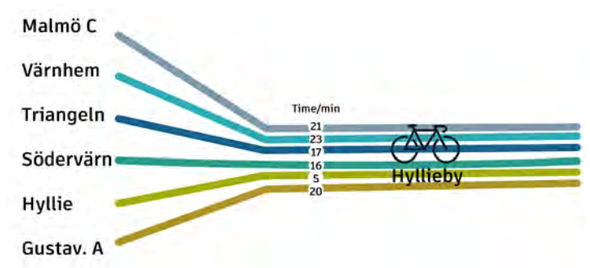


Figure 26-27: Aproximate biking time from Hyllieby and Ribersborg to different station areas in Malmö, times collected from google maps 2022.

Cars and Connectivity

Figure 28: Showing the traffic flow of Hyllieby to the left, and the traffic flow of Ribersborg to the right. Information gathered from google maps 2022.

Traffic Flow

Through the observations of traffic flow in Ribersborg it is revealed that Tessins väg is the most congested of the main roads of the district. This is contributed by the slower speed limit, the roundabouts and a higher number of intersections compared to Limhamnsvägen and Regementsgatan. Regementsgatan sees an increase in congestion throughout the day as it is the main road that connects Ribersborg to the east of Malmö.

In Hyllieby the main roads are of a larger scale, especially Annetorpsvägen and Lorensborgsgatan which is why even though there is a lot of traffic on these roads, traffic flows at a high speed without major congestion. These roads are not as connected to the districts in this area which is why Elinelundsvägen for example sees more congestion in the afternoon as people use Elinelundsvägen when they are coming home from work. The slower nature of the road is also contributed by transit use, as this is the main road that the bus network uses in this district.

Connectivity

One of the advantages of driving is the accessibilty and connectivity, with the car its possible to go pretty much everywhere and usually shorten the travel time, these times are example times gathererd from google maps. They are an aproximation of travel time from car to location.

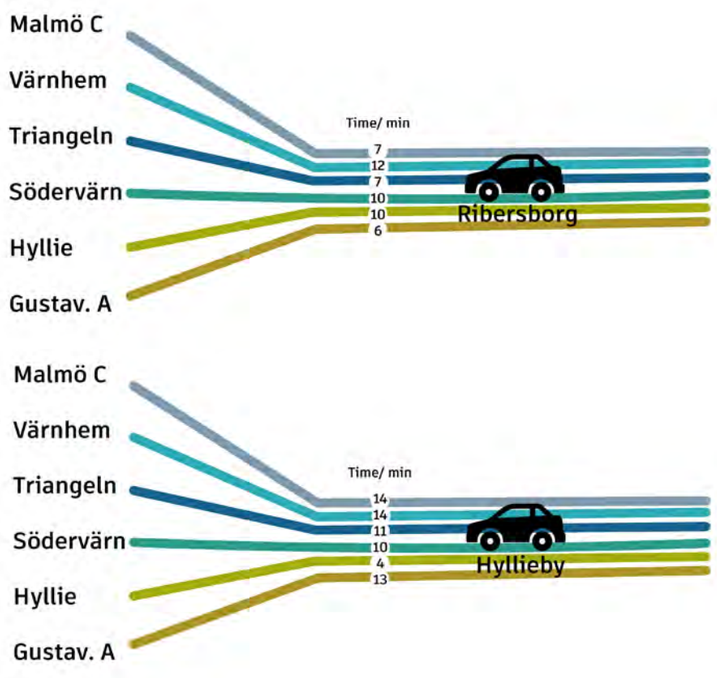


Figure: 29-30: Diagrams display an aproximate travel time, data collected from google maps 2022. The time is calculated from car to final destination, but the total travel time from door to car etc. is not taken into account.

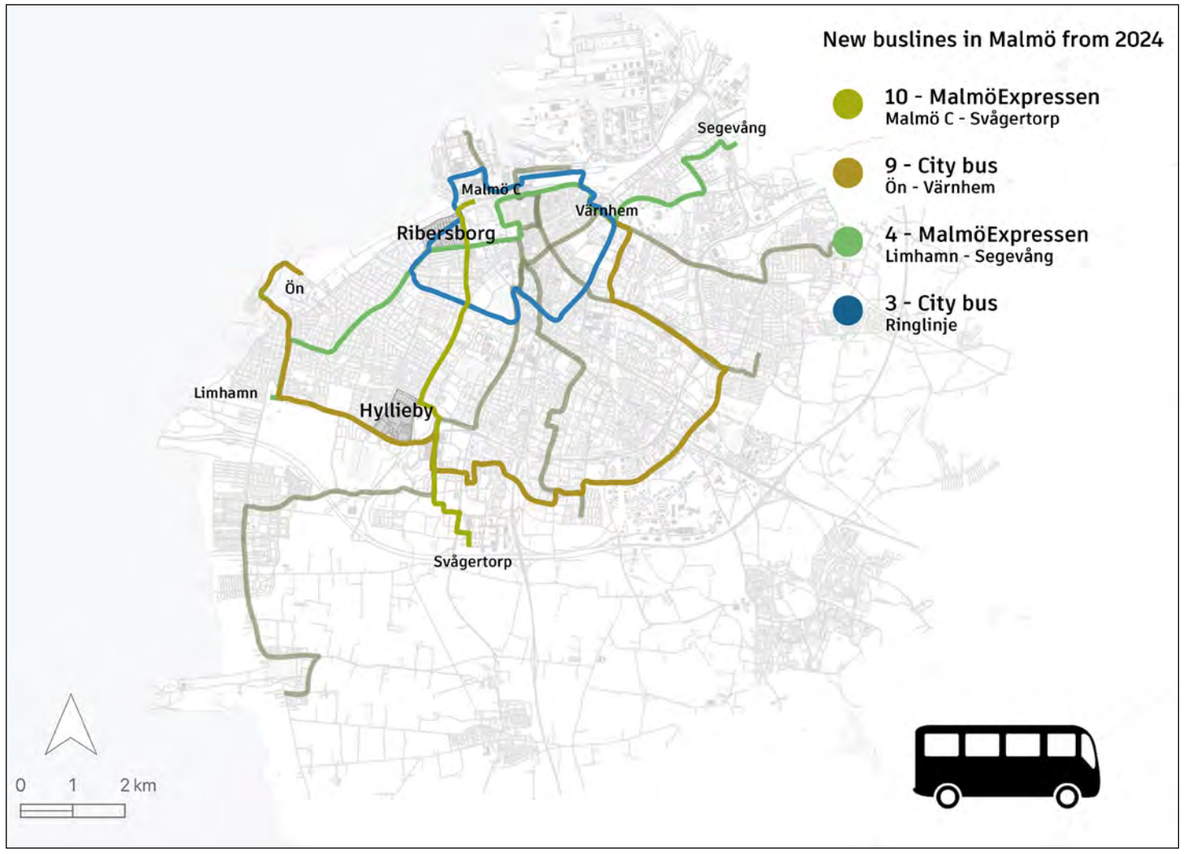
Plans and Strategies Influencing the Travel Patterns

