



**CHALMERS**  
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# **Implementing Local Cycling Policies Barriers and Success Factors in Gothenburg**

*Master's Thesis in the Master's Program  
Industrial Ecology*

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Department of Technology Management and Economics  
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CHALMERS UNIVERSITY OF TECHNOLOGY  
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# Implementing Local Cycling Policies Barriers and Success Factors in Gothenburg

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A bicycle with a view of Gothenburg in the background.

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## Abstract

Gothenburg is growing. There is a need to ensure that the transportation system functions. The city has ambitions of promoting cycling and other sustainable modes of transport. Two goals have been set for cycling. The number of cyclists should increase by three times and 75% of the people in Gothenburg should think that the city is a cycling friendly city by 2025. The purpose of this thesis is to investigate how cycling policies are implemented in Gothenburg. A theoretical framework of two orientations of implementation theory is used. The implementation theories are named top-down and bottom-up. Opportunities and barriers for successful policy implementation have been investigated. They are based on the city's strategic documents and interviews performed with politicians, officials and managers working for the municipality, and a cycling activist from a cycling interest group. Using a top-down lens, strategic documents have been analysed as a way of understanding how policies are supposed to be implemented. Thematic areas have been identified from the interviews and analysed in relation to the strategic documents. This method has allowed the combination of the two orientations of implementation theory.

The results show that the implementation process for cycling measures is mainly run by individual actors. Cycling is not integrated in the strategic city planning. Difficulties seem to arise when urban space is to be reallocated from the car to the bicycle. The goal of the city is to increase all of the sustainable modes of transport, i.e. walking, cycling, and public transportation. Local individual actors focus on different transport modes, which invites for conflicts when prioritizations are to be made. Moreover, common strategies and visions for cycling are lacking between actors within the municipality. They are also lacking between municipal and non-municipal actors.

The analysis show that the implementation process is guided by the city's strategic documents containing goals, measures, strategies, and principles. This can be regarded as a top-down structure. Moreover, laws and regulations, existing knowledge, support of interest groups and sovereigns, is further part of the top-down base. Bottom-up tendencies identified are project-specific solutions. They are produced based on the level of interest and knowledge of planners. An existing cycling group and individual officials gather inspiration and knowledge from other cities and share knowledge. They do so both internally at the Urban Transport Administration and externally, in cycling networks. Furthermore, officials are experimenting with new measures, in order to change existing regulations. The implementation process is continuously developed by following-up and evaluating implemented measures.

Several conclusions can be drawn. There is a need to find common visions for all involved actors. In early processes, cycling should be part of the strategic city planning, rather than being dependent on individual actors. A continuous political will is necessary locally and nationally to ensure that cycling is taken seriously. Moreover, the implementation process needs to continue to be dynamic in order to find new, innovative measures.

Keywords: Cycling, Implementation theory, Top-down implementation, Bottom-up implementation, Policy implementation, Sustainable transport



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## Wordlist

### *Glossary:*

<b>English</b>	<b>Swedish</b>
Accessibility	Tillgänglighet
Area regulation	Områdesbestämmelser
Building permit	Bygglov
Cycling speed areas	Cykelfartsgator
Cycling crossing	Cykelöverfart
Cycling passage	Cykelpassage
Local plan	Detaljplan
Implementation	Implementering
Mobility – The ease of moving in traffic	Framkomlighet
Mobility ( <i>mobilitet</i> ) – Being mobile and not dependent on a specific transport mode	Mobilitet
Stakeholder	Aktör/ intressent

### *Translation of names of documents:*

<b>English</b>	<b>Swedish</b>
Action plan	Handlingsplan
Comprehensive plan	Översiktsplan
Planning and building act	Plan- och bygglagen (PBL)
Technical guide	Teknisk handbok

### *Translation of names:*

<b>English</b>	<b>Swedish</b>
Building committee	Byggnadsnämnd
City council	Kommunfullmäktige
County administrative board	Länsstyrelse
District administrations	Stadsdelsförvaltningar
Local federation of Gothenburg	Göteborgsregionens kommunalförbund (GR)
Parking company	Parkeringsbolaget
Urban transport committee	Trafiknämnd

### *Translation of Swedish names used in this thesis:*

<b>Swedish</b>	<b>English</b>
Stadsbyggnadskontoret	Urban Planning Administration in the City of Gothenburg
Fastighetskontoret	Real Estate Administration in the City of Gothenburg
Trafikkontoret	Urban Transport Administration in the City of Gothenburg
Trafikverket	Swedish Transport Administration
Västtrafik	The public transport company in Gothenburg



# 1. Introduction

The intent of this chapter is to give a short introduction to the thesis, as well as presenting the aim and objectives, limitations, specification of issue, and the method used. In the end of the chapter, an outline of the thesis is presented.

## 1.1. Background

Transport is in many ways vital for a city to function properly. People need to be able to move around, as well as it is necessary for the delivery of goods. Despite the benefits, transport systems cause negative impact in many ways, such as greenhouse gas emissions, congestion, local air pollution and traffic safety (van Nunen et.al., 2011). As urbanization will continue to increase (United Nations, 2014), cities will remain the most impacted by transports, as it is in cities where most people live and where there is most traffic. There is a need to rethink the idea of the car-based society largely established by traffic planners in Sweden during the 1950s and 1960s (Lundin, 2008), and which have continued to form the cities we live in today.

In order to achieve a sustainable transport system, it is necessary to understand what sustainable development is. The most well-known definition of it is the one presented by Brundtland in 1987: *“Sustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future”* (Brundtland, 1987). Achieving sustainability further means taking into account environmental, social, and economic aspects of sustainability. The overall goal for transportation in Sweden is to ensure that it is economically effective and sustainable in the long term for both the citizens and the trade and industry sector. Moreover, specific goals have been decided, meaning that focus should be on accessibility, safety, environment, and health (Regeringskansliet, 2017).

One possible solution to the many negative impacts that today’s transport system is causing is cycling. Several cities have acknowledged cycling as a viable and sustainable transport mode, such as Amsterdam and Copenhagen. In recent years, cities without the same strong history for cycling, such as London, New York City and Barcelona, have begun to improve their transport systems for cyclists (Fishman, 2016). The benefits of reducing car use to the benefit of cycling are many. Reduced greenhouse gas emissions, air pollution and congestion, less material use, economical affordable in relation to the car, thus also socially equitable, and it is positive for people’s health (Pucher & Buehler, 2014). Hence, increased cycling is beneficial for all three pillars of sustainability; environmental, economic, and social (Pucher & Buehler, 2014).

Gothenburg, Sweden, is a city with ambitions on increasing the number of cyclists and making the city cycling friendly. In 2015, the city released a new cycling program (Trafikkontoret, 2015), with the vision to create a city easily accessible for all where the bicycle is a competitive transport mode. The goals presented in the program are that in 2025, three times as many trips should be made by bicycle in the city compared to 2011. The goal is thus to increase the share from 6% in 2011 to 12% in 2025. Moreover, three out of four should think that the city is a cycle friendly city in 2025.

In order for a city to increase cycling as a modal share, different aspects are important to consider, such as people’s attitude to cycling, traffic safety (Banister, 1990), the attractiveness of the bicycle in relation to the car and bicycle infrastructure (Ekblad et.al., 2016; Tolley, 2003), as well as the bicycle in relation to other transport modes, such as public transportation (Oldenziel et.al, 2016:10). Transport policy and how politicians and policy makers have approached cycling has during history also shown to be an important pillar for achieving

increased cycling (Oldenziel et.al, 2016:10). Another aspect to consider is integrating cycling in the planning process (Banister, 1990; Koglin, 2015).

Earlier studies have been done regarding barriers and challenges in the local transportation planning for increased cycling in Swedish municipalities (Aretun & Robertson, 2013). These studies have more specifically investigated how policies are implemented in the planning process, as well as how the deficit of implementation can be reduced. This thesis aims to further contribute to this research area by investigating the city of Gothenburg and the role of cycling in the city. Taking into consideration both aspects regarding which measures that are implemented, as well as how they are implemented, is of importance (Aretun & Robertson, 2013). Moreover, further studies have shown that there is a need for investigating barriers for successful policy implementation in the planning processes (Ross & Dovers, 2008; De Gruyter et.al., 2015; Low et.al. 2005).

Despite the good intentions, cycling programs and other strategic documents empowering cycling is not enough to achieve a sustainable transport system; policies and measures need to be implemented. Understanding how policies are implemented in Gothenburg, and what barriers and success factors that exist in the implementation process is thus relevant, in order to understand how the goals set for cycling in the city can be achieved.

## 1.2. Aim & objectives

The aim of this thesis is to understand how cycling policies better can be implemented in a local authority perspective. To understand this, Gothenburg is used as a case study.

The following questions will be addressed in this study, to answer the aim presented above:

- How are cycling policies implemented in Gothenburg?
- Which barriers and success factors exist for successful policy implementation in Gothenburg?

## 1.3. Limitations

The study has not focused on any policies regarding regional development, such as the interconnection with surrounding municipalities. Moreover, limitations have been done to the amount of different professional groups and actors within the city of Gothenburg. This is further described in the method chapter.

## 1.4. Methodology

The method used to answer the research aim has been to, based on implementation theory, analyse strategic documents used in the planning process in Gothenburg and perform interviews with actors in the city, see Figure 1.



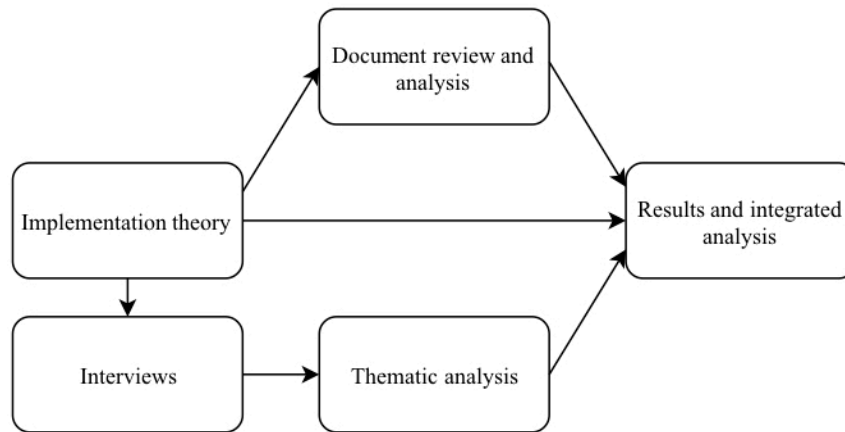


Figure 1: Method used in this thesis.

In the document analysis, the cycling program has been reviewed, to understand how the program is intended to be implemented. In addition, further strategic documents have been analysed to better understand what role cycling has in the overall urban planning process. These documents are the city's comprehensive plan, the transport strategy, the urban development strategy, the parking policy, and the road safety program. The document analysis is useful in understanding how cycling is accounted for in the different documents and if the information they contain is coherent and consistent.

Interviews have been held with professionals that are involved in the urban and traffic planning process, in order to understand how they implement cycling policies. Stakeholders that have been interviewed are local politicians responsible for setting cycling policy goals, officials from Trafikkontoret and Stadsbyggnadskontoret, and an activist from an interest group, see Table 1. A variety of professional groups have been interviewed, working on different levels of the planning process, in order to get a holistic view of the process and its different stages and actors. Taking into consideration professional groups on different levels can also allow to better understand where in the process the issue of cycling might be neglected. By integrating a document analysis with interviews, a deeper understanding of the potential barriers and success factors to successful policy implementation can be achieved.

The interviews have been semi-structured, to allow new ideas to arise throughout the process. Having a semi-structured interview gives the opportunity for several topics to be explored, without having the interviewees to end up in situations where there are only some predetermined choices possible (Bryman, 2008). The number of interviews has been based on recommendations from social research methods literature. Recommendations that a minimum of twelve interviews are to be performed with a maximum of 60, or until theoretical saturation has been achieved, i.e. theoretical sampling (Bryman, 2016:410). 19 interviews have been performed, as presented in Table 1. An interview guide has been used as structure for the interviews, see Appendix A. The questions have thereafter been adapted to the interviewees, based on profession. From the interviews, thematic areas have been identified based on the answers and the document analysis.

Table 1: List of interviewees.

<b>Profession</b>	<b>Organization/ committee/ interest group</b>	<b>Number of interviewees</b>
Traffic engineer	Trafikkontoret	2
Traffic planner	Trafikkontoret	2
Official, strategic level	Trafikkontoret	2
Official	Trafikkontoret	2
Project leader	Trafikkontoret	1
Planning coordinator	Trafikkontoret	One interview conducted with two planning coordinators
Manager	Trafikkontoret	2
Official, strategic level	Stadsbyggnadskontoret	1
Project leader, planning level	Stadsbyggnadskontoret	1
Planning architect	Stadsbyggnadskontoret	1
Politician	Urban transport committee	3
Cycling activist	Interest group	1

### 1.5. Outline of the thesis

The thesis is divided into seven chapters, which are described below.

Chapter 1 – INTRODUCTION. A short background to the thesis is presented, the aim and objectives, delimitations, and the method used.

Chapter 2 – POLICY IMPLEMENTATION. The theory used is presented in general terms, and related to cycling specifically.

Chapter 3 – PLANNING OF CYCLING IN GOTHENBURG. The city of Gothenburg, Sweden, is put into context. The municipal planning process, actors involved, and existing cooperation for cycling measures is described.

Chapter 4 – DOCUMENT REVIEW AND ANALYSIS. Strategic documents of Gothenburg are reviewed and analysed for themselves, and related to each other. Moreover, the documents are analysed in relation to the theory used, i.e. implementation theory.

Chapter 5 – INTERVIEW RESULTS. The results from the interviews are presented into thematic areas and discussed in relation to the strategic documents from Chapter 4, and to implementation theory.

Chapter 6 – DISCUSSION. The method and delimitations made are discussed, and recommendations for further studies are suggested. Also, the results from the document review and analysis, and the results from the interviews are discussed.

Chapter 7 – CONCLUSIONS. Drawing on the insights made from the thesis, the most important policy implications for cycling policy implementation in Gothenburg are presented, describing barriers and success factors.

## 2. Policy implementation

The following chapter will focus on two main orientations of implementation theory; top-down and bottom-up implementation. The two approaches will be presented and form a basis for the analysis of this thesis. Thereafter, combined approaches of the top-down and bottom-up approaches are discussed.

### 2.1. Implementation theory

Policy implementation considers the difference between policy decisions and what is actually implemented (Hill & Hupe, 2002:2). The literature around the theory has changed and taken different shapes (Watson, 2014:447). Two approaches that have evolved are the top-down and bottom-up approaches. The two approaches have both been criticized for not fully integrating the complexity of policy implementation since they have different focus (Sabatier, 1986, as cited in Mascini et.al., 2012:1547), but they have been commonly used in recent research, as they have proven to be useful theories in understanding implementation (De Gruyter et al., 2015; Ison & Rye, 2003). Several scholars have acknowledged the fact that both of these approaches can contribute in understanding policy implementation. Moreover, there is an agreement that a synthesis of the two is needed, in order to understand the complexity of policy implementation (Lafferty, 2004:40).

#### 2.1.1. The top-down approach

This approach focuses on the realization of a specific policy program, where the goals have been set by policy makers (Sabatier, 1986, as cited in Mascini et.al., 2012:1547). It tries to evaluate a policy program from its effectiveness or its goal attainment (Glachant, 2001:44). The policy objectives and goals are in the top-down approach determined by authorities. Later, organizations and departments below the authorities specifies how the policies should be achieved. Strong bureaucratic involvement is therefore needed, which implies control, clarity, persuasion, and consent throughout the process. Failure in implementation results from unclear goals and objectives, causing confusion and friction for the implementers. Moreover, ambiguous lines of responsibilities and weak accountability can make the implementers diverge from the stated goals (Watson, 2014:447).

Top-down implementation focuses on several different factors influencing how well implementation is achieved (Ison & Rye, 2003:224). These (pre)conditions for successful implementation acknowledges the importance of policy design, resources, hierarchy, organizations, control of those in authority, co-ordination between agencies, and changes in socio-economic conditions and political support (Glachant, 2001:44-45).

The top-down approach has received some criticism, based on the fact that it does put too much weight on the policy makers and the decisions taken from authorities, and neglecting other potential, but not formally evoked, strategies to achieve the goals (Sabatier, 1986, as cited in Mascini et.al., 2012:1547). Gunn presents ten preconditions for successful policy implementation (Gunn, 1978, as cited in Ison & Rye, 2003:224-225). These conditions have received criticism, as they can be considered to focus too much on the decisions made from the top. Despite this, these conditions have been used by Ison & Rye (2003) in their work on travel plans and road user charging, where they acknowledge that Gunn's conditions presents a useful structure to analyze policy implementation. The structure presented by Gunn is termed as "perfect implementation", which in real life is unattainable. It does however provide a framework that can help policy makers and implementers better understand where focus may be put, in order to improve the implementation process (Ison & Rye, 2003:225). On the same note, De Gruyter et.al (2015) uses a framework for successful implementation, presented by

Sabatier & Mazmanian, containing six sufficient factors for successful implementation (Sabatier & Mazmanian, 1981, as cited in De Gruyter et.al, 2015).

1. **Clear and consistent objectives.** What is to be accomplished needs to be precisely formulated, ranked and communicated to implementing officials. Measures to implement must be clear, accurate, consistent and unambiguous.
2. **Adequate causal theory.** Establishment of the link between the problem and the solution. Understanding what caused and what can solve the problem.
3. **Implementation process legally structured to enhance compliance.** The implementation process should be structured in such a way that the probability of the officials to successfully implementing the measures is maximized. This includes sufficient resources and supportive decision rules.
4. **Committed and skillful implementing officials.** Sufficient education, expertise and willingness is needed to be able to administer the measures. Moreover, sufficient time, equipment and funds must exist.
5. **Support of interest groups and sovereigns.** The continuous support of interest groups and political sovereigns is important throughout the implementation process.
6. **Changes in socio-economic conditions that do not undermine political support or causal theory.** New political, social or economic events should not undermine political support or causal theory.

*Description of list adapted from Sabatier & Mazmanian (1981, 1983 & 1986), as cited in De Gruyter et.al (2015:26) and Marzotto et.al (2000:95-96).*

This model is used in this thesis as a base for the top-down approach in the interview guide, see Appendix 1. Furthermore, it used a tool for the analysis of the document review and the interviews.

