MASTER'S THESIS ACEX30

Integrating Accessibility in the City Planning Process

Investigating the case of Frölunda, Gothenburg using a systems approach.

Master's thesis in the Design and Construction Project Management

Maria Jidah
Rasha El-Rifai

Department of Architecture and Civil Engineering
Urban Design and Planning
Urban and Regional Transformations
CHALMERS UNIVERSITY OF TECHNOLOGY
Göteborg, Sweden 2024

Integrating Accessibility in the City Planning Process
Investigating the case of Frölunda, Gothenburg using a systems approach.

Master's thesis in the Design and Construction Project Management

MARIA JIDAH

RASHA EL-RIFAI

Examensarbete ACEX30
Institutionen för arkitektur och samhällsbyggnadsteknik
Chalmers tekniska högskola , 2024

Department of Architecture and Civil Engineering
Urban Design and Planning
Urban and Regional Transformations
Chalmers University of Technology
SE-412 96 Göteborg
Sweden
Telephone: + 46 (0)31-772 1000

Department of Architecture and Civil Engineering
Göteborg , Sweden, 2024

Integrating Accessibility in the City Planning Process

Investigating the case of Frölunda, Gothenburg using a complex systems approach.

Master's thesis in the Design and Construction Project Management

MARIA JIDAH
RASHA EL-RIFAI

Department of Architecture and Civil Engineering
Urban Design and Planning
Urban and Regional Transformations
Chalmers University of Technology

ABSTRACT

Gothenburg, like many urban centers, must improve its transportation infrastructure to tackle environmental and social challenges. City planning plays a crucial role in addressing these issues and promoting sustainable urban development. A central emphasis is on accessibility, understood as the ease with which individuals can reach desired activities and destinations using different transportation modes. City planning encompasses various elements such as land-use and transport planning, which must be integrated to create accessible cities. Accessibility is crucial in urban- and transport planning as it ensures equal opportunities, promotes sustainability, and enhances the overall well-being of residents. This study examines the integration of accessibility into city planning, focusing on Frölunda in Gothenburg, Sweden. It comprises three main components: a theoretical framework derived from a literature review, a case study of the Frölunda area examining how accessibility is integrated in the city planning process, and an analysis of interviews. The main findings from the literature review outlined several strategies for enhancing accessibility, including stakeholder engagement, mixed land-use, and transit-oriented developments, while also advocating for a systems approach that emphasizes feedback loops. Various planning processes were identified: one based on the literature review, one from Gothenburg's policy documents, and two based on the interviews, highlighting their misalignment. While the literature emphasizes the complexity of the city planning process, highlighting the benefits of utilizing a systems approach, Gothenburg policy documents depict a linear process. Interviewees revealed that the linear process is not followed, where operational work often precedes strategic planning. They envision the linear process to be implemented, while the literature showcased that city planning is too complex to be perceived in that manner, necessitating a systems approach. As a result, a targeted planning process was designed, combining theoretical principles with empirical data. Key aspects were included, such as the incorporation of feedback loops, coordination among stakeholders across planning phases, and ensuring that the strategic-level output is finalized before initiating work at other levels.

Keywords: Accessibility, Land-Use Planning, Transport Planning, City Planning, Stakeholder Engagement, Frölunda, Gothenburg, Sweden.

Table of Contents

Preface

Through this thesis, we have explored how accessibility is implemented in the city planning process. Conducted between January 2024 and June 2024, at the Department of Architecture and Civil Engineering at Chalmers, Sweden, this research project delves into the city planning process in Gothenburg. This thesis has been conducted through a combination of theoretical data and interviews with key stakeholders involved in the planning process in Gothenburg. We want to thank all the people who attended the interviews and provided us with their expertise and insights about the city planning process in Gothenburg.

We are two students at Chalmers University of Technology, both holding Bachelor's degrees in Architecture and Engineering. One is pursuing a Master's degree in Design and Construction Project Management (DCPM), and the other in Complex Adaptive Systems (CAS). The thesis was written with supervision from DCPM and has been approved by the CAS program. This thesis reflects our efforts to integrate our diverse backgrounds in our approach for urban development.

We are deeply grateful for the guidance and support provided by our mentors, Postdoc Flávia Lopes and Docent Jorge Gil at Chalmers. Their insights and encouragement have been invaluable. We would also like to thank Axel Persson at Norconsult AB for his perspective and involvement.

Göteborg, May 2024

Maria Jidah & Rasha El-Rifai

1 Introduction

Gothenburg, like many urban centers, faces a critical need to improve its transportation infrastructure for both environmental and social reasons (City of Gothenburg, 2014). The city planning process plays an important role in developing sustainable cities (Banister, 2008). Over time, the expansion of cities has led to increased distances, creating a dependence on motorized vehicles, specially private cars. This dependence has been formed at the expense of alternative, more sustainable modes such as walking, cycling and public transport. Within the national transport sector in Sweden, private car usage is responsible for the largest share of carbon equivalent emissions (Naturvårdsverket, 2023).

Extensive use of private cars brings forth various challenges, including traffic congestion, air and noise pollution, environmental degradation, dependency on fossil fuels, and decreased safety for both pedestrians and drivers (Banister, 2008). To address these issues, reducing car travel is vital to mitigate negative environmental impacts (Gil Solá, Vilhelmson, & Larsson, 2018). Central to this effort is the concept of accessibility, understood in this work as "the extent to which land-use and transport systems enable (groups of) individuals to reach activities or destinations by means of a (combination of) transport mode(s)" (van Wee, 2022). Implementing accessibility involves various strategies, with a key focus on promoting walking, cycling, and public transit as viable alternatives to private cars (Gil Solá, Vilhelmson, & Larsson, 2018).

Hence, the city planning process, with its role of strategically organizing urban spaces and flows, plays a crucial part in promoting accessible cities (Banister, 2008). Accessible city planning emphasizes densification and mixed land use, creating compact, walkable communities where essential services are easily accessible without traveling long distances (Gil Solá, Vilhelmson, & Larsson, 2018). Prioritizing proximity to daily activities like schools and workplaces reduces the need for car-travel, as individuals can reach destinations using sustainable transport modes. By implementing strategies that promote accessibility, urban planners can contribute to decreasing car-travel, thereby reducing the environmental consequences. Efforts in accessible city planning involve the integration of land use- and transportation planning (Dur & Yigitcanlar, 2014). This approach aims to promote mixed land use to reduce the need for long-distance travel, providing easy access to urban services and facilities, while promoting sustainable transport modes.

By embracing these strategies, cities like Gothenburg can work towards enhancing accessibility, reducing environmental impacts, and improving overall urban sustainability. Accessibility is emphasized in the comprehensive plan for Gothenburg, developed in 2009 (Gothenburg Urban Transport Committee, 2014). This plan has the vision for Gothenburg to evolve into a dynamic and sustainable urban city, emphasizing economic, environmental, and social sustainability. The aim is to create a city that is not only accessible and vibrant but also appealing to its residents. The city also seeks to increase urban density through new construction projects, making daily life more convenient for locals by improving the city's

infrastructure and transportation networks. The infrastructure aims to be effective in meeting the users needs while minimizing its environmental impact. There is a vision for Gothenburg to be a close-knit city where walking, cycling and public transport usage are the favored modes of transport. This vision is supported by strategies regarding travel, urban space, and goods transport with set out implementation principles. This involves the development of vibrant urban nodes within the city. These nodes aim to serve as central points within the larger cityscape, enriched with activity and services that simplify daily life, minimizing the need to travel into the city center.

One of the areas in focus is Frölunda, which aims to be a node with a fulfilling urban life that does not necessitate frequent travels to central Gothenburg (Stadsbyggnadskontoret, Göteborgs Stad, 2020). Frölunda, located in southern Gothenburg, is a diverse neighborhood with a variety of housing options, businesses, and green spaces. It is rich in cultural heritage and has several historical sites, including Frölunda Church. One of its standout features is Frölunda Torg, one of Gothenburg's oldest shopping centers and a hub for commerce and services. Additionally, there are several smaller shopping centers and retail areas that contribute to the neighborhood's unique character. Green spaces are also integral to the area's charm. In terms of infrastructure, Frölunda is well-served by public transportation, including buses and trams, providing connectivity to other parts of Gothenburg. The diversity in this urban area offers both opportunities and challenges for Gothenburg's city development, making it vital to examine how city planning can improve accessibility, as it is an important node within the city network.

However, despite the importance of focusing on accessibility, the interests of different stakeholders, including citizens, companies, the government, and public transportation operators, are diverse (Ruhlandt, 2018). The stakeholders may have conflicting objectives, which makes it challenging to formulate long-term, optimal city plans that align with the goal of accessibility. Establishing a work culture that includes and fosters effective coordination, communication and collaboration can be challenging. However, in order to implement accessibility, it is crucial to achieve coordination and stakeholder engagement throughout the city planning process (Curtis, 2008). Given the multifaceted nature of city planning, involving various components and stakeholders, it can be seen as a complex system (Kölbl, Niegl, & Knoflacher, 2008). Thus, a systems approach can be utilized, moving towards understanding the interconnectedness and interdependencies among various components of the planning process, in order to implement accessibility. By implementing system thinking, planners can identify patterns, structures, and behaviors within the complex system, enabling a holistic approach to problem-solving and decision-making in city planning. This method includes breaking down the process into distinct phases and integrating feedback loops. Hence, addressing accessibility at each phase of the city planning process is vital for successful implementation (Curtis, 2008).

1.1 Purpose

The aim of this master's thesis is to examine how the city planning process addresses the accessibility issue in order to achieve accessible cities. Additionally, the aim is to analyze the implementation of a systems approach in the city planning process, to integrate accessibility. Specifically, the aim is to understand how accessibility is considered in the planning process of new developments in Frölunda, Gothenburg utilizing a systems approach.

1.2 Research Questions

In this report, the following questions will be addressed:

1. How can the city planning process approach accessibility issues in order to achieve sustainable cities?
2. What strategies are employed in the city planning process in Gothenburg to ensure accessibility, particularly in new development projects?
3. How can the systems approach be applied to address the complexity of the institutional stakeholder coordination in the city planning process?
4. In what ways can the planning process be used to enhance accessibility in Gothenburg?

1.3 Thesis Outline

This thesis is divided into eight chapters.

Chapter 1: Introduction The city planning process and importance of accessibility is presented. The concept of a systems approach is introduced.

Chapter 2: Methodology This chapter presents the research methodology and the methods utilized to investigate and address the study's objectives. A description of the interview procedure and the analysis process of the collected empirical data is provided.

Chapter 3: Literature Review In this chapter, the literature review presents various aspects of city planning and accessibility, including land-use planning and transport planning. The systems approach is described, focusing on how accessibility can be integrated in the city planning process through a complex systems approach.

Chapter 4: Case Study In this chapter, the case study is presented, delving into the development of the Frölunda area in Gothenburg, Sweden. Policy documents and related material are examined to gain deeper insights.

Chapter 5: Results This chapter presents the results from the conducted interviews and the literature review. The result is illustrated in block diagrams followed by descriptions. This chapter includes results regarding the general planning process in Gothenburg, the planning process in Frölunda and the target planning process in Frölunda.

Chapter 6: Discussion In this chapter, a discussion and interpretation of the results in relation to the research objectives is held. A comparison between the results and the research is made. Discussion of the method, limitations, implications and future research is included.

Chapter 7: Conclusion This chapter concludes the research, answering the research questions and compiling the study.

Chapter 8: References The references used in the thesis is listed in this chapter.

2 Methodology

The following chapter presents the research methodology and methods utilized to investigate and address the study's objectives. A description of the interview procedure and the analysis process of the collected empirical data is provided.

2.1 Research Approach

In this study a qualitative research strategy was utilized, focusing on understanding phenomena through the collection and analysis of non-numerical data, such as interviews, observations, and texts (Bell & Willmott, 2015). This approach is ideal for gathering detailed, in-depth information. This approach included developing research questions that include data collection through literature reviews and multiple interviews. By applying a qualitative method, the study aims to gain a deep understanding of the implementation of accessibility in the city planning process and the diverse stakeholder perspectives that shape urban development.

2.2 Literature Review

A literature review was conducted to explore the city planning process, its relationship to achieving accessible cities, and to understand how the complex systems approach can be utilized in the planning process. Literature was sourced from databases such as Google Scholar, ResearchGate, Springer and the Chalmers library by searching with keywords relevant to the subject, such as accessibility, city planning, urban planning, transport planning, planning process, and systems approach.

Subsequently, research for the case study in Frölunda, Gothenburg, was conducted. This involved analyzing the planning process in Frölunda, Gothenburg, while drawing insights from documents provided by the Gothenburg City administration and the Swedish administration. The analysis gave an understanding of how accessibility was integrated into the planning process, grasping the challenges and opportunities within the context of Gothenburg. Moreover, the analysis of the case study in Frölunda was conducted in correlation with the findings of the literature review, comprehending how the concepts addressed in the literature are reflected in practical urban planning strategies, specifically in Frölunda.

2.3 Interview Study

Interviews were conducted with key stakeholders working with city planning in Gothenburg and Frölunda to gain insight into their diverse perspectives and goals regarding urban development. Open semi-structured interviews were conducted, giving an opportunity for directing focus towards specific themes while allowing flexibility in the conversation (Magaldi & Berler, 2020). The semi-structured interview is commonly used for qualitative research, and is exploratory in nature. It typically follows a predefined guide or protocol centered around a core topic, while also facilitating further investigation within the theme. The conducted interviews comprised nine questions that were set in advance as a framework for guiding the discussion, but the format allowed for follow-up questions and exploration of new ideas that arose during the interview. Additionally, this approach allowed for a deeper understanding of the subject while still maintaining a level of consistency in the data collection.

Six interviews were carried out, involving individuals with diverse backgrounds working with Gothenburg city and/or with Frölunda projects. Four interviews were conducted with officials working at Gothenburg Municipality, one with a person working for the regional public transport company Västtrafik, and one official from Västra Götalands Region. The four interviewees working within the municipality had diverse roles and were engaged in different phases of the planning process, ranging from the strategic level to the operational level. Through this selection, valuable insights were gained regarding the different phases and the collaboration between stakeholders, both within the municipality and with external entities. Västtrafik is the executing company for public transport in the region, and interviewing both Västtrafik and the regional authorities provides a comprehensive perspective. The interviewee from Västra Götalandss Region works at the strategic level, while the interviewee for the transport company mainly works at the strategic level but participates in the operational level.

The formulated questions were designed to gain insight into their work and where they operate in the city planning process. Initially, general questions were asked regarding the stakeholders they collaborated with and their level of involvement in accessibility issues. Then, more specific questions regarding Frölunda were asked. This approach provided both a comprehensive understanding of how accessibility is addressed in the planning process in Gothenburg city, and also how it is addressed in the Frölunda area. Emphasis was also placed on potential opportunities and challenges. Through the questions a holistic perspective was obtained on the planning process. This enabled an analysis of the interview in conjunction with the conducted literature study. It also provides insight into how the planning process is executed in relation to the municipalities intended planning process. The questions are presented in Table 1.

Table 1 Interview questions of this study.

General questions	Question regarding case Frölunda
1. What role do you play in the city planning process?	2. How do the stakeholders work with implementing accessibility in Frölunda?
3. In which phase of the city planning process are you involved? Do you plan long or short term?	4. What types of input and output (documents) are required from you in terms of implementing and improving accessibility in the planning process?
5. Who are the other stakeholders involved in the phase of the city planning process in which you participate? Do they have the same timeframe?	6. Have you faced any challenges working with this project? (lack of communication, collaboration, etc)
7. How/Do you work with accessibility (defined as the ease of access to services, facilities, and opportunities)? Is it considered as a strategy in the planning process for sustainable mobility?	8. How do you think that the planning process could be improved?
	9. Do you have anything to add that you consider valuable to this study?

The interviews were recorded and transcribed automatically through Microsoft Teams. After the completion of all interviews, an examination of the transcription and recording were made, editing the transcription according to the recording. Four different topics were identified, aligning with the study's objective and scope. The four topics are: the general planning process in Gothenburg, the planning process in Frölunda, the challenges in Frölunda, and the visions in Frölunda. Each topic was assigned a unique color, and sections in the transcriptions were color-coded according to them. This information was then compiled into a shared Excel file to gain an overview of the different topics by creating data tabulations. The format of the Excel file is presented in Table 2.