The municipality of Malmö outlines on its website that it believes that residents' travel habits are a crucial factor that must be addressed to reach the global goals by 2030. Therefor they plan on intensifying their efforts in transportsplanning(2022) to realise their vision of cycling, walking and public transport being the obvious choices for people when traveling within the city. Figure 32 illustrates the municipality's goal to reduce car traffic and increase public transport and cycling use by 2030 (2016).

In order to create a sustainable and attractive Malmö, "ramavtal 8" has been negotiated with Region Skåne and the government. The agreement aims to build 26 750 new homes and to ensure sustainability goals this means developing public transport and cycle paths all in line with ramavtal 8. Lines 4 and 8 are two of the four new MalmöExpress lines planned in this agreement, both of which will connect to Ribersborg (Malmö, 2022). the MalmöExpress line is Sweden's first BRT line (Bus rapid transit), which is served by a high-capacity bus, by letting people get on and off through every door it reduces the time the bus stand still and speeds up the journy(nobina, n.d.). In figure 31, the changed bus line and new routes impacting the areas can be observed.

The bike lanes are also to be improved and added on, with an overall extension in ramavtal 8, of 3 miles, which will improve the bike accessibiltity as well as safety for cyclists(Malmö, 2021).

The planning programme of Malmö, inncludes a number of detailed plans for the areas surrounding Hyllie, both plans that are under consultation in planning and also those that have already been adopted. According to Malmö (n.d.), by the year 2040, Hylliebys neighboring area, Hyllie will have 25 000 inhabitants. The other neighbouring area Elinelund to the south of Hyllieby, also has housing planned and when fully developed the area will have a population of 4 000. The high population growth in these areas, combined with Malmö's sustainability and mobility goals, suggests that public transport needs to be developed and expanded, which with the right planning could also have a positive impact on public transportation in Hyllieby.



Figur 31: Planned bus lines affecting the areas as of 2024 and forward, information gathered from Malmö stad, 2022.

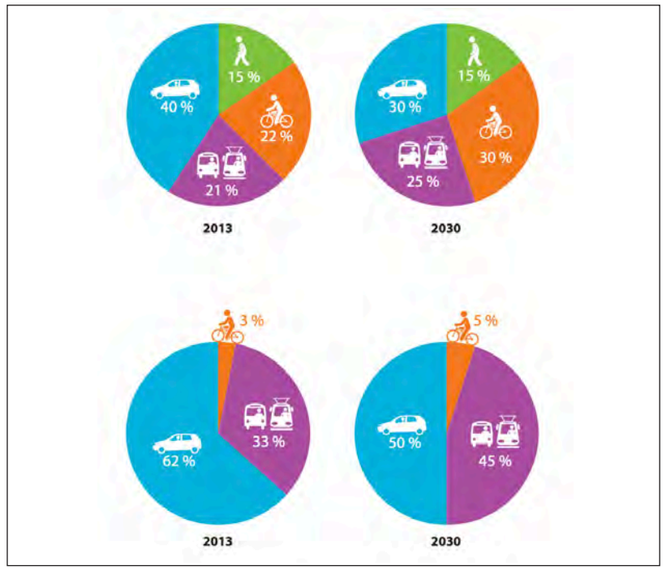


Figure 30: Illustration (Malmö 2018) showing the municipalitys goal for transportation. The top two pie charts represent citizen travels, and the lower two shows the goal for commuting in to Malmö.