### 2.1.2. The bottom-up approach

The bottom-up approach looks at the problem from another end. Instead of solely focusing on the implementation of policy, it highlights the importance of actor interaction (Sabatier, 1986, as cited in Mascini et.al., 2012:1547). The implementation is more focused on so called “street-level bureaucrats”, working on the ground and using their knowledge and interactions with other actors (Lipsky, 1980, as cited in Watson, 2014:447). These officials work more closely together, in order to define and solve policy formulation and response. The process thus involves experimentation, creativity, and knowledge exchange through different types of coalitions and networks (Watson, 2014:447). O’Toole (Peters & Pierre, 2012:293) states that working in an inter-organizational setting complicates the task of policy implementation (even though it can enhance the effectivity), since there are fewer opportunities to work together, as well as they might have different routines, specialized languages, and different perspective on things. Pülzl & Treib (2007:93) describes the aim of studying bottom-up approaches as investigating actor interaction, and how these actors together find strategies to solve occurring problems in the policy delivery. In contrast to the top-down approach, which is solely looking at the implementation stage of policy, the bottom-up approach investigates the entire process, i.e. how policies are defined, framed, implemented, and lastly redefined and reformulated (ibid; Glachant, 2001:45). This approach is much less of control than it is of adapting policy to local policy or a changing context. The bottom-up approach thus focuses more on the evolution of policy, not seeing it as static (Glachant, 2001:51-52).

A critique towards working in a bottom-up way is that street-level bureaucrats make simplifications when implementing policies, and that this is done with too little time and

information (De Gruyter et.al., 2013:26). Lack of agreements regarding goals, not considering all relevant groups in the process, as well as too much control over implementers can harm the process for reaching the targeted goals (Watson, 2015:447). De Gruyter et.al. (2013:33, from O'Toole, 2007), mentions that those implementing policies rarely are being part in the process of putting the policies in place.

### 2.1.3. Implementation from a bidirectional perspective

In the search of resolving the weaknesses of both the top-down and the bottom-up approaches, researchers have continued the debate and tried to merge the two approaches. There is a general agreement the two approaches need to be combined, and possibly integrate other theories as well, in order to fully describe implementation. Since policies are so versatile and dependent on numerous factors, and differing between various fields and sectors, it is difficult to find a general methodology (Hill & Hupe, 2002:82).

Gaffron (2003) shows in his study of local policy implementation in Great Britain that different factors affect the implementation process. No single orientation of either top-down nor bottom-up implementation is described, but rather an integration of the two. The implementation is described as processes and interactions of actors and their behaviour. The implementation results are described as output and outcome, which can be referred to the adequate causal theory, presented by Sabatier & Mazmanian (1986). External factors such as climate and topography, and the policy formation and national policy context are described to influence the implementation process of cycling policies in Great Britain.

In this thesis, both top-down and bottom-up factors are regarded, in order to understand how the implementation process of cycling measures in Gothenburg works.

## 2.2. Implementation and cycling

### 2.2.1. What cycling measures to implement

Research about implementation and cycling has been conducted, studying barriers and success factors on a local level (Aretun & Robertsson, 2013; Wennberg & Nordlund, 2011; Gaffron, 2003). According to Aretun & Robertson (2013), it is of importance to consider both how policies are implemented and what is being implemented. Four general research areas can be identified, regarding what is being implemented:

- *System* - Sustainable transport systems regarding integrated traffic and housing planning focuses on the accessibility of different transport modes in the city.
- *Structure* - Transport infrastructure and design focuses on the design of the infrastructure, depending on different transport modes and the conflicts between the modes regarding mobility and traffic safety.
- *Behavioural change (structure)* - Transport planning and modelling addresses the relation between supply and demand on vehicle transport and how it can affect other transport modes.
- *Behavioural change* - The fourth research area looks at the relation between the individual's attitudes and behaviour (Aretun & Robertson, 2013).

Previous research has shown that multiple measures need to be done, in order to achieve a positive effect on the cycling share (Aretun & Robertsson, 2013; Pucher et.al (2010), Harms et.al (2016:150), and Wennberg & Nordlund (2011:14).

### 2.2.2. How to implement cycling measures

When implementing cycling measures, one barrier to policy implementation is path dependency. This is explained by the fact that professional groups have been affected by their education, their work, and that the organization of the work that for a long time has been adapted for car traffic (Aretun & Robertson, 2013:5). Knowledge has been acknowledged as a success factor by Wennberg & Nordlund (2011), who argue that the right knowledge is required in order to implement measures, but also to be able to question current ideals so that path dependency can be changed. Generating knowledge areas in planning processes can also be of use to find integrated strategies (Te Brömmelstroet & Bertolini, 2010:99), thus empowering inter-organizational cooperation (Wennberg & Nordlund, 2011). Inter-organizational working structures does not on the other hand imply that officials will work in an inter-organizational way, since they might maintain and stick to their competence areas (Aretun & Robertson, 2013). Being able to adapt to policies, experimenting with new measures, integrating citizen participation, and having strong leaders has been shown to be successful approaches to effectively implement cycling programs in Dutch medium-sized cities (Harms et.al, 2016:150). A barrier to successful implementation is that there is a lack of planning support to help the workers plan for cycling (Aretun & Robertson, 2013:36). Combining research about new tools and “learning by doing” has been shown to be effective in other research areas, such as in sustainable energy supply (Sagar & van de Zwaan, 2006:2607).

Another important aspect in implementing measures, argued by Wennberg & Nordlund (2011:12), is to have clear structure and routines, so that the bicycle is not neglected throughout the planning process. An example is to involve people that have responsibility to make sure that cycling is regarded in local plans. Moreover, having a or several persons with specific and in-depth knowledge about cycling issues is of importance, in order for other officials to know who to turn to when problems arise. Wennberg & Nordlund (2011) showed in their study about the Swedish cities Lund and Malmö, that cycling questions should be handled in a more consistent and systematic way in the planning process of local plans. Therefore, it should in between the comprehensive plan and the local plan exist a more explicit description of the planned area. This should be done in order to better describe how the accessibility of cyclists can be ensured. Moreover, the study acknowledges that there should exist a political will and granting financial resources for investments. Wennberg & Nordlund (2011) also points out the importance of considering the bicycle as an own transport mode, i.e. separating it from other transport modes, including walking. This should be consistent throughout the different levels of the planning process, i.e. comprehensive, strategic, and detailed planning.

Wennberg & Nordlund (2011) argue that housing planning should be supportive of cycling as a transport mode, i.e. the accessibility and attractiveness of the bicycle. A strategic planning document on a comprehensive level should exist. This should ensure that there exists a comprehensive cycling network in a cycling strategy or program, as well as that there are principles and norms for cycling parking. Moreover, the detailed planning should ensure space for cycling in the detailed planning map and in the planning description (Wennberg & Nordlund, 2011). There also needs to be a clear link to the operations and maintenance phase so that the accessibility for cyclists is guaranteed over time (Wennberg & Nordlund, 2011; Harms et.al, 2016).

As there is limited space in cities, conflicting interests may arise in which prioritization must be done between different transport modes and solutions (Aretun & Robertson, 2013; Wennberg & Nordlund, 2011). Wennberg & Nordlund (2011:13) argues that it is during the local planning process that most conflicts arise, whereas in the comprehensive planning, the

majority of actors agree on the goals. External factors influencing the implementation of cycling measures has also been regarded. Harms et.al (2016:150) notes that demographic changes can have an influence, such as population increase or the amount of people living per household.

Implementing cycling policies is a complex process, where different types of measures are to be accounted for. Furthermore, several factors, dependent on many actors, affect the planning and implementation processes in themselves.



### 3. Planning of cycling in Gothenburg

This chapter gives an introduction to the role of cycling in Gothenburg. The municipal planning process is described, as well as actors involved, and cooperation between actors regarding cycling measures in the city.

#### 3.1. Cycling towards sustainability in Gothenburg

The city of Gothenburg with its 564 000 inhabitants has evolved throughout its soon to be 400-year long history. For the infrastructure, the city has in a historical perspective put a lot of focus on public transportation, especially trams and buses, as well as on car traffic. The investments made in traffic routes during the sixties and seventies have resulted in older roads and communication paths being ruptured. This has created physical barriers for cyclists and pedestrians in the city (Trafikkontoret, 2013:24). Moreover, it can be noted that Gothenburg is evolving with a lot of housing and infrastructure projects being planned, such as projects included in the West Sweden Agreement. These projects include the West Link train tunnel, the Marieholm tunnel, and the bridge of Hisingen (Trafikkontoret, 2014:72). Numerous projects are included in this agreement, where large focus is put on cycling and public transportation.

In the city of Gothenburg, cycling and its positive aspects have been recognized as important for the future development of the city. As presented in the city's recent cycling program, Gothenburg has set goals and a vision for the future where cycling plays an essential part in the transportation system of the city (Trafikkontoret, 2015). The goals as described in the program are that the number of trips will threefold from the reference year 2011 until 2025, and that three out of four believe that Gothenburg is a cycle friendly city in 2025. The current development of cycling in Gothenburg is positive, where the average annual increase of cycling is 3.1% since 2011. Although positive, the increase is not enough if the aim of three times as many trips are to be made until 2025. To achieve this, an average annual increase of 8.2% is needed. Moreover, the share of people thinking that the city is cycle friendly was in 2017 42% (Trafikkontoret, 2017). Currently, the cycling network of 811 kilometres is divided into a commuting cycling network, an overall cycling network, and a local cycling network, see Figure 2 below, which is presented in the cycling program.

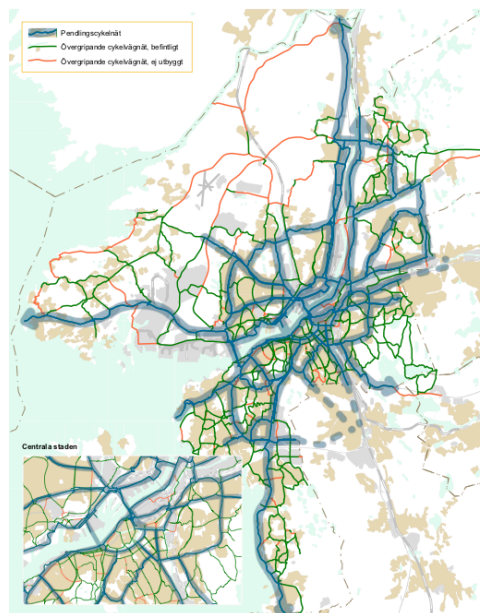


Figure 2: Commuting cycling network in blue, overall cycling network in green and overall cycling network to be built in orange. This is not an expansion plan, but requirements for how the cycling network should be improved (Trafikkontoret, 2015:40).



### 3.2. The municipal planning process

The municipal traffic planning process describes where new infrastructure should be built, and how it should be built. In the municipal process, it is mainly Trafikkontoret and the urban transport committee (*Trafiknämnden*) that works with Stadsbyggnadskontoret (the urban planning administration) who is the owner of the process, Fastighetskontoret (the real estate administration), and the district administrations (*stadsdelsförvaltningarna*) (Trafikkontoret, 2013:25).

#### 3.2.1. Planning and building act (Plan- och bygglagen, PBL)

The Planning and Building Act steers the physical planning of the municipality. There exist three types of physical infrastructure plans; comprehensive plan, local plan, and area regulations. The comprehensive plan should cover all of the municipality's surface and show how it should be developed. It should guide the local plan and the building permits but is in no way legally binding. The local plan describes in detail how a more specific area or neighbourhood should be developed, and it is legally binding. If needed, area regulations can regulate what is said in the comprehensive plan to ensure that the purpose of the comprehensive plan is attained (Boverket, 2018a).

In local plans, cycling can be built for individually or together with pedestrians. Traffic regulations are not done in local plans but are instead regulated by local traffic regulation (*lokala trafikföreskrifter*), since traffic regulations are in general easier to change than local plans. This includes special measures for speed regulation, limitation of certain vehicles or time limitation of traffic. Requirements for traffic safety, minimization of pollution and noise levels are part of the local traffic regulation (Boverket, 2018b).

#### 3.2.2. Laws & regulations

The institution for transport (*Transportstyrelsen*) depicts the different rules that exist for cyclists. This includes the duty to give away, to give priority to pedestrians on walkways and crosswalks, to show direction using signs with the arms, and the difference between a cycling passage and a cycling crossing, which is if the cyclists have priority towards vehicles or not. For a cycling passage, the cyclists has the duty to give away, for a cycling crossing, it is the car driver that has the duty to give away (Transportstyrelsen, 2018).

There exist laws that make it difficult to build new cycling paths where there currently does not exist any road for cars. In the law book for roads (*Väglagen*), a cycling path without connection to a road for cars is not defined as a road per se. This does not give cycling paths the same right of expropriation as roads (Sveriges Riksdag, 2018a). The other law regulating this is the law for layout (*Anläggningslagen*). In this law, the right for expropriation is regulated, but only the definition of the law book for roads is presented for roads, i.e. no cycling paths are mentioned (Sveriges Riksdag, 2018b). These two laws combined therefore prevents municipalities to build new cycling paths for recreation or/ and commuting where there is no existing road for cars. As there exist cycling paths presented in the cycling program that are yet not built, see Figure 2 in 2.2. (note that the map is not an expansion plan but rather show how the cycling network should be improved), this is a possible barrier if the municipality wants these roads to be built.

#### 3.2.3. The technical handbook

The technical handbook is a technical document that help officials from Trafikkontoret to build and design the city's infrastructure. It has been created on the request of Trafikkontoret and the park and natural administration, and is supposed to be used by all consultants or entrepreneurs who work within the city of Gothenburg with planning, execution, and operation and

maintenance of public space. It is not a manual, but it should give direction and counsel for certain areas and specific cases. Standard solutions are seldom applicable in all types of projects and cases (Teknisk handbok, 2018).

The handbook includes functional requirements for cycling (adopted from the cycling program), describes how separation should be done between cyclists and pedestrians, as well as between cyclists and cars. It includes a checklist for planning of cycling for distances, crossings, traffic signals, road signs and cycling parking. Moreover, there are guidelines for how to work with cycling traffic during construction, how to design infrastructure and cycling paths, as well as winter maintenance of cycling paths. Furthermore, it refers to laws and regulations, as well as it has adopted national guidelines (Teknisk handbok, 2018).

### 3.3. Actors in Gothenburg involved in the planning process

This report focuses on the cooperation of Trafikkontoret, the urban transport committee, and Stadsbyggnadskontoret. Fastighetskontoret, Trafikverket, the region of Västra Götaland, and the municipal association Göteborgsregionens kommunalförbund GR are also described below. Further stakeholders that are and can be involved in the process are the local federation of Gothenburg, the county administrative board, the district administrations (Trafikkontoret, 2013), consultants, building entrepreneurs, nonprofit organizations, and the public.

#### 3.3.1 Trafikkontoret & the urban transport committee

Trafikkontoret works with the planning process from strategic planning to practical implementation. Around 400 people work at the office, which is divided into eleven different sections (Trafikkontoret, 2018a).

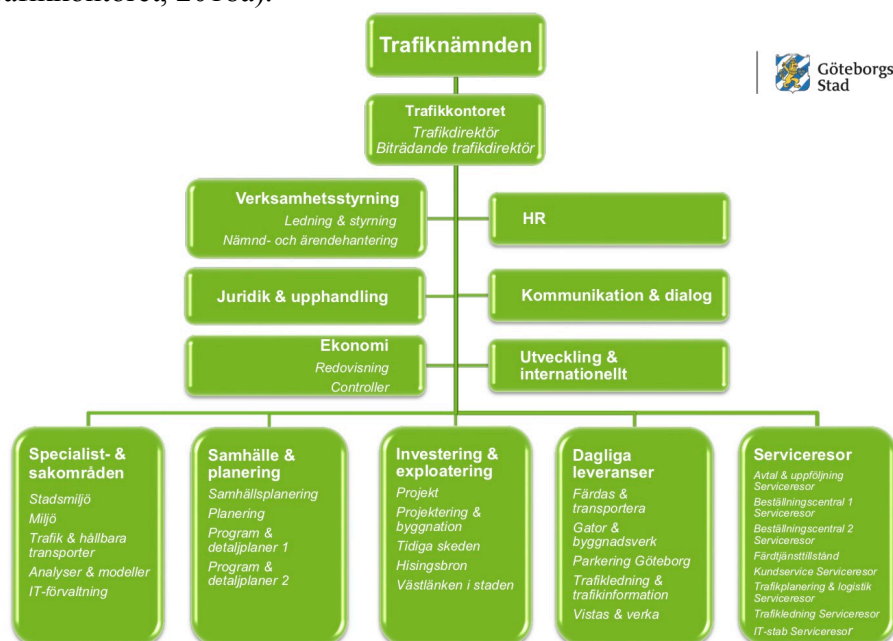


Figure 3: The organizational structure of Trafikkontoret (Trafikkontoret, 2018a). Trafikkontoret will change its organizational structure during the summer of 2018.

The department of specialists and matters ensures that Trafikkontoret and the city have the competence that it needs to be able to fulfil what the urban transport committee is responsible for. The department is working with producing strategies and orientations, planning support, investigations, and the Technical handbook. The department consists of five units, one being traffic and sustainable transports. The department society and planning work with urban planning, planning, and with programs and detailed plans. It ensures that activities and

investments are in line with the city planning of the municipality and is responsible for the planning process. Investment and exploitation ensures that the projects are run with good attention to the client, as well as intended time, cost, and content. The department daily deliveries ensure that citizens are given good opportunities regarding trips and parking regardless of needs. Moreover, the department of transportation service aims at offering personal transports paid by society for people who have difficulties at travelling on their own (Trafikkontoret, 2018a).

Trafikkontoret is run by the political committee of urban transport. The urban transport committee consists of nine politicians and six substitutes, added by the city council. Its mission is to, together with Trafikkontoret, fulfil the citizen's and the trade and industry's transport needs, and to improve traffic safety and decrease the environmental impact caused by traffic. Another responsibility area is to develop and maintain the city's infrastructure. It also works as a purchasing committee for competing interests between private companies, municipal, and state-owned entrepreneurs and consultants (Trafikkontoret, 2018b).

The investments made by the urban transport committee is either based on a deficiency or a need in the infrastructure. The committee works on a basis of *cities*, which is a method used to structure the investments made and is the committee's main mission. Five cities are mentioned; the pedestrian city, the cycling city, the public transportation city, the car city, and the freight transport city. The second part of the committee is *reinvestments/rearmament*, which concerns restoring old facilities to its original condition. For both the cities and the reinvestments/rearmament, some of the money put into the projects comes from a budget, but most measures are named and specific. The urban transport committee can for these investments prioritize differently from year to year, but they cannot transfer money between the different investment areas. (Trafikkontoret, 2016).