Table 2 Main topics and the sub-topics that were used to collect relevant information from conducted interviews.

Topics		Interview 1	Interview 2	Interview 3	Interview 4	Interview 5	Interview 6
Topic 1: General process (focusing on stakeholders, timeline, accessibility)	Phases						
	Timeframe						
	Stakeholders						
	Timeframe other stakeholders						
	Accessibility						
Topic 2: Planning process in Frölunda (documents)	Accessibility Frölunda						
	Stakeholders in Frölunda						
	Inputs						
	Outputs						
Topic 3: Challenges in Frölunda							
Topic 4: Visions in Frölunda							

2.4 Ethical Considerations

When conducting the thesis, various ethical considerations were addressed to ensure both the integrity of the research, and the protection of the interview participants (Bell & Willmott, 2015). Interviewees were informed about the study's objectives, and asked for consent to be recorded and to share relevant information. The interviewees privacy was respected and the collected data was securely stored. Confidentiality was maintained by avoiding directly identifying participants and instead referring to them in general terms, such as "one planner working at the municipality," to protect their identities. All of the participants' perspectives were acknowledged, and any conflicts of interest were openly disclosed. Reflection on biases and assumptions was conducted to ensure objectivity throughout the research process. These ethical guidelines helped uphold the credibility of this research.

2.5 Analysis

Based on the conducted literature review, a block diagram was designed using the software Miro. This software was used to create block diagrams with various colored elements, which differentiate the components within the planning process. The diagram visualizes the different phases of the planning process, showcasing the order of events. It emphasizes how accessibility can be implemented within each phase.

Following, two block diagrams were created based on the conducted interviews and the excel compilation of the interviews, also using the software Miro. One of them represents Gothenburg's planning process and the other one represents Frölunda's planning process. The diagrams highlight the different phases of the planning process, stakeholders involved at each phase, how accessibility is addressed within each phase, and the outputs generated. Workflow of activities across phases are illustrated using arrows. Black arrows represent the conventional flow of activities, while red arrows show distribution within the process. This visualized the gaps and inefficiencies within the planning processes.

Finally, a target process was designed based on insight from the literature review and interviews. Comparison was made between the collected theoretical data with findings from the interviews by analyzing the previously designed block diagrams, identifying gaps and inefficiencies. The target process represents an ideal model for the planning process in the Frölunda area, strategically addressing the challenges and visions. It considered the systems approach while combining previous research with empirical data.

3 Literature Review

The literature review explores various key aspects of city planning and accessibility, including the integration of land-use and transport planning, stakeholder engagement, transit-oriented and mixed-use developments, and feedback-loops. This highlights fundamental principles, strategies, and processes essential for integrating accessibility into urban development. The integration of accessibility considerations within city planning is crucial for fostering sustainable, inclusive urban environments that address the diverse needs of communities. Furthermore, city planning can be recognized as a complex system, with interconnected elements working towards common objectives. Adopting a systems approach allows planners to analyze the interdependencies among various components within the process, gaining a holistic view of city planning. Through system thinking, a comprehensive examination of interactions, inputs, outputs, and feedback loops within the planning process is conducted. This in order to identify patterns, structures, and behaviors that shape accessible urban development.

3.1 Planning towards Sustainable Cities

City planning is the process of designing and organizing the physical, social, and economic aspects of urban areas. Through city planning, it is possible to achieve sustainable cities and a good quality of life for residents (Bertolini, Clerq & Kapoen, 2005). The aim is to create well-functioning urban environments that meet the needs of current and future generations. Two key components of city planning are transport- and land use planning, and it is crucial to integrate those components. To achieve this integration, a robust planning process is essential, where all components of the urban environment collaborate seamlessly across different phases to complement and support each other. In this study, the focus is specifically on how accessibility, defined as “the extent to which land-use and transport systems enable (groups of) individuals to reach activities or destinations by means of a (combination of) transport mode(s)” (van Wee, 2022), is addressed within this planning process and how it is primarily influenced by the cooperation between land use and transport planning.

3.1.1 Accessibility as a Key Component of City Planning

Through effective urban planning strategies, cities can be designed to offer close access to everyday facilities and enhanced accessibility to other locations (Boisjoly & El-Geneidy, 2017). The transition to improved accessibility involves promoting sustainable transportation options and fostering equity within communities. By engaging in an interactive plan-making process that integrates both land-use and transport planning, accessibility goals can be realized (Geurs & van Wee, 2004).

Land-use involves determining how land within the metropolitan area is allocated for different purposes, such as residential, commercial, industrial, recreational, and green spaces (Bertolini, Clerq & Kapoen, 2005). Residential land-use focuses on housing, and ensuring availability of adequate and affordable accommodations for all residents, which includes planning for different types of housing. Commercial land-use involves facilities such as retail stores, restaurants, offices, and other commercial spaces. These facilities contribute to the vibrancy and functionality of urban areas as they provide goods, food, and services to consumers, and workplaces for various businesses. The mix of these facilities in a neighborhood can impact the overall livability and sustainability of the community (Yang, Song & Choi, 2015). Industrial land-use incorporates numerous workplaces, and when planning for sustainable cities, the aim is to minimize the traveling distances between destinations. This can be executed through road and transit investments (OECD, 2020). Another aspect of land-use planning includes planning for parks, green belts, and open spaces (Bertolini, Clerq & Kapoen, 2005). This is crucial as it provides recreational areas, preserves natural habitats, improves air quality, and enhances the overall quality of life for residents. Through effective land-use planning, it is possible to encourage mixed-use areas that combine residential, commercial, and recreational spaces within the same neighborhood to promote walkability, reduce commuting distances, and create vibrant urban centers (Koster & Rouwendal, 2012).

Transport planning, on the other hand, focuses on designing and managing transportation systems ensuring efficient, safe, and sustainable movement of people and goods (Bertolini, Clerq & Kapoen, 2005). It involves analyzing current needs, forecasting future demands, and developing strategies to address challenges. This includes policy development, infrastructure planning, and modal integration. Infrastructure planning incorporates the development of roads, bridges, and communication networks, facilitating trips between activities and thereby supporting the functioning of the city. It also involves designing public transport systems such as bus-, train-, and tram networks to provide efficient and sustainable mobility options for residents. An important aspect to keep in mind in transport planning is to create pedestrian-friendly environments with sidewalks, crosswalks, and bike lanes (Miller, 2018). This to promote walking and cycling as sustainable modes of transportation while also enhancing public health and reducing car-dependency.

Accessibility planning shifts the focus towards ensuring that individuals conveniently can reach important destinations such as jobs, schools, healthcare facilities, and recreational areas (Boisjoly & El-Geneidy, 2017). It addresses both the social perspective, economic development and the environmental impacts of transport planning (Boisjoly & El-Geneidy, 2017). It considers the fundamental reason behind why people travel, and works to make sure that all individuals have reasonable travel times to their diverse destinations. Within the framework of accessibility, four key components are identified and displayed in Figure 1: land-use, transport, temporal, and individual aspects (Geurs & van Wee, 2004). These components are interconnected, making it important to understand their relationships. The temporal component addresses constraints related to time. This includes both the availability of opportunities throughout the day, and the amount of time individuals distribute for

different activities. The individual component considers the diverse needs, capabilities, and opportunities of individuals, taking into account factors such as age, income, and education level. These individual characteristics influence access to transportation modes and opportunities, shaping the overall outcomes of accessibility initiatives.

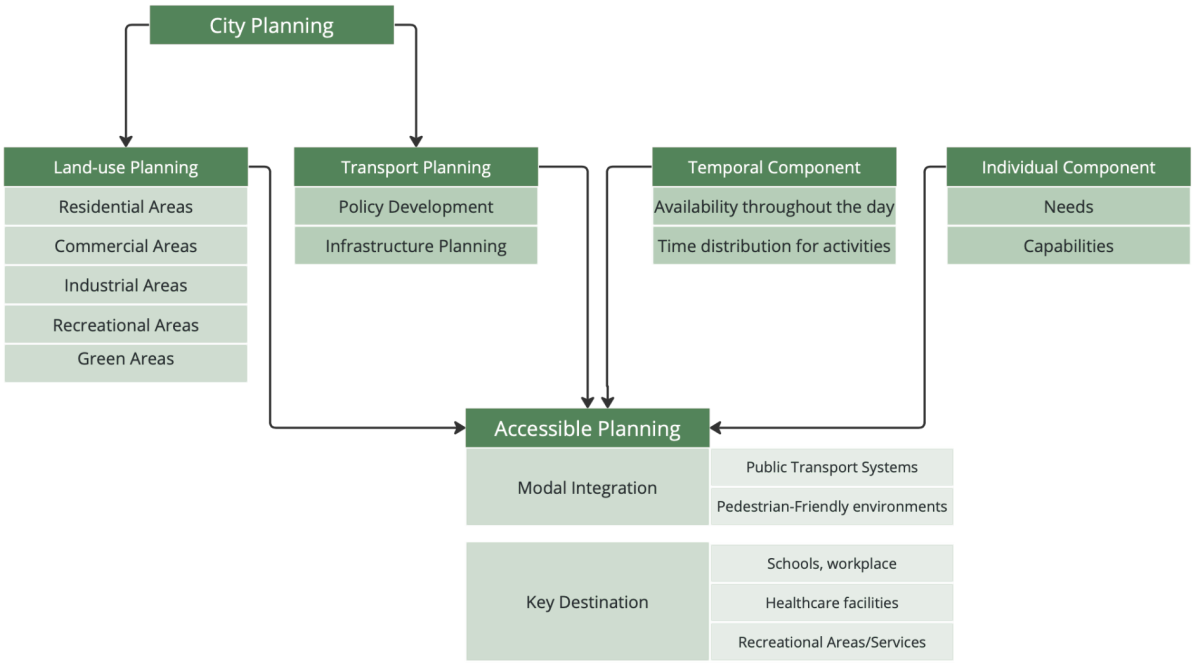


Figure 1 Different components in city planning, showcasing that an integration of land-use- and transport planning is necessary for accessible planning. Accessible planning also includes a temporal and individual component.

Aiming for an accessible city will contribute to a reduction in carbon emissions, traffic congestions, and air pollution, moving towards an environmentally sustainable city (Da Silva, King, & Lemar, 2020). Additionally, by enhancing accessibility, cities can support climate action plans, make urban areas more resilient, and reduce the overall environmental impact of transportation systems. Studies indicate that the transition from mobility-oriented transport planning to an accessibility-focused approach is still in progress (Boisjoly & El-Geneidy, 2017). Accessibility, as a concept in planning, sometimes lacks a clear definition. This results in it simply becoming an overused buzzword without precise implementation guidelines.

In order to assess accessibility, measurable indicators are used to track trends and evaluate policies (Jiménez-Espada, Cuartero, & Le Breton, 2022). When selecting indicators for sustainable planning, several aspects should be considered to ensure their relevance, effectiveness, and reliability. The indicators should directly align with the set sustainability goals and objectives of the city planning, reflecting economic, social, and environmental dimensions (Litman, 2006). The indicators should be relevant to the specific challenges faced in the specific field, focusing on performance areas that have a significant impact on various sustainability aspects. Another aspect to consider is that the chosen indicators should involve

relevant stakeholders and ensure that their diverse priorities are considered. Decision-makers often prioritize impacts that are easy to measure, sometimes overlooking broader goals. For example, the goals of transport planning often involve accessibility, which is sometimes measured by looking at indicators regarding improved traffic. However, improvements in walking, cycling, and accessible land-use can enhance accessibility without increasing traffic. In that case, the selected indicators might fail to measure accessibility effectively. Essentially, the indicator selection has a significant influence on both the transport policy-making and the planning process.

Accessibility-oriented city planning involves the incorporation of land-use policies that strategically minimize distances between various activities, promoting more efficient and sustainable urban development (Straatemeier & Bertolini, 2019). These policies encourage a transition towards greener modes of transport and contribute to reducing overall travel distances. By following these principles and integrating land-use and transport planning effectively, cities can achieve a range of benefits (Dur & Yigitcanlar, 2014). Those benefits include a reduced travel demand, shorter journeys, and improved access to services and jobs. This approach not only supports accessibility goals but also contributes to overall urban sustainability by creating close knit-communities. Through densification and strategically locating housing and everyday facilities, accessibility can be implemented (Banister, 2008). This includes designing buildings and spaces efficiently, and developing zones with good public transport networks, as well as areas that are accessible by walk and bicycle. Designing streets that accommodate all modes of transport such as pedestrians, cyclists, and public transport will improve safety and connectivity for all users (Rode et al., 2017). Simultaneously, this will foster inclusivity and accessible urban environments, while encouraging a healthier and more sustainable urban lifestyle.

The way land is used influences transportation needs and patterns, while transportation infrastructure shapes how land is accessed and utilized (Bertolini, Clerq & Kapoen, 2005). This correlation emphasizes integration of the two aspects of city planning. Accessibility can be improved through both transport policies (e.g. enhancing average speeds) or land-use policies (e.g. increasing density). Ultimately, the challenge lies in finding the right balance between these approaches, while considering constraints such as available finances and political conditions, as well as local characteristics such as existing infrastructure and urban landscapes. Land-use and transport integration is essential in city planning for sustainable urban development (Dur & Yigitcanlar, 2014). When considering both land-use and transport planning, urban environments become more vibrant, as an important part of this integration lies in promoting compact development with mixed land-use. This fosters walkability and reduces the need for long distance travel (Huang & Hsieh, 2014). This approach to city planning highlights both the importance of enhancing active transport modes such as walking and cycling, and improving public transport services. One result of integrating land-use and transportation is an improved access to urban services via alternative transportation modes, which makes it easier for residents to travel without relying on cars.

3.1.2 Achieving Accessibility through the City Planning Process

The city planning process has various phases with different focuses, from initial visioning to data collection, strategy translation, implementation, and maintenance (Curtis, 2008). It is crucial that accessibility is integrated across those phases, see Figure 2.

In the first phase, the visions for a city planning process should be examined. When the planning is initiated, it is necessary to create a foundation for accessibility that remains central throughout the process, from formulating strategies to the operational phase. Curtis describes a strategy called Network City Planning that can be implemented, serving as a framework for achieving accessibility (Curtis, 2008). It highlights the alignment of land-use- and transport planning to enhance urban development and support an effective transport system. Additionally, it is of essence to engage various stakeholders, such as public transport providers and land-use planners to achieve a better understanding of the diverse accessibility needs. It is crucial to adopt a collaborative approach and to aim for effective coordination from the start.

The next phase involves collecting data. Here information about the city planning process, the current transportation infrastructure, land-use, and travel behaviors are analyzed (Curtis, 2008). It is crucial to gain a comprehensive understanding of different challenges and opportunities regarding accessibility within this stage of the city planning process. It is possible to detect areas that can be improved regarding accessibility through an examination of land-use distribution, travel patterns, and transportation modes. Utilizing the collected data facilitates informed decision-making on improving accessibility, in addition to supporting institutional structures and predicting future needs.

The following phase involes translating collected data into strategies. When city planners carry out the translation, it is of importance to integrate public transport planning with land-use planning to determine the character, location, and management of activity centers and transport routes (Curtis, 2008). In order to foster accessibility within this phase, the focus is on aligning land-use decisions with public transportation to create accessible cities supporting sustainable transportation options. One focus is on promoting walking, cycling and public transport usage through transit-oriented development centered around public transport hubs (Rode et al., 2017). Accessible neighborhoods are designed with emphasis on sustainable transport modes, resulting in a reduction in car usage and an overall improved accessibility (Curtis & Scheurer, 2010). This is achieved by creating mixed-use developments close to public transport, which would result in a reduced need for long-distance travel. A key aspect when formulating policies is community engagement to gather feedback on proposals, ensuring that residents' accessibility needs are genuinely addressed in the planning process. By involving different stakeholders in decision-making, planners can develop urban environments that are more inclusive and accessible, catering to the diverse needs of the population.

During the implementation phase, the emphasis is on translating planning strategies into tangible policies and practices (Curtis & Scheurer, 2010). The aim is to align the city development with targeted goals. In this phase, effective coordination is required for implementing accessibility. This involves interdisciplinary project teams, fostering cross-disciplinary collaboration, and employing a participatory approach that engages stakeholders in decision-making.