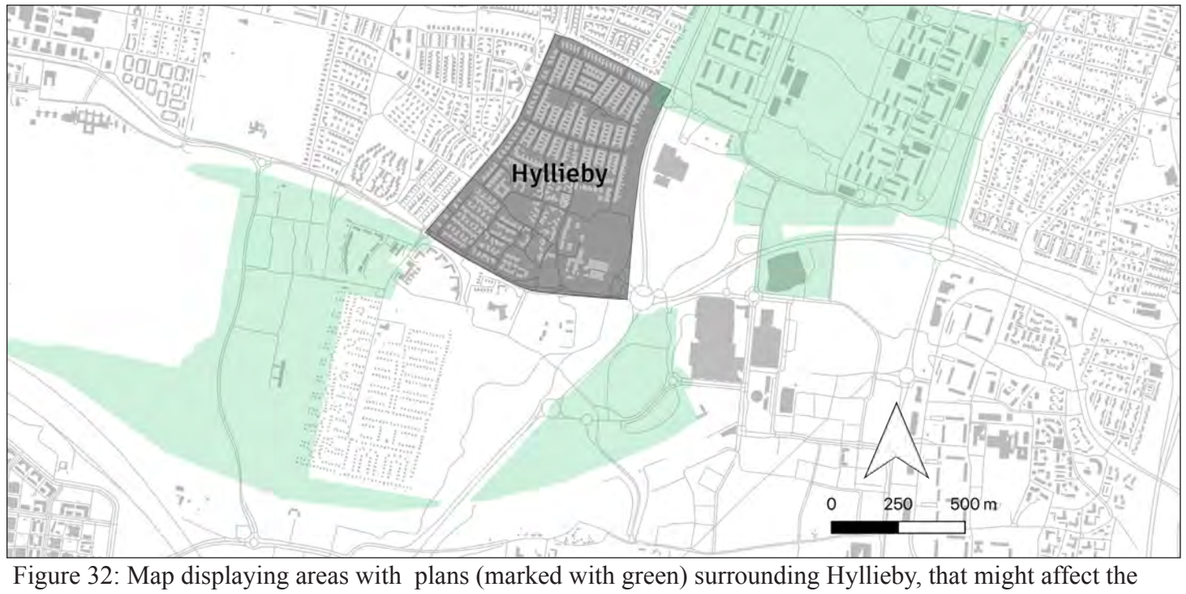


Figure 32: Map displaying areas with plans (marked with green) surrounding Hyllieby, that might affect the future public transportion investment in the area. The information is gathered from Malmö stadsatlas.

Analysis Conclusion

Transportation is one of the fundamental activities in our daily lives, moving from one location to another throughout the day. It is easy to understand the impact this has both on our everyday life, society and the environment. As mentioned before both Hyllieby and Riberborg were developed during an era where the car was very much in focus. Modes of transport that focus on motorization have a considerable impact on our planet due to high energy use and often fossil fuels(Schiller & Kenworthy, 2017).

When addressing sustainable transportation there are several important factors to take into consideration and one of them is that the car has become the main mode of transport on which we rely on for our everyday busy travel life. This can sustainably be addressed by moving away from this dependency and implementing change which aims at diversifying the choices of how we, along with goods and materials, move around. The focus in planning has shifted from car ease towards looking at different infrastructure, technological solutions as well as which modes are more appropriate (Schiller & Kenworthy, 2017)

In the municipality's plans there are already considerable efforts going into making a shift towards a more sustainable infrastructure in regards to public transit and increasing the accessibility and mobility with more evolved bike lanes in the city.
By comparing the different modes of transport in a travel time and connectivity we receive a basic understanding of the modes of transport which can be used to draw some relevant conclusions, even though the travel experience is much more complex than just looking at the travel time. The door to door travel time as well as, ease of travel and enjoyment of travel are some of the other important factors(Banister et al., 2019) which will be addressed shortly through reasoning and on sight observations. Our following reasoning is based on a preconceived notion of a traveler, commuting and living within Malmö.

Both bikes and cars have an advantage over bus transit in regards to the connectivity. Whereas the bus is put on an already determined route with fixed stops on which it departs on specific times, the car and bike are more flexible to the individual user.

By comparing the car and bike options we can see that in Ribersborg which is more close to the city center the bike is a viable option to the car with little time difference and between the modes. The set back in this instance for the bike could be the weather and for the car finding a good parking as well as it being a more expensive option to biking, both in car maintenance, taxes, gas and parking. Taking into account the traffic flow of Ribersborg we can also see that this might have an impact on both ease of travel and time as the traffic throughout the day moves a bit slower.

Looking at the bus line the connection to the rest of the city is still good with several of the lines connecting to bus stations which have strategic positions as well as connecting lines. All of the buses have a relatively fast route to Malmö C which has a high connectivity to both buses and trains. Ribersborg also has a mixed land use which offers more possibility for on sight activities such as shopping, leisure and work, which can reduce the need to travel. Following the reasons and comparisons, biking and buses seem to be the most reasonable choice for travel in Ribersborg.

In Hyllieby on the other hand the car seems to be a superior mode of transport in regards to time and connectivity. The traffic flow is low in the area offering no real hindrance. Buses have a low connectivity and no connection to Malmö C. In many instances the bus has an increased travel time to the different stations compared to the car, but equals the bike options. In regards to connectivity all modes have a good and quite equal connection and travel time to Hyllie, but the bus, although short travel time has a headway adherence of 20 minutes which makes it an inflexible option to Hyllie station. Hyllie could be seen as the best connecting station, since it has both buses and trains. The area is as mentioned a residential one with little on sight options for leisure, shopping and work which suggest that traveling may play a higher part in meeting these residential needs than it does in Ribersborg. Again Hyllie can offer some of these services and is within a short distance. In Hillieby biking and driving seems to be the most reasonable choices for the traveler in comparing the different options in this way.

In the pie charts in our chapter "Plans and Strategies Influencing the Travel Patterns", we can see that the municipality wants to increase traveling by bikes among the citizens. This seems like a concept that would be beneficial for both areas. But Ribersborg is the only area of the two that has on site bike rental as well as pump stations to refill tires.

Figure 33-36: Photos from observations in Ribersborg showing street activity and functions.

Survey Conclusion

Ribersborg

Ribersborg is very dense with a total population of 9118. Demographically the area is made up of approximately; youths' 10 percent (0-19), working age 63 percent (20-64), and retirement age 20 percent (65+). Car ownership compared to people of driving age (16-80+), practice driving included) is 35 percent (Stadskontoret Malmö stad, 2021).