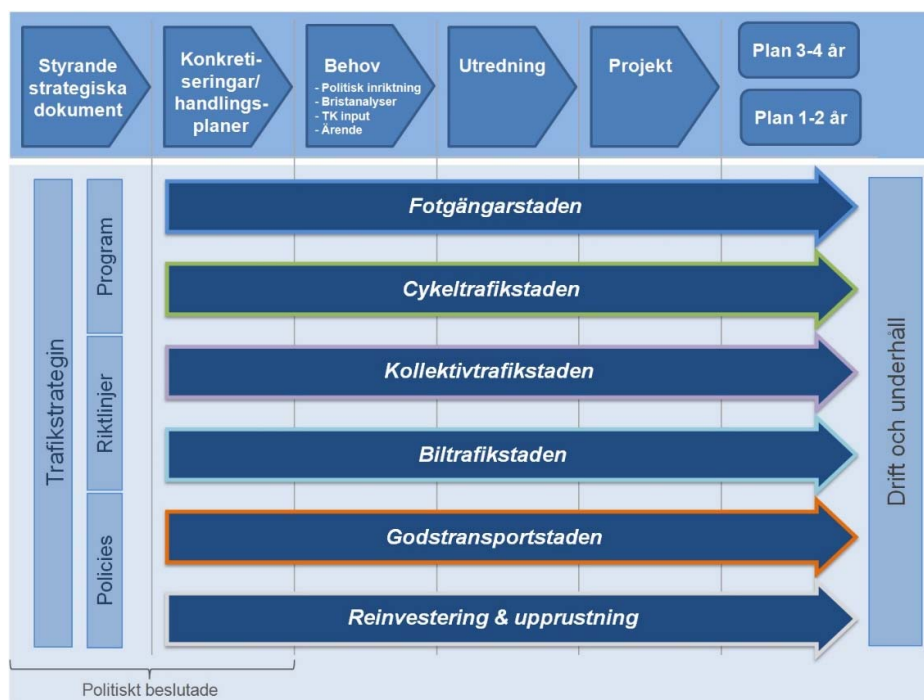


Figure 4: The process for the cities and reinvestments/ rearmament (Trafikkontoret, 2016).

The figure further details the process from strategic documents to finished projects and operation and maintenance. In the timeline at the top of the figure are the strategic documents followed by concretization/ action plans, needs (political orientation, deficiency analysis, input

from Trafikkontoret and errands), investigations, projects, and finally the plans. The two first parts, i.e. strategic documents and concretizations/ action plans, are political decisions.

### 3.3.2. Stadsbyggnadskontoret

Working on behalf of the building committee (*Byggnadsnämnden*) and consisting of approximately 320 people, the mission of Stadsbyggnadskontoret is to create a comprehensive plan for Gothenburg and to make detailed comprehensive plans that describes how and where new buildings can be built. Some of their responsibilities are building permits, maps, and existing plans. The organization consists of several different sectors; planning, building, surveying, strategic, and geographical data sector (Stadsbyggnadskontoret, 2018). The strategic, planning, and building departments all involve traffic planning in different levels of the planning process, i.e. comprehensive planning, detailed planning, and operational planning.

### 3.3.3. Fastighetskontoret

Fastighetskontoret, working on the behalf of the housing committee (*Fastighetsnämnden*) is working with four main areas; ground, exploitation, management, and accommodation and accessibility. It is responsible for the facilities owned by the municipality. Moreover, it works with the development of the trade and industry, and to the renewal through the extension of areas and companies, research, and education. To do this, it needs to cooperate in the work of producing programs and local plans for trade, offices, industries, and traffic. Fastighetskontoret is also responsible for coordinating and developing the physical accessibility in the municipality (Fastighetskontoret, 2018).

### 3.3.4. Park- och naturförvaltningen

Park- och naturförvaltningen work on the behalf of the park and landscape committee (*Park- och naturnämnden*). The administration manages and develops new city, park, and natural environments, such as parks, playgrounds, trees, and lakes (Park- och naturförvaltningen, 2018).

### 3.3.4. Trafikverket

Trafikverket is an authority of the state and are in charge of the state owned roads. Trafikverket is also involved in producing planning support and standards to create conditions for a good cycling network where they are not owners of the roads. This work includes actions such as developing models to calculate the socioeconomic benefits of cycling investments, and revisit technical requirements (VGU) (Trafikverket, 2017).

### 3.3.5. Västra Götalandsregionen (VGR)

Västra Götalandsregionen (VGR) is responsible for developing the regional plan for transport infrastructure. The region consists of 49 municipalities in which Gothenburg is one of them. Projects and cycling measures in the local infrastructure network can get funding to up to 50%. The region supports different types of cycling, i.e. recreation and commuting. Measures that are contributing to connecting cycling path networks and traffic safety are supported. Also, behavioral measures and measures that make a better use of the existing infrastructure are promoted (Västra Götalandsregionen, 2014:23). One goal stated from the region is to transfer car drivers to use more sustainable modes of transportation, i.e. walking, riding a bicycle or using public transportation, where the latter should be the main transport mode for the trip (Västra Götalandsregionen, 2014:31). The region further states the importance of using behavioral measures and policy instruments such as congestion taxes and parking taxes, in order to transfer car drivers to more sustainable transport modes (Västra Götalandsregionen, 2014:31).

### 3.3.6. Göteborgsregionens kommunalförbund (GR)

GR is a cooperation between 13 municipalities in the region of Västra Götaland. It is supposed to guide municipalities, the administration of the state, and the municipalities with regional viewpoints. GR is also following the municipal planning considering comprehensive and local plans. The task of GR is to participate in and coordinate the overall infrastructural planning and development of the transport system of the region (Göteborgsregionens kommunalförbund, 2018).

## 3.4. Cooperation in Gothenburg

### 3.4.1. Cooperation for new cycling projects

The municipality and its actors cooperates in different projects regarding cycling. Gothenburg is one of the municipalities which cooperates with Trafikverket in creating 100 kilometers of cycling paths in the region of Västra Götaland until 2025. The municipality further collaborates with Trafikverket and the cycling interest group Cykelfrämjandet to collect cycling data, to be used to plan cycling infrastructure. Another project is run by both the municipality and the state's research institute for road and transport VTI, to find new methods to collect data for travel surveys.

The region of Västra Götaland works with specific projects such as the promotion of cycling friendly workplaces, creating travel plans for schools and providing free winter tires to cyclists in cooperation with Göteborgsregionens kommunalförbund (GR) (Hållbart resande väst, 2018). Further projects are run in cooperation with the administration of energy and the research institute ICT Viktoria to investigate how freight bicycles can further be used in cities. A project is run with the state's institute for research Vinnova and VTI, in order to understand how cyclists can avoid risks in traffic by swerving (Göteborgs Stad 2018c).

### 3.4.2. Cooperation for developing the local transport system

*Trafiksamrådet* is a platform for different actors to discuss the transport system and how it can be developed. The actors are Trafikkontoret, the police, the emergency service, and other actors that are relevant for the purpose of the meeting. The purpose of Trafiksamrådet is to secure the mobility and traffic safety for people in traffic when Trafikkontoret implements measures in the road network. Moreover, the police should have the opportunity to express their opinion about the planned local traffic regulations (*lokala trafikföreskrifter (LTF)*). Traffic safety, dimensions of cycling paths and crossways, new local traffic regulation and traffic regulation to remove are some of the issues that are discussed (Trafiksamrådet, 2018).

## 4. Document review & analysis

This chapter describes the different documents used in the urban and traffic planning process in Gothenburg, and specific documents regarding cycling implementation. This allows for understanding how Gothenburg aims to develop the city in terms of transport, city planning, and cycling measures. Six strategic documents are discussed below; the comprehensive plan, the transport strategy, the urban development strategy, the cycling program, the parking policy, and the road safety program, see Figure 5. The document analysis therefore works as a tool for analysing the city and its view of cycling from a top-down perspective.

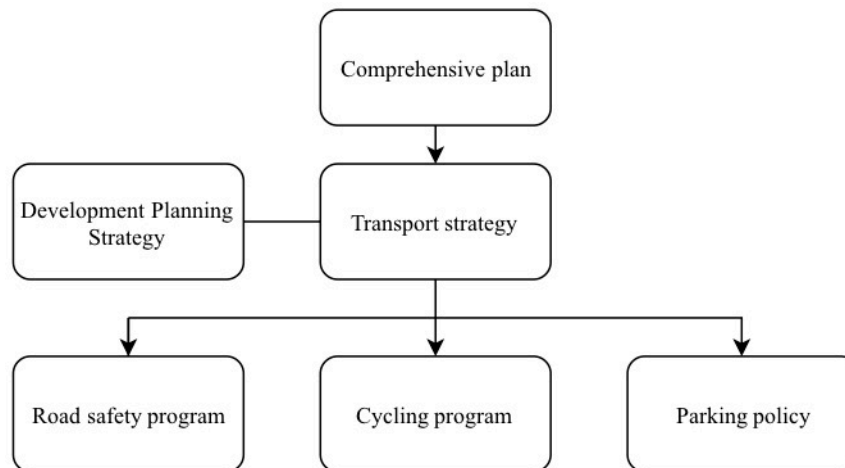


Figure 5: Overview of the reviewed documents and their correlation to each other.

The documents presented in this chapter can be regarded as forming a clear top-down structure. Working as a guide to the process, the strategic documents guide the people working with planning of the city and its transport system. The top-down approach as described by Sabatier & Mazmanian (1986) (see 2.1.1.) is used to analyze the documents. This chapter will thus review and analyze the documents based on the following aspects, which will in the analysis part be discussed based on top-down implementation:

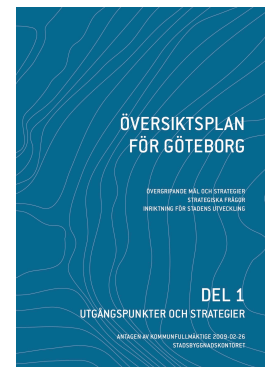
- ❖ *The authors of the document and by whom it has been approved.* This allows analyzing to which degree actors have cooperated in the policy formation process and by whom it is supported.
- ❖ *General goals, cycling goals, conflicting goals, and benefits of cycling.* This gives the opportunity to analyze if goals for cycling are mentioned and to find conflicting goals that could harm the implementation of cycling measures. This also allows analyzing how the authors of the document perceive cycling.
- ❖ *Measures, strategies and implementation process.* This allows to understand which cycling measures are to be implemented and how.
- ❖ *Analysis made of the reviewed document.* An analysis made by the author of the thesis, in order to put the reviewed material into context with implementation theory and further documents discussed.

To summarize, an integrated document analysis is presented in 4.7., where all documents are accounted for and discussed in comparison to each other and implementation theory.



#### 4.1. Comprehensive plan

The city's comprehensive plan is a long-term vision of the municipality's future development. It is a document mandatory for municipalities to produce. More specifically, the document aims at showing how the city should handle its land and water use, as well as how the built environment should be taken care of. The purpose of the plan is therefore to give recommendations, but it is by no means legally binding (Göteborgs Stad, 2009a:44).



##### ❖ *Authors and support*

Responsible for the document's compilation is the group of the comprehensive plan at Stadsbyggnadskontoret and it has been approved by the city council.

##### ❖ *Goals*

Sustainable development is a key goal, where the three pillars of sustainability, i.e. economic, social and environmental, are described as vital for the future development of the city. For the infrastructure more specifically, it should be used in an effective way and the environmental impact of the traffic should be minimized (Göteborgs Stad, 2009a:48).

The comprehensive plan describes the future development as changed transport needs. The city should provide good opportunities for the citizens to be able to change their travel behaviour. More specifically, more people should be able to travel by foot, bicycle, and public transport, instead of using the car. In addition, the mobility should be good without hindering the city's and the regions development. Moreover, traffic by car should be used in a wise way (Göteborgs Stad, 2009a:83).

The comprehensive plan relates to the transport policy objectives for 1998 with the objectives of an accessible transport system, high transport quality, safe traffic, good environment, positive regional development, and an equal transport system, which was added in 2001 (Wennberg et.al., 2010).

##### *Goals for cycling*

For cycling, the comprehensive plan specifies that cycling should have a larger importance. Walking and cycling should increase (Göteborgs Stad, 2009a:81).

##### *Conflicting goals*

As changing the transport need is only one of the city's goals, it has some conflicts with other goals set in the comprehensive plan. The plan describes four conflicting areas with changing transport needs. New roads passing through existing green areas, conflicting with natural and cultural area, as well as recreation and health. Another is that there is a need to improve the accessibility for freight transport, which in its turn could mean an increased amount of passenger vehicles, since freight and passenger vehicles often share the same space (Göteborgs Stad, 2009d:28). Moreover, while changing the transport need, the comprehensive plan stresses that consideration must be taken to alternative roads, since 80% of the public transport over the river is done by the bridge of Göta Älv (Göteborgs Stad, 2009d:29).

### *Benefits of cycling*

An increase of cycling as a transport mode benefits the environment and people's health. The building of new cycling paths across the river that runs through Gothenburg can also help bridge physical barriers (Göteborgs Stad, 2009c:61).

#### ❖ Measures, strategies and implementation process

Strategies presented in the comprehensive plan are (Göteborgs Stad, 2009a:80):

- Coordinate the planning of built environment and traffic.
- The traffic system should be supplemented to tie together city districts and lead the traffic by with the least traffic interference as possible.
- The city densifies, and the strategic nodes develops to minimize the need to travel by car.
- Prioritize public transport and cycling when competing over land use.
- Plan for good accessibility with the car at the city's terms.
- Create good mobility for freight transports. Freight transport should be led away from the central parts as much as possible.

It is further described in the comprehensive plan that public transport *should be prioritized* and that walking and cycling *should increase* (Göteborgs Stad, 2009a:80-81), giving an indication about which transport mode that has the highest priority among the two.

For cycling, care should be taken in the detailed planning process, with safe environments and direct roads. Parking for bicycles should be strategically placed to facilitate for public transport commuting (Göteborgs Stad, 2009a:81). In addition, the comprehensive plan mentions the new parking policy document, released later the same year, 2009. The traffic system should be designed in a safe way, so that nobody has the risk to die or being hurt badly in traffic. All people should also be able to move freely (Göteborgs Stad, 2009a:82). The cycling network can also be identified in the comprehensive plan (Göteborgs Stad, 2009c:63). Moreover, the former cycling program of the city is brought up in the comprehensive plan as one of the municipal documents regarding policy and guideline (Göteborgs Stad, 2009b:36).

According to the comprehensive plan, major road projects with the aim to shorten the travel time for cars should not be executed until there is a certainty that measures to decrease the demand for it has been done. For cycling, there is a need for a good infrastructure, but also a need for services, such as cycling pools and telephone applications, to increase the attractiveness of the transport mode (Göteborgs Stad, 2009c:60). Moreover, cycling roads are divided into three categories; main network, overall network, and local network. The building of new routes is required to increase mobility and safety (Göteborgs Stad, 2009c:61). Since the city is planning for a denser structure, it allows more people the possibility to walk or travel by bike (Göteborgs Stad, 2009d:24). A new walking and cycling bridge across the river of Göta Älv is also presented.

#### ❖ *Analysis of the comprehensive plan*

The comprehensive plan acknowledges sustainable development as a vital part of the future development of the city. As part of this solution, the bicycle is mentioned, together with walking and public transportation. It can be argued that consensus exist within the city and its actors for this document, as it has been approved by the city council. It is clear that the use of the car should decrease and that cycling and public transportation should be prioritized when



competing over land use, which could potentially mean conflicts when prioritizing between the two latter transport modes.

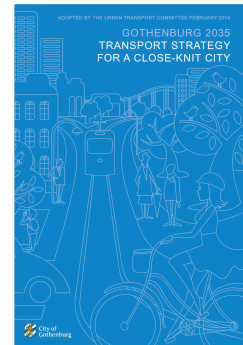
Cycling is well accounted for, where the different types of networks are presented. Moreover, measures needed to increase the number of cyclists are mentioned, where the document further relates to the cycling program created in 1999. Benefits for cycling are mentioned which contributes to the promotion of cycling as a viable and sustainable transport mode.

## 4.2. Transport strategy

Following from the comprehensive plan is the transport strategy that more in detail specifies how the transport system should be developed, in order to achieve the goals described in the comprehensive plan.

### ❖ *Authors and support*

The transport strategy has been produced essentially by Trafikkontoret. In cooperation with Trafikkontoret, several other representatives have been part in developing the program. These representatives consist of professionals from Stadsbyggnadskontoret, Fastighetskontoret, the region of Västra Götaland, Västtrafik, Trafikverket and different consultants. The transport strategy has then been accepted by the urban transport committee.



### ❖ *Goals*

The main challenges of the transport strategy are to handle more people's travelling, strengthening the city's competitive power, and lowering the greenhouse gases from the transport sector (Trafikkontoret, 2014:5). A clear example of the target-led approach is that the number of trips made by car should decrease with 25% until 2035, in comparison to 2011, see Figure 6. This can be compared to the prognosis-based national target of an increase of 35% until 2030 (Trafikkontoret, 2014:41). Moreover, and in a local context, the goal is to bridge physical barriers, without compromising freight, public transport, as well as cycling in the city centre.

On a social aspect, liberty of movement for all citizens should be achieved, regardless conditions, and without compromising the total accessibility. Furthermore, the negative health aspects caused by the transport system should decrease, more people should be able to move around while less people should be injured in traffic, it should be as easy to reach the intended destination during construction times as it was before, and getting more people to travel by foot, bicycle and public transport (Trafikkontoret, 2014:23-25). Moreover, the transport strategy points out three main goals (Trafikkontoret, 2014:5):

- To create an easily accessible regional centre
- Attractive city environments
- Remaining the logistical centre of Scandinavia

The two first are further detailed in the cycling program released in 2015 (see 4.3.) (Trafikkontoret, 2015).

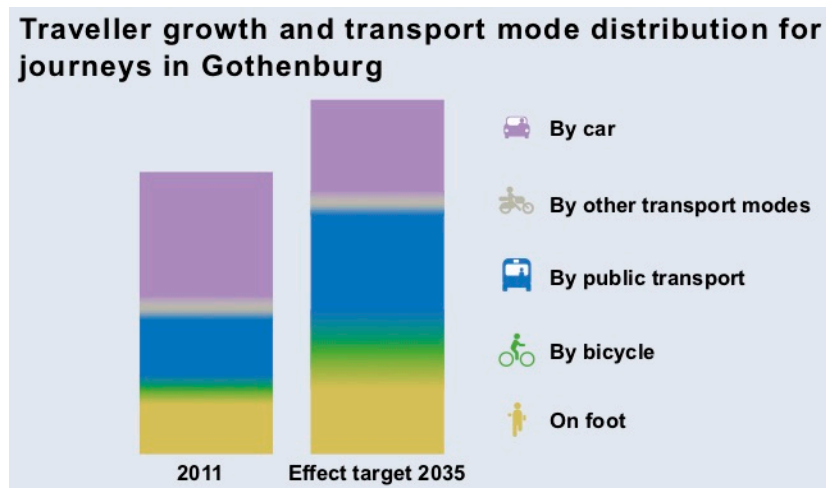


Figure 6: Effect target for the number of trips for different transport modes in Gothenburg (Trafikkontoret, 2014:41).

### *Goals for cycling*

People should be able to and wanting to use the bicycle as a transport mode in the city (Trafikkontoret, 2014:5). The goal is further to increase the number of cyclists as presented above in Figure 6.

### *Conflicting goals*

It is stated in the transport strategy that cycling paths and pedestrians should be separated, as the commuting cycling network can become a barrier. Further, when cyclists and cars share the same space, speed limits should be adapted to cyclists and cyclists should be prioritized. This is also to be taken into consideration for public transportation (Trafikkontoret, 2014:45).

### *Benefits of cycling*

The transport strategy describes the positive health benefits of cycling, that it does not require much resources, that it is an effective transport mode, as well as that it can unload the road and public transport traffic (Trafikkontoret, 2014:33).