In the maintenance phase, the effectiveness of planning strategies is continually monitored, and necessary adjustments are made to achieve accessibility goals (Curtis, 2008). This phase involves adapting to changes, ensuring that city planning strategies remain aligned with evolving demographics and transportation needs to sustain and improve accessibility over time.

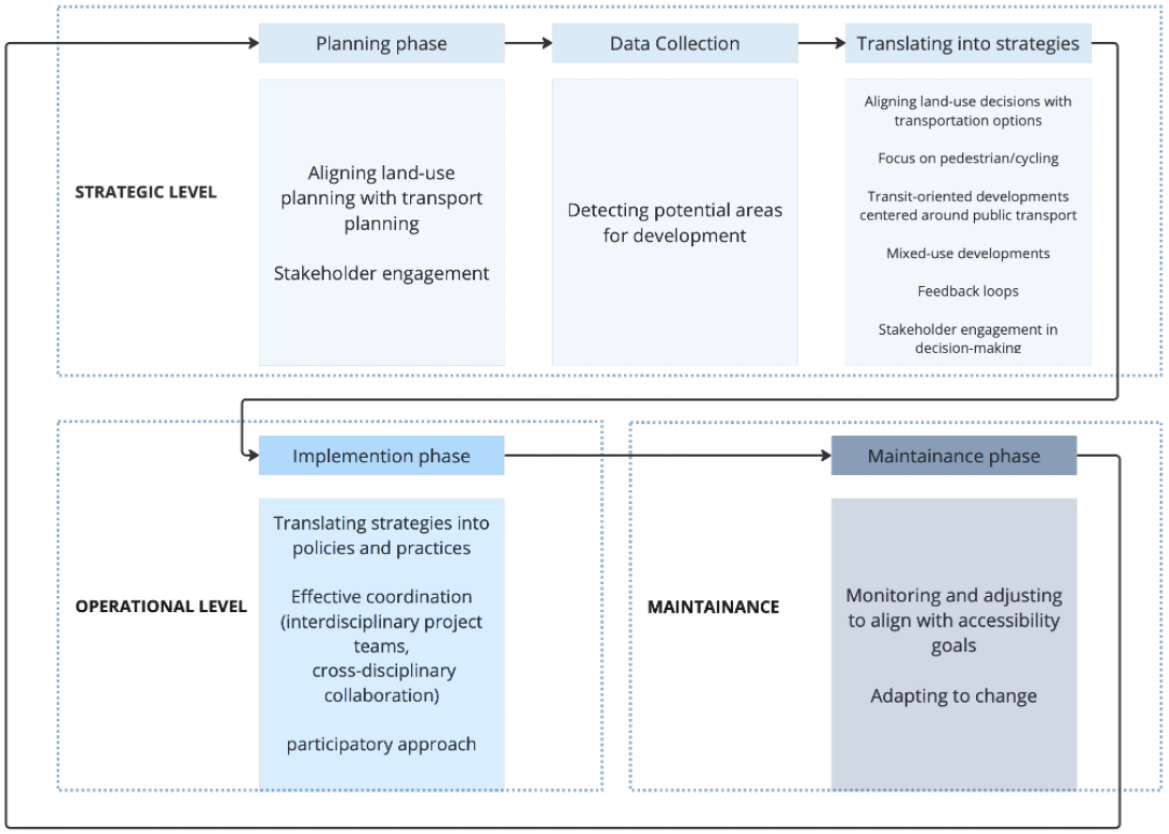


Figure 2 Different phases of the city planning process showcasing strategies for integrating accessibility throughout the planning process.

Developing accessible cities through the planning process aims at creating a cycle of good growth (OECD, 2020). Land-use planning can support sustainable travel by maximizing densities, setting goals and targets that implement policies with an emphasis on inclusion. This shapes the city to direct growth with high density, mixed-use places, and public transport usage. The cycle of good growth involves increasing the supply of sustainable transport options, which will lead to an improved public transport network with new connections and zones with lower emissions. This, in turn shapes the land-use, initiating a cycle of good growth that promotes accessibility.

3.2 The Systems Approach for City Planning

There is an emphasis on the integration of accessibility considerations across stages through collaborative, interdisciplinary approaches to foster sustainable urban development (Curtis, 2008). Thus, the city planning process is a complex system aligning with the principles of systems thinking (Ahrens, 2018).

The systems approach is a discipline that examines systems as interconnected elements working towards common objectives (Haraldsson, 2004). Systems are characterized by nonlinearity due to the interdependencies among their various components. This interconnected structure means that even minor alterations in one part can have significant, unexpected effects on the entire system. Therefore, when studying a system, it is essential to understand both its individual parts and its holistic nature (Kölbl, Niegl, & Knoflacher, 2008). This involves analyzing interactions, interdependencies, inputs, outputs, and feedback loops to identify patterns, structures, and behaviors within complex systems. Such a method allows for a holistic approach for problem-solving and decision-making. In figure 3, the concept of systems thinking is illustrated where the arrows represent the flow of the process starting from the initial inputs,becoming throughputs that are processed within the system to produce outputs. These outputs are then evaluated and sent back to the system in the shape of a feedback loop.

The systems approach involves analyzing how different parts of the system interact (Kölbl, Niegl, & Knoflacher, 2008). Within this approach, a feedback loop is a mechanism in which the outcomes of a system actively influence how the system operates, creating a self-adjusting process. Moreover, it includes defining the boundaries of the system to better understand what lies within and outside the system (Haraldsson, 2004). Figure 3 depicts the flow of inputs, throughputs, and outputs, showcasing feedback loops. Inputs represent various resources or factors entering the system, which undergo processes to produce outputs. The outputs represent the results or outcomes generated by the processes within the system. Those processes are presented as throughputs, initiated within the system in response to inputs, converting them into outputs. These outputs have the ability to influence the system itself, thus sustaining the feedback loop. Notably, feedback loops illustrate the interaction within the system, highlighting how outcomes influence the following processes within the system.

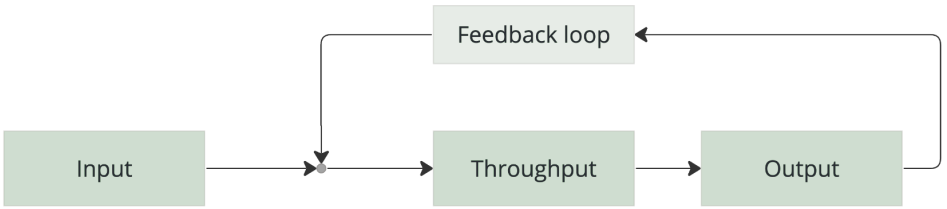


Figure 3 A feedback loop within a system containing input, throughput, output, and a feedback loop.

3.2.1 The Components of the City Planning Process

The city planning process can be understood as a complex system with various interconnected components that serve diverse functions (Ahrens, 2018). Those components include different stakeholders, phases, objectives, instruments, indicators, and feedback loops, which is shown in Figure 4 (Kölbl, Niegl, & Knoflacher, 2008). Interactions between the components are dynamic as they involve technical, socio-economic, and environmental factors.

In essence, this approach involves breaking the planning process down into manageable elements and phases to develop more effective and sustainable strategies (Kölbl, Niegl, & Knoflacher, 2008). When striving for accessible cities, it is essential to implement principles focused on accessibility into the city planning process (Curtis, 2008). A key element in this process is selecting the right indicators that measure accessibility across different dimensions (Kölbl, Niegl, & Knoflacher, 2008). By choosing the suitable indicators it is possible to monitor the system and find potential opportunities working towards set goals. This can help planners assess the effectiveness of their strategies.

The phases of the planning process must be identified as they are a component in the system (Kölbl, Niegl, & Knoflacher, 2008), as seen in figure 4. They consist of a) initial input, b) objective setting, c) policy development, d) measure implementation, e) indicator monitoring, f) outcome, and g) feedback. Objective setting requires an input containing external information that guides the planning process (Kölbl, Niegl, & Knoflacher, 2008). The input can include data, feedback from stakeholders, policy directives, research findings, and other relevant information. This serves as the starting point, from which it is possible to identify and analyze the challenges and opportunities within the study area. For instance, when investigating the transport system, this may include assessing traffic congestion, safety concerns, accessibility gaps, and environmental impacts. Thereafter it is possible to set objectives and define goals for the process. In the following phase, policy development takes place. The established policies outline the strategies and actions needed in order to achieve the objectives stated in the first phase. The frameworks for decision-making and implementation of decisions are based on the policies.

After the policies have been set, the next phase involves measure implementation (Kölbl, Niegl, & Knoflacher, 2008). In this phase, measures are being implemented to ensure that the defined policies will result in achieving the planned goals. Measures include specific actions, projects, or programs that are identified as part of the planning process. Implementing measures involve putting the previously developed strategies and policies into practice that have a direct impact on the operations for urban development. Following the measure implementation, is the indicator monitoring-phase. Different indicators are used throughout the planning process in order to monitor and evaluate the progress towards the objectives. The indicators provide data and metrics to assess performance, track trends, and measure the efficiency of the implemented measures. The output of the planning process is then used in a feedback loop that enables continuous evaluation and adjustment based on new information

and changing circumstances. It should be an iterative process that allows for flexibility and adaptability in response to new conditions in the planning process.

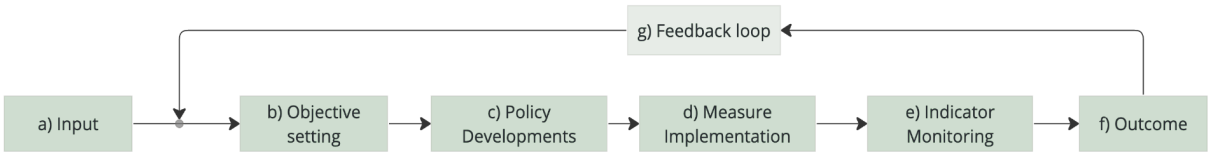


Figure 4 illustrates the phases of the city planning process, including the initial input, the objective setting, the policy development, measure implementation, indicator monitoring, the outcome and its feedback loop.

3.2.2 Stakeholders Engagement in Accessible City Planning

Because of the complexity of the city planning process, it is vital to apply different strategies to manage the system (Le Pira, Ignaccolo, Inturri, Pluchino, & Rapisarda, 2016). In order to achieve accessibility and sustainable cities it is essential to engage various stakeholders and utilize tools that foster participation. For instance, one approach is promoting multidisciplinary collaboration aligning with the different phases in the city planning process. Another method is to have a participative approach involving various key stakeholders in the decision-making process. This strategy is divided in two different phases: The top down-phase, implying that results are derived by experts and specialists in the field, and the bottom-up phase, implying that decisions are derived from the citizens. By combining these approaches, a comprehensive and inclusive decision-making process is generated.

The city planning process engages several stakeholders, each playing a role in shaping its outcomes. Key stakeholders include planners, politicians, public authorities, private initiators, public initiators, and community stakeholders (Curtis, 2008). Urban planners and transport planners use their expertise in urban development, transportation systems, to create land-use- and transport plans for the city (Tennøy, Hansson, Lissandrello & Næss, 2016). Their aim is to design plans addressing the needs of the community while also considering aspects such as traffic flow and environmental impact. Politicians at national, regional, and local level have decision-making authority over land-use and transport policies. Their role includes setting priorities, allocating resources, and approving plans that align with the political agenda and public interest.

The regulation and monitoring of land-use and transport activities is made by public authorities (Tennøy, Hansson, Lissandrello & Næss, 2016). They provide guidance and enforce regulations to ensure that the city planning process conforms with urban development laws and policies. Private initiators, including developers and businesses, propose and execute projects that contribute to urban growth and transformation. Meanwhile, public initiators, such as municipalities and transportation authorities, initiate and lead land-use and transport planning processes. Public initiators work towards achieving public goals,

improving infrastructure, and enhancing the quality of life in urban areas. Community stakeholders, including residents and local organizations, provide valuable input on proposed plans, ensuring that planning processes reflect community needs.

3.3 City Planning Process in Sweden

Sweden has policy goals regarding national transport, mainly focusing on economic efficiency and sustainability (Johansson, Hiselius, Koglin, & Wretstrand, 2017). The Swedish administrative structure is composed of three levels of government. The first level is the national level, i.e. the state. It is monitored by the parliament and the government. The planning of land-use is directed by laws and policies established at this level. However, there are also other entities at the national level that influence the planning and land-use such as the National Board of Housing, and Building and Planning. These entities contribute with expertise and guidance regarding housing and buildings. Another example is the Transport Administration (Trafikverket) which contributes to the planning of transport infrastructure projects. The second level is the regional level which consists of the counties, and lastly the local level presented as the municipalities. Thus, the Swedish planning process involves coordinating many levels of government and various entities which contribute to the development of policies and regulations regarding urban planning and infrastructure.

Regarding public transport, regulations are formed at the national level (Johansson, Hiselius, Koglin, & Wretstrand, 2017). These regulations delegate the responsibility of public transport to the public sector through contracting and procurements. The regulations give private operators the opportunity to provide their own service if necessary. The private operators can overlook the usual regulations that govern public transportation. This gives them the flexibility to address specific needs in the community where regular public transport might be insufficient. In general, the responsibility for local public transport is regional. However, which organizations are involved varies between different regions.

The decision of the participant organizations is made by the regional councils. Incentive contracts are used, which includes a signed cooperation agreement and a Memorandum of Understand (MoU). MoU includes the key stakeholders and parties involved during the contracting phase and includes authority, municipality, operator, and the Swedish Transport Authority. An emphasis on effective cooperation in the area of land-use, transport planning and operation is made. In order to achieve effective cooperation between land-use and transport planning, it is of essence to involve the identified key stakeholders: The municipality whose involvement is crucial regarding transport planning and land-use, and the Swedish Transport Administration that evaluates all transport modes and supports sufficient accessibility between different regions.

On the local level, urban- and transport planning is directed by the municipalities (Johansson, Hiselius, Koglin, & Wretstrand, 2017). The Swedish Planning and Building Act (SFS

Citation 2010: 900, §2) directs the responsibility of the municipalities. It declares that each region's urban and transportation planning is under the responsibility of Sweden's municipalities. Thus, the regions have planning monopoly, meaning that each municipality has all control over the planning process within their territory.

Investigations and planning models have been conducted leading to an emphasis on coordination between politicians and officials for construction and traffic planning in order to create sustainable urban environments (Hrelja & Nyberg, 2012). This includes accessibility to public transport, and infrastructure that supports bicycle-users and pedestrians. Sustainable urban development can be achieved through a holistic approach involving integration between different sectors as well as fostering citizen engagement, and being goal-oriented throughout the planning process. By setting short-term goals on the strategic level, long-term goals for sustainability can be achieved. In the planning manual "Trafik för en attraktiv stad" (TRAST) a similar approach is described highlighting the importance of coordinating goals on a strategic level, in order to achieve cross-sector goals.

Coordination in the transport planning process is divided into three different phases (Hrelja & Nyberg, 2012). The first phase includes collaboration and information exchange between different sectors. The second phase involves managing and avoiding goal conflicts through effective coordination between different stakeholders in diverse sectors. The third phase includes integrating and creating added value. Through cross-sector integration, the value created is greater than the sum of the individual parts. Thus, sectors set common goals to design long-term plans and strategies.

Successful coordination must consider that the process varies depending on the context (Hrelja & Nyberg, 2012). Hence, influencing factors have been categorized into three distinct groups:

- Contextual factors include norms, traditions and values. Contextual factors influence which priorities are set in case of goal conflicts, for example when the environmental sustainability goals and economic growth are incompatible.
- Organization factors are factors causing coordination issues such as distribution of responsibilities creating boundaries between different stakeholders.
- Procedural factors are established routines for the sector-wide decision-making and the shared understanding between politicians and officials. Exchange of knowledge between officials with various disciplinary backgrounds is considered crucial to achieve effective coordination.

4 Case Study: Frölunda, Gothenburg

Gothenburg city plays a vital role as a hub for freight and goods in Sweden, along with the goal of minimizing the environmental impact of travel. The city plans for a growth of 150 000 residents and 80 000 jobs in the next 20 years. The comprehensive plan includes a focus on developing central areas of the city. Thus, city planning in Gothenburg presents challenges on both national, regional, and local levels. Striving to reach climate objectives and create an accessible city with attractive urban environments is a complex task (Gothenburg Urban Transport Committee, 2014).