These statistics support the results from our survey, most of the participants use other modes of transport and walking rather than car for their work commute. For the Ribersborg survey we had 17 participants which is a good number for making some conclusions but still too small a pool to make generalisations for the entire population, but it will help portray a better picture of the needs and experiences of the area then purely statistics can.

The most popular public transport with biking and walking in shared second-place. When asked for the main reason for most answered that it was the easiest with health as the runner-up, cheap as third and last environmental reasons. One thing to note is that most people, 64,7 %, had a relatively short commute to work 0-10km, only 23,5 % had over 20 km and 11 % works abroad. Nobody had over 2 hours commute single-trip to their workplace, this might be a contributing factor to the relatively low car-ownership in the area. Being a central area it's not surprising that 47,1% walk to the grocery stores with biking as second at 29,4 & but there's still 23,5 % that chooses the car and no-one public transport. At 76,5 % saying that their main reason is because of the ease of use we can start to see a pattern. The same goes for free-time activities and shopping with 82,4 % saying it being the easiest is the main reason but for this category the car at 52,9 % being the 'winner', biking at second place with 23,5 % and walking and public transport at shared third place with 11,8 % each.

What we can conclude from this is that the most important factor for people's choice in mode of transport is how easy they find it for different purposes. The participants are mostly positive to the times and frequency of buses in the area but how they find the comfort seems to be split but mostly neutral. Something very positive is that the participants have a very positive view on the ease of use of the pedestrian and bike paths in the area. The car roads aren't as clear, but people are mostly positive to them. Interestingly at the question for if they would consider using a car-pool instead of private car 41,2 % said no. The majority still said they would consider it but what the reason might be for the negativity towards the idea of a car-pool, it would be interesting to examine more if time had permitted it. In the longer-answer questions, the consensus seems to be that a lot of people are content with the development as is of Ribersborg. The proposals seen are removing the street parking, widening pedestrian and bike path, also having one-way bike paths, better placement of crosswalks and making bus-lanes. Other than that people expressed complaints about the buses being too crowded and making it hard to use for shopping, both groceries and other. Another suggestion is making it nicer to with greenery, lower noise-pollution, and more space on the walkways. Also making car-use harder by making it more expensive and inconvenient to own while simultaneously making cheap, safer, more convenient to use other modes and finding solutions for bike thefts that is a major issue in Malmö as a whole. At Malmö central station, Triangeln station and Hyllie station there are secure bike parking spaces with 'Bike&Ride' but they only cover those specific points and have limited spaces for a very large population of the whole of Malmö (Malmö stad, 2021).

Hyllieby

Hyllieby is quite sparse with a population of 1279. Demographically the area is made up of approximately; youths' 26 percent (0-19), working age 47 percent, and retirement age 26 percent. Car ownership compared to people of driving age (16-80+) is 46 percent (Stadskontoret Malmö stad, 2021).

Because of troubles reaching out to residents of Hyllieby the survey results might be quite skewed. There are only three participants that answered. When looking for appropriate means of finding participants there were some Facebook-groups with member that would fit but the administrators declined when asked to share the survey with them. The solution was to share the survey on our private Facebook pages instead which is where these participants are from. They are all in the age bracket 19-25 years old this makes is so that we can't draw any definitive conclusions but might give an idea of the needs of the area.

The results follow; 66,6 % are single household and 33,3 % co-living without children. 66,6 % uses car for work commuting, 33,3% public transport. Everyone said this was because it was the easiest option. 66,6% had 5-10 km to their workplace and 33,63 % 1,5-2 mils. No one have over an hour single-trip to work. For grocery shopping everyone said they primarily walk to the store, 66,6 % because its easiest and 33,3 % for health reasons. For free time activities and other types of shopping everyone use public transport as means of travel, and everyone said this was because it's the easiest. They're generally happy with the frequency and time of public transport in the area, also with the comfort of bus-travels. They're all happy with the pedestrian and bike paths of the area. Although, they're neutral to the car roads and here everyone said they would consider a car-pool. Nobody answered any of the long-answer questions thereby we have no suggestion or feedback for change in the area. This is unfortunate but having answers of the experience of transport in the area is still good for our analysis.

Because of the unfortunate circumstances it's hard to make any suggestion of improvements in the area, but from the information collected there's a interest for a car-pool which might help with connectivity in the area and freeing up space for private cars for other activites further along.

Figure 37-38 : Photos from observations in Hyllieby, displaying street funtions and on street parking.

Proposal for change

Ribersborg

Further development with pedestrian and bicycle paths is needed in Ribersborg, the observations and inventory analysis show that these paths often need to share the space with autotraffic. On these local roads improvements can be made to produce a more attractive space for alternative modes of transport by prioritizing sustainable transportation options. Ribersborgs street pattern and built environment favor the Personal motor vehicle (Schiller and Kenworthy 2017). Therefore, as it currently is, large parts of the local street space are designated for on-street parking for its residents and the public. The PMV is also favored in the result from the survey.

The sustainable transportation agenda in Ribersborg should prioritize investment in walking and biking to overcome the present favoring of the PMV:s and showcase the importance of the public realm and its influence on non-motorized mobility (Schiller and Kenworthy 2017).

The detailed proposal in Ribersborg is about implementing street-calming methods on some local streets to introduce designated pedestrian- and bicycle lanes and discourage on-street parking. The streets that are subject to change in the proposal are Kilian Zollsgatan, Roslins väg and Sergels väg. The aim is to limit parking on these streets by only having the on-street parking available on one side, this frees up a large part of the street which can be used more efficiently by pedestrians and bike users. One way to accomplish this is by making the roads living streets (gåfartsområde). This implies that motor vehicles are not allowed to exceed speed limits over walking speeds (~7 km/h) making it safer for pedestrians and bikers to roam more freely on the streets.