#### ❖ *Implementing strategies and process*

The cycling network should be organized into three categories; main network, overall network, and local network. The two first networks are important in the work for people being able to commute by coherent, near, safe, and high standard cycling roads. They should also be well maintained and illuminated. Creating a street structure that is fine mesh and coherent, without any barriers is acknowledged. Accomplishing this can then lead to a higher degree of accessibility, meaning that more people can move around and thus improve the potential for urban life (Trafikkontoret, 2014:50).

By reducing the distance to important locations within the city, more transport by bicycle can be done. Having short distances to important locations is also of importance to promote that children travel with or without their parents in the local environment, since travel behaviours are created early on in life. It is further described that if more errands can be made by bike, it can contribute to a livelier neighbourhood. This can help improving local businesses (Trafikkontoret, 2014:37). Parking for cycling should be available in connection to public transportation (Trafikkontoret, 2014:33), following the parking policy of the city (Trafikkontoret, 2014:47). The needs and conditions for the cyclist should always be regarded when it comes to reconstruction, city planning, densification, and construction (Trafikkontoret, 2014:33).

Using the existing roads and streets in the right way is of importance for achieving a sustainable transport system. The increase in travel in the city should thus consist entirely of pedestrians, cyclists, and people using public transportation. New services are therefore needed, as well as involving the citizens when finding new solutions, such as cycling and car pools. Policy instruments, such as the congestion tax and increased vehicle parking fees, can lead to a reduced car use, thus promoting alternative, sustainable transport modes. Information systems should also be promoted, to facilitate mobility (Trafikkontoret, 2014:38). Transporting goods by bike is also brought up as a measure for finding alternative solutions to the current ones (Trafikkontoret, 2014:48).

As several different transport modes and functions are to be gathered in the city, the streets need to be redistributed to create more space where people want to be and move, according to the transport strategy. The document describes the importance of prioritizing pedestrians and cyclists and adapting the speed limits according to these transport modes, avoiding severe accidents, reducing noise, improving the air quality as well as improving the relationship between different transport modes. Moreover, the relationship between pedestrians and cyclists needs to be taken into consideration (Trafikkontoret, 2014:45). For pedestrians and cyclists, compromises have to be done depending on walking or cycling flows. Separating through overpasses or by redirecting the cycling path are presented measures (Trafikkontoret, 2014:45). Much like for pedestrians, the transport strategy further describes that public transportation has to be given priority or give priority to other transport modes. Creating overpasses or underpasses for public transportation is presented as measures, where cooperating with the state and region for financial resources are seen as necessary to implement the measures (Trafikkontoret, 2014:45).

In areas where the bicycle has to cooperate with the car, the speed should be adapted to the bicycle and the bicycle prioritized (Trafikkontoret, 2014:50). Measures such as cycling speed areas are presented. The focus presented in the transport strategy is separating by speed, rather than separating by transport modes (Trafikkontoret, 2014:46).

The principles to the implementation of the strategy are to prioritize investments concerning trips within, through or around the city center. Moreover, it needs to be ensured that people can get around during construction periods, innovation should be supported and that Gothenburg should work as a testing arena, as well as using the potential in a meaningful dialogue with both citizens and trade and industry (Trafikkontoret, 2014:7).

Different success factors are presented in order to successfully implement the stated policies in the transport strategy:

- *Success factors for the urban transport committee*

Concretize the recommendations into measures by producing programs, plans, investigations, and direct measures. Find a balance between time spent on investigations and planning, in comparison to time spent on implementing the direct measures. There is not a lot of time available, nor money and traffic planners (Trafikkontoret, 2014:67).

- *Success factors for the city of Gothenburg*

The development of Gothenburg should follow the comprehensive plan, working with city planning boards, including the district boards, as well as working with the parking company (Trafikkontoret, 2014:68).

- *Success factors lying outside of the city's responsibility area*

Changing existing laws and regulations, so that the city get more tools to work with during the urban and traffic planning, such as the possibility to build cycling speed areas (Trafikkontoret, 2014:69).

#### ❖ *Analysis of the transport strategy*

The transport strategy takes into consideration different types of benefits for cycling. These consists of social, environmental, and economic aspects, showing that cycling is a viable and sustainable transport mode. The document has been approved by the urban transport committee but not by the city council. Despite this, the document has been produced in the same time as the development planning strategy (see 4.3.) and the green strategy, showing that different administrations simultaneously have been working on their respective documents, to find a common path to how the city should be developed.

As stated in the comprehensive plan, the transport strategy describes the goal of all sustainable modes increasing in number, in comparison to the car. This can again create issues between walking, cycling, and public transportation in how these transport modes should be prioritized against each other. The transport strategy mentions possible conflicts between pedestrians and cyclists. It further states that measures that decrease the dependence for cars should be implemented, showing that a united approach towards reducing the use of cars.

The implementing principles and success factors presented show that the city intends to work with the implementation in both a top-down and a bottom-up way. Seen from a top-down perspective, the documents state the importance of having the right personnel and financial resources available, following the comprehensive plan, and changing laws and regulations. Seen from a bottom-up approach, support is stated in inviting for dialogues with citizens and further cooperation with other actors in the city to find new measures.

### 4.3. Development Planning Strategy

Like the transport strategy, the development planning strategy derives from the comprehensive plan. The focus of the document is foremost on year 2020 and foreword until 2035 in the areas surrounding the central parts of the city (Stadsbyggnadskontoret, 2014). The strategy acknowledge some important challenges; the increasing population in Gothenburg, the possibility to live a simpler life for more people, planning for more jobs, new requirements from trade and industry, and developing a cohesive city.



#### ❖ *Authors and support*

The document is written by Stadsbyggnadskontoret and Fastighetskontoret on the request of the building committee.

#### ❖ *Goals*

The goal of the development planning strategy is to show how the city should evolve regarding new housing and city development, to give the city's administrations support for making prioritizations in the planning process and in the investments made by the municipality, as well as to secure the city's housing development. Creating a close-knit city is mentioned as important to support the trade and industry business (Stadsbyggnadskontoret, 2014).

### *Goals for cycling*

The document presents cycling as one of the transport modes that is part of the close-knit city, which can create an attractive and safe city. The bicycle is regarded as a transport mode that can be used for both short and long trips, and is mentioning the commuting cycling network. Bicycle paths should be fast, accessible and recreational (Stadsbyggnadskontoret, 2014).

### *Benefits of cycling*

By planning for pedestrians and cyclists, the trade industry is according to the document reinforced since being part of the close-knit city. The development planning strategy refers to the transport strategy for further benefits on a cycling city (Stadsbyggnadskontoret, 2014).

#### ❖ *Implementing strategies and process*

The development strategy states that it is of importance to create value in the city, making economic analysis in early stages when planning to understand costs and incomes of projects, owning the ground, width of actors, perseverance over the state of the market, continuous dialogues, methods for following up the measures implemented, and recognizing that the greatest potential is by thinking in a holistic way.

#### ❖ *Analysis of the development planning strategy*

The document acknowledges cycling as a city that can be part of a close-knit city, hence also being beneficial in economic terms. Other benefits for cycling are not mentioned, thus less focus is put on cycling in this document than the comprehensive plan and the transport strategy. The document is referring to the transport strategy for further benefits. The document has only been adopted by the building committee, thus not the city council, which could mean a lack in support. Despite this, and as mentioned for the transport strategy (see 4.2.), the development planning strategy was developed at the same time as the transport strategy, showing willingness in finding common goals and strategies in how to develop the city. No potential conflicts areas are mentioned for cycling as it is done in the transport strategy between the different sustainable transport modes, i.e. walking, cycling and public transportation. This can potentially indicate that the responsibility is fully on Trafikkontoret. Despite this, the implementing principles shows, in addition to the top-down approach, that a bottom-up approach in cooperating between actors and having continuous dialogues.

## 4.4. Cycling program

The cycling program is a concretization of the transport strategy for cycling as a transport mode (Trafikkontoret, 2015:21).

Since the city's latest cycling program, released in 1999 and also known as C99. Focus has during this period mostly been on safety. Citizens consider cycling in Gothenburg as troublesome and difficult to understand (Trafikkontoret, 2015:23). What is new in the program of 2015 is that accessibility will be equally prioritized with safety (Trafikkontoret, 2015:24).



#### ❖ *Authors and support*

The cycling program has been requested from and approved by the urban transport committee, and created by Trafikkontoret. Consultancy support has been given from two different consultancy companies.

### ❖ *Goals for cycling*

The vision is that cycling is a competitive transport mode with which it is easy to travel quickly, safely, and easily to main spots lying in a short or long distance. The goal is that the number of bicycle trips in 2025 will be three times as many as it was in 2011, as well as that three out of four believe that the city is a cycling friendly city by 2025 (Trafikkontoret, 2015:9).

### *Conflicting goals*

Conflicting goals are mentioned for the tramway and cycling, which are difficult to combine, in order to create a coherent cycling network. Further conflict is between cyclists and pedestrians.

### *Benefits for cycling*

Improving the share of cyclists in the city is seen as a way to improve many of the political goals set for the city, concerning the environment, improved health, sustainable transportation, as well as rich city life. The economic benefits for the society are positive for each cycled kilometer in the city, as compared to negative for every driven kilometer in a car (Trafikkontoret, 2015:17).

### ❖ *Measures, strategies and implementation process*

The cycling program presents four main areas where measures are needed to create an attractive cycling city (Trafikkontoret, 2015:11) (Figure 7):

- Building a coherent and well-designed cycling infrastructure
- Offer a good standard on the cycling network all year
- Offer support and services that facilitates for cycling and raises the attractiveness of the transport mode
- Strengthen the image of Gothenburg as a cycling city with the help of communication

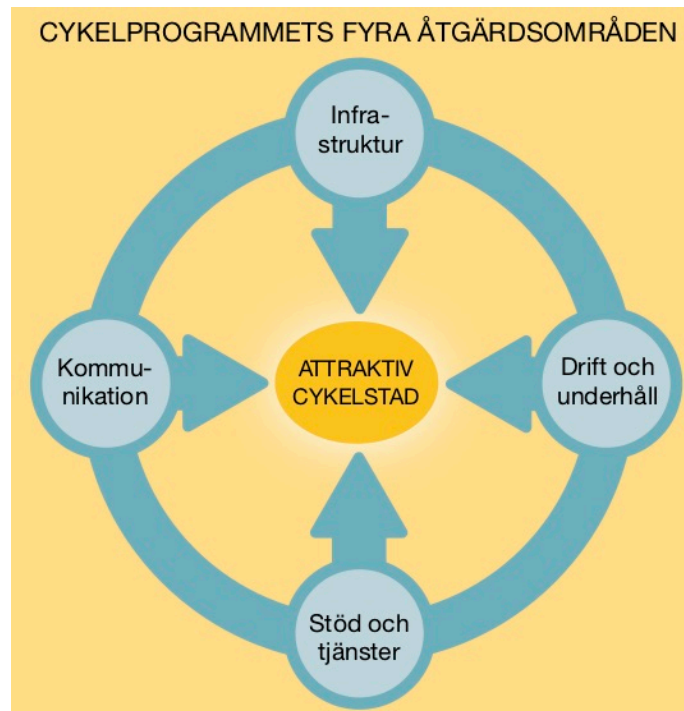


Figure 7: Four areas for measures are presented to create an attractive cycling city, according to the cycling program; infrastructure, operation and maintenance, support and services, and communication (Trafikkontoret, 2015:19).

The two latter types of measures will further on be called behavioural measures, as Aretun & Robertsson (2013) presents it, see 2.2.1..

### *Implementation principles*

According to the cycling program, prioritization should be done based on where the cyclists' needs are quick, easy, and safe, but also depending on where in the city the measures gives the highest possible impact for achieving the goal of increased cycling. What can achieve a higher impact is if measures are coordinated, and therefore clearly improve the quality in a certain area (Trafikkontoret, 2015:81). The principles required to implement the cycling program are presented below (Trafikkontoret, 2015:81).

- *Prioritize central parts and the cycling network*

The geographical planning should be implemented and prioritized in the following order; the central city, tie together areas of city character with a commuter cycling network and develop areas into a city character. This prioritization is done in relation to the number of potential cyclists that can be affected (Trafikkontoret, 2015:82).

- *Coordinate measures*

For certain predetermined roads and area, a coordination of measures that increases the quality should be done. This is done to achieve the highest possible impact. If physical measures are implemented in an area, communicating these to the cyclists will give an even higher positive effect. Communicative measures will also become more effective if cyclists can see that the infrastructure is getting better (Trafikkontoret, 2015:84).

- *Plan for a good connection to public transportation*

It should be easy to combine cycling and public transportation at major connections, to offer an easy travel solution for the citizens. Cycling parking should be available at major connections and there should exist cycling garages with different types of services available at major public transportation spots. Offering a bike-sharing service is regarded as an important complement to public transportation for those who do not have access to their own bike (Trafikkontoret, 2015:84).

- *Plan for good accessibility during construction*

Since the time frame for the cycling program is colliding with the city building many new urban development projects, planning for cycling sees both challenges and opportunities. The challenges are that some cycling roads passes through areas who are affected by the construction. On these roads it will, according to the program, be difficult to achieve an increased quality. The opportunities lie on the other roads who are not affected by construction. Focus can be put on these roads, to increase their quality through good comfort and accessibility, and to decrease the number of cyclists passing by the areas under construction. The goal of the city is that, during construction times, fewer people should choose the car. Therefore, the possibilities for cycling must be very good (Trafikkontoret, 2015:84).

### *Knowledge and cooperation*

In order to achieve the goals described in the cycling program, competence about cycling issues generally, and more specifically about functional requirements and planning principles that are mentioned in the program. This is important for all actors involved in the process; politicians who make decisions, officials and consultants who are planning, and for entrepreneurs finalizing the work. To achieve this, Trafikkontoret must cooperate both internally within the municipality, and externally with other relevant actors (Trafikkontoret, 2015:85).



Cooperation is an essential part for a successful implementation of the cycling program. In the program, cooperation is divided into four specific areas:

- *Internally within Trafikkontoret*

The main responsibility to implement the cycling program is on Trafikkontoret, assigned by the urban transport committee. The cycling program suggest that there exist a cooperation group where all sectors and functions are represented. Their responsibility is to present action plans for cycling and follow up the goals and intentions of the cycling program (Trafikkontoret, 2015:86).

- *Among the city's companies and administrations*

All administrations and companies within the city of Gothenburg have, in line with the city's budget, a common responsibility to transform the city so that it is attractive for cyclists. Cooperation with these administrations and companies should improve, regarding issues that specifically affect the possibility to reach the intentions of the cycling program (Trafikkontoret, 2015:86).

- *Among external, individual actors*

The city of Gothenburg cannot alone transform the city into an attractive city for cyclists. External actors, such as individuals, nonprofit organizations, and private companies, who in some way works with cycling in Gothenburg are needed as well. Trafikkontoret is dependent on receiving as much information as possible from users, to ensure that the user perspective is considered. Trafikkontoret can become more effective if more actors are involved. Organizations should be invited to cooperate, to ensure that there is a broad range of interests represented (Trafikkontoret, 2015:86).

- *Among external, public actors*

As Gothenburg is an important location in the region, there is a need to cooperate with surrounding municipalities whose cycling network is interconnected with Gothenburg's network. Moreover, cooperation should exist with the national transport administration, Trafikverket, who is responsible for the regional and the state-owned roads. There is also a potential in increasing cycling from surrounding municipalities, more specifically commuting (Trafikkontoret, 2015:86).

#### *Ensuring quality and follow-up*

The cycling program also identifies how measures and improvements should be evaluated and monitored. This includes developing a yearly action plan, consisting of the measures that are to be implemented, based on the goals presented. The follow-up should ensure that the implemented measures are in line with the required quality based on the functional requirements. In addition, a follow-up of the measures should also be done in relation to the planning of measures and available resources (Trafikkontoret, 2015:86).

The action plan is an internal document for Trafikkontoret but is available online. The document is useful in the sense that it helps Trafikkontoret knowing what measures are to be done in a calendar year. Moreover, it is useful as a communication tool, to inform citizens about what measures are being performed. The action plan describes, in a comprehensive way, what measures will be performed in the city during a calendar year. All of the four areas for measures detailed in the cycling program are included; infrastructure, operation and maintenance, and



behavioural measures (För liv och rörelse, 2018). There further exist planning documents for cycling parking for planners and for property owners (Cyelparkering, 2018).

#### ❖ *Analysis of the cycling program*

The document acknowledges cycling as a viable and sustainable transport mode by connecting cycling to all three pillars of sustainable development, i.e. economic, environmental, and social. It has been approved by the urban transport committee and created by Trafikkontoret. This could potentially mean that there is no common agreement about the goals and strategies presented in the program by other administrations and committees. Conflicting goals are presented between the transport system of the tramrails and the cyclists. Furthermore, it is possible to believe that conflicting goals between different modes can occur, if all sustainable transport modes are to increase in number.

The cycling program can, seen from a top-down approach, be described as the perfect way of implementing the cycling policies presented by the politicians. It states implementing principles and strategic areas for where measures are to be implemented. Moreover, it states further actions that Trafikkontoret should work with, in order to develop and improve the implementation process. As earlier studies has shown (Pucher et.al, 2010; Harms et.al, 2016:150; Wennberg & Nordlund, 2011:14), a wide set of measures are needed and presented, in order to achieve an increase in the number of cyclists. Moreover, combining both push and pull measures, i.e. implementing cycling measures and measures that decrease the attractiveness for the car are stated and in line with what previous studies have shown (Pucher et.al, 2010; Harms et.al, 2016). Seen from a bottom-up perspective, the cycling program allows for cooperation with several different actors, such as citizens.

#### 4.5. Parking policy

The parking policy is a document with the aim to guide how the city should work with the changed requirements for parking and the accessibility to different parts of the city. The policy should support the city development that is identified in the municipality's budget and in the comprehensive plan (Göteborgs Stad, 2009:5). Moreover, new (from 2018) parking requirements are presented in the end of 4.5.

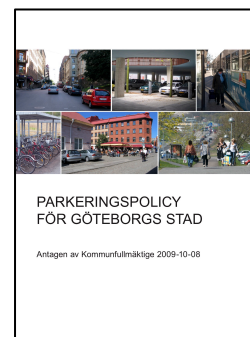
#### ❖ *Authors and support*

Authors of the document are Stadsbyggnadskontoret, Trafikkontoret, Göteborgs Stads Parkering AB, Fastighetskontoret, and the administration of environment (*Miljöförvaltningen*). It was produced at the request of the building committee and the urban transport committee and has been approved by the city council.

#### ❖ *Goals*

The goal with the parking policy is to ensure that the city is accessible for all citizens. The city should be attractive with a sustainable urban development, considering the three dimensions of sustainability; economic, social, and environmental. Moreover, it should encourage more people to choose public transport or the bicycle, instead of the car (Göteborgs Stad, 2009:7).