In order to reach climate goals, the Swedish Transport Administration (Trafikverket) has determined that a 20% reduction in passenger transport work between 2010 and 2030 is necessary. However, they also predict an expected increase in private car transports in Greater Gothenburg to be 25% from 2010 to 2030. Furthermore, managing the financial aspects of major city projects has become particularly demanding due to evolving dynamics in funding. It is important to also consider incorporating a dose of daily physical activity into people's lives as a strategy to prevent obesity.

4.1 Goals and Challenges

The comprehensive plan developed 2009, addresses that Gothenburg should be developed into a dynamic and sustainable city in terms of economic, environmental and social sustainability (Gothenburg Urban Transport Committee, 2014). The comprehensive plan highlights the importance of improving the already built environment and nature. Concerning social sustainability, the city is to be shaped into an environment with the right conditions for a good life. The plan also addresses the segregation issue and the importance to work towards integration. Regarding environmental sustainability, the objective is to minimize the environmental impact from transportation. The comprehensive plan also highlights the importance of balancing competitiveness and the concern of local life. Gothenburg should have a competitive city center in order to promote innovation and economic strength. However, it is also important to consider the local community, their way of life, and their overall well being. Thus, it is not only about economic growth, but rather a balance between economic success and the concern of local life.

The comprehensive plan focuses on the city development through a staged expansion (Gothenburg Urban Transport Committee, 2014). This method involves gradual and systematic growth, meaning that the expansion is a longer planned process rather than an unplanned rapid development. A staged expansion also emphasizes to first develop the central areas and then expand outwards, and making the central parts more attractive, denser and more accessible.

Concerning the strategic nodes, Gothenburg identified them in Backaplan, Frölunda Torg, Gamlestaden, and Angered Centrum (Gothenburg Urban Transport Committee, 2014). These are strategic locations selected for their potential to transform into vibrant and functional urban hubs. These areas are envisioned to accommodate diverse residential, commercial, and recreational activities, creating dynamic and lively urban environments. By focusing on developing these nodes into dense spaces, the city aims to enhance connectivity, accessibility, and overall quality of life for residents, which will have a larger impact on the overall city's functionality. In addressing challenges across national, regional, and local spheres, Gothenburg has laid out specific goals for each level.

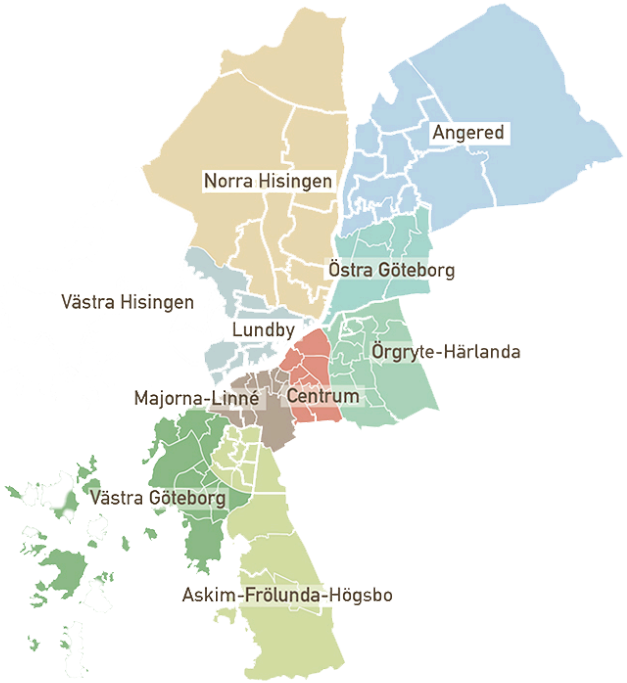


Figure 5 A map of Gothenburg highlighting various areas. Frölunda can be seen in the South of Gothenburg (Boplats, n.d.).

4.1.1 National Level

A multifaceted approach is crucial in order to face the challenges presented on a national level (Gothenburg Urban Transport Committee, 2014). One aim is to create conditions that reduce private car travel that are reliant on fossil fuels. Simultaneously, the aim is to leverage Gothenbug's strategic location for freight and goods transport to make sure that it aligns with environmental sustainability goals. Another goal is to find financing solutions that gain support at national, regional, and local levels. Lastly, one objective is to create an environment where more individuals are inclined towards modes of transportation involving physical activity. Balancing these challenges collectively form a comprehensive strategy for sustainable urban development in Gothenburg.

4.1.2 Regional Level

Gothenburg is at the center of a growing region. In 2010, the city witnessed a daily inflow of approximately 100 000 people, and an outflow of 45 000 individuals (Gothenburg Urban Transport Committee, 2014). From 2010 to 2030, job opportunities are expected to increase by 80 000 within the city, and 50 000 in the surrounding region, which will lead to an increase in commuting. Additionally, Gothenburg is an events city with venues such as Liseberg, Scandinavium, the Swedish Exhibition and Congress Centre, Ullevi, Universeum, and the Museum of World Culture, attracting more than six million visitors annually. Regionally, the goal is to enable increased commuting and visitor travel in and out from Gothenburg while preventing car transport from increasing.

4.1.3 Local Level

Gothenburg is a sparse city characterized by scattered points of origin and destination that has fostered a dependence on car commuting (Gothenburg Urban Transport Committee, 2014). The comprehensive plan focuses on creating a dense urban environment as it facilitates an efficient transportation system and greater accessibility. It can also reduce societal costs, and foster greater integration. However, growing cities often leads to more segregation and competition over street space, which is something to consider. Hence, one of the large challenges on the local level is to effectively manage the transportation demands of commuters, visitors, and a considerably larger population within a compact urban setting limited by land access.

Upon closer examination of the challenges at the local level, various obstacles become apparent (Gothenburg Urban Transport Committee, 2014). Barriers such as rivers, tram lines, and highways pose considerable hindrances for movement and communication across borders. The goal is to overcome these obstacles by bridging the barriers to facilitate greater movement without reducing the ease of mobility for public transport, freight, and cyclists in urban environments. Another significant challenge is to ensure the freedom of movement for everyone in the population. This leads to setting goals in order to make the cityscape appealing to diverse demographics, ranging from children to the elderly, also including individuals with disabilities who require enhanced accessibility of movement. This envisions the streets as urban spaces where everyone can navigate freely. Moreover, maintaining a healthy local environment for inhabitants becomes crucial, which results in efforts to minimize emissions, air pollution, and noise pollution. Additionally, there is a need to address the challenge of reducing the risk of incidents and accidents, with the objective being to enhance the overall road safety. The ongoing city planning initiatives for Gothenburg encompass numerous projects, both in progress and under construction. This introduces the challenge of preserving the city's appeal during the construction phases, ensuring good accessibility and transportation to and from essential destinations. The ultimate goal is to

make urban space into more than just a construction site throughout the developmental stages, maintaining both its appeal and its functionality.

4.2 Strategies for Gothenburg

Two of the main objectives with the Gothenburg city planning is to create an easily accessible regional center, and to create an attractive urban space along with a vibrant urban life (Gothenburg Urban Transport Committee, 2014). An easily accessible regional center includes access to essential destinations and services, regardless of the mode of transport. The transportation strategy aims to foster an appealing, efficient and sustainable transit system that supports urban growth, and makes sure that Gothenburg is perceived as accessible. The method for transport planning in Gothenburg is described by the four-stage principle., which includes the stages: rethink, optimize, rebuild, and build new (Gothenburg Urban Transport Committee, 2014). The first stage, "Rethink," involves reconsidering the necessity for transportation and journeys. The second stage, "Optimize," focuses on optimizing the use of existing infrastructure. If further intervention is required, the third stage, "Rebuild," is implemented through modifications and reconstruction of existing infrastructure. Finally, if the transportation needs remain, the fourth stage, "Build New," comes into play. This involves new investments and significant construction efforts to meet the demands of the city's transport system. This systematic approach ensures that improvements are considered and implemented in a strategic manner. Making the urban space in Gothenburg more attractive involves a lively city life that attracts people to reside, work, shop, study, and socialize. The transport strategy aims to enhance the appeal of the urban setting, as well as to improve safety and security in the city.

The transport strategy in Gothenburg is shaped by urban planning and the ongoing growth in population, housing, and activities in the central areas (Gothenburg Urban Transport Committee, 2014). Several of the city’s urban planning actors and stakeholders influence goal fulfillment in the transport strategy. The collaboration between different actors is crucial when creating a sustainable city. Their input is essential to ensure a balance between the social, environmental, and economic sustainability perspectives. The city's overarching aim is to create an inclusive environment for everyone, emphasizing increased integration through planning. The approach to achieve this involves implementing measures based on social impact assessments and child impact assessments. To fulfill local environmental quality objectives in an economically sustainable manner, active collaboration among committees and companies is encouraged. This collaboration aims to establish near access by strategically locating new public services like preschools, schools, libraries, and elderly care, thereby minimizing the need for transportation and travel.

4.2.1 Transport Strategy

The strategy for travel involves strengthening the traveling network between the city's nodes and important destinations (Gothenburg Urban Transport Committee, 2014). There is a focus on connecting the city's cores, large workplace areas, hospitals, parks, and other important destinations with efficient bike- and public transport networks. Biking should be regarded as a separate mode of transport with its own lanes, and as for public transport, the aim is to shorten travel times, raise capacity, and improve reliability. Improving public transit is crucial both within Gothenburg city, and in the surrounding region, making Gothenburg an attractive city for commuters. The travel strategy also includes a focus on densifying the city, and building new residential areas close to the strategic nodes of Gothenburg. Proximity to both social, cultural, and recreational facilities, as well as essential services, will minimize the need for extensive travel. By reducing distances between activities and key destinations, walking and biking become more attractive modes of transport. High access and density also creates vibrant and appealing neighborhoods. Another important aspect of the travel strategy includes making the use of roads and streets more efficient - optimizing the use of already existing infrastructure. Congestion taxes and the city's parking policy are tools that can be used to support reduced car use in the city, which increases the ease of passage in the urban area.

There are three main effect targets for journeys mentioned in Transport Strategy for a Close-Knit City, looking at the transport mode distribution (Gothenburg Urban Transport Committee, 2014). One of them is for at least 35% of the trips in Gothenburg to be either on foot or by bicycle by 2035. The second one is aiming for at least 55% of motorized journeys in Gothenburg to be by public transport by 2035. This suggests that the number of journeys on foot or by bicycle will be doubled between 2011 and 2035. The number of public transport trips will also be doubled, and the number of car trips will be reduced by a quarter. The third effect target is for the travel time between two arbitrary cores or key destinations to be at highest 30 minutes by either car or public transport. One factor for an area to be considered accessible, is the ability to reach half of the workplaces in the city within 30 minutes using public transit. Many people base their travel decisions on this timeframe. To achieve this goal, public transport, especially in and around the inner city, needs to be made faster.

4.2.2 Urban Space Strategy

The urban space strategy involves prioritizing pedestrians and cyclists, transforming the streets to create a more vibrant urban area, and creating a dense network of streets without barriers (Gothenburg Urban Transport Committee, 2014). Prioritizing pedestrians is important for lively urban spaces, as people walking the streets bring vitality to the city while also enhancing safety and expanding service possibilities. It is essential to improve conditions for pedestrians regardless of age or physical ability. Additionally, it is crucial to recognize the significance of cyclists in the transport system, designing clear cycling lanes and creating a

balance between the room for pedestrians and cyclists. Following the densification of Gothenburg there will be more people sharing the streets, and a higher risk of congestion. However, when designing the streetscape of the city, it is important to take into consideration that the urban spaces are not only meant for transport but also for a place to be in and enjoy. It is also important to consider that part of creating an accessible city is to have a denser and interconnected street network. Working towards removing or bridging barriers in the street network will increase the movement of people, creating a more vibrant urban environment.

In Transport Strategy for a Close-Knit City (2010), three main effect targets for urban spaces are described. First, the aim is to increase the percent of Gothenburg residents who consider walking to be the most attractive mode of transport when moving around the inner city in 2035. Another goal is to increase the share of Gothenburg residents who consider the street spaces to be appealing spaces to be. The third effect target regards road safety, with the objective being a reduction of fatalities and injuries by 75% from 2010 to 2035. The overall goal is to create a more welcoming urban environment.

4.2.3 Gothenburg's Strategy Documents for Improved Accessibility

In order to achieve a sustainable and accessible city in Gothenburg, the systems approach is applied (Gothenburg Urban Transport Committee, 2014). On the operational level of transport planning, there are three significant strategy documents; the Transport Strategy, the Green Strategy, and the Development Planning Strategy. These strategies should align with other objectives created by the municipality and also contribute to Sweden's total transport system.

The Development Planning Strategy for the year 2035 describes the objectives for a sustainable urban development in Gothenburg. The document identifies ideal strategic nodes (Gothenburg Urban Transport Committee, 2014). These nodes have the appropriate conditions for sustainable urban development which will make daily life more accessible for locals. The Transport Strategy is designed to accommodate the ongoing increase of people engaging in activities in the city, making it easier to navigate. The goal is to create a more vibrant urban environment. The Green Strategy focuses on the importance of maintaining and enhancing the city's green qualities even when the city becomes more dense through new construction. The document provides guidance in finding a balance between environmental and new urban construction development. The strategies provide clarity in the city development and give various stakeholders the information needed for making their own long-term decisions and creating an alignment towards a common goal (Gothenburg Urban Transport Committee, 2014). The strategies also serve as a tool for the city politicians and officials when making prioritizations. Through the documents, new construction areas with the most impact for a more accessible and simpler life are highlighted, supporting the officials and politicians in decision-making.

4.3 Gothenburg’s City Planning Process

The Gothenburg's city planning process presented by the municipality, is illustrated in figure 5 (Göteborgs Stad, n.d.). It is a twelve-step linear process explaining the process of Gothenburg's development into a sustainable city:

1. Comprehensive Plan: The initial stage in the urban planning process involves conducting a comprehensive plan. This plan showcases a vision for the current and future utilization of the city's land and water resources.

2. Ideas and Needs Assessment: Urban development efforts typically originate from a concept or identified need for change. Various interests are evaluated and balanced during the planning phase. Thereafter, a submission of an application for a planning decision (‘planbesked’) can occur.

3. Planning Decision: In cases where proposed actions involve creating a new detailed plan or that the actions affect existing plans, an application for a 'planbesked' must be submitted. Decisions regarding the formulation of a detailed plan are dependent on factors such as the comprehensive plan, local circumstances, and the objective of fostering housing development.

4. Land Allocation: Individuals or entities seeking to construct on municipally-owned land must obtain a land allocation (‘markanvisning’). This allocation permits developers to build in accordance with designated land-use specifications at a predetermined price point.

5. Consultation Phase: The consultation (‘samråd’) phase involves the distribution of the proposed detailed plan to the public. Stakeholders and authorities provide input and feedback, which influences the final version of the plan.

6. Plan Review: Following the consultation phase, all received comments and feedback are evaluated, and adjustments may be made to the detailed plan. A finalized proposal is then presented for review.

7. Adoption of Detailed Plan: Upon getting approval from decision-makers, the detailed plan becomes official. This decision is then shared to all relevant stakeholders and made public on the municipality's website.

8. Property Formation: Property formation involves creating new properties by dividing or combining existing land. This process ensures that property boundaries comply with regulations and urban planning goals.

9. Building Permit: Before construction starts, one must obtain a building permit (‘bygglov’). This involves adhering to the detailed plan that is legally binding.

10. Construction: Construction activities begin once all earlier steps are finished. Projects continue until they're fully completed, with different tasks possibly finishing at different times.

11. Completion: When construction wraps up, projects are considered completed and ready for use. Detailed reports on construction activities and project finalization are submitted to municipal authorities.

12. Operation, Management, Development, and Maintenance: After construction, effective management and maintenance are needed to ensure functionality and durability. This includes maintaining buildings, parks, and infrastructure, as well as ongoing development efforts to improve the area over time.