The proposals' goal is to facilitate a calmer nature of the streets which in turn discourages motor vehicles. The living street is a perfect facilitator for expansion of greenery and future development of smaller local businesses such as restaurants and shops. A critique of the proposal could be that residents would not be able to park their private vehicle anymore, this could be counteracted by making most of the parking spaces private for the residents in the area which also would discourage motorists not living in the area from using these roads, contributing to further calming of the area. In the end, this proposal aims to produce a more attractive space by reducing the automobile's dominance of the streets by favoring non-motorized mobility.

Figure 39 : Map produced in QGIS, with the focus streets for our proposals marked in blue and placement for our section A-A.

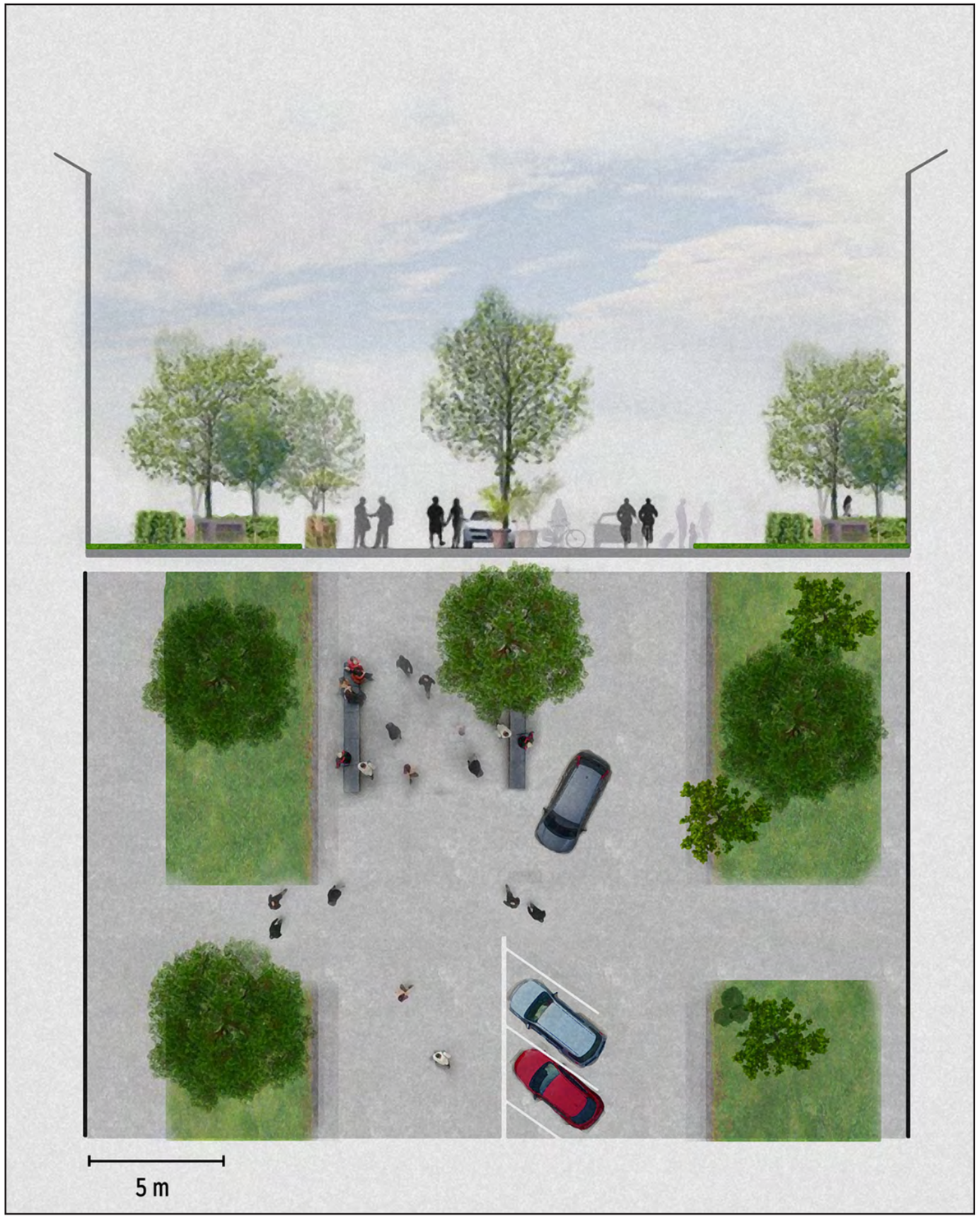


Figure 40: Illustrative section of our proposal, showing one interpretation of our suggested change where cars are visitors on streets where pedestrians and cyclists are the main actors.

Propsal for change

Hyllieby

Car-sharing has been increasingly popular around the world as societies are moving away from the idea of private automobilism, especially in Europe. The aim is to incentivise the user by the opportunity to avoid the expenses that comes along with owning a car but still have the privilege of using one when the need arises. The popularity of car-sharing, or a car-pool, shows a cultural shift where the perception of owning a car is imperative for mobility. Auto-dependence of the physical aspects of the city is something that in recent times we have been trying to move away from, both for environmental reasons and reducing congestion at peak hours (Schiller, Bruun & Kenworthy, 2010: 247-248).

Hyllieby was planned in the 1960s for automobile use, with the times ideals of separation of functions and cul-de-sacs. From our observation of the area its clear to see that the car has a major role with most houses having two cars or more. In contrast to Ribersborg Hyllieby is not self-sustaining as it is mainly residential land-use.