The parking policy argues that the distance to a car parking should be longer than the distance to a public transportation stop. This should mostly be implemented in the city center (Göteborgs Stad, 2009:19). The demand for public transportation should increase. Therefore, measures to reduce the demand for car parking should decrease to achieve the goals (Göteborgs Stad, 2009:19). Moreover, space made available from car parking could potentially be used for



cycling paths. The municipality cannot influence a lot of parking space at workplaces, and a cooperation with private actors is therefore important to reduce commuting made by car (Göteborgs Stad, 2009:20).

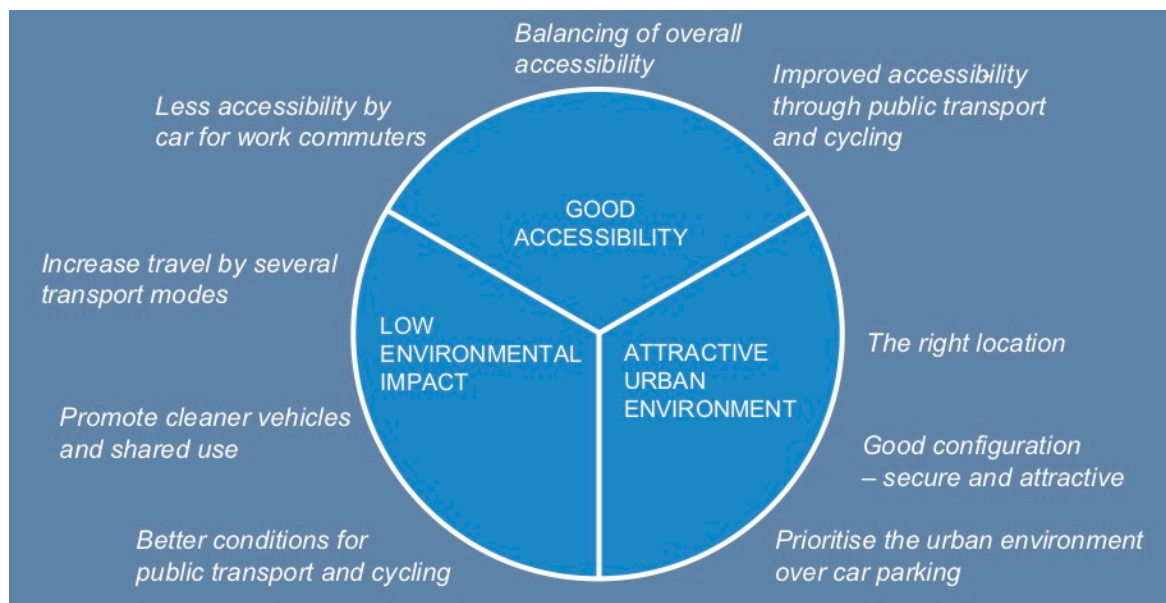


Figure 8: Goals presented in the parking policy (English picture taken from the transport strategy) (Trafikkontoret, 2014:49).

### Goals for cycling

For cycling parking more specifically, the number of cycling parking should increase in the city center, where the distance is not too far away from important locations. Cycling parking should be put in place at car commuting parking, and at major public transportation stops. Cycling parking should also be arranged within an area for building sites at residences and workplaces. The cycling parking should be safe, of good quality, have weather protection, and there should exist opportunities to lock the bicycle (Göteborgs Stad, 2009:7). Further, the environmental benefits for cycling are mentioned in the parking policy.

### ❖ Measures, strategies and implementation process

Five strategic areas of measures are presented (Göteborgs Stad, 2009:165):

- Localize, prioritize, and make the supply more effective
- Refine the city environment of Gothenburg
- Empower and increased travelling with public transportation and cycling
- Develop the chain from comprehensive planning to contract
- Better cooperation when planning

The parking policy describes that the city should remain the same number of car parking as it has today, but that these may need to be relocated, to give more place for new public transport and cycling roads or if other prioritizations need to be made. As the public transport system is expanded, car parking can be reduced, especially in places where there is a good connection to public transportation (Göteborgs Stad, 2009:7). It is mentioned in the parking policy that the environmental problems such as noise, pollution, and land-use will be difficult to resolve if car use continues to increase (Göteborgs Stad, 2009:9). Accessibility is acknowledged as being of major importance. It is mentioned that there is a need to balance the different transport modes;

car, public transport, and bicycle in different parts of the city. This should lay as a ground as to where to put new parking facilities (Göteborgs Stad, 2009:11).

The document also acknowledges that further cooperation needs to be made between municipal and private actors. Moreover, strategies to increase the accessibility should be weighted and analyzed together with other municipal administrations, and the parking company and public transportation actors (Göteborgs Stad, 2009:22).

#### *Updated parking requirements*

Since 2018, new parking requirements means that, during local plans and building permits, the focus should be on mobility (*mobilitet*) rather than the previous focus on specific number of parking and cycling parking. The new approach is supposed to be project specific and flexible. In the early stages of a planning project, the municipality holds a meeting with the housing developer so that new innovative solutions can arise, to reduce the number of car parking and car ownership (Göteborgs Stad, 2018a:4).

#### ❖ *Analysis of the parking policy*

The parking policy of 2009 has been approved by the city council and created between different administrations, which shows that collaboration exist and potentially a united approach towards parking exist within the city. The document is in line with the comprehensive plan and the transport strategy, with the aim being to reduce vehicle traffic and increase cycling and public transportation. A potential conflicting goal is thus between cycling and public transportation. The strategy is to balance the different transport modes. The new parking requirements from 2018 shift focus from number of parking to mobility (*mobilitet*), which shows that new ways of looking at the transport system are made. By adapting the use of different mobility solutions to a particular area and not having predetermined a specific transport mode, the process allow new innovative solution to be found (Smidfedt Rosqvist & Ljungberg, 2009).

#### 4.6. Road safety program 2010-2020

The aim of the road safety program is to decrease the number of people injured and killed in traffic, where continuous investigations and measures are done in the city (Trafikkontoret, 2017:51). At the same time, more people should be moving in the city, new technology with the ability to reduce accidents should be used, and increase the interplay between the street environment, the people, and the vehicles (Trafikkontoret, 2009:6). The author of the document is Trafikkontoret.

Three groups of people are prioritized in the road safety program; pedestrians, cyclists, and people using public transportation, emphasizing the importance of creating a consciousness of safety for young people (Trafikkontoret, 2009:6). Lack of safety is foremost brought up due to poor asphalt coating on the cycling paths and other causes are derived to cyclists behaviour, defect on the bicycle. It is also mentioned that many of the people being hurt severely are lacking a helmet (Trafikkontoret, 2009:14).

#### ❖ *Analysis of the road safety program*

The road safety program shows that sustainable transport modes are prioritized in terms of traffic safety. The lack of poor asphalt coating on the cycling paths is acknowledged, as in the cycling program, which shows that there, partially, exist an adequate causal theory as expressed by Sabatier & Mazmanian (1986) about traffic safety.



#### 4.7. Integrated document analysis

The document review allows to analyse the different goals set by the different administrations and how cycling is acknowledged in these. The documents can from a top-down approach be regarded as a framework for how the city should be developed. These documents work as guidelines, which have been politically decided. According to the guidelines set by the officials, officials and managers cooperates to find strategies and solutions. The goal from the state (*Transportpolitiska mål*) are mentioned in the comprehensive plan and the following documents are referring back to the comprehensive plan, showing willingness from the city as a whole to strive towards the same goal and future.

##### 4.7.1. Support of the documents

The goal of increasing the number of cyclists from 6% to 12%, and that 75% of the citizens of Gothenburg should think that the city is a cycling friendly city is well presented. Furthermore, the comprehensive plan, transport strategy, urban development strategy, and parking policy are all acknowledging the bicycle as a viable transport mode. It can therefore be argued that there exist an agreement between different actors within the city that measures should be implemented to increase the number of cyclists in Gothenburg and make Gothenburg a cycling friendly city. Despite this, it can be noted that the documents produced by Trafikkontoret are the ones who are mentioning the most benefits, potentially showing the largest comprehension of why cycling measures should be implemented, and acknowledging the fact that they are the administration primarily responsible for this issue.

Trafikkontoret primarily produces the documents regarding transport, and Stadsbyggnadskontoret the ones for urban development. What can be noted is that there has been cooperation between different administrations for the overall strategic documents. The comprehensive plan was taken forward by several administrations. Moreover, the transport strategy, the development planning strategy and the green strategy were taken forward simultaneously. This shows that there are efforts being made to get a holistic and united approach on how the city should be developed. In addition, the documents Vision Älvstaden (Vision Älvstaden, 2012), and the parking policy show that a wide set of actors cooperates to find common goals and solutions. The questions brought up in these documents could mean that there exists more cooperation for certain issues or transport modes, i.e. parking, public transportation, and creating cycling and pedestrian bridges across the river. Moreover, the documents are, before approved, handed out on remittance which allows for feedback from a various group of actors.

##### 4.7.2. Status of the bicycle in comparison to other transport modes

Benefits for cycling are mentioned in all of the strategic documents. The three aspects of sustainability are all accounted for, i.e. environmental, social and economic sustainability. These benefits are generally described in documents that are not focusing on transport. More detailed explanations of the benefits can be found in the transport strategy and foremost in the cycling program. This shows that there exist an understanding of the benefits of cycling, which can be beneficial for the implementation of the measures.

In the transport strategy, it is possible to believe that potential conflicts may arise between different transport modes. The goal of the city clearly mentions that cycling, walking, and public transportation should increase in number in comparison to the car. Despite this, no clear prioritization is made between the different sustainable transport modes in the transport strategy. A lack of clarity could potentially mean that the officials on the ground do not have

any clear guideline about what to prioritize and when. This could mean that they can find new innovative solutions on the ground, but it could also be problematic when trying to build a coherent network for all of the sustainable transport modes. In the new parking requirements, a new approach to parking is made and the term mobility (*mobilitet*) is used. No specific number of parking should thus be predetermined, but instead find the best sustainable solution dependent on the specific solution.

The comprehensive plan argues that public transportation and cycling should be prioritized where there is limited space. Prioritizing public transportation is specified while the goal for cycling rather is to increase the number of cyclists. Prioritizing public transportation can be a barrier to building a coherent cycling network. The specific issue of railways for tramways is further brought up in the cycling program, mentioning the difficulties in prioritizing the bicycle.

The document review thus shows that the bicycle is acknowledged in all documents. It further shows that potential conflicts may arise between different, sustainable, transport modes, as these all should increase. What is clear and consistent in terms of the goals is that the use of car should decrease.

#### 4.7.3. Implementation process and measures

The cycling program clearly describes how cycling measures should be implemented and how the process of implementation should be improved, in order to continuously develop the process. The cycling program clearly states how cycling measures should be implemented. It can, despite this, be noted that there exist room for experimentation on finding new measures and developing the implementation process, allowing for a bottom-up approach. Moreover, cooperation with other actors is supported, inviting once again for a bottom-up working process. In addition, projects are being run between the city and different actors (see 3.5.1.), showing that the city is involved in continuous research about cycling.

As the cycling program more in detail show what measures that should be implemented, measures can be found in the other city documents as well. Strategies that are reoccurring in several documents are to create a dense city, which invites the bicycle a place in the city. Furthermore, allowing for different transport modes to be combined in a journey, i.e. having cycling parking nearby bus and tram stops and bicycle sharing systems, are acknowledged measures.



## 5. Interview results

This chapter will describe the results from the interviews. 19 interviews were held with politicians, one member of a cycling interest group, and officials from Trafikkontoret and Stadsbyggnadskontoret. The interview material is analyzed and connected together with relevant documents and implementation theory, i.e. top-down and bottom-up theory. The chapter is organized in the following thematic areas: Cycling measures, Status of the bicycle in relation to the car, Promoting cycling, walking, and public transportation, Combining housing and infrastructure development, Approaching the goals differently, and Knowledge and support. The interviews are based on implementation theory, but the thematic areas have been identified based on the interviews. In this chapter, what cycling measures to implement and how to implement them is accounted for and discussed.

### 5.1. Cycling measures

A wide set of measures are needed according to the interviewees. Large focus is put on increased mobility, building a coherent cycling network and making adjustments to the existing one, i.e. operating and maintaining, as stated in the cycling program.

When mentioning the need for a coherent cycling network, arguments were made about the cycling network being poorly built and designed for cycling. The focus is on infrastructure investments, which is supported by the budget of the urban transport committee. Despite this, few projects are carried out and the money allocated for the investments are not being used. This is due to a lack of personnel resources lacking both internally within Trafikkontoret, but also in terms of entrepreneurs carrying out the work. The lack of entrepreneurs and a housing and infrastructure market in Gothenburg that is saturated means that the prices are rising, which is another barrier for the implementation.

Another topic brought up by two officials from Trafikkontoret was that the state's transport administration, Trafikverket, should take more responsibility in building their part of the network. Trafikverket owns some of the car roads that are a part of the intended cycling network identified in the cycling program (note that the map in 2.2. is not an expansion plan but requirements for how the cycling network should be developed). In other words, the municipality is dependent on Trafikverket in order to fully expand the coherent cycling network:

*“They [Trafikverket] own a large part of the network [...] It [the cooperation] works well, but I think they should build more [cycling paths]”* (Traffic engineer, Trafikkontoret)<sup>1</sup>

This shows that building a coherent cycling network is dependent on several actors and a good cooperation must thus exist between Trafikkontoret and Trafikverket, in order for the cycling network to be fully expanded. As the cycling program mentions functional requirements, it needs to be ensured that these are implemented as intended and cooperation between the two actors is therefore important.

Another barrier to building a coherent cycling network is the fact that there exist laws (*Väglagen & anläggningslagen*) (see 3.3.2.), which means that new cycling paths needs to be built adjacent to car roads. This can potentially be a barrier if Trafikkontoret wants the cycling network to be

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<sup>1</sup> All translations of citations are the author's own. The citations and the full interviews are within the author's possession and available to review.

built as is identified in the cycling program, where some of the potential cycling paths are dependent on changing the laws. Relating to Sabatier & Mazmanian's (1986) third factor of the implementation process being legally structured to enhance compliance, these laws are barriers to a successful implementation.

Another problematic issue in the local plans to ensure how the newly built area should be connected to the surrounding areas. The level by how much this is a problem differed based on which type of project it was. According to the detailed planning coordinators, there is a difference in the size of the area being built, i.e. when planning smaller areas it is more difficult to get a holistic view of cycling and adjacent areas. The importance of taking into account the surrounding areas in local plans was mentioned:

*“You should have a comprehensive approach, so that you can ensure that you can move from A to B and not just past the [local] plan. You should see the whole perspective, it is also really important in our plans”* (Planning coordinators, Trafikkontoret)

This shows that having a holistic approach when planning is important. This has further been acknowledged by Wennberg & Nordlund (2011), where detailed comprehensive plans (*fördjupad översiktsplan*) were regarded as a success factor, so interconnections between areas are not forgotten.

For operation and maintenance of the cycling paths, financial resources are lacking. Financial support concerning investigations and working with behavioural measures are also lacking. Poor maintenance, and behavioural measures has in an earlier study been shown to be lacking in Gothenburg (Cykelfrämjandet, 2017:41). A holistic approach to the implemented measures was regarded as important, both stated in the cycling program and according to the interviewees. Despite this, some interviewees mentioned that money were mostly aimed for infrastructure improvements in the first hand, and that money for operation and maintenance, and behavioural measures were lacking:

*“We have a lot of money for investments but very little money for what we call operation and maintenance measures, that is operation and maintenance of cycling paths, but also producing investigations, producing support and so on. There we don't have enough resources or working with behavioural measures either”* (Official on strategic level, Trafikkontoret)

From a top-down perspective, it can be argued that the documents work as guidelines for what measures the officials should work with, but they are at the same time dependent on financial resources specifically aimed for other measures than infrastructure. Not having financial resources for certain measures limits the potential positive impact that the officials can, with intended measures to implement, achieve. It can further be noted that the cycling program depends on a continuously improved working process at Trafikkontoret, hence money is required to improve the implementing process with measures such as producing investigations.

The interviews show that there exist a clear view from the traffic engineers and traffic planners of infrastructure measures being an effective measure for reaching the goals of the cycling program. For behavioural measures on the other hand, a lack in causality is a possible explanation to why there is no more focus on this, i.e. financial resources allocated. The interviewed project leader working with these types of measures expressed it as follows:

*“...And that’s what it’s really about, so to say, on the behavioural measures issue, it is difficult to know what we should focus on without knowing what really gives an effect and to then follow it up”* (Project leader, Trafikkontoret)

Referring to Sabatier & Mazmanian’s (1986) second factor about adequate causal theory (see 2.1.1.), a clear link between problem and solution is possibly lacking for behavioural measures, i.e. there seems to be a higher degree of uncertainty about the effectivity of the measures. For these measures, inspiration from other countries and cities, and experimentation were seen as ways of finding measures.

The interviewees also acknowledge that focus should be on operating and maintaining the existing cycling network. The main accidents that occur for cyclists are accidents only involving one cyclist, where better maintenance of the lanes would decrease the number of accidents. The operation and maintenance of the existing cycling lanes are behind in terms of quality, which needs to increase overall. The lack of proper quality has in an earlier study for Swedish cities shown to be the cause of a lack of financial resources (Niska, 2006). An argument brought an official, was to spend enough money to get the required quality on the whole network. Thereafter, the yearly spending could be lower but focus on improving the network even more. By working in this way, the interviewee argued that cyclists could more clearly see the improvements made than when “last-minute fixes” are made:

*“I would rather have.. that we have a base level, that the base level on the cycling paths is good enough, so the million we can invest each year instead, it is then we do the fine tuning, so it becomes even better, not just selective measures because then you don’t see that things get better”* (Official, Trafikkontoret)

Having a larger budget for operation and maintenance is preferred to making last-minute fixes. As this official expresses it, it is not always the case in practice.

Different projects are organized by Trafikkontoret to get people to ride a bicycle during winter, such as allowing a number of cyclists to get free winter tires. This is done together with the region of Västra Götaland and the local federation of Gothenburg (GR). New methods are also being tried, such as new methods to remove snow (*sopsaltning*). During this process, an important actor was argued to be VTI, the state’s research institute for transport, which is stated as an important actor to get access to new methods. Finding the right measures are therefore not always done by bottom-up experimentation, but can be provided by national institutes. An official from Trafikkontoret expressed it as being important to see that new methods have been used and tested at other locations before. This was further stressed in relation to the money available being limited and trying new methods in Gothenburg would therefore be too costly.

Much focus during the interviews was put on the commuting cycling network. The activist interviewed on the other hand explained that in order to get new groups of people to ride a bicycle, more focus should be on the fine mesh of the cycling network. This interviewee expressed it as the commuting cycling network, which is highly prioritized by the officials interviewed at Trafikkontoret, is intimidating for new cyclists, due to the high speeds:

*“If you want to gain new cyclists, I don’t think you will do that with these fine paths [commuting network], it is the local network. You need to get someone to*



*start cycling two, three kilometers to the store, instead of taking the tram or the car” (Activist, interest organization)*

This interviewee further argued that it was important in terms of equality, since cycling not necessarily means cycling to work and commuting, but could also mean to make daily chores. According to this interviewee, most of the focus was put on the commuting network, which in itself was regarded as a barrier to attract new cyclists.