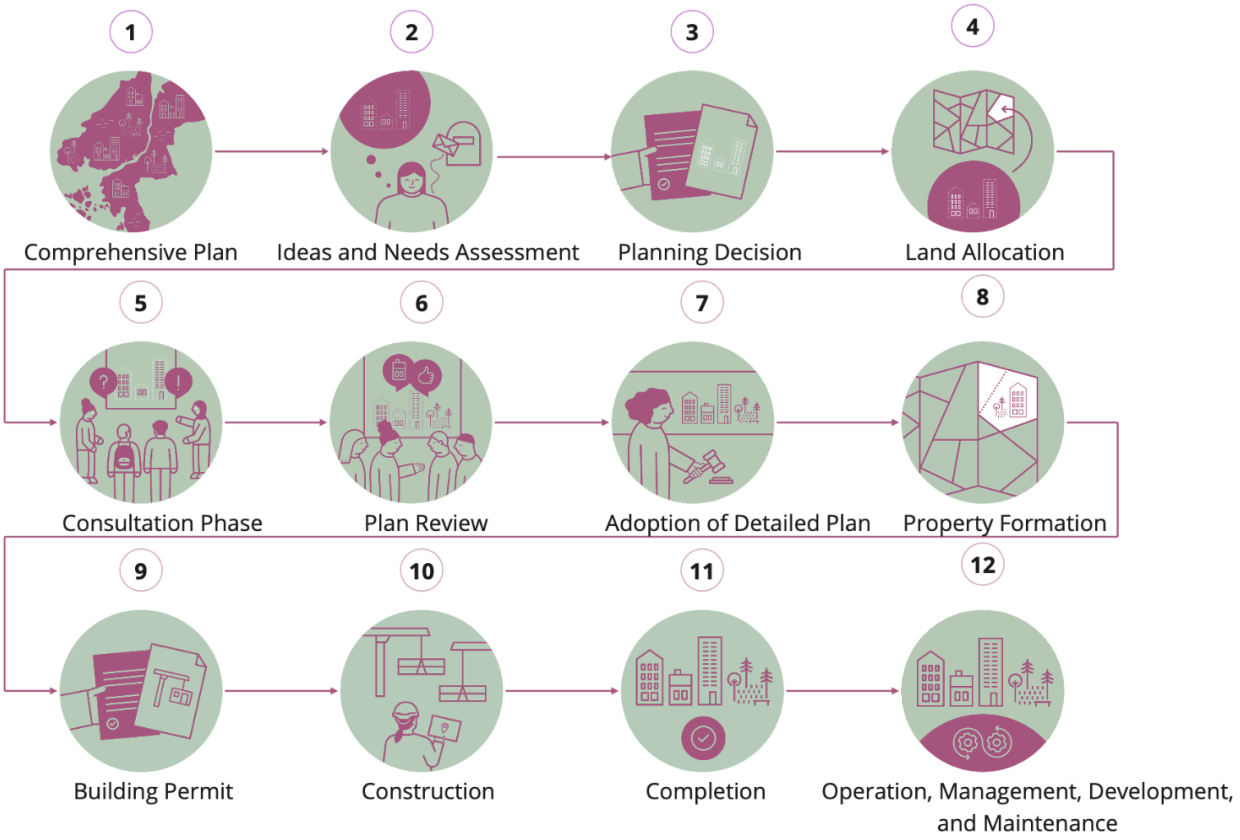


Figure 6 The planning process in Gothenburg (Göteborgs Stad, n.d.).

4.3.1 Principles during the Process

There are certain identified implementation principles and success factors that will ensure success of the execution of the transport strategy project enhancing the accessibility (Gothenburg Urban Transport Committee, 2014). There are four established principles for transport strategy. First, it is of essence to start with improving travel both within the city

center but also around the city. In order to address the upcoming population growth and an increased public transport demand, public transport must be developed in the city. However, the West Sweden Agreement mainly focuses on facilitating travel into the city but not within it. Thus, investments must be made in order to increase travel within the inner city, which also includes accessible roads for cyclists.

Second, accessibility must be preserved during the development of the city. The expansion of Gothenburg city must not compromise on the accessibility and safety for people and transportation around the city (Gothenburg Urban Transport Committee, 2014). This is accomplished through managing and coordinating different transport systems with the main goal being to facilitate the movement for road users. The primary goal is to utilize the transport strategy objectives during the expansion and construction period in order to promote new traveling methods. Thus, traveling methods for pedestrians and cyclists will be generated.

Third, as there are future environmental challenges, new solutions and innovations are needed (Gothenburg Urban Transport Committee, 2014). Thus, Gothenburg city must be open and test different approaches. This environmental challenge extends beyond Gothenburg city, and will lead to prompting technological advancements from various regions around the globe. Hence, Gothenburg must be a city where different ideas and innovations can be tested.

Fourth, it is of significant importance to estabilsh good communication and collaboration between different stakeholders (Gothenburg Urban Transport Committee, 2014). As the transport development has an impact on the overall city, the inhabitants and the creation of a sustainable attractive city, it is important to inform and be open for a dialogue between the decision-makers, the executors and the inhabitants. The different stakeholders must understand their requirements in order to achieve the transport strategy objectives. There is also a lack of collaboration between businesses on city planning and urban planning. Thus, new methods for collaboration and communication must be developed.

4.4 Visions for Frölunda City

Frölunda is a strategic area in Gothenburg that is currently under development (Stadsbyggnadskontoret, Göteborgs Stad, 2020). The planning process for Frölunda encompasses both comprehensive, strategic, and detailed levels with the aim to transform it into a core node in Gothenburg. At present, there is a high demand for housing in Gothenburg. The vision for the future includes replacing longer car rides with public transport in order to promote a sustainable city. A step in this direction is a city with different strategic nodes. Effectively managing future needs and maximizing existing investments is crucial for sustainable city planning.

Within the Frölunda area, there are some important aspects that needs to be considered when planning for development (Stadsbyggnadskontoret, Göteborgs Stad, 2020). Firstly, there are

significant green areas that are highly appreciated for their natural values that should be preserved. Additionally, the Söder- and Västerleden in the region is a part of the national road network, which is of national interest. The Söder- and Västerleden is an important transport route that plays a key role in transporting heavy and hazardous goods. Another thing to consider is the emphasis on increasing the proportion of public transport, cycling, and walking trips in Gothenburg's plans. Those factors are all important to evaluate in the decision-making process.

The vision for Frölunda is to evolve from a suburb into Frölunda City, aspiring to become an urban environment resembling a small town that accommodates the expected population growth (Stadsbyggnadskontoret, Göteborgs Stad, 2020). This transformation involves expanding housing and activities to increase urban density, establishing Frölunda as a local node in Gothenburg where walking and biking are the primary modes of transport. The aim is to minimize the need for commuting to central Gothenburg, ensuring that all essential activities are available within the area. Introducing new public transport options, such as metro buses and commuter trains, is being considered as a potential mode of transport to enhance connectivity within the region. Currently, the central part of Frölunda is characterized by its car-centered infrastructure and numerous parking lots, with the Västerleden acting as a barrier to the nearby Tynnered region. The future plan involves bridging this gap and connecting Frölunda with Tynnered. Collaboration with stakeholders and actors in Gothenburg's urban planning is crucial in order to implement a sustainable transport strategy for the evolving city.

4.4.1 Projects in Frölunda

Frölunda has been divided into smaller projects that will be developed in order to increase connection to the surrounding areas (Stadsbyggnadskontoret, Göteborgs Stad, 2020). In the strategic output for Frölunda, certain areas are emphasized as they have a large impact on the overall region. Figure 6 shows a map where new developments in the Frölunda area are numbered from 1 to 12. Marconigatan (number 1 & 5) and is one of the main streets in the program, as it is a long street centered in Frölunda. Here, double sided building and increasing pedestrian and cycle paths is the focus aiming to create a vibrant urban environment throughout the street. Additionally, green structures will be added between different green areas to connect them. A zone known as Musikplatsen (number 2) links Marconigatan, with the shopping mall Frölunda Torg (number 7), along with other destination points in Frölunda. This area can potentially serve as a smaller central part of the region by developing the accessibility for pedestrians and cyclists. However, developing Musikplatsen will compromise public transport. Thus, an advanced transport system is a crucial condition for enabling the development.

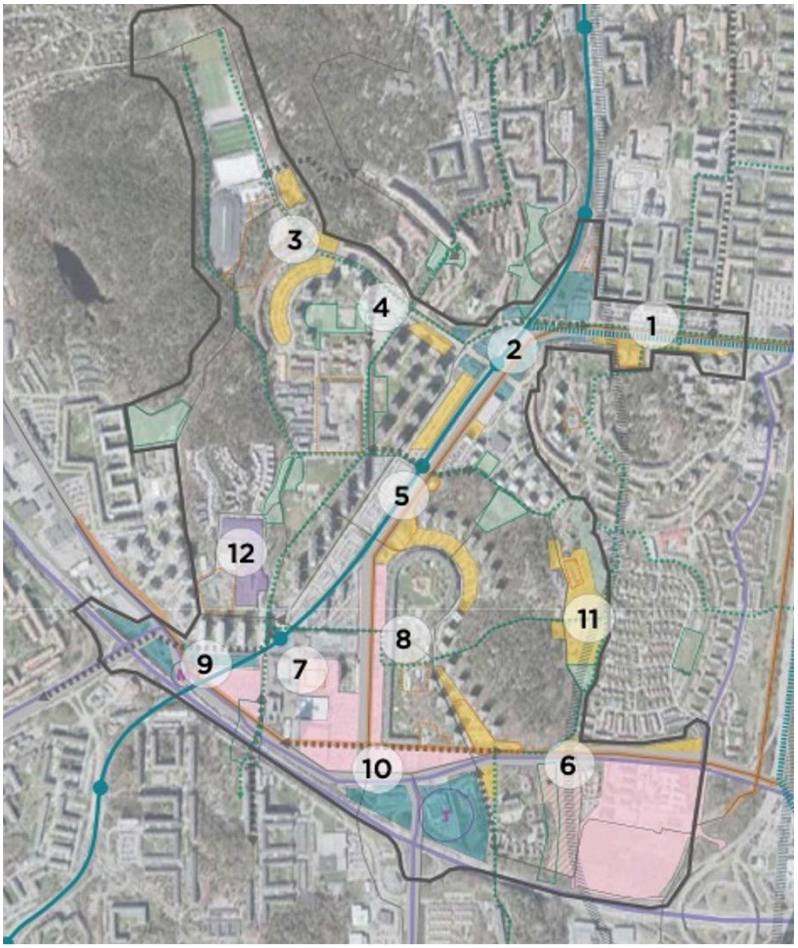
Ruddalen (number 3) is another area within Frölunda that is to be developed, and the potential for new parks, schools and facilities is discussed (Stadsbyggnadskontoret,

Göteborgs Stad, 2020). In Altplatsen (number 4) a new student apartment with services at the ground floor will be built, and an already existing preschools' green area will be expanded by adding a garden creating more green qualities. New buildings, cycle-and pedestrian paths are proposed to expand the connection. Green areas are planned to be preserved and further expanded.

Another main street in the program is Radiovägen (number 6), connecting South Frölunda with West Frölunda and is part of a larger road extending to Mölndal, a nearby municipality (Stadsbyggnadskontoret, Göteborgs Stad, 2020). Like Marconigatan, this street should be developed into a city street surrounded by buildings connecting to the surrounding area. Additionally Frölunda Torg should be further developed by creating attractive and welcoming streets promoting accessibility for pedestrians and cyclists. Additionally, new proposals have been developed for new buildings, townhouses and apartments to be built. A development within the Tynnered program along with the Frölunda program creates the need for strong connection across Västerleden to reduce barriers and unite the city. The traffic system needs to be improved as the current roads are nearing their capacity. Development in the area could also focus on creating workplaces.

The area in the West of the shopping mall Frölunda Torg (number 10) has the potential to further connect Frölunda with Tynnered (Stadsbyggnadskontoret, Göteborgs Stad, 2020). Similar to the East of the square (number 9), the focus should be on developing workplaces, making it more attractive and accessible, while improving pedestrian- and bike-lanes. Exploring the possibility of centrally locating cultural activities in the area should be considered in conjunction with the development of the Frölunda Cultural Center (number 12).

Along the street Gnistgatan (number 11), residences and an expansion of an already existing preschool will be developed (Stadsbyggnadskontoret, Göteborgs Stad, 2020). The program suggests that the main development is primarily townhouses with a smaller number of taller residential buildings. With regard to the ongoing population growth in Frölunda and Tynnered, Frölunda Cultural Center should be further developed. Currently, Frölunda Cultural Center serves as a swimming hall, library and diverse cultural functions. Given the expanding population in Frölunda and Tynnered, the emphasis on developing cultural activities grows.



1. North Marconigatan
2. Musikplatsen
3. Ruddalen
4. Altplatsen
5. Middle Marconigatan
6. Radiovägen
7. Frölunda Torg
8. Käppen & Norra Dragspelsgatan
9. East Frölunda Torg
10. West Frölunda Torg
11. Gnistgatan
12. Frölunda Cultural Centre

Figure 7 A map of the Frölunda area with new development projects numbered from 1-12 listed on the right.

4.4.2 The Program Proposal for Frölunda-Högsbo

Regarding construction, the Frölunda-Högsbo program means to build on ground parking lots (Stadsbyggnadskontoret, Göteborgs Stad, 2020). The expansion is planned with an alignment to factors such as a demand for schools and different facilities. Additionally, it should not compromise on obtaining the cultural environmental values, but rather be adapted to it and provide more cultural activities in the central parts. The identified areas in the node should have new business and the surrounding buildings should have venues on the ground floor.

Regarding the infrastructure, the main objective is to increase the accessibility for pedestrians and cyclists and to develop the infrastructure to proactively manage both growth and the capacity for public transport (Stadsbyggnadskontoret, Göteborgs Stad, 2020). Thus, certain areas are to be developed in order to achieve this goal. For instance, Macronigatan should be evolved into a more urban area without compromising on the current accessibility and travel time. Another important aspect is the interconnection between different areas. Here, Västerleden plays a crucial role as it both connects various areas and acts as a barrier. Hence, there is a focus on improving the connections for pedestrians and cyclists, over and under

Västerleden. Improving the connectivity for pedestrians and cyclists in Marconigatan is also in the program proposal. Additionally, a proposal regarding a tramway network between Musikvägen and Macronimotet is discussed.

Concerning green infrastructure, the program proposal notes the importance of detaining the already developed green structure such as parks and other natural areas (Stadsbyggnadskontoret, Göteborgs Stad, 2020). The proposal also highlights that the green structure should be developed and the connection should be increased. Parks should therefore be developed aligning with the increase in population in the neighborhoods. Also, developing green walking paths between different parks will increase connectivity between parks in different neighborhood areas.

Frölunda is a crucial development area in order for Gothenburg to become a close-knit-city (Stadsbyggnadskontoret, Göteborgs Stad, 2020). In connection with the population growth, it is relevant to work towards a sustainable city, where accessibility is a crucial factor. Frölunda is a key destination for a large number of Gothenburg's population. Achieving accessibility within the area will not only influence residents but also affect Gothenburg as a whole. By making Frölunda an accessible node, through promoting sustainable transport modes and creating attractive urban environments, Gothenburg will aim to become a sustainable city. Hence, an investigation into the area will not only showcase opportunities and challenges but also facilitate a comprehensive understanding of how accessibility is implemented, thereby identifying potential areas for improvement.

5 Results from Interviews

5.1 General City Planning Process in Gothenburg

The interviews offered insights into Gothenburg's city planning process, which unfolds in different phases: strategic, operational, and construction, seen in Figure 7. Each phase engages various stakeholders. At the strategic level, key participants include the local transport company, Västtrafik, Gothenburg municipality, the Swedish Transport Administration (Trafikverket), and Västra Götalands Region. Their focus on accessible cities revolves around long-term accessibility planning, setting goals for public transport efficiency and proximity to residences and key destinations. These objectives are then integrated into the strategic level outputs, which serve as input for the operational level. The strategic level output is comprised by various documents containing the goals, strategies and the plans for development. Here, stakeholders such as Västtrafik, Gothenburg municipality, Trafikverket, and land developers, work towards achieving accessibility by planning for the available land. The different departments within the municipality focus on land-use and transport planning, and work together to integrate the two aspects of city planning. They prioritize maximizing the utility of available space while considering unique area-specific qualities. This phase aims to create proximity to essential services and public transport from residences, fostering pedestrian and cyclist-friendly urban environments with a reduced car dependency. Addressing barriers to pedestrian accessibility is crucial in this process. At the detailed level, detailed plans are developed, sometimes preceding strategic level, therefore influencing the strategic level outputs.