The problem is not accessibility to good alternatives but using them. From the survey answers we can see that there is an interest for a car-pool as an alternative for private ownership. There are many costs associated with car-owning so it is not particularly surprising that they are open to other alternatives that would reduce the cost of living in the area. Our proposal for an improvement to the transportation in the area is to instate a car-pool, expand Malmö By Bike rentals to strategic places and have campaigns showcasing them as good and cost-efficient alternatives.

Mobility management is a theory, or rather a collection of different strategies for improvements of the already existing infrastructure towards being a more efficient and human-oriented one (Schiller, Bruun & Kenworthy, 2010). For Hyllieby a car-pool and having Malmö By Bike docks would expand the options available to them. Having the bike rental strategically places within the area and having docks at key places such as Hyllie Station might incentivise people to use bikes more often as they will not have the same worry of bike thefts and needing to pick up the bike later opening option for other ways of going home in the end of the day. Instead, they can use it as an intermediate travel mode between the home, public transport stops and if needed to reach their final destination. If Malmö By Bike was simultaneously expanded both within Malmö and a subscription collaboration with neighbouring towns bike rentals, e.g., Lundahoj, this might reduce congestion on trains as well with the need for taking ones own bike would be lessened. Giving a rental option would thus lead to a snowballing effect of lessening congestion in general because the need for private owning of vehicles would be diminished, given that the price is reasonable, and it is deemed as the easier option by the public. Knowledge about it will be vital to its success or failure, just giving people the option will not necessarily be enough. For widespread usage people need to be informed and shown that it is the better option. As seen from the survey, ease of use or deemed ease of use is the most important factor in guiding their choice in transport mode for different activities. Therefore, making it easy for people to rent bikes and join the car-pool should be given priority while planning and implementing the strategy.

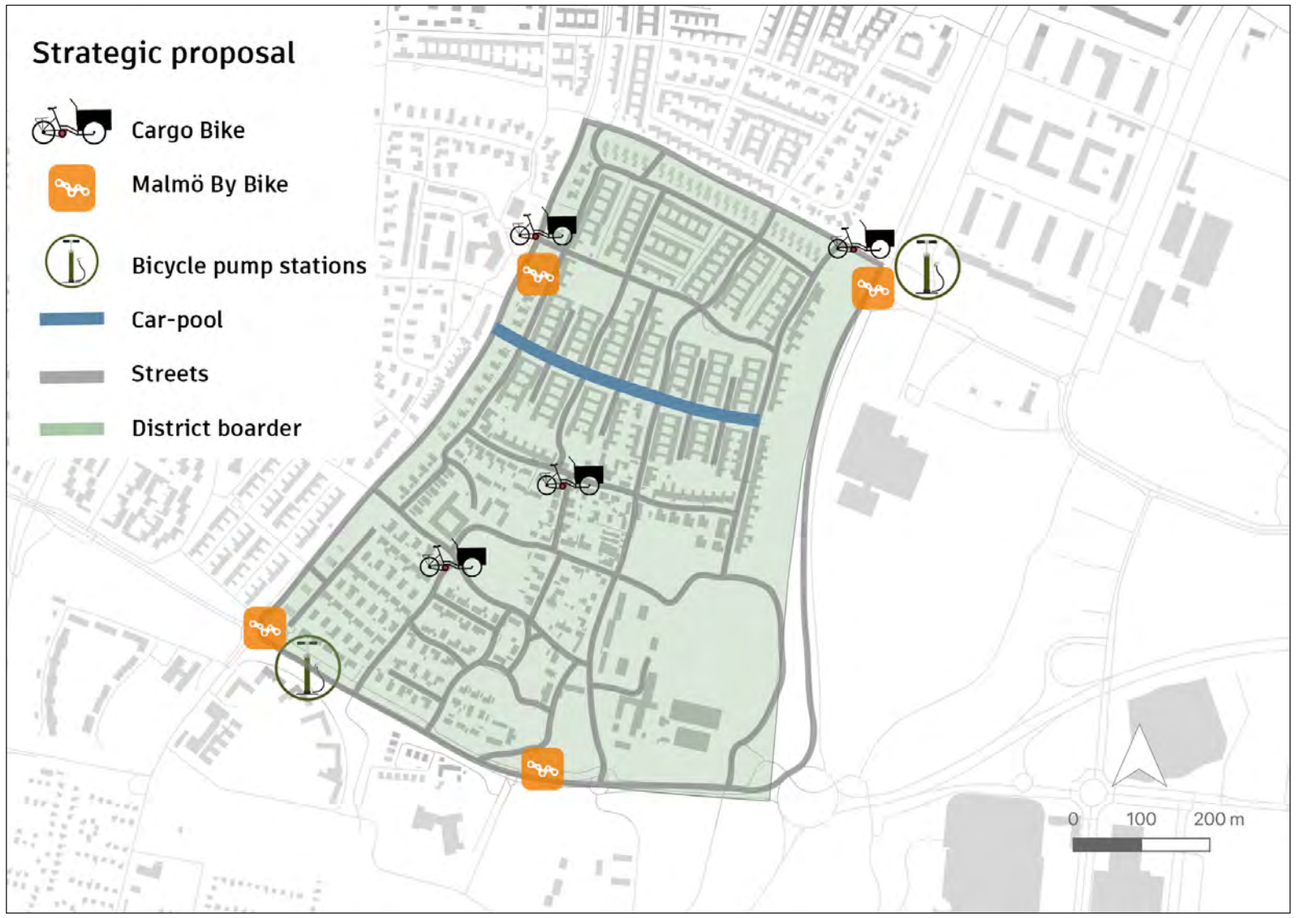


Figure 41: Map produced in QGIS, and final render in Photoshop. Displaying strategic placement for bikes, cargo bikes and street for car pool.

