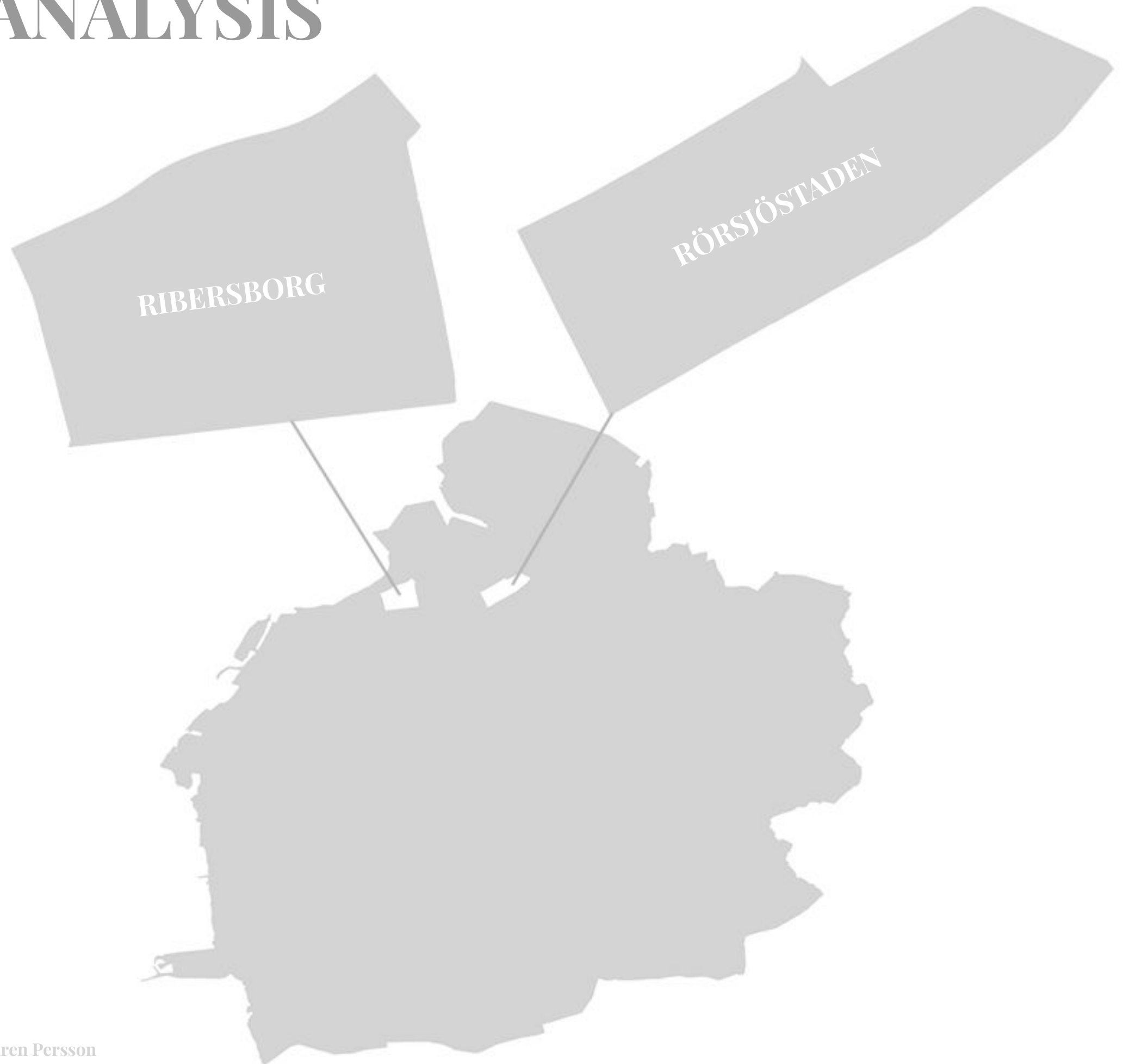


INVENTORY, ANALYSIS & PROPOSAL



BACKGROUND AND LAND USE

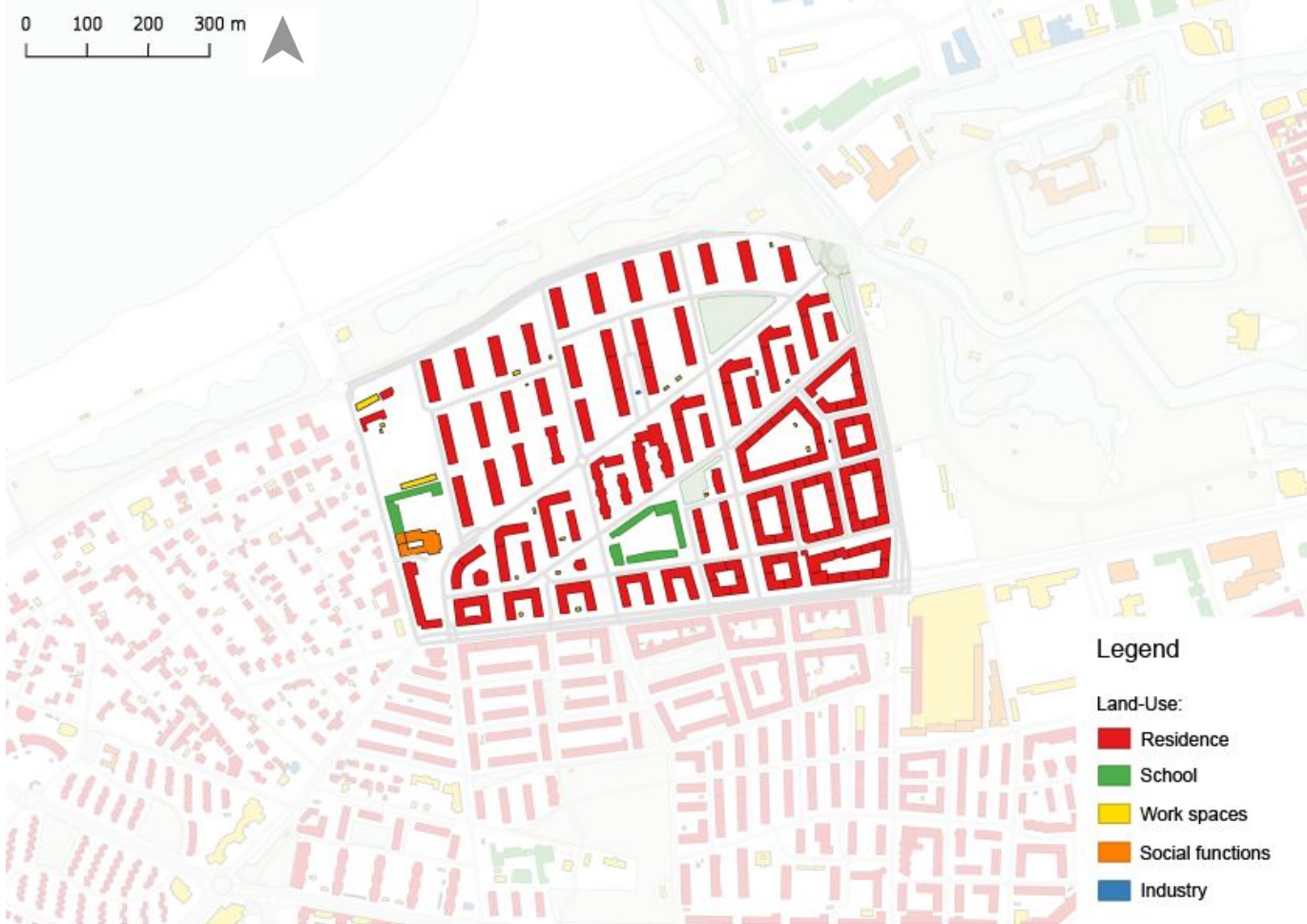


Fig 1.1. Morphology and land use in Ribersborg. By: Lina Sahlgren



Fig 1.2. Morphology and land use in Rörsjöstaden. By: Lina Sahlgren

RIBERSBORG

Ribersborg's urban structure is based on two main urban plans. The southeastern part of the area was included in the first urban plan from the 1900s and is characterized by period-typical irregular blocks with curved streets and enclosed buildings. The remaining part of the area is covered by the area's second urban plan from 1936. It is characterized by the ideal of functionalism with "houses in a park" and "lamellhus" positioned in a north-south direction in order to maximize its light penetration (Riksantikvarieämbetet, n.d.).