Moreover, overcoming the physical barriers in the city was raised as an argument, but also to make a statement to the inhabitants of Gothenburg that cycling is important. A traffic engineer expressed it as more venturous measures were needed, not only cycling specific measures:

*”...It is a large investment and it really shows that: “here we are doing something beyond what is expected” and that is something that we need in Gothenburg. We need a cycling bridge, we need to give cyclists priority where you might have not expected it” (Traffic engineer, Trafikkontoret)*

Seen from a top-down approach, the politicians sets goals and allocate a budget to these goals. It was argued to be of importance that cycling investments are continuous over a longer period of time, in order for true change to happen. Successful cities were used as examples to show that continuity is of importance and hence acknowledging the importance of a strong political will:

*“I believe it’s good to set the goals. I mean, what should I say, that method of, that method of ruling, eh, works if politicians continues to work with what they have said. I believe that Copenhagen is a good example. People believe, yes well Copenhagen is a good city to cycle in. When did they start? In the 60’s, in the end of the 60’s or in the second half, then the politicians say that we will, we will give cyclists priority. 40 years later we believe that it is a good city to cycle in” (Project leader working with local plans, Stadsbyggnadskontoret)*

This importance of continuity was raised in relation to the cycling program only having been approved since three years when the interviews for this thesis are performed. Interviewees agreed that achieving a larger number of cyclists is a continuous process that takes time and therefore demands a continuous political will, stressing the importance of the top-down approach and the sixth factor presented by Sabatier & Mamanian (1986) of not having changes in socio-economic conditions that undermines political support. Moreover, the interviewees argued that this much amount of financial resources only has been allocated for Trafikkontoret for a couple of years, meaning that the organization needs time to adapt and understand how to work with implementing cycling measures.

To summarize, the main focus is put on building a coherent cycling network, where the main focus is on the commuting cycling network and the overall cycling network. Here, arguments are made that it is difficult to get a coherent cycling network throughout the local plans. Operation and maintenance, behavioural measures, and producing investigations seems to be of importance but it is argued that the money available is not enough. Financial resources are on the other hand not the issue for new investments in cycling paths, but rather a lack of personnel resources internally and in terms of available entrepreneurs. Moreover, arguments are made by the interviewees for the importance of continuous investments made by politicians.

## 5.2. Status of the bicycle in relation to the car

Several interviewees not only mentioned the importance of implementing cycling specific measures, but also the need to implement measures restricting motorized vehicles, such as limiting the mobility and parking of cars. Arguments for measures restricting the use of cars was the necessity to limit one transport mode, if another was to gain in number. As examples brought up of these more venturous measures, some interviewees mentioned the importance of restricting vehicles by different measures, such as taking away parking to create new bicycle lanes or increasing parking taxes for cars.

Getting car drivers to choose cycling was deemed a necessity to achieve the effect targets in the transport strategy. In other words, getting car drivers to use public transportation would not help, as the public transportation system is already at maximum capacity during rush hours. Most of the interviewees believe that the number of motorist should decrease and be replaced with cyclists, which is in line with the city's strategic documents. A specific measure mentioned was for car drivers to have the opportunity to use an electric bike instead of their car for a limited time period, a project stated in the action plan for cycling of 2018 and has been conducted previous years as well. The persons involved could thereafter buy the bikes to a discounted price once the project was finished. This measure was by one interviewee regarded as an effective measure but acknowledging that it can only be offered to a limited number of people. The electric bicycle was mentioned as a solution to bridging fixed barriers such as the river, a hilly topography and the weather.

Regardless of political party, cycling is highly discussed and expressed as important for the development of the city. The dividing line between parties is whether or not the share of cars should decrease or not:

*“That is a reasonable development if we can achieve to keep the car traffic constant when we will grow with 150.000 inhabitants, and that we get an increase in public transportation, and then if cycling also increases, then that is also beneficial” (Politician)*

This citation shows that there exist differing opinions about what should be the quantitative share for the different transport modes.

The interviewees mention that more venturous decisions are not always taken. These arguments are raised by different professionals having different competence areas. One official from Trafikkontoret argued that there can sometimes be a cautious approach from politicians even when traffic planners can prove that a measure can be implemented without affecting cars negatively, when at the same time it benefits cyclists and pedestrians. A politician discussed these difficulties that exists in politics to limit the car:

*“Our strategic documents says that, the transport strategy, will increase cycling and pedestrians. Here, they do exactly what the politicians are telling them to do, I mean the officials really do it. They see, “ah, here the number of cars are decreasing, here we can do something positive for the cyclists, and pedestrians”, because otherwise there are many conflicts when there is common paths, but the politicians [from other political parties], don't dare to do this” (Politician)*

Difficulties in the political process was mentioned by a politician as to carry through ideas presented in the budget, since the political parties having proposed the budget are not in a

majority. In these processes, it occurred that even though there was a will from officials in Trafikkontoret, politicians could at times be resistant to make changes for cars. Political differences were discussed but also the fact that it is an election year (2018) and that certain political parties therefore have to acknowledge the car to gain and retain voters, or at least, so they believe. Seen from a bottom-up approach, there exist knowledge and creative, venturous measures. On the other hand, these bottom-up tendencies from traffic planners need to be acknowledged and approved by the top in order for the measures to be implemented.

It was further mentioned by the interviewees that there exist support from interest groups working for cycling. Some interviewees although noted that the influence of these groups were not so important in Gothenburg and that a higher level of cooperation should exist with Trafikkontoret and politicians. A politician and a traffic engineer further argued that a barrier was the fact that interest groups supporting cars have a stronger influence at the moment.

In general terms, there seems to exist a united vision of the city striving toward replacing car use with sustainable transportation use (further developed in 5.3.), which is in line with the city's strategic documents and the goal of the city council. Despite this, it is not always the case and examples brought up by the interviewees show that the car is still prioritized in certain projects. A political dividing line seems to be if the number of cars should decrease or not. This could be a barrier to successful policy implementation, relating to the sixth factor of Sabatier & Mazmanian (1986) about socioeconomic conditions not undermining political support.

### 5.3. Promoting cycling, walking, and public transportation

The interviews, together with the documents, shows that the city's goal is to increase the number and share of cyclists, pedestrians, and people using public transportation. At the same time, the number of people using the car should decrease (even though there exist examples of the car being prioritized by politicians, see 5.2.). This gathered approach of promoting all sustainable modes of transport means that, without clear prioritized ranking of the modes, conflicts can arise. Two main issues have been identified from the interviewees; cycling in relation to public transport, and cycling in relation to walking and creating a pleasant and attractive city.

#### 5.3.1. Public transportation and cycling

Trafikkontoret not only works with cycling but also with many other transport modes. Therefore, conflicts between different modes can occur. As stated in the transport strategy, the goal is to increase the number of people using sustainable transport modes in the city, while decreasing the number using cars. In addition to cycling, walking and public transportation is of high priority. The officials working for Trafikkontoret expressed this as there being a focus from officials to work with their subject of matter. Some interviewees were uncertain about what to prioritize and how, since both were of high importance. One traffic planner mentioned that a new traffic net plan is produced at the moment and that it might facilitate the process.

The interviewed planning coordinators mentioned the difficulties of prioritizing both cycling and public transportation:

*“I rather think that it is more difficult to prioritize maybe between public transportation and cycling. Because they're both highly prioritized. And if we for example have. Yes well if we want the tramway to pass through and the commuting cycling network, which one has the highest priority? That one I believe can be difficult sometimes. Because I feel that we have the mandate to*

*prioritize down the car, but public transportation should also be highly prioritized” (Planning coordinators, Trafikkontoret)*

*”You have to better agree about, I mean where we should have better mobility and where we can have a little less mobility, so that it creates a functioning network, not only for the car and public transportation but also for pedestrians and cyclists. So that you make it work. And then you can start.. Then it is easier to when you densify to know: this street or this street, it is an important link for public transportation for example. Then it is more clear instead of arguing in each one of the local plans” (Traffic planner, Trafikkontoret)*

These citations show that the planners are uncertain about what to prioritize and when. Arguments were made about having more specific documents that clearly depicts what and where to prioritize. A traffic planner argued that a digital version of the cycling program was being produced, and a transport network plan. For this traffic planner, it was of importance to have the cycling network in a digital format, since the one existing was mentioned to be difficult and time consuming to use. The transport network plan would help in knowing what transport mode that should be prioritized and where. Seen from a top-down perspective, there is according to the interviewed planners currently (2018) a lack of supporting documents for properly knowing what to prioritize and when. There is therefore a lack of a clear structure from the top to enhance compliance, as is one of the six top-down factors of Sabatier & Mazmanian (1986). The documents are being produced during 2018 and can once finalized mean a more clear structure and detailed planning support.

Despite this, it was argued by several interviewees that public transportation is often prioritized. It was mentioned that public transportation is a big part of the transportation system in Gothenburg and that it requires a lot of space. Moreover, an example was brought up by an interviewee about public transportation and green waves for cyclists. Concerning this, the interviewee found it hard to believe that public transportation, transporting numerous people, would give up priority for a few bicycles.

One opinion about cycling was that the bicycle must be able to support itself all year around, which reflects how cycling was perceived by engineers after the second world war (Emanuel, 2012). Concerns were brought up considering the fact that public transportation has achieved its maximum capacity in the central parts of the city during rush hour and that therefore, cyclists must continue to cycle during rainy days and during winter (see 5.1.). An aspect brought up by an interviewee from Trafikkontoret was the importance of keeping cyclists cycling during autumn. According to this interviewee, a person who does quit cycling during autumn due to the heavier winds will not start again during winter but later in spring the following year:

*”Because if you have put away your bike at the autumn, then you won’t get back during all winter. Then you start during spring again” (Official, Trafikkontoret)*

This shows that there is a need for an integration of the two transport modes, in order to create a more sustainable transport system in Gothenburg and reduce the number of cars. Further strategies mentioned to support these two transport modes were to put focus on cycling parking nearby public transportation stops, and to continue to develop and expand the bicycle-sharing system (Pucher et.al, 2012), which is further supported by the document analysis.

To summarize, the prioritization between public transportation and cycling is not clearly stated from the top, as there arises difficulties for the planning coordinators and traffic planners. This lack of clear and consistent goals and prioritization means that arguments about what to prioritize is brought up in for numerous local plans, meaning that the officials below have to create project-specific solutions. The document analysis shows that the specific issue of tram railways is a barrier to creating a coherent cycling network. Moreover, the law of tramways always having priority in Gothenburg is also a barrier. Despite these inconsistencies, the interviewees acknowledges that cycling and public transportation should complement each other by having cycling parking at bus stops and developing and expanding the bicycle-sharing system.

### 5.3.2. Creating an attractive and pleasant city for pedestrians, and cycling

Creating a pleasant and attractive city life versus building cycling paths is the main conflict between Trafikkontoret and Stadsbyggnadskontoret. An official on strategic level from Stadsbyggnadskontoret believes that the goal of increased cycling is aligned with the goal of creating a green and close-knit city, which is in line with what is said in the city's strategic document of urban development, created by Stadsbyggnadskontoret (Stadsbyggnadskontoret, 2014). On the other hand, the same interviewee also believes that commuting cycling networks can be barriers on streets and disturb pleasant city life on plazas for pedestrians. This is further acknowledged by the interviewees from Trafikkontoret as being a reoccurring discussion point between the two administrations.

Conflicts with pedestrians are often related to the goal of creating a pleasant city life. The focus of Trafikkontoret on the other hand is on mobility and traffic safety. This conflict was acknowledged by the interviewees. Separating pedestrians from cyclists to avoid conflicts and accidents was a reoccurring measure. This type of measure requires a lot of space and is therefore not easy to implement, considering other solutions that has to fit in the sections. Problems that had to be solved are argued to be the cause of a lack of space. Some interviewees also acknowledged the fact that a lot of focus lately has been put on cyclists and not pedestrians:

*“There is a lot of talk about the bike nevertheless, more and more. A whole lot I would say. I mean there is not as much talk about pedestrians” (Traffic planner, Trafikkontoret)*

The up- and coming strategy for pedestrians was mentioned and it is possible to believe that this can become a more intense conflict in the future between the two transport modes.

As one factor causing these conflicts seems to be a lack of cooperation and discussion in the strategic planning phase between the different administrations in the city, expressed by an interviewee as follows:

*“Sometimes it can be, in the discussions a conflict between the mobility of the bicycle and other city qualities. And there is no consensus I would say between Stadsbyggnadskontoret if you think generally about the role that cycling should have in the city and what that means, a part of the ambitions that we have in the cycling program. So we would really need to illustrate what we mean but also discuss” (Official on strategic level, Trafikkontoret)*

There is an agreement between the different administrations that cycling should be promoted and cycling infrastructure built. Despite this, there does not seem to exist a united strategy of

how this should be accomplished. In the cycling program, principles about how cyclists and pedestrians should be separated are presented, depending on which type of cycling network it is, and the pedestrian flow. These principles seem to not be implemented to the extent wanted. As mentioned above, more illustrations and discussions between Trafikkontoret and Stadsbyggnadskontoret is needed. Also, Park- och naturförvaltningen was mentioned when the mobility of cycling and creating an attractive city was discussed. Reoccurring discussions about if and how cycling should be integrated in green environments such as parks were made. Moreover, an argument brought up by most interviewees was the lack of space in the inner parts of the city, making it difficult to separate cyclists and pedestrians in a desired way.

To summarize, the document analysis shows that the different administrations, Trafikkontoret and Stadsbyggnadskontoret, have different goals, which is further acknowledged in the interviews. Professional tasks are thereafter clearly divided between the administrations. Seen from a top-down perspective, there exist a clear structure formed by the documents and the organization of the administrations. From below, the different goals need to be handled and weighted against each other to find solutions.

#### 5.4. Combining housing and infrastructure development

While there are conflicting views between different parties in the urban transport committee about whether car traffic should increase or not, there are in the city also different goals between the different committees. Gothenburg is a growing city and the city has other important goals, such as housing, education, and healthcare. A manager expressed cycling in comparison to other goals within the city:

*“Politics in the wider sense [the city council] maybe does not see that cycling should be prioritized instead of healthcare and education, which is a large part of the municipal budget” (Manager, Trafikkontoret)*

Of these different goals, the one that was mentioned clearly brought up by the interviewees was the goal of housing. Combining the goal for housing and cycling was deemed difficult. As the main priority is on building new housing due to the rapid urbanization of Gothenburg, cycling can sometimes be neglected in the local plans. The goal of increased housing puts pressure on the officials to work in a fast pace, and according to the interviewees working with local plans, cycling can be forgotten. The different goals set by the politicians create difficulties for the officials in the organizations. The interviewees expressed it as there was a need to keep up with pressing housing goals, which could leave the cycling issue forgotten if time was a matter of issue:

*“If we are going to create space for a cycling path here, that local plan is going to take more time and that means that we cannot achieve the goals that we have with housing. So, many times, the one who loses, is the cycling path” (Planning coordinators, Trafikkontoret)*

In addition to the pressing housing goals, the number of simultaneous projects going on at the same time in Gothenburg was mentioned:

*“It is difficult to work with both housing and infrastructure at the same time. Because today we have, we have a high workload because there are many plans in the city at the same time” (Manager, Trafikkontoret)*

The goals set by politicians affect the way the officials handles the work from below. As the officials need to consider which goals are set and required for them to achieve, it influences their work.

Further conflict during the exploitation processes is the issue of enough space during housing projects. As commercial actors invest money to build housing, they want to make profit out of their investment. This was mentioned as a problem by the officials from both Trafikkontoret and Stadsbyggnadskontoret, as it made it difficult to ensure the right amount of space for cycling lanes, parking, and crossings. This problem is enhanced by the fact that there is limited space in the central parts of the city. A planning coordinator from Trafikkontoret mentioned that the same problem concerning space also can arise when new areas are planned, thus the limited space is not always the only problem.

An argument was the need for further cooperation between actors. Officials from Trafikkontoret and Stadsbyggnadskontoret explained that the city's administrations need to stand united when housing projects are developed. The commercial actors were described as powerful and that it was difficult to argue against their will:

*“The city, that is Trafikkontoret, Stadsbyggnadskontoret and Fastighetskontoret, it is we that are planning the city, not the commercial actors. Sometimes I can feel that it would have been better to separate them a bit more. And then we can achieve how we see that the city actually should evolve”* (Traffic planner, Trafikkontoret)

The interest of the private actors to make profit is regarded as a barrier to ensure enough space for cycling paths and cycling parking. This can be referred to the development that has been part of the Swedish planning process since the 1980's, i.e. negotiation planning (*förhandlingsplanering*). This type of planning means that there exist two types of decision making; one formal, and one informal. This planning phenomenon states that actors not being part of the municipality take more initiatives in the planning process and that later, the municipal planning process finalizes the process of already predetermined, informal decisions (Strömgren, 2007:236). The interviews show that this process might occur for certain projects and that it can affect how the municipality plans to develop the city. Private actors thus seem to affect the implementation process, leading to that the top-down structure is not always followed as intended.

The interest of commercial actors to make profit is argued to affect cycling parking in local plans. This can be due to property developers requiring as much built area as possible, leaving the issue of cycling parking to the building permits, expressed by the planning coordinators as follows:

*“In many cases I experience that the focus is on car parking and that the property developers or Stadsbyggnadskontoret thinks that the parking for cycling will be resolved in the building permits”* (Planning coordinators, Trafikkontoret)

The planning coordinators further acknowledged that they hoped and believed that the new parking requirements, focusing on mobility (*mobilitet*), is going to favor cycling.

A barrier for successful policy implementation was difficulties in creating enough space to ensure technical requirements, such as proper visibility for cyclists at crossings, tracing of the



cycling paths, and cycling parking. Parking for cycling was raised as an issue where the detailed planning coordinators argued that it was difficult to ensure the proper number of bicycle parking. The number of parking to ensure was raised as high but in the same time clearly stated as important for cycling as a transport mode. The planning coordinators mentioned the difficulties that exist with cycling parking:

*“Another challenge is that we exploit a lot in the central parts of the city and the demands on exploitation are very high. And then we need to make space for bicycles, and that can be difficult. And then we have the new bicycle parking requirements and they are high, and they should be, you should be able to store your bike, but it also takes space in the buildings and the property owners are to take care of it”* (Planning coordinators, Trafikkontoret)

Cycling paths and parking is handled with in local plans. Finding solutions that integrates all functions and transport modes desired by different actors was deemed difficult. Seen from a top-down approach, there is no legal requirement that can ensure a sufficient width on the cycling paths or number of cycling parking. Project-specific solutions therefore has to be made by officials, showing bottom-up tendencies.

Housing development and cycling seems difficult to combine, as there is no combined approach and strategy on how to solve these two questions simultaneously. There are different goals for the different committees within the city, which lets the officials find project-specific solutions. This complicates the task of building a coherent cycling network. Pressing time to finish local plans and developing housing, combined with a high workload, means that cycling can at times be neglected or forgotten. The limited amount of space in the central parts of the city, which is the main area for where to implement cycling measures, is argued to be a barrier. Many functions and transport modes needs to be accounted for, see 5.3..