Figure 42: Photo of our proposed street, one of the areas widest and with central location in the area. The surrounding streets have the most on street parking i Hyllieby.

Reference:

Banister et al. (2019) Chap 14: Reasonable travel time- the travelers' perspective, in Hickman et al., A Companion to Transport, Space and Equity

Dill, J. (2004) Measuring Network Connectivity for Bicycling and Walking. Accessed 2022-02-24 from http://reconnectingamerica.org/assets/Uploads/TRB2004-001550.pdf

Fastighet och gatukontoret. (2020) Underlagsrapport Linjenätsutredning 2030. Accessed 2022-02-24 from https://motenmedborgarportal.malmo.se/welcome-sv/namnder-styrelser/tekniska-namnden/mote-2020-02-26/agenda/linjenatsutredning-2030-underlagsrapportpdf?downloadMode=open

Kostof, S. (1991). The city shaped: urban patterns and meanings through history. London: Thames and Hudson.

Malmö. (u.å) Delområden och projekt I Hyllie. Accessed 2022-02-24 from https://malmo.se/Stadsutveckling/Stadsutvecklingsomraden/Hyllie/Delomraden-och-projekt-i-Hyllie.html

Malmö. (2022) Hållbarhet och mobilitet. Accessed 2022-02-24, from https://malmo.se/Stadsutveckling/Tema/Resande-och-infrastruktur/Hallbar-mobilitet.html

Malmö. (2021) Nya cykelstråk. accessed 2022-03-02 from https://malmo.se/Stadsutveckling/Tema/Resande-och-infrastruktur/Ramavtal-8-Storstad-Malmo/Nya-cykelstrak.html

Malmö. (2022) Ramavtal 8 Storstad Malmö. Accessed 2022-02-24, from https://malmo.se/Stadsutveckling/Tema/Resande-och-infrastruktur/Ramavtal-8-Storstad-Malmo.html

Malmö. (2016) trafik och mobilitetsplan. https://malmo.se/download/18.4cc964c317575b479bd78f1/1605625383803/MALM_TROMP_210x297mm_SE.pdf

Malmö By Bike. (2022). Accessed 2022-02-14, from https://www.malmobybike.se/

Malmö Stad (2021). Cykelkarta och Service. Accessed 2022-02-18, from https://malmo.se/Bo-och-leva/Stadsmiljo-och-trafik/Trafik/For-dig-som-cyklar/Cykelkarta-och-service.html

Malmö Stad (2021). Cykelparkering på offentlig plats. Accessed 2022-02-18, from https://malmo.se/Bo-och-leva/Stadsmiljo-och-trafik/Trafik/For-dig-som-cyklar/Cykelparkering-pa-offentlig-plats.html

Malmö Stad (2021). Elsparkcyklar. Accessed 2022-02-18, from https://malmo.se/Bo-och-leva/Stadsmiljo-och-trafik/Trafik/For-dig-som-cyklar/Elsparkcyklar.html

Malmö Stad (2021). Hyrcykel. Accessed 2022-02-18, from https://malmo.se/Bo-och-leva/Stadsmiljo-och-trafik/Trafik/For-dig-som-cyklar/Hyrcykel.html

Nobina. (u.å) Bus rapid transit- MalmöExpressen. Accessed 2022-02-24 from https://www.nobina.se/vara-losningar/vara-losningar-i-verkligheten/bus-rapid-transit-malmoexpressen/

Sarkheyli, Elnaz; senior lecturer at Malmö University. 2022. Concepts in urban transportation planning, lecture january 20th.

Schiller, P.L., Bruun, E.C. & Kenworthy, J.R. (2010). An introduction to sustainable transportation: policy, planning and implementation. London: Earthscan.

Schiller, P.L., Bruun, E.C. & Kenworthy, J.R. (2017). An introduction to sustainable transportation: policy, planning and implementation. London: Earthscan.

Stadskontoret Malmö Stad. (2021). Statistiskunderlag för Malmös områden 2021-11-20. Malmö stad. Region Skåne.

PL120: Förslag till stadsplan för del av Slottsstaden (Ribersborg M.M.) I Malmö. (1936). Malmö stad. <https://kartor.malmo.se/Planvisaren?plan=PL120>>. [Accessed: 2022-02-26].

Individual assessment

Individual assignment Asker

The group assignment was an interesting way of making an inventory of districts in Malmö. The assignment made us discover and experience new areas of Malmö, especially Hyllieby, a district none of us had ever been to before. Choosing Hyllieby turned out to be a bit of a problem in terms of getting participants to answer our survey. In hindsight it could have been easier to choose a different district, but we got some answers and learned a valuable lesson on how difficult it can be sometimes to work in the field of surveys and public participation. In the end the group doesn't regret the decision to study either Hyllieby or Ribersborg at all.

The process went very well, we had great dynamic from the start and communicated well throughout the project. The first weeks we visited the districts and just experienced them. We also started to work together on the questionnaire after we got some ideas of what we want to accomplish in these areas.

Our process usually consisted of us meeting at the University where we compiled our maps and discussed them. Me and Julia worked most with the QGIS software which we felt most comfortable with. Julia also compiled most of the statistical and historical data which she also used in some GIS-maps. Elin and Mina worked mostly with Adobe softwares like Photoshop. The use of Photoshop made it so that they usually compiled the more illustrative maps, like the section Mina made and the strategic proposal map Elin made. Mina also designed the pdf for the assignment in InDesign which is a difficult thing to do with many painstaking adjustments, but it looks so good, and I am so grateful for this. This use of different programs for both the same but also different needs led to a great dynamic in the group where everyone understood what to do and not to do. If someone had problems with a specific map or assignment, someone else could do the work in a different program.