Once the detailed plan is finalized, it transitions to the construction phase, where the responsibility lies in developing the land, and constructing the buildings and infrastructure. Here, developers play a crucial role in bringing the plans to actuality. They have a significant influence on the detailed plan, which is part of the operational level output. From an accessibility standpoint, developers prioritize accessibility as it enhances the value of their properties and creates attractive business and service locations, leading to potential profits. Their impact on the plan reflects their interests in the area. In projects where developers intend to hold onto the land long-term, they prioritize long-term accessibility, whereas in projects aimed at quick sale and profit, their focus tends to be more short-term. The output of the construction phase manifests in the actual built environment, which not only requires maintenance but also shapes further city development.

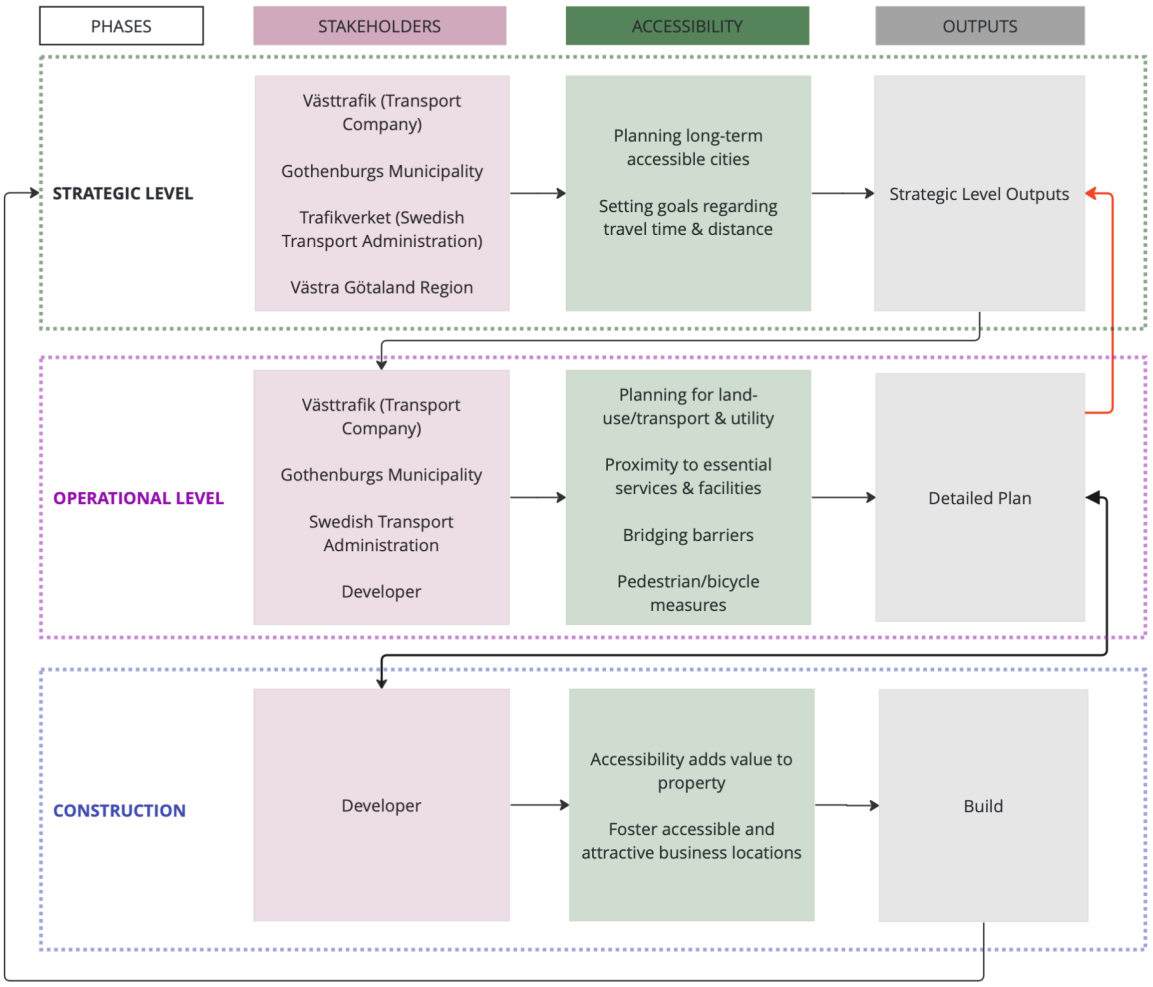


Figure 7 The city planning process of Gothenburg, as told by the key stakeholders. It includes the different stakeholders, the strategies to implement accessibility, and the outputs of each phase. The flow between the different phases is illustrated using arrows where black arrows symbolize the conventional workflow, and red arrows showcase a disrupted workflow.

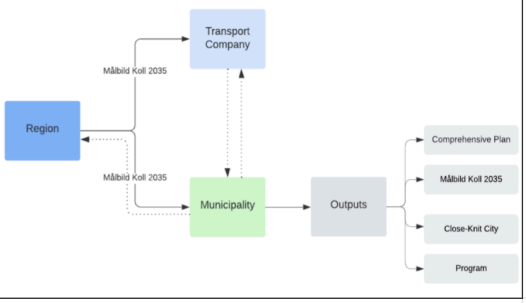
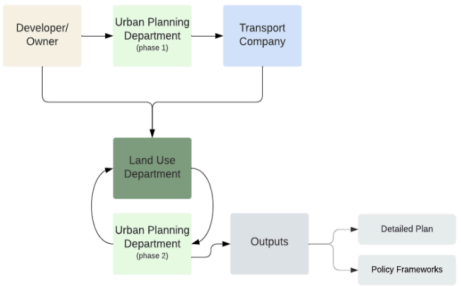
5.1.1 Stakeholders Collaboration and Documentation

The conducted interviews gave an understanding of how the collaboration between different stakeholders occurs. The documents utilized and produced during the strategic- and operational levels were identified. When planning for public transport, a document known as *Målbild Koll 2035* is utilized. The document describes the targets for development of the public transport network in the Gothenburg, Mölndal, and Partille area up until year 2035. This document has been generated by Västra Götalands Region and the Gothenburg municipality. The local transport company in Gothenburg, Vässtrafik, and the municipal transport planners are guided by this document. Västtrafik and the municipality collaborate during the strategic phase, aligning their objectives, but often losing contact later on during the implementation phase. Regarding accessibility, the municipality and the region have the

decision-making mandate while Vässtrafik acts as an executing party. The municipality also generates other documents during the strategic level, such as the comprehensive plan, the transport strategy, and various strategic documents.

During the operational level, the strategic level output is used as the input. There is a distinction between the municipality's urban planning department and the land-use department. The departments collaborate in order to align transport planning with land-use intentions. Vässtrafik assumes a more passive role with limited collaboration and communication with other stakeholders. In this phase, the documents produced are the detailed plans. Another stakeholder involved in the operation level is the developer, often having a significant impact, as they give requirements that the municipality needs to consider. The developer has a considerable influence, affecting the process as a whole. Consequently, detailed plans are often developed and produced according to their alignments, sometimes neglecting the strategic documents. Thus, the developer also has an influence on the strategic level. The stakeholder engagement on the strategic- and operational level is shown in Table 3.

Table 3 Main policy documents and key stakeholders on both the strategic and the operational level. The current planning procedure on each level is presented, including stakeholder engagement and the outputs consisting of policy documents.

Level of Planning	Policy Documents	Key Stakeholders			Process
		Region	Transport Company	Municipality	Current Process
Strategic Level	Comprehensive Plan Målbild Koll 2035 Close-Knit City Program	Long-term accessibility in public transport Setting goals	Executing party	Bridging barriers Densifying area Proximity to services City nodes	
Operational Level	Detailed Plan Policy Frameworks	Municipality Stadsbyggnadsförvaltning Finding potential placement of new developments Improve accessibility to activities	Exploateringsförvaltning Accessibility by bridging barriers Ensure easy access to destinations Accessible public transport & pedestrian/bike lanes	Developer/Owner Creating accessible & attractive locations for businesses	

5.2 Frölunda's City Planning Process

In Frölunda, the planning process follows the general structure of the city planning process in Gothenburg. Through conducted interviews and analysis, the process in Frölunda was mapped (see Figure 8). The strategic phase in Frölunda involves key stakeholders such as Västtrafik, Gothenburg municipality, Trafikverket, and Västra Götalands region. Their focus on long-term accessibility envisions Frölunda as a city node within Gothenburg, aiming to make activities accessible locally and reducing the need for trips into central Gothenburg. One approach to achieve this involves enhancing accessibility to Frölunda Torg, the local shopping mall offering various facilities, job opportunities, and services, along with densifying the Frölunda area. At the strategic level, plans include bridging barriers and implementing fast public transport routes with minimal crossings.

At the operational level, key stakeholders consist of Västtrafik, Gothenburg municipality, and land developers. Efforts are being made, ensuring that residential areas are located in close proximity to essential services and facilities. By strategically placing these services within walking or biking distance of residential areas, residents can easily access the necessities of daily life through sustainable travel options. However, physical barriers like the national road, Västerleden, and tramlines, disrupt pedestrian and cyclist flow. To address this, stakeholders plan to bridge these barriers, enhancing safety and convenience for pedestrians and cyclists. There is an overarching aim to enhance pedestrian and bicycle infrastructure to encourage those modes of transportation, including plans to widen sidewalks and create dedicated bike lanes. In order to densify the area, plans include repurposing parking spaces for the construction of new buildings to optimize land-use. Mobility measures are implemented in order to decrease the number of available parking spaces, promoting sustainable travel options instead.

The interviews revealed that the developer plays a significant role in shaping accessibility efforts and the planning process as a whole in Frölunda. One of their primary focuses is on enhancing property value. This can be done by developing Frölunda Torg with additional businesses, and expanding ground-floor services in buildings to create a more dynamic urban environment.

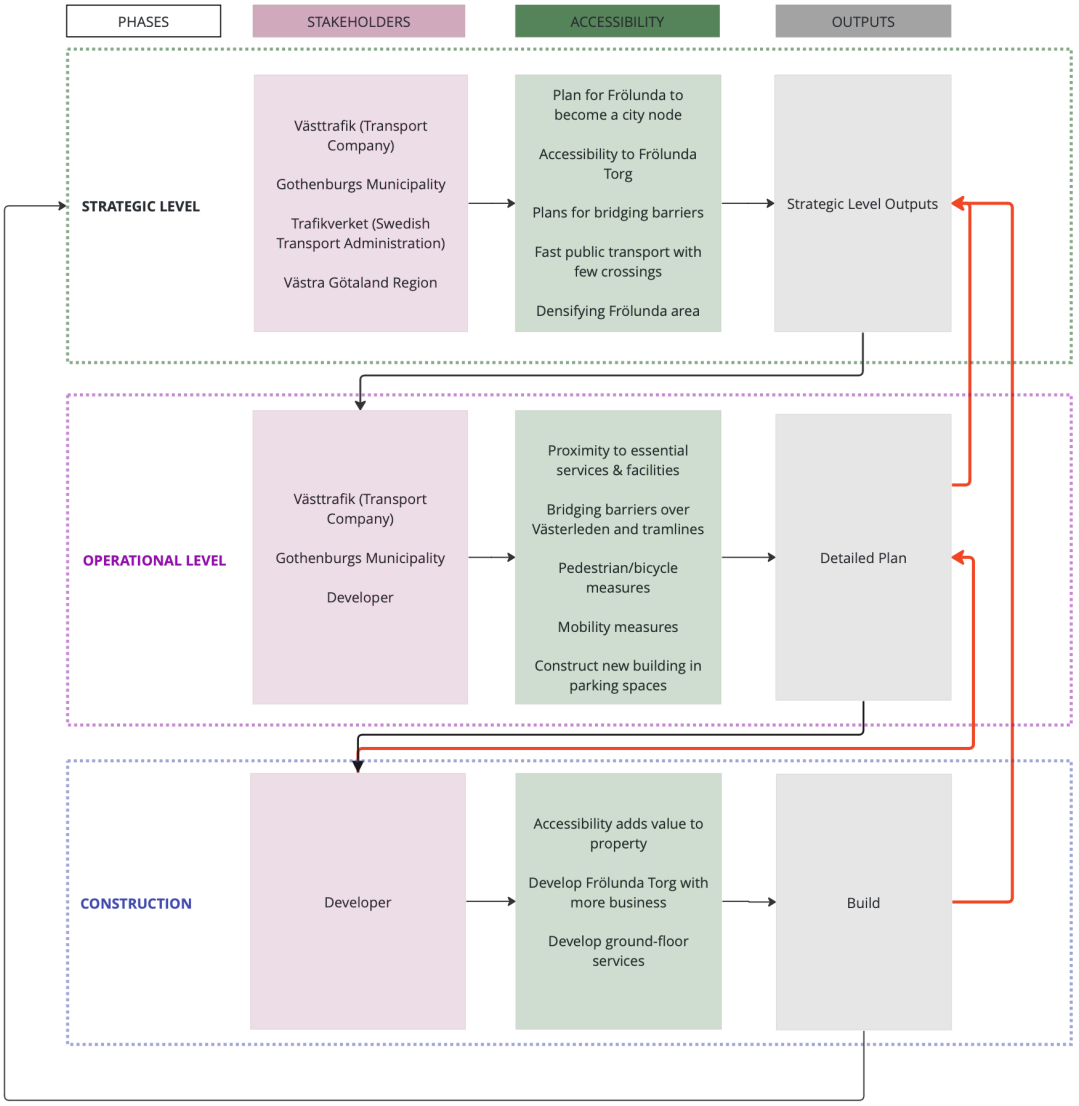


Figure 8 The planning process in Frölunda, Gothenburg. It shows the stakeholders involved in each phase, along with their strategies to implement accessibility and their outputs. The interplay between the different phases and stakeholders is illustrated using black and red arrows. The red arrows display interactions disrupting the flow.

Figure 8 illustrates the progression and interaction among different phases and stakeholders in the planning process in Frölunda. The strategic level stakeholders generate strategic level output, serving as input for the operational level. Operational stakeholders then collaborate to develop the detailed plan, forwarded to developers at the construction level for implementation of buildings and infrastructure. Simultaneously, several loops showcase backward movement rather than feedback. The interviewees working in the operational level noted that their work began before completion of strategic level tasks, causing the detailed plan to influence strategic level output, as depicted in Figure 8. Moreover, developers at the construction level influenced operational level plans, as they dictate construction decisions on

their land. This ability allowed them to initiate operational level planning before strategic level completion, directing the planning process.

Strategic level output guides subsequent phases, meaning that changes in the strategic decisions makes it necessary to adjust detailed plans. Due to unfinished strategic output, the detailed plan influences the decisions on the strategic level, often leading to adjustment of the outputs. This in turn impacts the detailed plans, often leading to revising already conducted work at the operational level. However, if the construction phase has already begun, the strategic level must adapt according to the built structures. The process in Frölunda involves work on both the strategic, operational, and construction phases at the same time, resulting in operational and construction level outputs feeding back into the strategic level. Consequently, both detailed plans and newly constructed environments impact strategic level output.

5.3 Challenges in the Planning Process in Gothenburg

During interviews, stakeholders raised several challenges related to Frölunda. One significant issue, emphasized by stakeholders involved at both strategic and operational levels, was the deviation of the planning process from its initial course. Detailed plans were initiated and executed before the completion of strategic documents, resulting in strategic issues being addressed only in the final stages. This lack of synchronization between detailed plans and strategic objectives underscores a critical issue in the process. One interview provided one example in Frölunda where a detailed plan started without accounting for an upcoming metro bus project that had not yet received approval. Consequently, part of the plan had to be removed later in the process to accommodate the metro bus. There is an external pressure for rapid progress leading to initiation of detailed plans before completion of strategic level outputs. Consequently, accomplished detailed plans in Frölunda have changed the strategic documents, altering the process as a whole. This makes the process ineffective and often leads to errors later on. Such inefficiencies have resulted in missed opportunities and have impacted external parties, such as the transport company Västtraffik. For instance, Västtraffik may have already allocated resources based on established routes, only to face revisions deciding not to develop the area at all.