Because of this, the area today is characterized by mixed buildings from different eras with both functionalist and classicist features and consists of closed block buildings, "lamellhus" and so-called semi-open yards. Large parts of the area were built during the advancement of the automobile society, and the street system is therefore strongly adapted to the automobile. You will find wide streets without traffic separation and a large range of parking spaces for the residents of the area (Riksantikvarieämbetet, n.d.).

The majority of the area is covered by housing in the form of apartment buildings divided into both condominiums and rental properties. On the ground floor of many of the buildings in the area, there are premises set aside for business and restaurant purposes. Because of this, there is a large selection of restaurants and shops of varying sizes and characters. Furthermore, there are two primary schools situated in the area as well as some office space.

RÖRSJÖSTADEN

Rörsjöstaden is influenced by the architecture of Paris which can clearly be seen today with the wide boulevard Kungsgatan that runs through Rörsjöstaden, and the richly decorated turn-of-the-century houses placed in a clear grid pattern along the boulevard (Malmö Stad, 2021a). Kungsgatan measures as much as 85m at its widest points and consists of a double avenue of lime trees with an age of up to 118 years (Malmö Stad, n.d.).

In the middle of the boulevard there is a footpath paved with gravel, and next to it on the north-western side runs an asphalted cycling lane. Kungsgatan functions both as a passage and as a park and has a multifunctional purpose completely free from car traffic. Instead, car traffic is concentrated on the parallel streets Drottninggatan and Föreningsgatan, which run parallel to Kungsgatan on either side of the edges of Rörsjöstaden (Ström, 2009).

The area as a whole consists mostly of housing, the majority of which is located on the south side of Kungsgatan. In addition to housing, there are also a number of government buildings, St. Pauli church as well as numerous other small businesses such as restaurants, convenience stores, and cafes. There are also 6 different types of schools in the area in the form of two preschools, two high schools, adult education, and a vocational college.

STREET HIERARKI

0 100 200 300 m



Fig 2.1. Street hierarki in Ribersborg. By: William Olausson

0 100 200 300 m

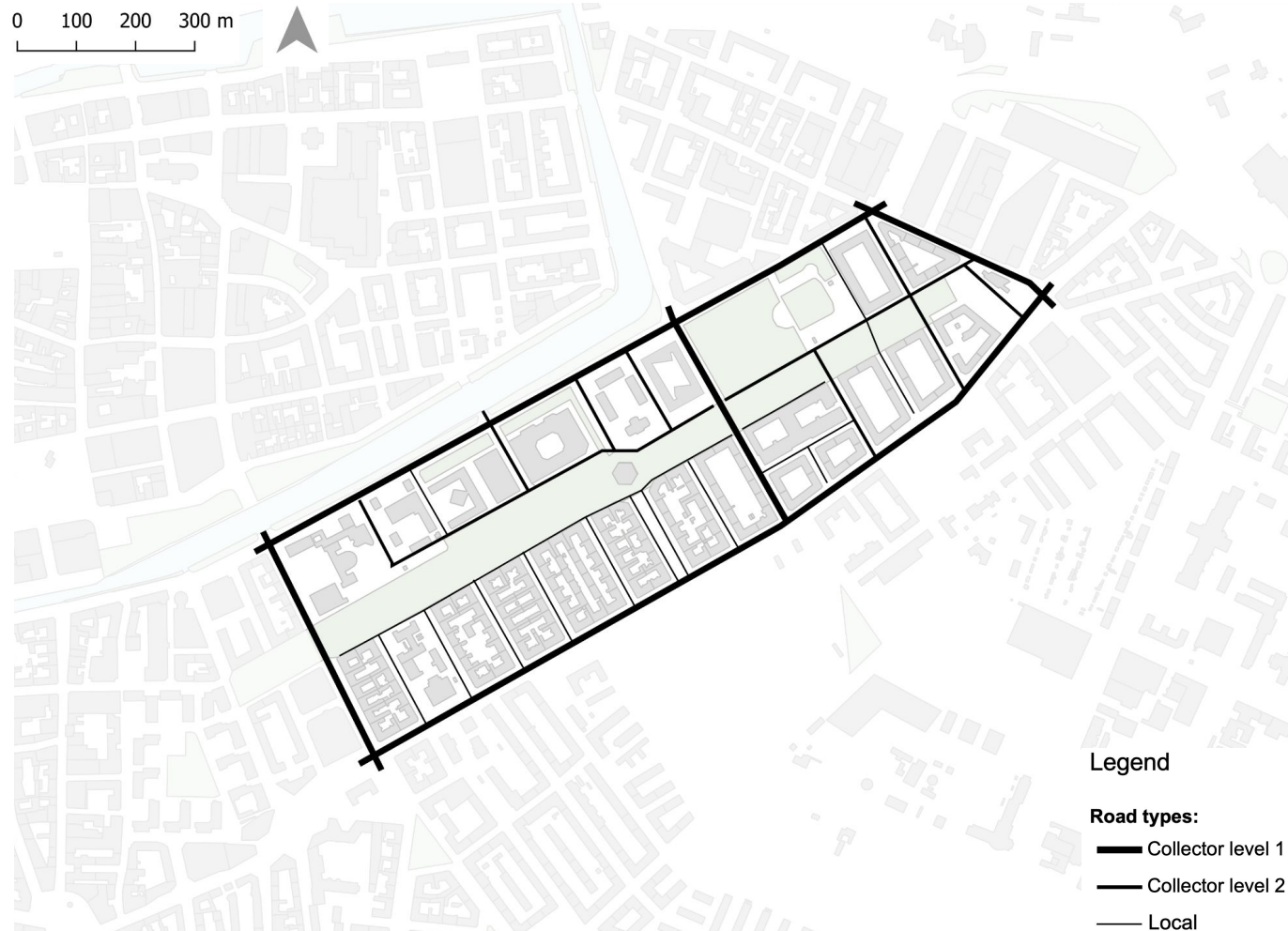


Fig 2.2. Street hierarki in Rörsjöstaden. By: William Olausson

RIBERSBORG

Ribersborg is surrounded by Collector level 1 roads on three of its four sides. Another Collector level 1 road is located in the middle of the area and therefore divides the area into a northern and a southern part. The localization of this Collector level 1 road increases the mobility in the area because the remaining roads are distributed over an increased amount of Collector roads, which means less traffic and higher mobility.

In a north-south direction, two collector level 2 roads run through the area. The Collector level 2 roads have lower mobility than Collector level 1 roads. These function as thoroughfares at the same time as they offer direct access to several of the area's functions. Its multifunctional purpose creates both increased mobility and access but leads to more traffic and higher travel speed in the area. The relatively few local roads in combination with an Collector level 1 road in the central part of the area, lead to lower accessibility for pedestrians and cyclists, as these must adapt to the increased car traffic through the area. (Marshall, 2005).

RÖRSJÖSTADEN

Rörsjöstaden is surrounded by Collector level 1 roads on its four sides where mobility is higher and accessibility is lower. One more Collector level 1 road moves through the area in a north-south direction, but because this road only connects to a small amount of the areas remaining roads it acts more as a pass-by road for the city traffic. The majority of the roads in the central part of the area are local roads where its primary function is to create access to the area's housing and other functions. These roads distribute the traffic in the area and create lower mobility in relation to higher accessibility.

The localization of Collector roads around the area and a large number of local roads in the area's core increases accessibility for pedestrians and cyclists in the area as passing traffic is distributed to the outskirts of the area and both the amount of traffic and its speed are kept down in the central parts. (Marshall, 2005).

SPACE SYNTAX ANALYSIS MAPS MEASURING CONNECTIVITY

ABOUT SPACE SYNTAX

Space syntax is a theory and method for analyzing spatial relationships in the built environment, whereas the techniques used can be applied individually or in combination with each other (Van Nes & Yamu, 2021). The street network of an area is analyzed by first being converted to an axial map, which is the minimal set of axial lines, where an axial line represents both the longest visual sightline for movement, as well as the way people move linearly through the urban street network.

One of the methods used for analyzing is *connectivity*, which is used to explain the number of connections each street has to its direct neighboring streets in its immediate vicinity (van Nes & Yamu, 2021). The more connections, the higher connectivity value. There are different types of methods for measuring connectivity. In this project, the *One-Step Analysis* type has been chosen. One-Step Analysis is useful for understanding the degree of connectivity a street has to its surroundings, as it demonstrates how directly a street is connected to its vicinity (van Nes & Yamu, 2021). The larger the number of axial lines directly connected to an axial line, the higher the connectivity value. The area is thus well interconnected as all destinations from all origins can be easily reached - it is a high-density area. The opposite is true for a lower connectivity value, making it a low-density area that is less interconnected.