Individual Reflection: Elin Kindahl

The project started with a joint analysis of a map of Malmö and we decided to approach the areas of Ribersborg and Hyllieby.
In my opinion, we in the group have worked well together which has made the whole process very flexible and fun for everyone. The process started with trying to map out how we wanted to structure the work during the course so that everyone felt they were given a worthwhile task. Therefore we chose to divide the work through the different points of the inventory, everyone was given a responsibility but throughout the process we have collaborated, discussed and listened to the views/opinions of everyone. All team members have therefore contributed both text, maps and other visual designs. I would like to point out the good cooperation when it came to compiling questions for the questionnaire and how we struggled to reach out to people to get answers to our questions, at this stage we especially had problems reaching out to the residents of Hyllieby. Everyone in the group helped to try and find new and creative ways to deliver our questionnaire and in the end we received responses that have helped us to answer questions about Hyllieby in our project.

When designing the new proposals, we have instead focused on allowing the group members to focus on what they consider to be their strengths in producing text and visual material, this has meant that I, for example, have been able to work more on maps and visual material together with Mina while Julia and Asker have produced more text for the proposal. The design and theories of the proposal came from all group members contributing ideas that we have evaluated and discussed together to anchor these in theories.

Throughout the project we have used different methods for different parts of the work. For the analysis we visited Ribersborg and Hyllieby, we walked around the areas, discussed and took pictures to get our own impression of the areas. Before each visit we decided to use different means of transport, for example, I cycled, Julia and Asker took the train from Lund and then walked to the areas from the nearest train station and Mina took the bus.

My focus during the analysis of the inventory has been on bicycle routes, bicycle parking, bicycle rentals and pedestrian routes. To make this inventory I have used a lot of maps from the City of Malmö, the group's own analysis of the area, google maps and other information from e.g. Malmö By Bike. In the process of developing the proposal I have produced maps and focused on implementing connectivity for bicycle transport.

Individual assessment

Individual Assessment Mina Fredriksson

In this group assignment we have complemented each other in a good way. Equally dividing the work between each other, playing off each other's strengths. Although the focus has been on developing materials and reaching conclusions based on each person's interests and abilities, everyone has been involved and tried the different methods for analysis. Although we have focused more on working with programs we feel comfortable in to achieve better and quicker results, more often than not we have screen-shared to both learn from each other and give input on the final products. Everyone has been engaged in the project and have been willing to both learn and try the methods presented to us in the course.

Consistently throughout the course we've had regular meetings and checked in with one another, helping each other with problems and engaging in meaningful conversation about our findings and how to move our project forward. Early on in the process we started our inventory and were able to explore each area in depth and discuss our findings both on sight and in retrospect.By dividing the work early on we were able to give extra focus on our chosen fields of our inventory which made discussions easier and we got a clear picture of our chosen sights, combining our experiences.

The group dynamic and everyone's interests, ideas and knowledge have really been conducive to our work and I'm impressed with my group members hard work, dedication and positive attitudes.

My chosen fields in the final report were public transportation, as well as plans and strategies influencing the travel pattern. I found public transport very interesting to work with and would have enjoyed more time to further explore the connectivity and comfortability of the bus transport. When I made the analysis for the buse's travel time and connection to different stations in Malmö the results were intriguing and enabled a new perspective to whether or not the bus would be a viable and attractive option. We decided to carry on with the time/destination analysis to both bikes and cars for comparison. In the final conclusions this was very beneficial to getting a good idea and understanding of the different travel modes. Apart from this I've written part of the conclusion after valuable discussions and produced maps, illustrative works and diagrams.

Individual reflections: Julia Andersson

This group assignment has worked very well. We split the assignment parts equally amongst each other according to our individual strengths and interests. The first thing we did was to give suggestions on interesting areas of Malmö to work with. After some discussion of pros and cons of the different options we ended up with Ribersborg and Hyllieby, two districts with completely different contexts which we thought would be interesting to contrast.

Our workstyle has been very collaborative even with individual tasks often working together both on campus and Zoom. Elin and Mina, who have access to Photoshop and InDesign on their own computers, took on more of the visual parts and looked more closely at the public transport, pedestrian, and bike path in and around the areas. Mina doing the layout for the assignment in InDesign. Me and Asker, who are more comfortable in QGIS, made maps and analysed more of the geospatial data such as nodes, connections, morphology, and street patterns. Asker also painstakingly hand drew and counted all the links and nodes and drew out the on-street parking and parking spots in QGIS for the areas because there was no existing geodata for it we could find. All in all, this proved to be a successful division of labour with everyone being able to show off their strengths. If difficulties occurred such as language, analysing and so on we worked together to figure it out. Creating a work environment where you could ask each other for help and providing it to the others which really helps move the project along.

For my part I choose to work on the morphology and street pattern changes over time as history is something I find very interesting. To understand why the areas are shaped as they are I examined the detailed development plans for the areas and the general plan for Malmö from 1968 and 2018. This proved very useful in understanding why the built environment and streets look the way it does. Also seeing the differences in ideals from the 1930s, 1960s and 2010s. I used Malmö Stadsatlas area photos from the 1930s and 2020 to trace where the old roads were placed and for morphology of the built environment selecting the buildings as seen on the 1930s photomaps. This visual data together with the general and detailed development plans was the basis for my analysis of the street patterns and morphology of the areas. I used Schiller, Bruun and Kenworthy (2010) for most of the theoretical aspects. Mobility management proved very applicable for this assignment and our areas. I also wrote the strategic plan for Hyllieby from everything we have discussed in the group, and conclusions with reflection from our survey results using statistical demographic data from Malmö stad to strengthen our conclusions.