Additionally all the interviewees highlighted the challenge regarding misalignment between stakeholders' interests. In Gothenburg, the developers have high influence due to their ownership rights. Conflicts often arise over land-use and financial responsibilities between the municipality and the developer. Aligning developers' interest with certain objectives is a challenge leading to one party compromising. While developers are driven by economic pressures, the municipality and region interest lies in broader concerns. As a result, economic pressures often dictate project outcomes, sometimes at the expense of environmental considerations. The interviewees from the municipality pointed out this consequence, underscoring its impact on their work.

The interviews with the institutional stakeholders also revealed internal conflicts within Gothenburg's municipality departments. Lack of communication and collaboration had led to misalignment, resulting in an excessive amount of unrelated paperwork. For instance, the city planning department can design plans that the department responsible for public transportation and infrastructure cannot accommodate. The interviewees also recognized a lack of collaboration and communication between the municipality's development department and Västrafik. When planning occurs, Västrafik is involved during the decision-making phase. However, as there is a significant timespan between the planning and the implementation phase, changes occur making it vital to reconnect to Västraffik continuously during the process. The interviewee from Västrafik noted that this is mainly due to a deeply embedded working culture that makes it difficult to comprehend the importance of maintaining contact.

Another challenge arises from the broad and non-specific visions outlined in the strategic documents and Målbild Koll 2035, posing difficulties in transportation and urban development planning. The interviews conducted provided insight into how these visions lead to various interpretations, resulting in a lack of alignment among stakeholders. For instance, conflicting objectives arise between prioritizing resources for improving pedestrian and cyclist accessibility, and ensuring efficient public transport movement. The municipality aims to enhance accessibility by establishing pedestrian-friendly crossings and minimizing barriers, favoring the development of dense, mixed-use urban areas. On the contrary, the public transport perspective prioritizes greater distances between crossings and the implementation of grade-separated intersections to facilitate smoother traffic flow and increased speeds. This tension is exemplified in the redesign of the tramline, highlighting the clash between urban development goals and concerns over public transport efficiency and travel time.

Urban development presents constant challenges, particularly in implementing accessibility measures for establishing services. Insights gathered from the interviews highlight the municipality's intentions to create opportunities for external stakeholders to develop services, but there remains uncertainty as to whether they will actually proceed with it. Thus, developers and owners play a significant role regarding accessibility implementation. Furthermore the interviews observed that the transportation supply poses a challenge in Frölunda, where the existing strain on public transportation will be intensified by densification. It was also noted that the national road, Västerleden, acts as a barrier between Frölunda and Tynnered, complicating efforts to bridge the gap between the two areas. Additionally, Frölunda's infrastructure, built with a focus on car-centric design during the sixties, makes it difficult to transition the area into pedestrian and cyclist-friendly spaces. Thus, conflict arises in urban planning efforts aiming to promote walking and cycling while reducing parking spaces.

One interviewee from the municipality described the multifaceted nature of accessibility within the city planning process. This interview brought up the perspective that consumption-centric meeting places, such as Frölunda Torg, are closed and inaccessible

during many hours of the day. During certain hours, those spaces cannot be utilized, reducing the city's vibrancy and safety.

5.4 Visions for the Planning Process

5.4.1 General Visions for Gothenburg

During the interviews, various visions for the planning process were revealed. One recurring theme was the importance of completing strategic-level outputs before initiating operational-level activities. For example, the interviewees emphasized the need for conducting a strategic analysis before initiating detailed planning to ensure feasibility and alignment with strategic objectives, thereby preventing potential errors down the line. Consequently, an emphasis was placed on the importance of thoroughly reviewing the processes before proceeding, with a primary focus on fostering effective collaboration among stakeholders. Gothenburg municipality has recently undergone reorganization, aiming for better coordination between departments, and a more tactical approach. The institutional stakeholders described the ideal process, starting with the development of a comprehensive plan, followed by strategic outputs. When the strategic outputs are completed, detailed plans can be initiated. Close collaboration is needed to achieve this while also letting the strategic issues be finished. Looking at the city planning process presented by Gothenburg's municipality, it is of essence to let strategic questions and issues to be settled in early stages.

All interviewees shared a common vision of achieving effective stakeholder involvement and fostering good collaboration. For example, in response to the challenge of limited involvement between Vässtrafik and the municipality during the implementation phase, Vässtraffik wants to be actively engaged throughout the process. However, the underlying issue stems from an embedded working culture, where not all people working in Gothenburg's municipality are aware of the need to contact Vässtraffik. Consequently, Vässtraffik has prioritized educational initiatives and stakeholder engagement within the municipality to facilitate information exchange between organizations. Another proposed solution involves reorganizing multiple offices into a unified development management entity, thereby ensuring alignment on key matters prior to consultation and achieving consensus at an earlier stage. This has recently been put to practice, through the reorganization within the municipality. The importance of proactively identifying critical issues and potential challenges as early as possible is underscored by the interviewees, emphasizing the need for clarity regarding goals and limitations.

5.4.2 Visions for Frölunda

In discussions about Frölunda, one interviewee highlighted that the area is not being fully utilized to its potential. Despite being in close proximity to the sea, which is a unique feature in Gothenburg, this aspect is not apparent to residents or visitors due to the area's structure. While connectivity to the city center is an important point, it's equally important to ensure accessibility within the area itself. Improving internal accessibility will enhance Frölunda's appeal, especially as it provides access to key attractions. Moreover, interviews revealed that Västerleden acts as a physical barrier between Frölunda and Tynnered, disrupting connectivity both within the area and with neighboring regions. By addressing this barrier, accessibility can be significantly improved for various modes of transportation, including public transport. The interviewee from the region emphasized that achieving good accessibility means providing viable alternatives to car usage, which can be realized by improving public transport. One challenge pertains to the visions outlined in the strategic documents and Målbild Koll 2035, which lack specificity, thereby prompting varied interpretations. To address this, stakeholders emphasized the importance of establishing a common understanding. This could be achieved through the creation of more binding guiding documents and by fostering clear communication among stakeholders.

Errors often occur due to external pressure leading to the operational- and construction level influences the strategic level. Several institutional stakeholders highlighted that the current process often leads to retakes, requiring additional time and capital. One interviewee emphasized the importance of a slower pace within the process, as it allows for deeper reflection and more meaningful discussions about the future of the city. The interview claimed that a slower pace would not imply a longer process then the existing one, as the current hastiness is proved to be inefficient because of the retakes. With a slower pace, the work on the strategic level would be finalized before the operational level is initiated, leading to a clearer course of the process. Consequently, time that is currently being spent on retakes will instead be invested in adding value to the projects, leading to overall improved quality.

One interviewee explained that due to the constant nature of changes in cities, urban planning must remain dynamic and flexible. Additionally, several interviews noted that it is critical to consider the already built environment, and to preserve the city's unique identity while promoting accessibility and accommodating growth. Integrating existing structures enriches urban planning efforts and adds value to the community. Another critical aspect that was brought up in the interviews involves maximizing the use of currently unused urban space to improve accessibility, efficiency, and sustainability within the city. One vision mentioned in one of the interviews encompassed transforming large car traffic areas into vibrant alternative spaces fosters the creation of diverse, inclusive public areas that prioritize accessibility for all citizens.

5.5 Target Planning Process in Frölunda

Examining the conducted literature review, the Gothenburg and Frölunda case study, and the current planning process in Frölunda and Gothenburg as revealed by interviews, provides valuable insights. These analyses contribute to the design of a target planning process, as depicted in Figure 9. While the stakeholders, aims, and outputs remain consistent with the current process, there are differences in the progression between phases.

The target process prioritizes the completion of the strategic level output before advancing to the operational level. Additionally, it emphasizes coordination between stakeholders at both levels, both prior to and following the creation of the strategic output. This coordination ensures that the operational level stakeholders understand the visions and plans established at the strategic level, preventing misinterpretation of the strategic output. Moreover, early coordination between operational and strategic level stakeholders at the beginning of the planning process enables them to guide the process collaboratively, without the detailed plans influencing the strategic level outputs. Effective understanding and communication between stakeholders across phases are essential for successful implementation of the target planning process. For this to be possible, it is necessary to slow down the pace in the whole process instead of stressing through the strategic level, leaving the strategic level output unfinished while initiating the operational level.

Rather than allowing the developer at the construction level to directly influence both the detailed plan and the operational level stakeholders, a shift is proposed. The developer should now engage in communication with operational level stakeholders but not have a decisive role in that phase. Once the detailed plan is finalized, it serves as an input for the construction level, where the planned buildings and infrastructure are realized. These constructed projects become a part of the city's structure and influence new plans for city development within the strategic level. However, they do not directly impact or alter the course of operational level work.

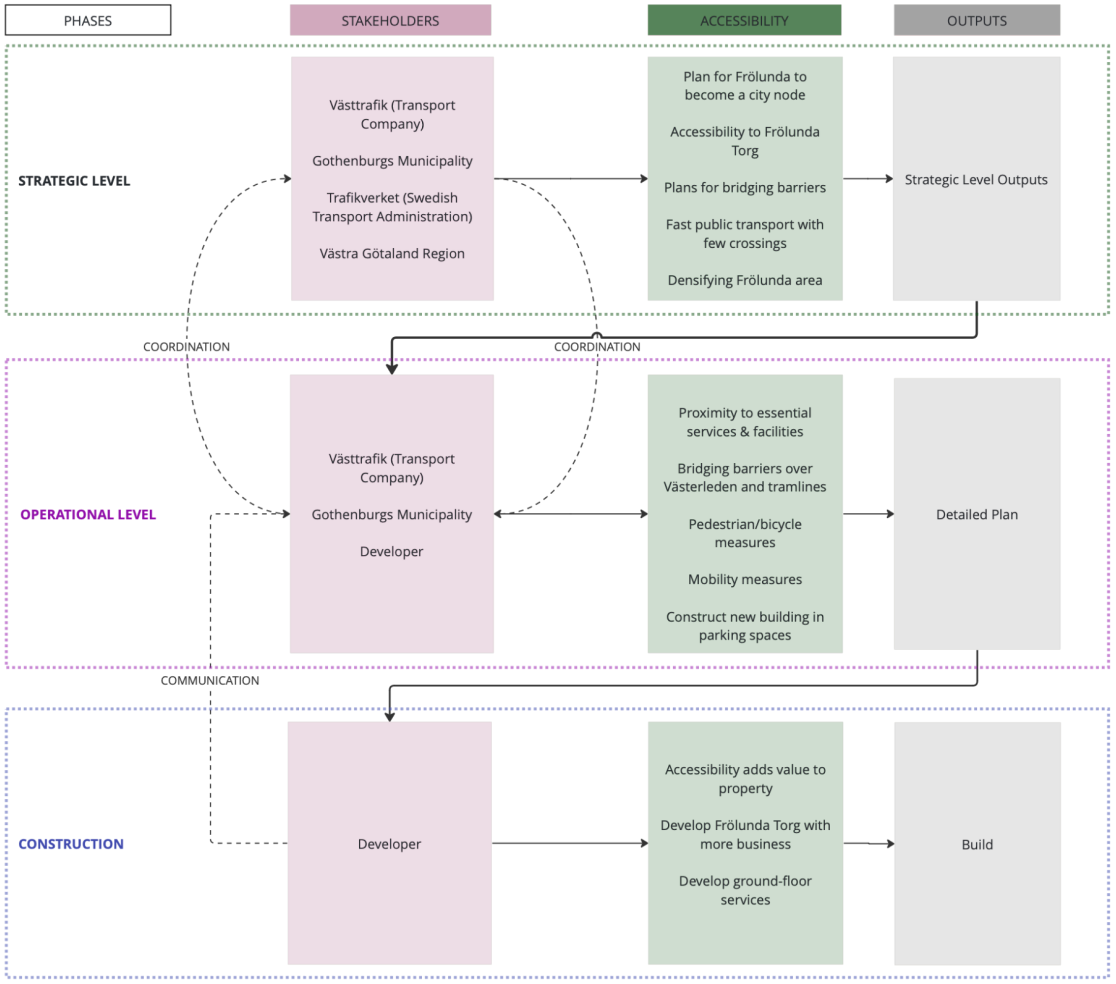


Figure 9 The target planning process for Frölunda. It includes the stakeholders, their aims for accessibility, and outputs involved in the different phases of the planning process. The flow is displayed with black arrows, and feedback loops are shown with dashed arrows.

6 Discussion

The conducted interviews showcased how the planning process is carried out in Gothenburg and in Frölunda, enabling a comparison with the findings from the literature review and the case study. The case study presents Gothenburg's planning process as linear, with each phase completed before the next phase begins. Each phase is clearly defined and has predetermined activities, making the process straightforward. In practice, phases often overlap, adding complexity to the process. According to the policy documents for Gothenburg, the institutional stakeholders collaborate closely and have the mandate in decision-making, leading to well-thought out projects aligning with broader goals regarding sustainability and urban development. However, in reality, decision-making in Gothenburg often adapts to the agendas of high-stakes actors such as developers. Thus, the linear process presented in the documents is rather an ideal process for Gothenburg than a process reflecting reality. This deviation from the prescribed linear process highlights a gap between theory and practice. Effective collaboration among stakeholders isn't always realized, leading to uncertainty regarding responsibilities.

6.1 Stakeholder Engagement in the Planning Process

The literature review highlights the importance of integrating accessibility into each planning phase to foster accessible cities. Effective stakeholder engagement is crucial for this integration, ensuring that each actor understands their role in promoting accessibility. There were gaps between planning for accessible urban environments and the actual implementation of accessibility policies. Since the planning process is not carried out according to the municipality description, misalignment among stakeholders occurs, hindering effective coordination and knowledge sharing. By fostering a collaborative environment, the planning process can better address the needs of all stakeholders and work towards creating inclusive and accessible urban environments.

Delving into Frölunda, the conducted interviews highlighted the disorganized workflow in the city planning process. There is an excessive amount of paperwork, making it difficult for stakeholders to stay updated of developments beyond their individual projects across the broader area. Moreover, there is an embedded work culture that does not promote communication and collaboration between stakeholders prior to project finalization. This leads to different stakeholders having difficulties working towards common goals. Despite the expectation that projects align with one another to fulfill the strategic vision of a more accessible Gothenburg, the reality falls short. In practice, the operational and construction phases often precedes the finalization of strategic-level outputs. This creates a cycle of misalignment, where operational activities influence strategic decisions, which subsequently impacts operational execution. Consequently, this leads to numerous revisions, with operational stakeholders assuming decision-making roles that belong to institutional stakeholders at the strategic level. At the strategic level, institutional stakeholders prioritize

broader objectives, with sustainable urban development being the overarching goal. On the contrary, operational-level stakeholders adopt a narrower focus, concentrating on specific project details. Consequently, when operational concerns influence strategic decision-making, the perspective on accessibility becomes constrained. In some instances, the motives of individual operational stakeholders have a decisive influence on the city planning, despite their focus not aligning with goals set on the strategic level.

In Frölunda, the interviews highlight the significant influence of operational-level stakeholders on strategic-level outputs. Developers, possessing the financial resources to invest in and develop their own land, have a large impact on the city planning process. They often direct operational-level activities, prioritizing their individual agendas. This dynamic creates a greyzone between developers and institutional stakeholders, as their actions impact strategic-level outputs and, consequently, the overall city planning. Thus, the role of the developer does not align with what is presented in the policy documents by Gothenburg's municipality. Ideally, finalized strategic-level outputs would provide clear guidance for operational-level activities, directing them towards broader accessibility objectives. Moreover, this would give institutional stakeholders at the operational level a more stable foundation when collaborating with external parties. By referring to the finalized strategic level outputs, stakeholders could better adhere to accessibility objectives. However, as the interviews were only conducted with institutional stakeholders, the developers perspective was not taken into account, which could have led to a one-sided point of view.

6.2 Coordination within City Planning in Gothenburg

The integration of public transport planning with land-use planning is another key aspect discussed in both the literature review and the interviews. This integration is crucial for promoting sustainable modes of transportation such as walking, cycling, and public transit. Stakeholders in the interviews shared strategies for promoting accessibility, however, there were some contradictory approaches between the institutional stakeholders. Although the same strategic documents were followed, some prioritized fast and effective public transport as a means to increase accessibility, while others put emphasis on bridging barriers such as tram-lines. Since the documents are not always clear, it often leads to different interpretations, making it hard for stakeholders with different perspectives to have common aims. Thus, a lack of stakeholder engagement across phases can be a consequence of unclear guiding documents. In order to increase the collaboration between urban planners and transport planners, a recent reform has been undertaken within Gothenburg municipality, attempting to integrate the two aspects of city planning. It remains unclear whether the reorganization has been effective yet, due to its recent implementation.