RIBERSBORG

By analyzing Ribersborg, it is apparent that the area is dominated by low-medium connectivity value of the streets, more streets ranging from dark blue-green than other colors. No axial line reaches the highest connectivity value of red. The lines with a higher connectivity value are located on the south side of the city district border, being closer to the center of Malmö. In general, the district is somewhat interconnected, the longer axial lines often being more connected than the shorter ones.

RÖRSJÖSTADEN

In Rörsgjostaden, the streets with the highest connectivity value are the ones in a west-east direction, mainly being concentrated to the left side of S:t Pauli Church: on the north and south border and through and around the boulevard. The streets from a west-east direction tend to have higher connectivity on the left side of S:t Pauli Church value than the right side, which does not have as many red colored lines as the west side. When it comes to the streets crossing the district in a north-south direction, the axial lines ranges from low-high connectivity value, often having a low-medium value on the left of S:t Pauli Church, but have higher connectivity value on the right side.

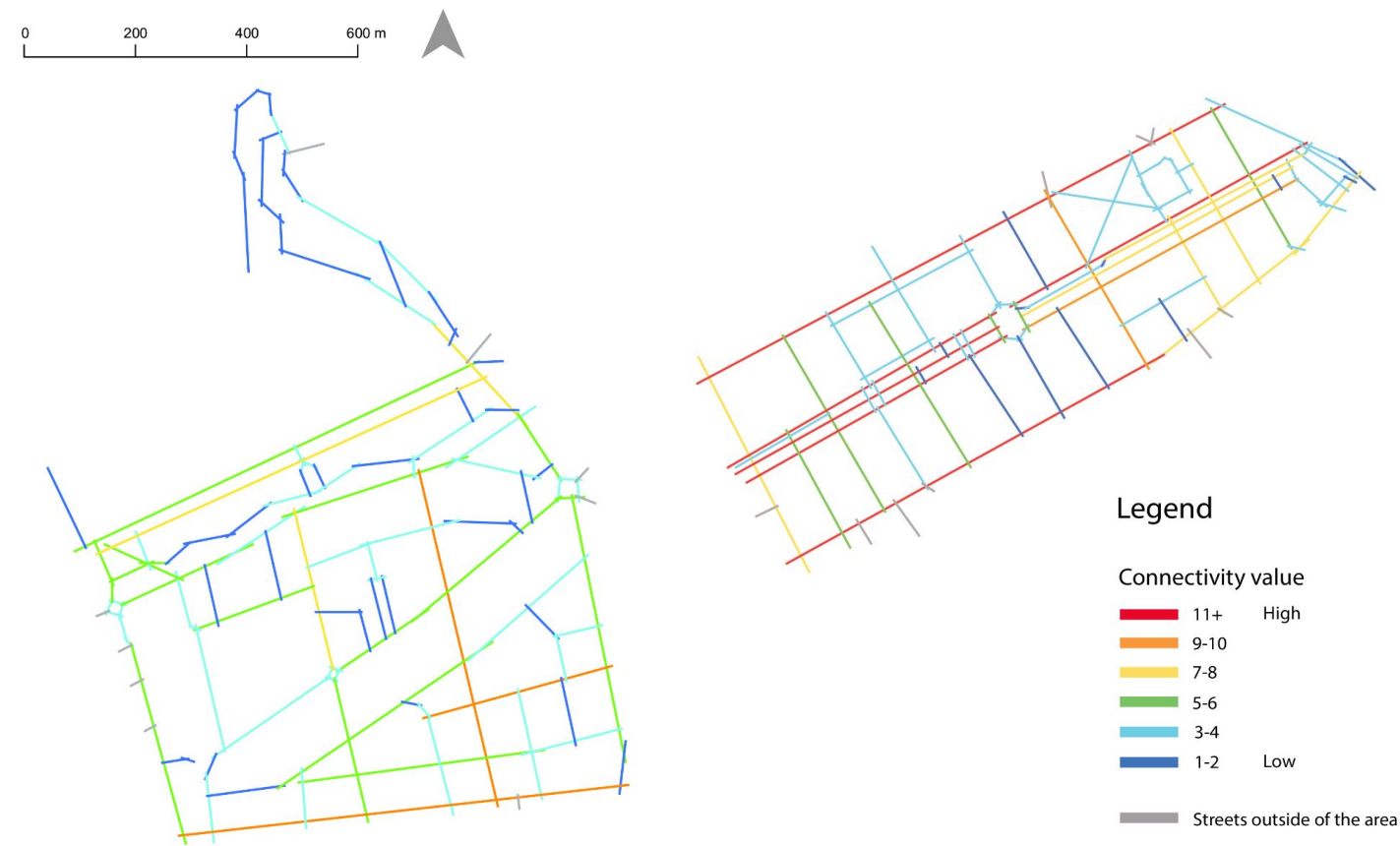


Fig 3.1. Space Syntax Analysis, Connectivity Map of Ribersborg and Rörsgjostaden. By: Airen Persson

LINK TO NODE

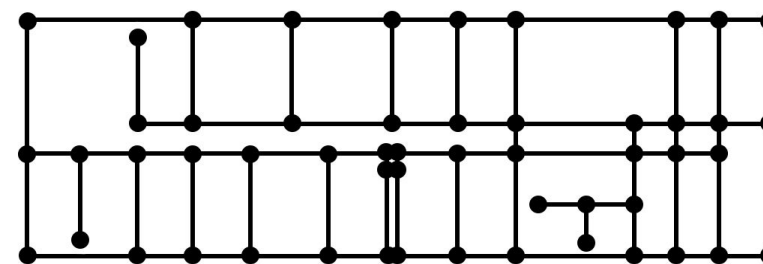


Fig 3.2. Link to Node ratio in Rörsgjostaden. By: Saga Kullgren

Rörsgjostaden Link to Node Ratio 1.33

By looking at the link to node ratio of Ribersborg and Rörsgjostaden, we can get a picture of the connectivity in the areas (Sarkheyli, 2023). Rörsgjostaden has a ratio at 1.33, while Ribersborg has a ratio at 1.59. From this we can conclude that Ribersborg has greater connectivity than Rörsgjostaden.

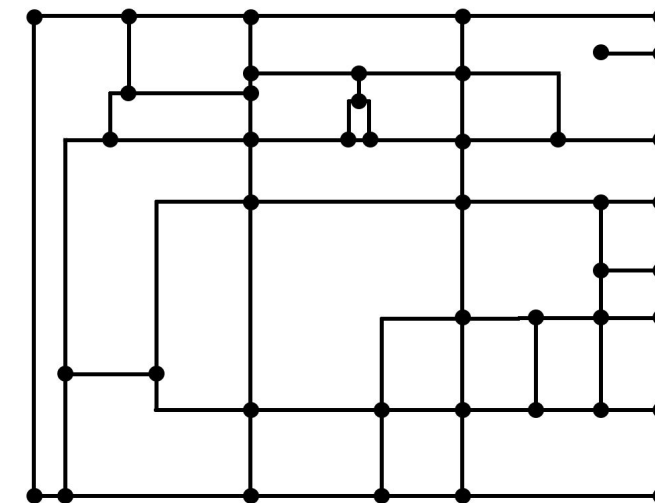


Fig 3.3. Link to Node ratio in Ribersborg. By: Saga Kullgren

Ribersborg Link to Node Ratio 1.59

From these two connectivity analysis, we can conclude that Rörsgjostaden have some specific streets with a very high connectivity which Ribersborg has not, according to the Space Syntax analysis. However, as an area overall Ribersborg has a greater connectivity according to the link to node analysis.