To sum up, private companies imposes pressure on the municipality and it can at times be difficult to resist the will and requirements of the private actors of creating more space for buildings to gain larger profit, as expressed by the interviewees. The interviewees from the municipality further explain that a united approach between the different administrations is needed in order to create the city that the municipality wants to see. It can be argued that a better cooperation in terms of vision and goals is needed between the city and actors outside of the city. It can also be argued that the city needs to be able to resist the requirements of financial return that the private actors impose the city. Furthermore, this shows bottom-up trends of external factors influencing the planning process. This can be referred to negotiation planning (*förhandlingsplanering*) that has existed in Sweden since the late 1980's.

### 5.5. Approaching the goals for cycling differently

Some respondents from Trafikkontoret were worried that the goals stated in the cycling program would not be achieved, i.e. that the goals were too ambitious. Different opinions exists internally within Trafikkontoret about whether or not the goals are realistic or not. Some interviewees explained that the goals can be questioned internally, based on the goal's realism and why so much was invested in cycling, since it only represents a small share of the total trips made in Gothenburg. Why high investments is made for cycling without achieving the wanted increase in cycling shares were also questioned:



*“I can feel that internally [in Trafikkontoret] it is still a bit: ”oh, these bikes”. I mean, “why put so much money on so few people? How do we benefit from that?”” (Official, Trafikkontoret)*

*“Internally [in Trafikkontoret] there is very large width about how you approach this document [the cycling program] and what you actually believe is reasonable to achieve. Some have a negative attitude towards the goals that are set for cycling traffic and believe that it will cost a lot of money to get there and that we probably won’t get there” (Official on strategic level, Trafikkontoret)*

The citations above show that there might still exist a path dependency where certain officials from Trafikkontoret are thinking prognosis-led planning instead of what the transport strategy stresses, i.e. target-led planning. Whether or not the goals for cycling are realistic to achieve or not seems to be influenced by the level of interest that the officials have for cycling. Officials who primarily work with cycling generally have a larger belief in the goals stated in the cycling program. Arguments are that the goals are realistic, considering the low number of cyclists in Gothenburg today, and because there already exists a lot of cycling paths in the city. Moreover, these interviewees believe that the goals are useful since it allows for follow up.

Despite the importance of having goals, one interviewee argues that the goals are not what is most important:

*“If you think in terms of implementation I believe that it is more important to have indicators for what we need to achieve to reach the goals. We don’t really have that, we have initiated that work and will continue during this year [2018] to try to find these indicators because it requires a whole lot of preparation work to be able to follow up [...] The goals are too diffuse to be to guidance. So the goals in themselves, they are irrelevant. What matters is what stands in the cycling program, with the strategy, functional requirements and principles which are important” (Official on strategic level, Trafikkontoret)*

*“I think that it sometimes gets wrong, I notice that in some of our strategic documents. We end up in a discussion about the numbers, the quantitative goals. The interesting thing with such a program are the strategies, it’s about how you reach them [the goals]” (Politician)*

These interviewees states that the goals are not what essentially matters in order to increase the number of cycling trips, but the strategies in themselves. It is therefore important that the strategies are well-known by the people working within the city but also by other actors, so that there exist a united vision for how cycling measures are to be implemented.

To summarize, the officials have different opinions about the goals. These different opinions about the realism of the cycling goals were not argued to be a barrier in the implementation process. Despite this, it seems that the different views on if investing in cycling is the right way to go or not could affect the perception of cycling when solutions are to be found below. The view explained by some interviewees of not investing in cycling due to its low current share shows tendencies of a path dependent and prognosis- led approach. Moreover, having clear goals for cycling is not the only important aspect according to the interviewees, strategies are also mentioned to be of importance.

## 5.6. Knowledge and support

Even though arguments were made about there being a lack of officials specializing on cycling, the officials from Trafikkontoret argued that the present ones are very competent, but that the organization depends on a few key cycling experts. Moreover, there exists a cycling group, who coordinates the internal work and continues to develop the cycling program. The Cycling group consists of officials from each of the departments in Trafikkontoret, which was raised as positive since it facilitated communication. The group participates at different seminars and conferences. Thereafter, they share relevant information or present new measures that are inspired from other cities to the rest of the department or the organization.

In this process of finding new measures, there is an interplay with the politicians, where new measures are presented by the officials and discussed with the politicians in the urban transport committee. In addition, still having the authors of the cycling program present at Trafikkontoret was argued to be beneficial, as this gave continuity to the process. Many of the interviewees also referred to the importance of having a cycling strategist to turn to and who is responsible for the cycling program. Seen from a top-down perspective, there exist a structure for the people working with cycling to meet and work. The officials can from this structure work on finding new measures and improve the cycling program and the implementation process.

The interviewed traffic planners mentioned that they were the ones who need to find a solution on the ground, acknowledging that many solutions are specific to a certain location. Moreover, arguments were made about the importance of involving cycling in an early phase in the local plans. The traffic planners further explained that much depends on the competence and interest of the planning coordinators of taking cycling into consideration. They did also argue that, depending on who the planning coordinators turn to for advice, different answers can be handed, thus different solutions:

*“It is very different, and, when you enter a process. In some local plans you enter very early and you give support, and in some you get a finished document and you have a look: “oops, have you thought about this? Have you thought about that?” So it is really different when you enter. And much has to do with how experienced the planning coordinators are”* (Traffic planner ,Trafikkontoret)

The citation above shows tendencies of a bottom-up way of working. The traffic planners need to find new solutions, adaptable to each project, which is argued to be a necessity since different areas are different and have different conditions.

Internally, the officials from Trafikkontoret mentioned that they have access to a good set of documents helping them in the process of implementing cycling measures. The cycling program was argued to be of good use in different parts of the process and by different actors in the planning process. Arguments were made about that it clearly describes the cycling network and includes technical requirements that could be used as guidelines. One traffic planner mentioned that having the cycling map digitally would be easier to work with. The same interviewee mentioned that this is being produced. Another traffic planner argued that there should exist more concrete examples of different solutions, in order to facilitate the work for the planning coordinators:

*“Because there are more inexperienced [planning coordinators] arriving also. Then it is even more important to have something to look at. Then it is easier if you are a coordinator, then you can go and search and find what you need, in a*

*clear way. Maybe pictures, examples from reality”* (Traffic planner, Trafikkontoret)

The importance of the competence of the planning coordinators show that cycling is not fully integrated in the professional prerequisites of the planning coordinators. Analyzing this from a top-down approach, it can be argued that cycling better needs to be accounted for, and a prerequisite for planning coordinators. Seen from a bottom-up approach, a better cooperation is needed so that the planning coordinators more easily and naturally can use and integrate the documents available.

Within Trafikkontoret, the technical handbook was mentioned as a useful document for technical details in the planning process. Moreover, it was explained to continuously be updated with relevant information, e.g. the functional requirements presented in the cycling program.

A lack of personnel resources was argued as a barrier in the process of the local plans. Being able to get support from cycling experts was mentioned to be of importance. Moreover, a lack in detailed examples was brought up by a traffic planner. If there existed different examples showing how solutions in different situations could be made, the need for getting support from cycling experts would decrease. From a top-down perspective, it can be noted that there is, according to some interviewees, a lack of personnel resources (see 5.1.) and a clear structure in how solutions should be found. Officials explained that a more clear structure would help them in taking the right decisions.

Relating to the lack of personnel resources regarding cycling issues, as expressed by some officials, a general opinion was that Trafikkontoret should own the process in local plans. In that way, they would have better control of the traffic issue and better being able to control which personnel resources that would be needed and when they would be used. A manager expressed it as follows:

*“I would more want that we operated each local plan project for project so that maybe, well, that each plan has its own budget and to that we can buy competence or operate it so that we have it. Because now it becomes, the processes are long to get [personnel] resources. Do they exist or not? Are they attached to other projects?”* (Manager, Trafikkontoret)

Seen from a top-down approach, arguments during the interviews were made about there being too little personnel resources internally in terms of cycling experts to support planning coordinators. In addition, a lack of support was mentioned regarding documents that could help the officials with prioritizing between different transport modes and functions in the city, and with finding solutions without always being in need of support from a cycling expert.

Another barrier brought up in the discussions was how to measure the cycling flows during construction work. Since measuring stations are being moved during constructions, it is difficult to know how the flows are dispersed. No consistent measurements can therefore be made, which is seen as troublesome as the surveys therefore are not as reliable as they could be:

*“As I have heard from my colleagues who works with it, [people working with] analysis and the ones who measures, it is very difficult to know when we are constructing that much. Because you might close off a place, then we cannot use*

*that measuring station. Then the cycling flow is dispersed, but we don't really know how” (Traffic engineer, Trafikkontoret)*

Also, different methods have been applied for travel pattern surveys, leading to unreliable numbers (Trafikkontoret, 2017). The lack of proper and consistent measuring methods caused by constructions can be a barrier to knowing which measures that should be implemented, thus being a barrier to the continuous implementation process. The many constructions occurring in the city was seen as a potential barrier to cycling, but at the same time it was seen as a potential success factors as the construction work also might affect people driving cars to shift transport mode, which is furthermore a goal stated in the cycling program. For this, it is stated that the possibilities to ride a bicycle must be good. The cycling program describes the difficulties during construction times but also describes how the city should work with it. The cycling program further mentions that other paths, not being affected by constructions, can be improved in terms of mobility and comfort and that flows through paths being subject to construction projects can decrease.

Concerns about traffic regulations were that the regulations were old and not adapted to cycling. Attempts were made by some officials within Trafikkontoret to implement new, creative and experimental cycling measures that were not in line with the traffic regulation (*Trafikförordningen*). There are officials within Trafikkontoret that work towards finding new solutions and measures. These officials argue that existing laws regulated on a national level does not support cycling. In order to achieve a change, testing a new idea at one location and then evaluating this was deemed an effective strategy. According to these officials, whom have a high interest in cycling, this was a difficult process in which they encountered resistance both internally at Trafikkontoret but also from actors part of the *Trafiksamråd* (the consultation platform for traffic regulation, see 3.5.3.), a network of actors who work together in developing new local traffic regulations for the traffic system. An official from Trafikkontoret described it as follows:

*“Partly we are free [to experiment with new infrastructure measures], but there is still traffic legislation and traffic regulation and then we also have our own traffic safety requirements which sets limitations, but within that you can do it. And we have tried testing measures that are not in line with the traffic regulation, but it has been very very difficult to get it approved, I would say almost impossible, unfortunately. But you have to wait a bit and then you can raise the question again” (Official on strategic level, Trafikkontoret)*

This can further be related to the third factor presented by Sabatier & Mazmanian (1986) of having a legal structure to enhance compliance. Current traffic regulations are not favoring cycling. The citation above shows that, despite this, there exist possibilities to influence the current traffic regulation from below.

In contraposition to these bottom-up forces, opinions raising difficulties in the implementation process were. While still supporting new solutions, one traffic planner acknowledged the difficulties that can arise when implementing new solutions, costing money and creating mobility, traffic safety and financial challenges:

*“Are we to implement cycling crossings, if it is not going to lead to a lot of accidents, then we need to remove thousands of places where it is already red [color of cycling passages] if this is to be clear, if this is to work in people's mind*

*at all. Eh, that costs money.. Then it becomes unclear. So I don't have anything against the crossing in itself but it gets a little, mm.. weird"* (Traffic planner, Trafikkontoret)

These traffic regulations and the different opinions internally within Trafikkontoret and among the *Trafiksamråd* is a potential barrier to implementing new measures. On the other hand, new measures are experimented with from below. Seen with a bottom-up perspective, the *Trafiksamråd* is where the traffic regulations can be discussed and later possibly changed to benefit cycling.

In the detailed planning process, arguments were raised about the car benefiting from regulating laws concerning road width and that no such existing laws exist for cycling lanes but only guidelines, which thus could be a barrier for cycling. As enough space was mentioned as a barrier here, ensuring space to cars is easier as there is a law claiming that there should be enough space outside newly built buildings:

*"We don't talk about cars but in practice we fix so the cars can come, always. We don't always fix for pedestrians and cyclists. So in practice, in practice you have, a law that says that you need to dock the house with 25 meters [...] But nowhere there exists something that says that you can come there by a cycling path. No, there exists no such requirements, except that we should prioritize, that is more, maybe visionary than we have requirements"* (Planning coordinators, Trafikkontoret)

This law has to do with the accessibility of people with disabilities (BFS 2011:5 - ALM 2), ensuring parking near the building but also to ensure that larger vehicles have access. This law therefore ensures enough space for vehicles on the streets.

Despite the cars having more legal authority, the interviewees believed that the situation for cycling is improving. One positive aspect mentioned here was the new guidelines regarding parking and mobility (*mobilitet*) where focus is changed from cars to mobility (*mobilitet*), as mentioned in the document review (see 4.4.).

To sum up, there seems to exist a lack of measuring methods and competencies to be able to further improve the implementation process. Existing laws and regulations are still benefiting the car, but requirements for cycling, such as cycling parking, are increasing. Work is being done by the officials in the Cycling group where inspiration and new measures are found. Some officials with a high interest of cycling are working to test new measures in the city so that later, the new measures can be accepted and implemented.

The interviews have been useful in identifying both barriers and success factors for the process of implementing cycling policies in Gothenburg. Drawing on the city's strategic documents, the interviews have allowed to gain insights about how officials, managers, politicians, and a cycling activist work and perceive the implementation process of cycling policies. In the following chapter, Chapter 6, the interview results will further be discussed in relation to implementation theory, strategic documents, and literature.

## 6. Discussion

The chapter discusses the thesis and its results. The method and delimitations used are first analyzed, and recommendations for further studies are suggested. Thereafter, implementation theory is discussed using a top-down and bottom-up lens, and an integrated approach of the two orientations.

### 6.1. Discussion of method, delimitation, and recommendations for future studies

Many actors are in some way part of Gothenburg's transport system, but the study has limited the numbers of actors to officials from Trafikkontoret, Stadsbyggnadskontoret, politicians from the urban transport committee, and a member of an interest group to cycling. The limitation of interviewed actors in this thesis is local actors within the city, although regional and national actors have been brought up in the discussions. A recommendation for future studies would thus be to involve interviewees from entrepreneurial companies, consultancy firms, trade and industry, universities, other interest groups (e.g. for cars), the region of Västra Götaland, the local federation of Gothenburg GR, and Trafikverket. This would give a wider perspective on the implementation and the responsibility and cooperation between different actors. Analyzing local plans could also further contribute to understand what policies are implemented. A delimitation made was also to regard the new organizational structure of Trafikkontoret, which is coming into force during the summer of 2018. Further research is therefore suggested on how cycling measures are implemented thereafter.

The document analysis has been useful in order to understand the different goals that exist in the city. It has helped in understanding how cycling is perceived, the goals presented for cycling and conflicting goals. Moreover, it has been useful in understanding how the city and Trafikkontoret intends to implement the cycling program and the policies set by the politicians. Furthermore, it has helped understanding the implementation process from a top-down perspective and if there exist barriers or inconsistencies in this.

The method of snowball sampling has been applied in this study and the interviews. Interviewees have had the opportunity to recommend other interviewees. This has been helpful in finding persons with specific knowledge about certain issues. Other interviewees have been selected on the basis of implementation theory and chosen by the author of the thesis, to avoid biases and that a too narrow group of people are interviewed. Conducting semi-structure interviews have allowed other aspects and topics to be introduced than first intended.

By integrating the document analysis with interviews, the city's strategy towards finding the right measures have been compared to the interviews in order to understand the implementation process. This method has allowed the interviewees to be analyzed based on the documents they have available in their work. The strategic documents allow for a top-down analysis and by combining this with the interviews, top-down and bottom-up factors influencing the implementation process can be analyzed.

### 6.2. Discussion of the top-down and bottom-up approach

This thesis has focused on two of the main orientations of implementation theory; top-down and bottom-up. Below, the two approaches are discussed, based on the results from the document analysis and the interviews. The analysis of the top-down and bottom-up approaches results in determinants specific for the implementation process in Gothenburg. These determinants are presented in the end of 6.2.1. and in 6.2.2..

### 6.2.1. Top-down implementation

The top-down model used in this thesis is the one created by Sabatier & Mazmanian (1986) which presents six factors for perfect implementation:

1. **Clear and consistent objectives.** What is to be accomplished needs to be precisely formulated, ranked and communicated to implementing officials. Measures to implement must be clear, accurate, consistent and unambiguous.

From a top-down perspective, the goals are clearly stated in the cycling program, but a change in political rule could change the process of implementation (see factor 6 below). The goals for increasing sustainable transport modes and cycling are well-known by the interviewees, where the goal of increasing the number of cycling trips is the one that is the most discussed. The city's strategic documents work as guidelines for implementing officials. The goals are according to the interviewees clear and consistent and are related to sustainability aspects, i.e. environmental, social, and economic aspects. Relating to sustainability, the main focus is often on the benefits cycling brings to the environment. Health benefits are also brought up and a few also mentioned the socioeconomic benefits that follows.

Different committees have different goals which influences the officials below, who are the ones responsible to find solutions. The city council further has to prioritize between different areas in society, such as healthcare, education, housing, and infrastructure. Moreover, the goals are not consistent for all actors involved. Officials from Trafikkontoret argue that they have difficulties in knowing what to prioritize and when. Common strategies on how to combine all these transport modes is needed.

The national policy context was not mentioned per se, but one argument was made about Trafikverket having different goals for the state and its roads, influencing the traffic system and traffic flow in the city. It is possible to believe that the national policy context, which is focusing on prognosis-led planning, can affect the municipal implementation process and goals, which is focused on target-led planning. The existing national strategy for cycling containing strategies for increasing the role of cycling in the transport system of Sweden, released in 2017, was not mentioned. No effect targets are mentioned in the national strategy, which could influence the perception of cycling of the municipality of Gothenburg and its actors. Studying the implementation from a local perspective in Great Britain, Gaffron (2003) argues that having goals set by the state of increased cycling can be beneficial for the implementation process, increasing the awareness of local actors, and the political credibility. Moreover, when cycling policies meet doubt or opposition, local actors can refer to national goals (Gaffron, 2003).

2. **Adequate causal theory.** Establishment of the link between the problem and the solution. Understanding what caused and what can solve the problem.

Measures restricting car use was mentioned in the strategic documents, but also in the interviews as important for cycling. What can be noticed is that the largest increase of cyclists in Gothenburg since the goal was stated in 2011, occurred at the same time as the congestion tax was introduced (Trafikkontoret, 2017). Restricting car parking or car movements in the city is likely to induce demand for cycling. Political and public support needs in these cases to be created and maintained for allowing these measures to be implemented (Adam et.al, 2018), which can further be related to the fifth factor below of Sabatier & Mazmanian (1986).

There further seems to exist a contraposition between building new cycling paths and operating and maintaining the existing one. The interviewees mention different focal areas which can point to a lack of causality. Different arguments are used, where focus is either put on expanding and creating a coherent cycling network or maintaining cycling paths.