The case study described how successful coordination is achieved by understanding the influencing factors. One important factor is the contextual factor, influencing which priorities are set in case of goal conflict. Based on the results, the developers' agenda is often

prioritized due to certain norms within the industry, and the fact that they have the monopoly of the economic capital. The developers approach accessibility as it can promote economic growth and increase the attractiveness of an area. However, they might not aim for accessibility as a means to achieve sustainable cities. By connecting how the contextual factors create priorities within the city planning process, awareness can be raised and redirect the aim towards creating sustainable cities.

As previously mentioned, detailed plans were produced before the strategic level outputs were finalized in Frölunda. Some projects entered the construction phase before the work on the strategic level was completed. This does not align with the process described by the municipality, which is presented as an allegedly linear planning process. However, delving into the literature review it is evident that the planning process must not be linear. Using feedback loops and communication across phases can be positive as it allows for information and experience to be transferred between experts. Additionally, the study revealed that it is of essence that the initial steps, including the core strategies, are completed before any other work proceeds. This will not only save time and capital, but will lead to a higher value-result, as time spent on revisions will be used to add value to the project. Through an alignment in early stages, in combination with clearer directives, goal conflicts will be minimized, increasing coordination between stakeholders across phases.

The policy documents emphasize the benefits of a slower, well thought-out process rather than a rapid one. This aligns with one of the interviewees' vision on the planning process. However, in observing the planning process in Frölunda, frequent revisions result in wasted time. Embracing a slower process allows for strategic and tactical considerations, ultimately streamlining the process by minimizing the need for revisions. The process would therefore not take longer. Moreover, it's crucial to recognize the multifaceted aspect of accessibility and avoid addressing it from a narrow perspective. Understanding accessibility's complexities and its manifestation across different contexts is essential. By adopting a systems approach and establishing a stable foundation, accessibility can be comprehensively understood and effectively integrated into the city planning process.

6.3 The Systems Approach in the Planning Process

The literature highlighted that a systems approach can address the complexity of city planning. Unlike the linear process, which follows a straightforward progression, the systems approach seeks to comprehensively grasp all components, ensuring that crucial factors are considered and minimizing gaps. By interconnecting these components, a holistic view of the city planning process can be achieved. Rather than aiming for a simplistic, straightforward, linear process, the focus shifts to addressing the complexity of planning by adopting a systems approach. Through a complex systems approach, a simple procedure will not become complex but rather, the complexity within the process will be understood, making it a simple

matter. This enables working at different phases simultaneously without conflict, fostering mutual feedback and knowledge exchange among stakeholders.

When comparing various approaches to the city planning process, as presented by the literature review, case study, and stakeholder interviews, revelations emerged. The literature review approaches the city planning process as a complex procedure with interconnected elements. It describes the need for a systems approach in order to assess and understand how the planning process can be used as a tool to implement concepts such as accessibility. In contrast, the case study presents a simplistic, linear process as the official planning method in Gothenburg. However, insights from the interviews revealed that this linear model fails to be followed. Through the conducted interviews, the institutional stakeholders revealed their vision to adhere to the linear process, as it appears easy to follow. However, the linear process does not take into account the numerous stakeholders and their complex dynamics. Therefore, it becomes a simplified process that abstracts reality and fails to understand the intricacies of the city planning process. Thus, when stakeholders envision the linear process as an ideal one, it reflects the gap between researched knowledge found in the literature review, and their desired process. By oversimplifying the process, essential components are overlooked, leading to potential misinterpretations and oversights. This complicates stakeholders' ability to identify gaps and root causes of inefficiencies, particularly when they are solely fixed on the linear process.

When designing the target planning process it was viewed from a systems approach, where feedback loop is one of the main mechanisms, both between phases but also between stakeholders within phases. However, as previously mentioned, in order to succeed with applying a systems approach into the city planning process, it is essential to address all components, which is an aspect overlooked in the study. For instance, the individual- and temporal factors presented in the literature review, are two of the four main components regarding accessibility. However, this was not addressed in the study, as they require input from the public to be assessed. Consequently, the target planning process may not fully cater to all needs, making it open for further investigation. Moreover, developers were not interviewed, although they are important stakeholders given their crucial role in the system of city planning. During the interviews, the developers were perceived as a stakeholder that hindered urban development. In reality, the developers play a crucial role in both the operational and construction phase in the planning process, implying that they have valuable knowledge and impact the outcome. In contrast to the municipality, which works in a more theoretical manner, the developer is operative, thereby knowing what works in practice. The municipality often adopts a visionary approach, sometimes overlooking the practical feasibility of their plans. Additionally, while the municipality may prioritize other considerations over economics, profit remains a significant driver in the planning process which is an aspect that developers understand and incorporate into their decision-making.

6.4 The Study's Limitations

While this study provides valuable insights, it also has limitations. Specifically, a broader range of stakeholders should be interviewed to broaden the study's perspective. Perspectives from developers, the public, and politicians were not included. They play crucial roles in city planning as the public can express their desires, developers can respond to claims, and politicians hold a final decision-making voice. Including more diverse stakeholders would make the study more holistic and enhance its credibility. Moreover, future research could delve deeper into the systems approach within the city planning process. Understanding how adjustments to each component affect the workflow could enable city planners to implement accessibility more effectively. By predicting outcomes more accurately, planners could better achieve sustainable cities. Investigating how the systems approach can be utilized to implement accessibility in city planning processes could significantly impact the achievement of sustainability goals.

7 Conclusion

This study has examined the integration of accessibility in the city planning process in order to create more accessible cities. The study delves into the city planning dynamics in Frölunda, situated within the broader context of Gothenburg's urban planning landscape, with the aim to understand the challenges and strategies involved in urban development. By examining Frölunda, an understanding of Frölundas unique planning dynamics was obtained, as well as an understanding of the broader principles of city planning in Gothenburg, Sweden.

The literature review explores various aspects of how accessibility is approached in city planning processes to achieve sustainable and accessible cities. It highlights the integration of accessibility within urban planning to create inclusive environments that address the diverse needs of communities. Strategies discussed in the literature review include aligning land-use planning with transport planning, stakeholder engagement, and formulating strategies to promote walking, cycling, and public transport use. The interviews with key stakeholders provided insights into their roles, involvement in accessibility issues, phases of the planning process, required input and output documents, challenges faced, and suggestions for improving the planning process.

Stakeholder engagement was emphasized as a crucial aspect in both the literature review and the interviews. The literature underscores the significance of engaging with a diverse range of stakeholders to incorporate accessibility considerations into the planning process effectively. Similarly, stakeholders in the interviews acknowledge the value of engaging with various stakeholders, including community members and organizations, to address accessibility challenges. The comparison between the strategies outlined in the literature review and the identified approaches in the interviews revealed an alignment between theoretical concepts and actual planning in addressing accessibility. In the literature review, a key emphasis is placed on the critical need to align land-use planning with transport planning to create accessible urban environments. Stakeholders in the interviews demonstrate a shared understanding of this integration. However, this is not effectively implemented in reality, instead gaps emerge between the integration of the two components in city planning. Moreover, there is also a lack of coordination between stakeholders in Gothenburg's city planning.

Through the study, gaps were identified, showcasing the need for improvement in order to implement accessibility through the city planning process. The systems approach is analyzed in the study as a tool for enhancing the city planning process as it assesses its complexity. The conducted interviews revealed that there is a deviation between what is presented in policy documents and the practical process. While the literature review showed how system thinking can be used in order to achieve accessible cities throughout the planning process, Gothenburg municipality presents a linear process simplifying the complexity by neglecting crucial components. Thus, the linear process is neither attainable nor representative. By using a systems approach including all crucial components in city planning, the complexity could be

addressed. Consequently, the implementation of accessibility within the city planning process becomes more graspable.

This study makes contributions to the field of urban planning by examining how accessibility can be integrated into city planning processes to create accessible urban environments. By focusing on Frölunda within the context of Gothenburg city, the research provides both specific and general insights into the challenges and strategies involved in urban development. Additionally, practical recommendations from stakeholder interviews include the need for clearer directives, enhanced coordination among stakeholders, and a more iterative, feedback-driven approach to planning. Overall, this study contributes to urban development by emphasizing the importance of integrating accessibility into city planning and providing insights for key stakeholders such as urban planners.

8 References

Ahrens, G. (2018). Transport planning. https://nbn-resolving.org/urn:nbn:de:0156-559926643

Banister, D. (2007). Is paradigm shift too difficult in U.K. transport? Transport Reviews, 27(1), 71-86. https://doi.org/10.1080/10630730701531732

Banister, D. (2008). The sustainable mobility paradigm. Transport Policy, 15(2), 73-80. https://doi.org/10.1016/j.tranpol.2007.10.005

Bell, E. and Willmott, H. (2014) 'Editor's Introduction: Qualitative Research – Themes and Prospects', in Bell, E. and Willmott, H. (eds.) Major Works in Qualitative Research in Business and Management. London: Sage.

Bertolini, L., le Clercq, F., & Kapoen, L. (2005). Sustainable accessibility: a conceptual framework to integrate transport and land use plan-making. Two test-applications in the Netherlands and a reflection on the way forward. Transport Policy, 12(3), 207-220. https://doi.org/10.1016/j.tranpol.2005.01.006

Boisjoly, G., & El-Geneidy, A. M. (2016). How to get there? A critical assessment of accessibility objectives and indicators in metropolitan transportation plans. Transport Policy, 49, 185-195. https://doi.org/10.1016/j.tranpol.2016.12.011

Boplats. (n.d.). Boplats logotyp. Retrieved June 3, 2024, from https://www.boplats.se

Curtis, C. (2008). Planning for sustainable accessibility: The implementation challenge. Transport Policy, 15(2), 104-112. https://doi.org/10.1016/j.tranpol.2007.10.003

Curtis, C., & Scheurer, J. (2010). Planning for sustainable accessibility: Developing tools to aid discussion and decision-making. Progress in Planning, 74(2), 53-106. https://doi.org/10.1016/j.progress.2010.05.001

Da Silva, D. C., King, D. A., & Lemar, S. (2020). Accessibility in Practice: 20-Minute City as a Sustainability Planning Goal. Sustainability, 12(1), 129. https://doi.org/10.3390/su12010129

Dur, F., & Yigitcanlar, T. (2015). Assessing land-use and transport integration via a spatial composite indexing model. International Journal of Environmental Science and Technology, 12(4), 803–816. http://dx.doi.org/10.1007/s13762-013-0476-9

Geurs, K. T., & van Wee, B. (2004). Accessibility evaluation of land-use and transport strategies: Review and research directions. Journal of Transport Geography, 12(2), 127-140. https://doi.org/10.1016/j.jtrangeo.2003.10.005

Ghorbanzadeh, O., Moslem, S., Blaschke, T., & Duleba, S. (2019). Sustainable Urban Transport Planning Considering Different Stakeholder Groups by an Interval-AHP Decision Support Model. Sustainability, 11(1), 9. https://doi.org/10.3390/su11010009

Gil Solá, A., Vilhelmson, B., & Larsson, A. (2018). Understanding sustainable accessibility in urban planning: Themes of consensus, themes of tension. Journal of Transport Geography, 70, 1-10. https://doi.org/10.1016/j.jtrangeo.2018.05.010

Göteborgs Stad. (n.d.). Process - Steg för steg när vi utvecklar Göteborg. Retrieved from https://goteborg.se/wps/portal/start/goteborg-vaxer/sa-planeras-staden/process--steg-f%C3%B6r-steg-nar-vi-utvecklar-goteborg

Haraldsson, H. V. (2004). Introduction to System Thinking and Causal Loop Diagrams. Lund University

Hrelja, R., & Nyberg, J. (2012). Samordning av trafik- och bebyggelseplanering: Förutsättningar för hållbar mobilitet. VTI rapport, 742. Energimyndigheten. (Projektnummer: 50755, Dnr: 2009/0773-23). https://www.diva-portal.org/smash/get/diva2:670615/FULLTEXT01.pdf

Huang, S.-W., & Hsieh, H.-I. (2014). The study of the relationship between accessibility and mixed land use in Tainan, Taiwan. International Journal of Environmental Science and Development, 5(4).

Jiménez-Espada, M., Cuartero, A., & Le Breton, M. (2022). Sustainability Assessment through Urban Accessibility Indicators and GIS in a Middle-Sized World Heritage City: The Case of Cáceres, Spain. Buildings, 12(6), 813. https://doi.org/10.3390/buildings12060813

Johansson, E., Winslott Hiselius, L., Koglin, T., & Wretstrand, A. (2017). Evaluation of public transport: Regional policies and planning practices in Sweden. Urban, Planning and Transport Research, 5(1), 59-77. https://doi.org/10.1080/21650020.2017.1395291

Koster, H. R. A., & Rouwendal, J. (2012). The impact of mixed land use on residential property values. Regional Science and Urban Economics, 42(1-2), 177-188. https://doi.org/10.1016/j.regsciurbeco.2011.06.006

Kölbl, R., Niegl, M., & Knoflacher, H. (2008). Transport Policy: A strategic planning methodology. Transport Policy, 15(5), 273-282. https://www.sciencedirect.com/science/article/pii/S0967070X08000358?ref=pdf_download&fr=RR-2&rr=8664cb0eb8075687

Le Pira, M., Ignaccolo, M., Inturri, G., Pluchino, A., & Rapisarda, A. (2016). Modelling stakeholder participation in transport planning. Case Studies on Transport Policy, 4(3), 230-238. https://doi.org/10.1016/j.cstp.2016.06.002

Litman, T. (2006). Issues in sustainable transportation. International Journal of Global Environmental Issues, 6(4), 331. https://www.vtpi.org/sus_iss.pdf

Magaldi, D., & Berler, M. (2020). Semi-structured Interviews. In Encyclopedia of Personality and Individual Differences (pp. 4825–4830). Retrieved from https://link.springer.com/referenceworkentry/10.1007/978-3-319-24612-3_857

Miller, E. J. (2018). Accessibility: Measurement and application in transportation planning. Transport Reviews, 38(4), 551-555. https://doi.org/10.1080/01441647.2018.1492778

OECD. (2020). Improving Transport Planning for Accessible Cities. OECD Urban Studies. OECD Publishing. https://doi.org/10.1787/fcb2eae0-en

Rode, P., Floater, G., Thomopoulos, N., Docherty, J., Schwinger, P., Mahendra, A., & Fang, W. (2017). Accessibility in Cities: Transport and Urban Form. In Lecture Notes in Mobility ((LNMOB)) (pp. 239–273). Retrieved from https://doi.org/

Ruhlandt, R. W. S. (2018). The governance of smart cities: A systematic literature review. doi: https://doi.org/10.1016/j.cities.2018.02.014

Stadsbyggnadskontoret, Göteborgs Stad. (2020). Samrådshandling: Program för Frölunda inom stadsdelarna Rud och Järnbrott [Consultation Document: Program for Frölunda within the Districts of Rud and Järnbrott]. Göteborgs Stad. Retrieved from https://www.goteborg.se/planochbyggprojekt

Straatemeier, T., & Bertolini, L. (2019). How can planning for accessibility lead to more integrated transport and land-use strategies? Two examples from the Netherlands. Transport Reviews, 39(6), 1713-1734. https://doi.org/10.1080/09654313.2019.1612326

Tennøy, A., Hansson, L., Lissandrello, E., & Næss, P. (2016). How planners' use and non-use of expert knowledge affect the goal achievement potential of plans: Experiences from strategic land-use and transport planning processes in three Scandinavian cities. Progress in Planning, 109, 1-32. https://doi.org/10.1016/j.progress.2015.05.002

Urban Transport Administration. (2014). Gothenburg 2035: Transport Strategy for a Close-Knit City. Adopted by the Urban Transport Committee on February 6, 2014. Reg. no. 0894/11. ISSN 1103-1530. Commissioned by the City Executive Board, Gothenburg. https://goteborg.se/wps/wcm/connect/6c603463-f0b8-4fc9-9cd4-c1e934b41969/Trafikstrategi_eng_140821_web.pdf?MOD=AJPERES

van Wee, B. (2022). Accessibility and equity: A conceptual framework and research agenda. Journal of Transport Geography, 104, 103421. https://doi.org/10.1016/j.jtrangeo.2022.103421