CITY BUSES OPERATING IN RIBERSBORG AND RÖRSJÖSTADEN

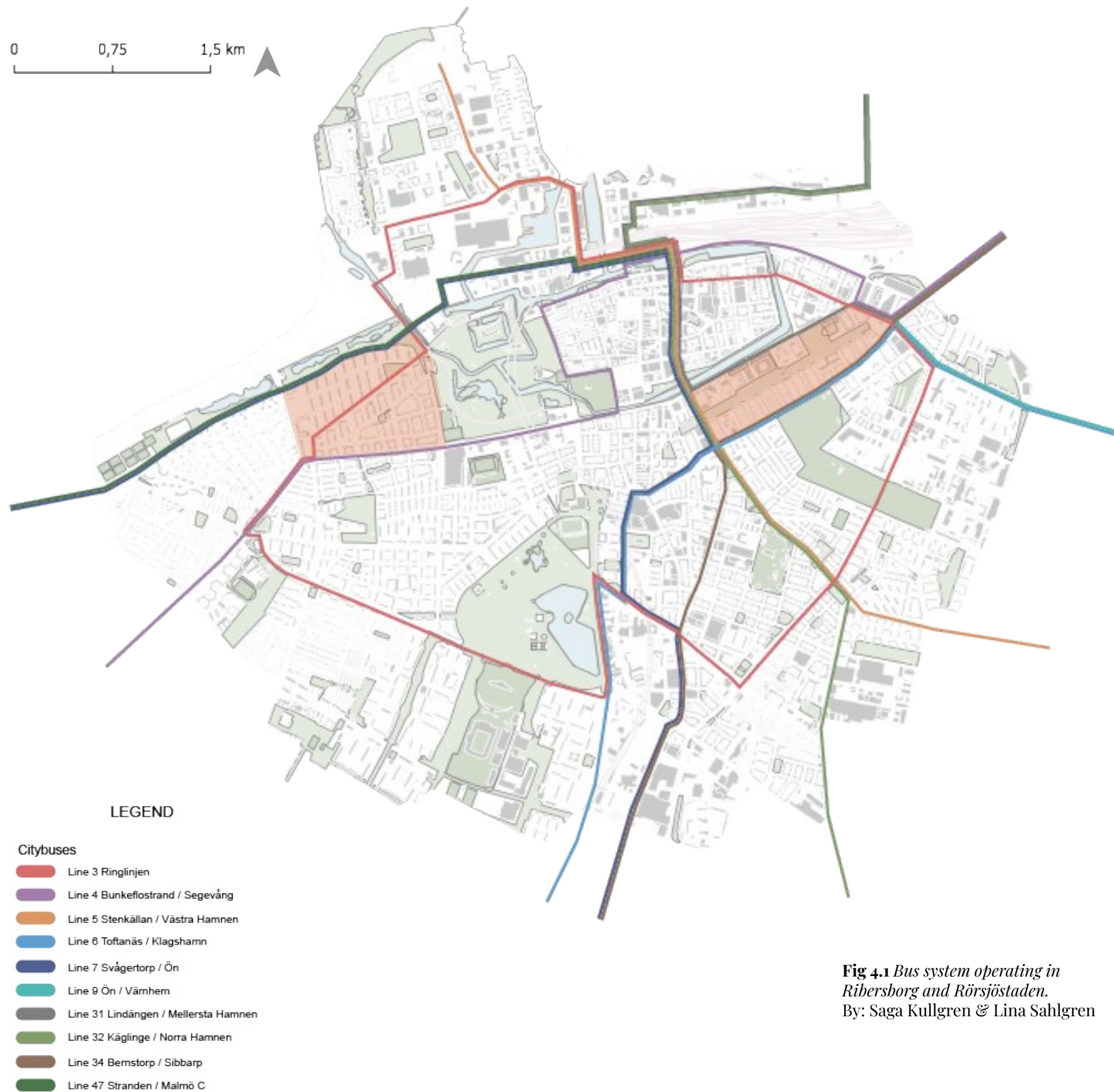


Fig 4.1 Bus system operating in Ribersborg and Rörsjöstad.
By: Saga Kullgren & Lina Sahlgren

BUS TRIPS/HOUR- RÖRSJÖSTADEN CITY BUSES

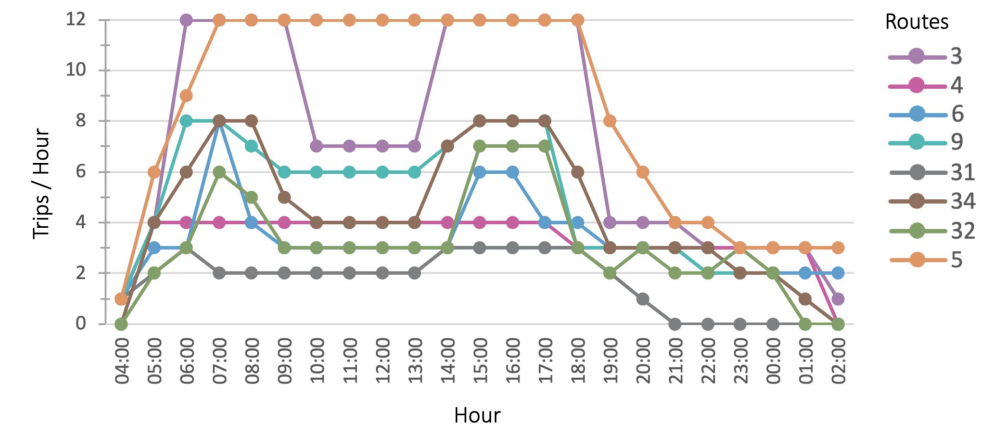


Fig 4.2. Bus trips/hour, Rörsjöstad, city buses. By: William Olausson

BUS TRIPS/HOUR- RÖRSJÖSTADEN REGIONAL BUSES

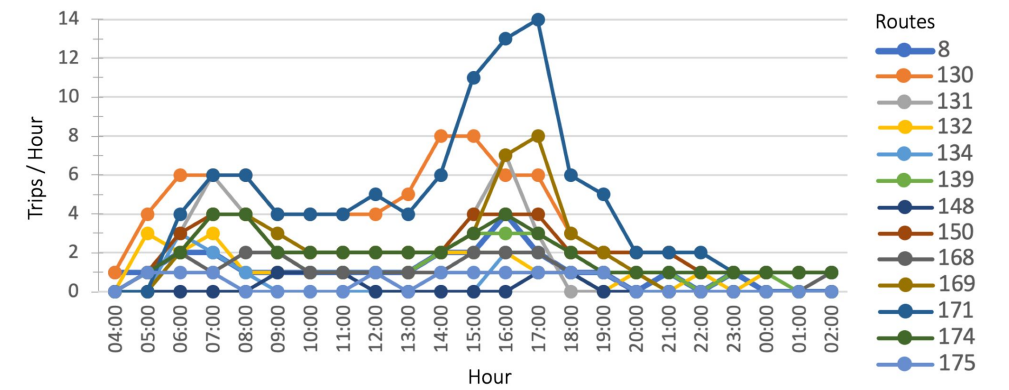


Fig 4.3. Bus trips/hour, Rörsjöstad, regional buses. By: William Olausson

BUS TRIPS/HOUR- RIBERSBORG

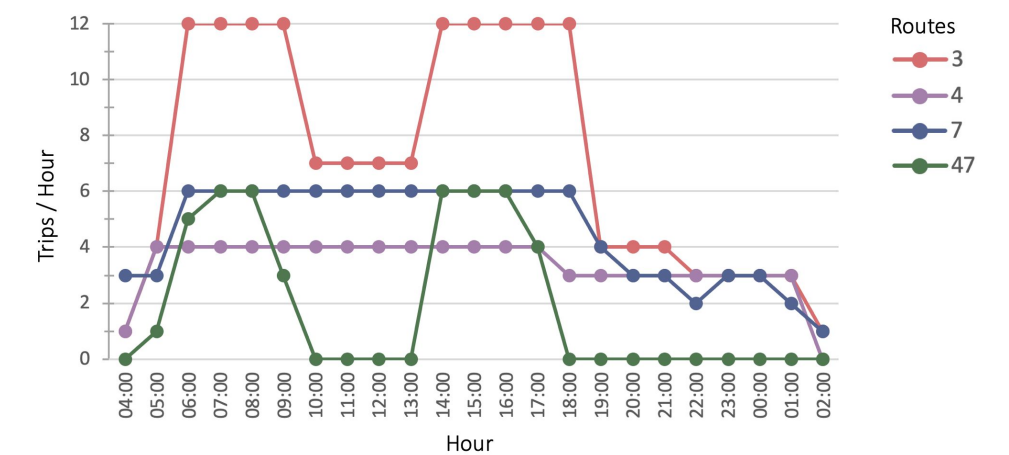


Fig 4.4. Bus trips/hour, Ribersborg. By: William Olausson

BUS SYSTEM OPERATING IN RIBERSBORG AND RÖRSJÖSTADEN

RIBERSBORG

Ribersborg is served by four different bus lines going to different areas of the city. The routes are dispersed around the area as well as one route going through the area. Line number 3 is the one which runs through the area and is the most frequent one, with buses operating twelve times an hour during peak hours. That bus line is called Ringlinjen, and travels in a closed loop around most of the central neighborhoods in Malmö, creating great connectivity from this area to other central parts of the city. All lines stop at the central station, creating a possibility to travel to other parts of Skåne, and Copenhagen from the area. Bus lines 3 and 4 stop at the bus node Värnhem which has bus connections to many neighborhoods inside and outside of Malmö. Bus line number 7 makes a stop at Triangeln which is another public transport node with bus stops and a train station.

RIBERSBORG BUS LINES



Fig 5.1 Bus system map in Ribersborg. By: Saga Kullgren

RÖRSJÖSTADEN BUS LINES

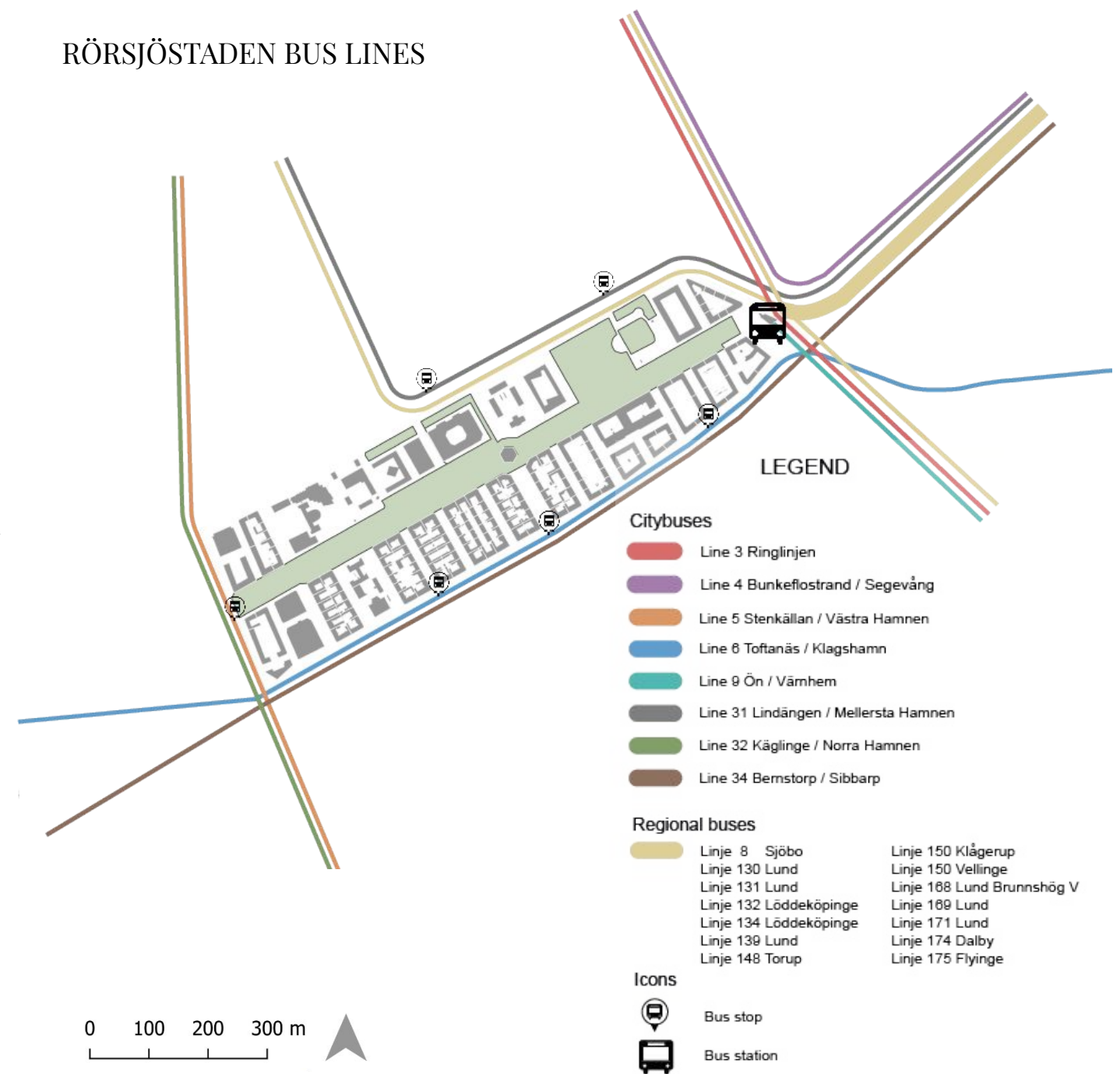


Fig 5.2. Bus system map in Rörståden. By: Lina Sahlgren

RÖRSJÖSTADEN

Rörståden is served by many bus lines connecting the area to a large range of neighborhoods in Malmö and areas outside of the city. There are not any routes going through the area but each side of the area is trafficked by at least two bus lines. In the eastern part of the neighborhood the bus station Värnhem is located. This bus station has a large number of bus lines stopping there, making it a node for buses in Malmö. There are city bus lines as well as regional bus lines connected to Värnhem, creating an easy connection between Rörståden and different parts of Skåne, such as Vellinge, and Lund. The frequency of the routes trafficking the area differs quite much between the different lines. Lines 3 and 5 have a quite high frequency, operating 12 times during the peak hours. Most of the buses operating in the area stop at Malmö Central station, creating connections to most of Skåne as well as Copenhagen. Many of the buses operating also stop at either Triangeln or Södervärn, which both are nodes connecting many bus lines, which creates a possibility to travel to many different areas.

BUS STOPS – 400m RADIUS

Both Ribersborg and Rörståden have quite many bus stops dispersed throughout the areas. When looking at how well dispersed the bus stops are, both neighborhoods have an uneven distribution of the bus stops. Most buildings have a bus stop within a 400m radius, while some are not within this radius and therefore have longer than a 5-minute walk to the bus.



Fig 6.1. Bus stops in Ribersborg with a 400m radius around. By: Saga Kullgren



Fig 6.2. Bus stops in Rörståden with a 400 m radius around. By: Saga Kullgren

CYCLING LANES

RIBERSBORG

Ribersborg as a whole is surrounded by cycling lanes on almost all sides, the exception being the west side and along a great part of the shoreline to the north. Most of the lanes are concentrated on the east side of Ribersborg. Some cycling lanes are scattered across the district, especially along the larger streets Tessins väg and Limhamnsvägen, as well as around Öresundsparken. However, there are not many cycling lanes along the smaller streets between the blocks. In Ribersborg, Malmö by bike is scattered across the whole district,

primarily being concentrated around the district's borders. All of them are located by cycling lanes, with an exception for one Malmö by bike station at the very southeast corner of the district border.



Fig 6.3. Cycling lanes and Malmö by bike stations in Ribersborg. By: Lina Sahlgren

RÖRSJÖSTADEN



Fig 6.4. Cycling lanes and Malmö by bike stations in Rörståden. By: Lina Sahlgren

In Rörståden there is a cycling lane that runs through the whole neighborhood alongside the boulevard, on the street Kungsgatan, whereas the different traffic types on this street are completely separated from each other. Although there are cycling lanes mainly along the boulevard and at the ends of the city district - in the southwest and northeast - there is a lack of lanes through the smaller streets between the blocks, in similarity to Ribersborg. Malmö by bike is located in many places across the area as well as by the borders. All of them are located within close proximity to a cycling lane, the majority of them being located directly by one.

TRAFFIC ACCIDENTS

In terms of documented traffic accidents in the two areas, all are concentrated at major intersections between arterial roads and collector roads. In Rör sjö staden, the accidents are concentrated on the outskirts of the area and can be explained by the fact that its arterial roads are positioned around the area, instead of through it. The exception is Exercisgatan, which runs through the area, but is an arterial road too, but at its point of accidents, it crosses the main pedestrian- and cycle street in the central part of Rör sjö staden (Kungsgatan).

As for Ribersborg, the number of accident sites in the central part of the area is more than they are in Rör sjö staden. This can be explained by its arterial road that runs through the area as well as the several collector roads that drive up the amount of traffic through the area. The large number of multifunctional roads in the area thus leads to more traffic and an increased speed, which creates a greater risk of accidents at intersections.



Fig 7.1. Traffic accidents in Ribersborg. By: Saga Kullgren



Fig 7.2. Traffic accidents in Rör sjö staden. By: Saga Kullgren

INTERVIEWS

We performed interviews regarding transportation in Ribersborg and Rör sjö staden. We interviewed a total of 20 people, 10 in each area and a 50/50 division in the respondents gender. The purpose was to create an insight in the ways of transport and what the experience of mobility and accessibility in the area is.

RIBERSBORG

During the interviews in Ribersborg, the respondents expressed that transportation in the area overall felt safe, but when questioned on what alterations the area would benefit from they had a lot of ideas. Some of the respondents mentioned that the bigger roads in the area would benefit from slower traffic. Others talked about the cycling lanes in the area only going from east to west, and feel a lack of lanes from north to south. The lack of lanes in this direction makes it difficult to travel through the area by bike. Crossing the bigger roads by bike were also mentioned as troublesome. Most of the roads only have crossings for pedestrians, making it difficult for cyclists to change direction and move freely in the area.

Bicycles were the primary form of transport for most of the respondents in Ribersborg. They motivated this choice by it being the easiest, most convenient, and fastest form of transport in Malmö. The ones that traveled by car mostly expressed that this was not an active choice but a result of various circumstances.

RÖRSJÖSTADEN

During the interviews in Rör sjö staden, all the respondents thought that the transport facilities in the area worked very well. In terms of public transport, the supply of buses and bus stops was considered to be good. As for the possibilities to transport oneself on foot or by bicycle, these possibilities were also thought to be good. A clear strength that emerged was Kungsgatan, where both the cycle path and the footpath are completely free from car traffic, which made the roads feel safe to use.

The majority of the respondents transported themselves mainly on foot or by bicycle. Only a few of the respondents had access to car, and these did not use the car for everyday trips between home and work. More than half of the respondents lived in the area, while two people lived near Värnhem, and passed through Rör sjö staden daily, during their walk to work. One of the respondents lived outside of Malmö and was a student at Malmö Latin.

Regarding the question of what could be improved in the area connected to transport and mobility, several interesting answers were given. Of all the answers, there were three that were mentioned several times in different ways. The first answer had to do with difficulties in crossing the cycle path on Kungsgatan, and the respondents would have liked to see clearer crossing points for pedestrians. The second answer had to do with the footpath on Kungsgatan, which on rainy days was perceived as slippery and muddy. The improvement proposals included new ground covering of stone or asphalt. The third answer had to do with the bicycle tunnel under Amiralsgatan, which was perceived as dark and scary in the late evenings and early mornings. When follow-up questions were asked, it emerged that the art installations in the form of the faces on the walls of the tunnel most likely contributed to the creepy feeling.

PLANNED PROJECTS IN THE AREAS

RIBERSBORG

There is only one planned project in Ribersborg itself, for the real estate *Macken 1*, which is in the early stages of planning, since Stadsbyggnadskontoret is still in the process of creating a plan proposal (Malmö stad, 2022). Otherwise, there is also a project planned alongside the south district border - Regementsgatan - where there are plans for creating a one way-cycling lane along the north side of the street (Malmö stad, 2023). The project planning is in its final stage and a finished plan will be made later this year. The rebuilding of Regementsgatan stems from the city's vision of a more sustainable infrastructure, whereas people can travel more environmental friendly by public transport and bicycling. For this to come true, the infrastructure must be improved to create space for both "smart and modern" public transport, as well as safe cycling lanes. The project will start in autumn 2023.

A reason for the lack of planned projects in Ribersborg can be due to Ribersborg being named as one of the municipality's most valued cultural historical areas according to the PBL (Malmö stad, 2001). Perseverance of the city's cultural environment is still a priority today, whereas there is a carefulness in adding or changing architecture in these areas (Malmö stad, 2021b). This might be a reason why there are not many planned projects in Ribersborg.

Secondly, Ribersborg already has a lot of residencies and a great commercial range in relation to its inhabitants, thus creating a lot of activity in the area. Today, Ribersborg is an open neighborhood town with a very attractive location, both in relation to Malmö centrum and the ocean shore. The district has a relatively high density and is today primarily constituted by residences and a great commercial range. Not only do Ribersborgs inhabitants have close proximity to necessities and leisure, but as consequence also have close proximity to work, trade, and industry. This corresponds to Malmö's current overview plan of the city, the goal being a close, dense city - both socially and physically - with good conditions for living, business life, and many working opportunities (Malmö stad, 2021b).

RÖRSJÖSTADEN

As of today, there are no projects planned in Rörsjöstaden (Malmö stad, 2022). This can be due to several factors. Rörsjöstaden is an old district of Malmö and it is possible that the architecture is considered beautiful by many, as well as composing a form of the cultural history of Malmö. This factor could be a reason for the lack of need to change the area. As mentioned, perseverance in the city's cultural environment is a priority today (Malmö stad, 2021b).

On the other hand, Rörsjöstaden as a city district also has a sense of sustainability already, either purposely or not. This is constituted by several smaller local streets and many cycling lanes, the one through the boulevard being the only possibility for freeway traffic in the area. As a result, the traffic has a strong focus on walking and bicycling, thus fulfilling the present city planning ideal of Malmö stad being a sustainable walk- and bicycle city with a traffic system with low environmental impact (Malmö stad 2018; Malmö stad 2021b).

COMPARISON AND CONCLUSION

COMPARISON

With the help of the information that the inventory provided us with, we have found both interesting similarities and differences between the two areas. In terms of land use, the built environment in both areas consists of the majority of residential buildings. We did also find several schools, as well as in Rörsjöstaden a few pure office buildings.

Regarding the morphology, it is easy to distinguish that the areas originate from two separate building eras. Rörsjöstaden mostly consists of classic neighborhood buildings positioned in a strict grid pattern, that dates back to the early 20th century. As for Ribersborg, the area is instead dominated by functionalist elements with "lamellhus" that maximize light penetration and greenery between the buildings. The area developed during the progress of the automobile society, which gave rise to wider thoroughfares with the aim of maximizing accessibility on four wheels. As for the number of parking spaces, with parking garages under existing buildings, as well as parking lots along the majority of the area's roads create good parking opportunities for all its residents.

These differences in the age of the two areas also create differences in its road hierarchy. The similarity between the areas is that they are both surrounded by collector roads, but when it comes to the types of roads in the central parts, differences arise. In Rörsjöstaden, most of the roads consist of local roads, which both reduces speed and the amount of traffic in the area, as the roads will only be used by people with the aim of accessing the specific functions of the area. This creates high accessibility and a lower degree of mobility, which creates good conditions for pedestrians and cyclists as car traffic in the area is relatively low. Something that reinforces this further is Kungsgatan, which offers both pedestrian and bicycle paths completely free of car traffic. As for the accessibility of cars, Kungsgatan instead acts as a kind of barrier due to the limited possibilities to travel by car between the northern and southern parts of the area.

In Ribersborg, the supply of collector roads in its central parts increases mobility in and through the area. This leads to more traffic on the roads as they are being used both by cars with the aim of accessing the area and moving through the area. This is something that both drives up the speed and the car density and thus makes it more difficult for pedestrians and cyclists to move freely in the area. In this way, the road hierarchy creates a district with a focus on accessibility for motor traffic.

The difference in road hierarchy can also be used as an explanation for the different distribution of traffic accidents in the two areas. What they both have in common is that the traffic accident are centered to the major intersections between collector roads. Due to the fact that local roads dominate in Rörsjöstaden's central parts, the accidents are positioned around the outskirts of the area. As for Ribersborg, it is instead possible to find several accident sites in its central part, which can be explained by the higher concentration of collector roads.

If we study the result of the link to node ratio, this is estimated to be higher for Ribersborg (1.59) than it is for Rör sjö staden (1.33). This shows that the connectivity is higher in Ribersborg as the area's existing roads (links) meet each other in more places (nodes). If we instead study the results of the Space Syntax Analysis, Rör sjö staden is considered to have better connectivity than Ribersborg. Thus, link to node-ratio can be used as a more comprehensive measure of an area's total connectivity, while Space Syntax gives a picture of the connectivity of individual streets in an area.

When comparing the Space Syntax Maps to the Cycling Lanes Maps, all cycling lanes in Ribersborg are along streets with low connectivity value, except for along the south border. When comparing the maps of Rör sjö staden, the cycling lanes along the boulevard and the west border are on streets with high connectivity. Even the streets from north-south has relatively high connectivity where the cycling lanes go, with some exceptions for the short cycling lanes across the boulevard that have low connectivity. However, although the cycling lanes are on streets with high connectivity, it is important to note that all streets that connect are not bicycle-friendly or have cycling lanes.

Regarding public transport, we believe that both Rör sjö staden and Ribersborg has a great accessibility. If we disregard Rör sjö staden's close connection to Värnhem, the number of bus lines, the number of departures per hour and the distribution of bus stops in the area are very similar. In Rör sjö staden there are 6 bus lines, while in Ribersborg there are 4. In terms of the number of departures, buses depart up to 12 times per hour during peak hours for both areas, and regardless of where in the area you live, you can find a bus stop within a radius of 400m. This is with a few exceptions regarding the north-eastern part of Ribersborg, where the distance to the nearest bus stop is slightly longer. If we choose to include Värnhem in the calculations, the accessibility to public transport in Rör sjö staden increases drastically. This applies to both the number of departures per hour and the supply of bus routes with destinations that range from different locations in Malmö to different parts of Skåne.

When it comes to cycle paths, we can distinguish a lower accessibility for cyclists in Ribersborg. The two areas are equivalent to each other in terms of a traffic-separated cycle path in the central part of the areas, Kungsgatan in Rör sjö staden and Tessin väg in Ribersborg. As for cycle paths on the remaining streets, these are limited in both areas. However, accessibility is considered better in Rör sjö staden due to the limited amount of car traffic through the area, while car traffic in Ribersborg outcompetes accessibility for cyclists. In Ribersborg there are also no cycle paths that run through the area in a north-south direction, which further limits accessibility. When it comes to Malmö by Bike stations these are located in proximity to the cycle paths in both areas.

In conclusion, the conducted interviews contributed to a good overall understanding of how the areas are perceived by the residents. Of the individuals who were interviewed, bicycles dominated as a means of transport in Ribersborg, while in Rör sjö staden it was dominated by a combination of bicycles and walking. Other information showed that the perceived safety in both areas was good and there were also suggestions for improvement. In Ribersborg, the proposals were more comprehensive and included a perceived lack of cycle lanes in a north-south direction and a lack of pedestrian crossings suitable for cyclists. Furthermore, information where given that cars often drive faster than the permitted speed limit on the area's roads.

CONCLUSION

In summary, the analysis shows that transport planning generally works well in both areas. In Ribersborg, mobility is perceived to be greater for car traffic, while in Rör sjö staden there is better mobility for pedestrians and cyclists. In terms of accessibility to public transport and the area's connection to the rest of the city, this is proven good in both areas. In conclusion, in terms of potential improvement measures linked to sustainable mobility, we find a greater overall need in Ribersborg. These improvements are mostly linked to mobility and safety for the area's cyclists.

PROPOSAL FOR CHANGE

Our improvement proposal concerns a change in the road structure as well as adding a Malmö by bike station on Roslins väg in Ribersborg. The aim is to improve accessibility for cyclists and pedestrians by creating more space for them, and less space for the car. Roslins väg was chosen as there is currently a lack of cycle paths in a north-south direction. The project can be divided to two focuses: Roslins väg (which is further divided into a red and purple part) and safer crossings at the intersections of Roslins väg and the existing cycling lanes in a west-east direction (Limhamnsvägen, Tessins väg and Regementsgatan).



Fig 9.1. Existing Bicycle Lanes and Planned Changes on Roslins väg, Ribersborg.
By: William Olausson.

In the purple-marked part of the road, the proposal includes a pedestrian- and cycling street completely free of car traffic. In the red-marked part of the road, the road is kept open for car traffic, but where access is restricted. The Malmö by bike station we are adding is marked on the map with the Malmö by bike symbol.

ROSLINS VÄG – PEDESTRIAN AND BIKE STREET

On the pedestrian- and cycling part of the street, greenery is introduced with the aim of creating a more dynamic and attractive place, while acting as a traffic separation between pedestrians and cyclists. The wide pedestrian street is kept simple and open with the aim of guaranteeing accessibility for emergency vehicles and other vehicles that, due to special needs, need access to the local environment.

Seating will be created along the pedestrian section to create a social space for people living in the area and for those visiting the restaurants, cafés and shops in the area. This will also create a pleasant walkway down to the sea and a footpath along the beach. With plenty of greenery, this street will also act as an extension of Tessin's park and Öresund Park.

ROSLINS VÄG CURRENTLY

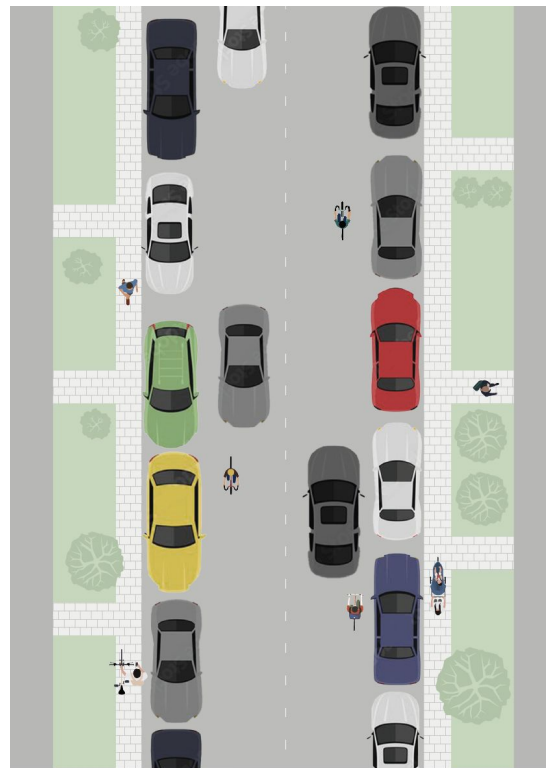


Fig 10.1. The street currently. Roslins Väg Ribersborg. By: Saga Kullgren & Lina Sahlgren.



Fig 10.2. The new Pedestrian and Bicycle Street, from a street point of view, Roslins Väg Ribersborg. By: William Olausson, Saga Kullgren & Lina Sahlgren.



Fig 10.3. The new Pedestrian and Bicycle Street, part of the Proposal for Change, Roslins Väg Ribersborg. By: Lina Sahlgren.

NORTHERN PART OF ROSLINS VÄG

The northern part of Roslins väg, after the intersection with Tessins väg, is kept open for car traffic to offer access to existing parking facilities. However, car traffic is restricted to only go one way, to create space for a wide pedestrian path, and bike lane. That part of the street is which also separated from the car traffic with the help of greenery.



INTERSECTIONS WITH PEDESTRIAN- AND BICYCLE CROSSING

The second part of the improvement proposal concerns the provision of bicycle- and pedestrian adapted crossings that offer a safe and efficient passage for the area's cyclists. These will be deployed where Roslins väg crosses Limhamnsvägen, Tessins väg and Regementsgatan. Bicycle crossings will be added at all intersections to add passage for cyclists. The existing pedestrian crossings will become more narrower as well, which will slow traffic and making passage safer for both pedestrians and cyclists.

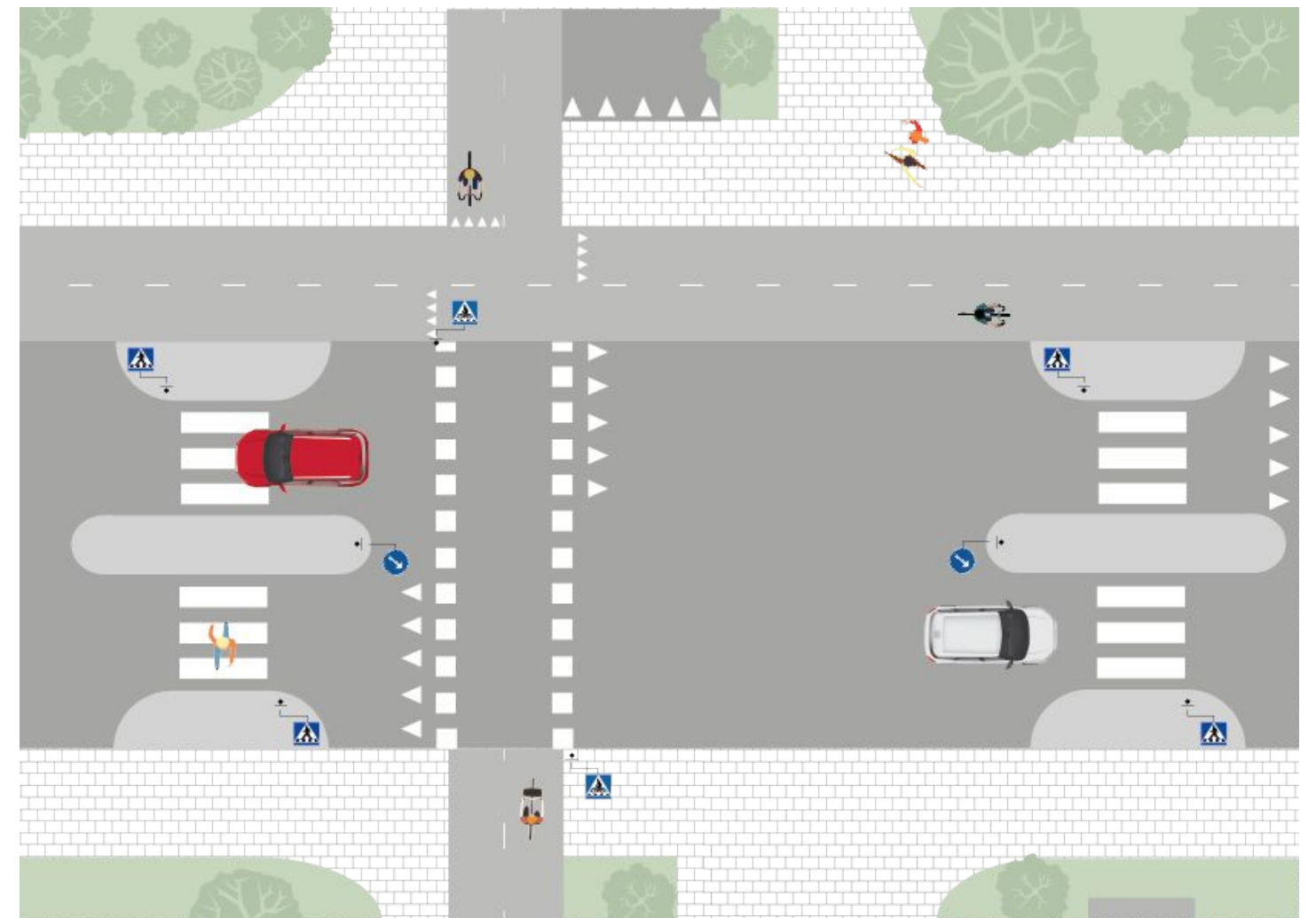


Fig 11.2. One of the new pedestrian and bicycle-adapted crossings, at the intersection between Roslins Väg and Tessins Väg, Ribersborg. By: Airen Persson.

Fig 11.1. The new combined one way road, part of the Proposal for Change, Roslins Väg, Ribersborg. By: Saga Kullgren.

THE EFFECTS OF THE PROPOSAL

To summarize, the changes to Roslins väg, in combination with the bicycle- and pedestrian adapted crossings, creates a safe and accessible passage for cyclists and pedestrians throughout Ribersborg. More specifically, the change proposal creates value in the following four categories:

IMPROVED CONNECTIVITY FOR CYCLISTS

With the new layout of Roslins väg and the crossings, the connection between existing cycling lanes will improve, thus creating better interconnection for bicycles in the area (Ranhagen, 2022). Although, neither the connectivity value nor the link to node-ratio will change, since no new streets are added and only the layout will change.

PROMOTES SUSTAINABLE TRANSPORT

By transforming Roslins väg to a walking- and bicycling street, it will enable a more sustainable form of transportation, since cars will have severely limited accessibility, thus minimizing the car traffic and the resulting pollution (Schiller & Kenworthy, 2017). This is also coherent with Malmö stad's city planning ideal of making Malmö a sustainable walk- and bicycle city, where the traffic system has a low environmental impact (Malmö Stad, 2021b). Furthermore, a reduction in the area's parking spaces as a result of the changes in the road structure on Roslins väg may encourage a reduction in car use. If the supply of parking spaces decreases, while the demand remains the same, the price of parking spaces increases (O'Sullivan, 2012). An increased price further leads to an increased total cost of car use. This increase in cost can thus attract alternative means of transport in the form of, for example, bicycles and public transport, which offer a higher benefit in relation to its cost of use.

INCREASED SAFETY AND REDUCED NUMBER OF ACCIDENTS

The new layout of the street will also encourage slower transportation. This will also result in safer traffic. As of today, many of the traffic accidents in Ribersborg are concentrated at the intersections, along Roslins väg as well. By changing the layout of the street to become more accessible for pedestrians and bicycles, the traffic slows down, creating longer reaction time and thus decreasing the amount of traffic accidents. If traffic accidents were to happen on Roslins väg, they would also be less likely to have severely dangerous outcomes, since there is no heavy traffic involved on the designated bicycle streets (Schiller & Kenworthy, 2017).

INCREASED ACTIVITY FOR LOCAL BUSINESSES

With slower traffic there is more time for observing the area as well. Cyclists and pedestrians have more time to observe more elements of the environment (Carmona, 2021). As a result, nearby businesses along the street will have a larger likelihood of attracting more customers, thus boosting the economy for the businesses in the area. The restaurants will especially be affected due to the addition of seating on Roslins väg which can act like an extension of their own seatings.

In conclusion, the improvement proposal leads to improvements in a number of different categories. In addition to these direct effects in terms of improved accessibility for cyclists and pedestrians, the proposal can be seen as part of the city's overall transition to an increasingly sustainable city. By creating more space and accessibility to alternative means of transport in a currently car-dominated district, a shift from the passenger car can be created and a more sustainable approach to our city and its transport can be planted.

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FIGURE SOURCES

Fig 1.1. *Morphology and land use in Ribersborg.* Created in QGIS. By: Lina Sahlgren

Fig 1.2. *Morphology and land use in Rör sjö staden.* Created in QGIS.

By: Lina Sahlgren

Fig 2.1. *Street hierarki in Ribersborg.* Created in QGIS. Edited in Adobe Illustrator. Information based on observation and Google traffic data. By: William Olausson

Fig 2.2. *Street hierarki in Rör sjö staden.* Created in QGIS. Edited in Adobe Illustrator.

Information based on observation and Google traffic data. By: William Olausson

Fig 3.1. *Space Syntax Analysis, Connectivity Map of Ribersborg and Rör sjö staden.*

Created in Adobe Illustrator. By: Airen Persson

Fig 3.2. *Link to node map in Rör sjö staden.* Created in Adobe Photoshop.

By: Saga Kullgren

Fig 3.3. *Link to node map in Ribersborg.* Created in Adobe Photoshop.

By: Saga Kullgren

Fig 4.1. *Bus system operating in Ribersborg and Rör sjö staden.* Created in GIS. Edited in Adobe Photoshop, Adobe Illustrator. By: Lina Sahlgren, Saga Kullgren

Fig 4.2. *Line graph: Bus trips/hour- Rör sjö staden city buses.* Created in Microsoft Excel. Statistics sourced from Skånetrafiken. By: William Olausson

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Fig 4.3. *Line graph: Bus trips/hour- Rör sjö staden regional buses.* Created in Microsoft Excel. Statistics sourced from Skånetrafiken. By: William Olausson

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Fig 4.4. *Line graph: Bus trips/hour- Ribersborg.* Created in Microsoft Excel. Statistics sourced from Skånetrafiken. By: William Olausson

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Fig 5.1. *Bus system map in Ribersborg.* Created in GIS. Edited in Adobe Photoshop, Adobe Illustrator. By: Saga Kullgren

Fig 5.2. *Bus system map in Ribersborg.* Created in GIS. Edited in Adobe Photoshop, Adobe Illustrator. By: Lina Sahlgren

Fig 6.1. *Bus stops in Ribersborg with a 400m radius around.* Created in GIS.

By: Saga Kullgren

Fig 6.2. *Bus stops in Rör sjö staden with a 400m radius around.* Created in GIS.

By: Saga Kullgren

Fig 6.3. *Cycling lanes and Malmö by bike stations in Ribersborg.* Created in GIS. Edited in Adobe Illustrator. By: Lina Sahlgren

Fig 6.4. *Cycling lanes and Malmö by bike stations in Rör sjö staden.* Created in GIS.

Edited in Adobe Illustrator. By: Lina Sahlgren

Fig 7.1. *Traffic accidents in Ribersborg.* Created in GIS. By: Saga Kullgren

Fig 7.2. *Traffic accidents in Rör sjö staden.* Created in GIS. By: Saga Kullgren

Fig 9.1. *Existing Bicycle Lanes and Planned Changes on Roslins väg, Ribersborg.* Created in QGIS. Edited in Adobe Illustrator. By: William Olausson.

Fig 10.1. *The street currently. Roslins Väg Ribersborg.* Created in Photoshop Illustrator. By: Saga Kullgren & Lina Sahlgren.

Fig 10.2. *The new Pedestrian and Bicycle Street, from a street point of view, Roslins Väg Ribersborg.* Created in Sketchup, edited in Adobe Photoshop. By: William Olausson, Saga Kullgren & Lina Sahlgren.

Fig 10.3. *The new Pedestrian and Bicycle Street, part of the Proposal for Change, Roslins Väg Ribersborg.* Created in Adobe Illustrator. By: Lina Sahlgren.

Fig 11.1. *The new combined one way road, part of the Proposal for Change, Roslins Väg, Ribersborg.* Created in Illustrator. By: Saga Kullgren.

Fig 11.2. *One of the new pedestrian and bicycle-adapted crossings, at the intersection between Roslins Väg and Tessins Väg, Ribersborg.* Created in Adobe Illustrator. By: Airen Persson.

The GIS material is collected from:

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