As has been shown by Aretun & Robertsson (2013) for the Swedish cities Malmö, Linköping, Örebro, and Västerås, the policy orientation is focused on the central parts of the city, as this is where the greatest increase of the number of cyclists is believed to occur. It is also in the inner city that the largest problems arise, as many different transport modes and functions need to be accounted for. Several transport modes are fighting for a limited amount of space, and creating the required mobility is more difficult than in the peripheral parts of the city.

There is an agreement among the interviewees that the city has physical barriers and that there are long distances to account for. A potential in replacing car trips with cycling trips is mentioned, in which the electric bicycle is regarded as part of the solution. Moreover, a large focus is put on creating a commuting cycling network, focusing on stringing together distant areas, to increase the competitiveness of the bicycle against the car. It can be mentioned that 42% of the trips in between two and five kilometers are made with a car, against 11% with a bicycle (Trafikkontoret, 2015), showing the importance of also focusing on the local network where trips can be transferred from cars to bicycles.

Cycling was by some interviewees argued to have developed more as transport mode with higher status than before. Important aspects were also to acknowledge that there are many different groups of people that ride a bike. Focusing on gender equality and getting more kids to cycle was raised as important focal areas, explaining that these measures would increase the level of cycling.

Knowing what effects implemented measures will have is not always easy, as described by officials. The benefits for behavioural measures are considered difficult to understand. On the contrary, there seems to exist a stronger link between problem and solution for infrastructure investments, in particular creating a coherent cycling network where the main focus is on the commuting cycling network. Earlier studies (Pucher et.al., 2010) have showed that it is difficult to know whether or not a certain measure will have the desired impact. Rather it can be argued that a set of different and combined measures will have larger effect. Moreover, being flexible is important to allow for new solutions to arise during the process (Smidfelt Rosqvist & Ljungberg, 2009). This is further discussed in 6.2.2..

- 3. Implementation process legally structured to enhance compliance.** The implementation process should be structured in such a way that the probability of the officials to successfully implementing the measures is maximized. This includes sufficient resources and supportive decision rules.

There exist laws and regulations still favoring the car. This is partly due to the fact that the traffic system is in large built for cars. The car has for a long time in the city been the norm. Attempts are made to change some of the existing regulations, to favor the bicycle in the city, showing bottom-up tendencies from officials with a high interest for cycling, and from the public and interest groups. In order for the bicycle to be allocated more space in the city, the value of cycling must be emphasized. Scholten et.al (2018) discusses, based on the concept of urban spacewars from Bauman (1999), meaning that multiple functions and transport modes are to fit in a city, that problems can arise since the value and the determinants affecting it can



be different. For a long time, the economic value and thus the mobility of the car has been prioritized (Scholten et.al, 2018). For cycling, there exist methods on how to display the economic benefits. In Groeningen, the value of cycling is measured in urban planning processes with a method to analyze the consequences of implementing cycling measures. Moreover, benefits can also be shown with methods for showing the health benefits that cycling has (Boverket, 2018c).

The strategic documents that exist can, seen from a top-down perspective, be regarded as what Sabatier and Mazmanian (1986) calls a legally structured implementation process to enhance compliance. The strategic documents are not legally binding in themselves, but serves as guidelines and influences the way the officials work below. Financial resources are, for investment in cycling infrastructure measures, regarded as sufficient for Trafikkontoret.

The number and the quality of supporting documents were by some interviewees regarded as sufficient, while some meant that there is a need for more specific examples. This was argued by the interviewed traffic planners to support the planning coordinators if expert competence of cycling is lacking. In order for the planning support available and produced for cycling, it needs to be valued highly by all actors. Moreover, it needs to be included in a well-defined decision process (Smidfeldt & Ljungberg, 2009). As cycling can be neglected in local plans, legal support or consistent decision support for cycling could benefit cycling for not being neglected in the urban and traffic planning process.

4. **Committed and skillful implementing officials.** Sufficient education, expertise and willingness is needed to be able to administer the measures. Moreover, sufficient time, equipment and funds must exist.

Having the right knowledge is not a barrier at Trafikkontoret, rather it is a lack of personnel resources. The Cycling group helps the organization gather new information and knowledge by attending conferences and study visits. Cycling knowledge exist at Trafikkontoret which was deemed positive by the interviewees, but that a lot depends on a few people. If these officials are not available, it creates problems during local plans if cycling expertise is needed. How well cycling is accounted for further depends on the knowledge and level of interest of officials at Trafikkontoret.

Cycling measures are foremost driven by individual officials and the Cycling group. For specific solutions in for example local plans, traffic planners and planning coordinators work together to find project-specific solutions. The cycling program and its technical requirements are useful for officials to use, but the width of the cycling paths can be difficult to achieve in the central parts of the city where space is limited.

5. **Support of interest groups and sovereigns.** The continuous support of interest groups and political sovereigns is important throughout the implementation process.

Support generally exist for cycling internally at Trafikkontoret. What can be noted is that there exist a path-dependent approach towards the, argued by some, ambitious goals. This was identified by interviewees arguing that there are employees at Trafikkontoret that are basing their opinions on current modal shares. This can potentially be connected to a prognosis-based approach towards the future development of the different transport modes, instead of a target-led approach.

Political measures have been done in the city to regulate and limit the access of the car. Despite this, there still exists some political resistance to limit the mobility of the car despite that officials, based on their competence and knowledge, show that it is possible. For the interest groups, not only cycling groups were mentioned but also interest groups supporting cars which was meant to affect cycling in a negative way. Conflicts can further arise when there are discussions about different transport modes and how these should be prioritized, as well as conflicts between committees and administrations about what goals have top priority. This shows that support exists from politicians, but other goals such as housing can make it complicated to account for cycling in local plans.

Private housing companies are further part of the planning process. Some interviewees from Trafikkontoret mentioned the power that the private companies have in influencing the final result of some local plans. This could be that the private companies want as much space as possible in order to maximize housing, which could mean narrower cycling paths and a lack of cycling parking. The interviewees further argued that the city as whole, with all of its administrations, should have a united vision as to better deal with the power of private actors, which can be referred to negotiation planning, see 5.4..

6. **Changes in socio-economic conditions that do not undermine political support or causal theory.** New political, social or economic events should not undermine political support or causal theory.

Changing socioeconomic factors might have an influence. Interviews with politicians show that a change in political ruling might influence how cycling is implemented. Discrepancies can be found between different parties, which might affect the continuity of the policy orientation of Trafikkontoret, where the main difference between the parties is about to what extent car traffic should decrease or not. Restricting car use is an area of measure where continuous political and public support need to be continuous (Adam et.al, 2018). Considerations simultaneously have to be made to the fact that the interviews have been made during an election year (2018) and that this might influence the answers of the respondents.

The policy orientation of infrastructure measures is focused on the inner parts of the city, because this is where the highest potential exist of increasing the number of cyclists. Moreover, the cycling paths in the outer parts of the city were regarded as being of good standard. Cycling was also regarded as a transport mode that is easily accessible for many people, due to its low cost in comparison to the car. The state of the market was not mentioned but in the urban development plan, created by Stadsbyggnadskontoret, the importance of sticking to the city's strategies was deemed important, as to fulfill the goals of creating a close-knit city. It is possible to argue that this is also important for cycling.

### 6.2.2. Bottom-up implementation

Bottom-up implementation is described as actor interaction, experimentation, creativity, and knowledge exchange through different types of coalition and networks. Based on the documents and the interviews, these three factors have been identified as important determinants influencing the implementation process of cycling measures in Gothenburg.

- *Communication and cooperation*

The cooperation between different administrations exist foremost below, where officials from the different administrations working with local plans work together to find location-specific solutions. What can be noted from the policy formation process is that there could have been

more cooperation during the process of producing the cycling program, in order to understand each other's viewpoints. The document has been out on remittance before finalized, but an interviewee argued that there should have been more involvement from other administrations, in order to understand each other's views and visions better. A success factor mentioned is that the authors of the cycling program are still working at Trafikkontoret. This is helpful for when questions about the program arises, and for continuing developing the program.

Communication and cooperation is important between the municipality and non-municipal actors. Sharing common goals and vision about the role of cycling is needed between the municipality and property developers for integrating cycling early on in local plans, and with Trafikverket to ensure that the cycling network is expanded, and that the functional requirements presented in the cycling program and the technical handbook are accounted for. An example brought up during the interviews show that there exist cooperation between different actors to find solutions to problems such as finding a location to extend the bicycle sharing system onto the island of Hisingen on the northern part of the river. Moreover, cooperation exist between the municipality and the region of Västra Götaland (VGR), the local federation of Gothenburg GR, research institutes, and cycling interest groups (see 3.5.1.).

Interaction between Trafikkontoret and the target group, i.e. cyclists, exist. The two groups can interact via mobile applications, for example. Another example is the action plan released to show what cycling measures Trafikkontoret is planning. Interaction was also shown to exist between politicians and the target group through discussions about cycling in Gothenburg. Moreover, there exist cycling forums on the internet, where people from the municipality, interest groups, and the target group discusses different topics about cycling in the city.

- *Knowledge exchange*

Internally, Trafikkontoret has a Cycling group which is part of cycling networks where cycling issues are discussed, and information shared. Further knowledge creation is done by continuous improvements of the cycling program, where implemented cycling measures are evaluated. Trafikkontoret also shares knowledge to other actors within the city, such as producing guidelines for cycling parking for planners and property owners.

Depending on which planner that will get a task, i.e. the knowledge and level of interest of the planner, cycling will be accounted for differently. Actors within Trafikkontoret seem to fight for their cause, i.e. for a specific mode of transport. This can cause conflicting goals in the planning process, regarding which transport mode that should be prioritized. For cycling, this can mean inconsistencies in the cycling network or that certain functional requirements presented in the cycling program are not implemented. Gaffron (2003) argue the effect that individuals have on the implementation process. This is in line with the results, which show that different personal goals exist for different actors within Trafikkontoret, which can influence the perception of cycling and the implementation process.

Cycling measures can also be differently accounted for based on if there is available personnel resources when measures are to be implemented in the local plans. Trafikkontoret does not own the urban planning process and therefore cannot plan when cycling competence is needed or not. Considering different organizational perspectives is important, in order to ensure that cycling is not neglected in any part of the urban and traffic planning process. Arguments have been made about Trafikkontoret being dependent on few people with high cycling knowledge. If these persons are not available when needed in local plans, cycling can be neglected or an insufficient solution than intended can be implemented. Due to this issue, a traffic engineer

stressed the importance of having more detailed examples of how to solve certain issues in local plans. This could be a tool for planning coordinators when personnel resources are lacking. Different interviewees value the existing documents differently, which mean that cycling is accounted for variously based on which official is working with the local plan, which can be related to the importance of the decision support being valued highly and part of a clear decision support, see the fourth factor in 6.2.1. above.

- *Experimentation*

There exist officials internally who are pushing for changed laws and regulations, as well as experimenting to find new solutions. Cycling speed areas and cycling crossings are examples of such experimentation. For cycling speed areas, it allows a reallocation of the space in the city, where cyclists and cars share the same space. For cycling crossings, it allows for the bicycle to have priority in traffic and for cars to give away. Trafiksamrådet is a platform where these changes can become reality. Individuals with a high interest for cycling drive this change, which is sometimes a necessity for trying new measures (Smidfeldt & Ljungberg, 2009).

Experimentation is dependent on other cities and non-municipal actors. Gathering inspirational examples of solutions is in Gothenburg a prerequisite for experimentation. The experimentation process can be restrained by individual actors opposing new solutions, thus testing and continuously working to gain acceptance for trying new measures is vital. The experimentation process can also be restrained by laws and regulations, which are not favoring the bicycle, see the third factor in 6.2.1..

### 6.2.3. Implementation from a bidirectional perspective

As previous studies have shown (Gaffron, 2003; Hill & Hupe, 2002:82), the results of this thesis presents a need for an integrated approach of the top-down and bottom-up approach. For Gothenburg, and much like Rothstein (1997) earlier have argued for Swedish municipalities, the city's cycling policies are generally implemented by politicians setting goals and letting officials be creative and finding the right measures based on their competence. Politicians can require investigations from the officials and officials can also propose their own ideas, to invite the politicians for discussion. Tendencies from both top-down and bottom-up implementation can be found. The use of these two approaches has allowed to explore and focus on aspects brought up by the literature.

#### *The importance of organizational structure*

The implementation process is largely affected by the organizational structure of the municipality. As presented in chapter 3.4., the city of Gothenburg is divided in different committees and administrations, meaning that each administration has its special focus and competence. The administration's goals derives from the goals set by the politicians for the city as a whole and thereafter for their administration. Drawing on the political goals set at the top, the administrations have their respective goals that follow. This was made clear during the interviews, where officials from the different administrations have their own responsibility areas. From below, these goals are handled and weighted against each other, to find project-specific solutions.

Integrating planning of infrastructure and the development of new housing is a barrier to implement cycling measures, which have been noted in earlier studies for Swedish cities (Aretun & Robertsson (2013) and Wennberg & Nordlund (2012)). The different committees in Gothenburg sets different goals for their respective organizations. The municipal operations are divided into separate administrations and committees; the urban transport committee and

Trafikkontoret, the building committee and Stadsbyggnadskontoret etc. By separating the different administrations, they also have, at least partly, separate goals and objectives. These differences on a strategic level further creates problems in the urban planning process where conflicting goals needs to be handled and accounted for. It can be noted that there are other Swedish cities such as Malmö, Linköping, and Örebro, that merges the different administrations into one, in order to achieve better cooperation. Aretun & Robertsson (2013) showed in their study that merging the different organizations into one is not a prerequisite to achieve better cooperation. In these three cities studied by Aretun & Robertsson (2013), there is a clear distinction between the different occupations and professional groups, meaning that actors stick to their competence areas and not broadening their perspective.

The organization of the city of Gothenburg with different committees and administrations for transport, housing, and environment can be compared to an earlier study performed by Koglin (2015). In the study conducted by Koglin, the city of Stockholm, which is also divided into different committees and administrations like Gothenburg, is compared to the city of Copenhagen, known to be a successful cycling city. On the contrary to Stockholm and Gothenburg, the urban and transport planning departments are organized under the Technical and Environmental Administration, and only having one political authority above them in the hierarchy. This allows urban and transport issues to be discussed together in a wider sense than in Stockholm (Koglin, 2015). Organization thus fosters communication and knowledge exchange between different professions and planners. Koglin (2015) further acknowledges that this is not the only factor influencing if a city is successful cycling city or not, but that it is one factor that can help improve the issue of integrating housing and transport issues. Further studies states the importance of not only focusing on what to implement when it comes to integrated land-use, transport (and environmental) policies, but also how to implement it, which includes focusing on organizational factors (Geerlings & Stead, 2003).

Organizational structure is therefore of importance for successfully implementing cycling measures. A clear organizational structure is needed from above, as presented by Sabatier & Mazmanian (1986), but the organizational structure must also allow knowledge exchange, experimentation, and dialogue and cooperation.

## 7. Conclusions

This thesis has led to a couple of insights. I will outline the most important policy implications for cycling policy implementation in Gothenburg. These implications are based on identified barriers and success factors.

Implementation theory discusses both the importance of what to implement and how to implement it. Considering what to implement, previous research argues the importance about having a holistic perspective when implementing cycling policies. Measures are needed on a system, structural, and behavioural level. The results of this thesis are in line with previous research. They show that cycling measures can be forgotten when integrating traffic and housing planning, i.e. on a system level. The focus is largely on the structural level, i.e. expanding the cycling network and improving mobility and traffic safety measures. On a behavioural level, the effect of measures are deemed difficult to assess. Arguments from the interviewees are raised about focus not being enough on these measures. Measures for restricting car use have been stated as important but not sufficient, in order to benefit the bicycle.

Enough personnel resources are necessary to ensure that Trafikkontoret's investment projects are implemented. A lack of internal resources exist at Trafikkontoret, but also a lack of external resources in terms of entrepreneurs conducting the work. For behavioural measures and operation and maintenance, financial resources are argued to be lacking. Implementing cycling measures is furthermore largely dependent on the limited space available in the city. A barrier is at times the resistance of reallocating space from the car to the bicycle. In order for the bicycle to be prioritized in terms of mobility in the city, it is of importance to find economic benefits for cycling.

It is agreed that the share of sustainable modes of transport, i.e. walking, cycling, and public transportation should increase in Gothenburg. It creates difficulties in the planning process when transport modes are to be prioritized. Building a coherent cycling network can be difficult to achieve as the mobility of pedestrians and public transportation also is of high priority. Planning support needs to be continuously updated in order to help planners prioritize. In practice, the car and public transportation plays a large role in the traffic planning process. Moreover, individuals fight for their specific transport mode, where public transportation seems to have the largest status due to its high modal share. The car and public transportation thus still have higher priority than the bicycle. Tendencies exist, as with the new parking requirements from 2018, of a shift from planning for specific transport modes to focusing on how people should move in the most effective way.

There is a need to find common strategies and visions between the city's different committees and administrations. It is important to illustrate and describe how cycling, already in an early process, can be part of the strategic city planning. Currently, the implementation is rather dependent on the knowledge, level of interest, and behaviour of individual local actors at Trafikkontoret. Finding common visions and strategies between the different committees and administrations would benefit cycling. Organizational aspects should be regarded. Illustrating what is meant by different solutions in the policy formation process can help administrations better understand each other regarding conflicts between creating an attractive and pleasant city for pedestrians, and increasing the mobility for cyclists. All actors within the city part of the planning process, i.e. municipal and non-municipal actors, need to share a common vision of why cycling is important. This way, cycling could be accounted for early on in the planning

process. Moreover, continuous political will locally and a national target for cycling is suggested to increase the status of cycling in a local context.

Continuous experimentation with new measures should be supported. For example, trying to implement new measures on one location and thereafter evaluating the results. Trafiksamrådet is a platform for changing current traffic regulations, where different opinions and insights are shared about new solutions. This implies a continuous search for inspirational examples from other cities. Moreover, being able to adapt to the policies should continuously be supported. Evaluating implemented measures and adapting them to the city is a success factor. Staying open for new measures is thus beneficial in order to find new, innovative, and sustainable solutions. Continuous research and cooperation with research institutes, interest groups, and other cities is needed in order to successfully follow up measures and understand their effect.

The implementation process of cycling policies in Gothenburg can be described as a combination of top-down and bottom-up implementation. It contains both barriers and success factors. It is important to acknowledge the barriers, while at the same time being aware of the success factors.

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## Appendix A – Interview guide

*This guide has been used for the 19 interviews held. The questions have been adapted depending on the interviewee and the profession of the interviewee.*

### **Introduction**

The purpose of this thesis is to understand how cycling measures are implemented, and further to find barriers and success factors.

I will, before describing the theory used for this thesis, ask a few general questions:

1. What is your name and age?
2. For long have you worked at this organization/ committee/ interest group?
3. Can you describe your working tasks?
4. In which way are you affected by cycling issues in your daily work?
5. Which background do you have regarding cycling issues?
6. What possibilities do you see for Gothenburg as a cycling city? What strengths and weaknesses exist?

In my thesis I use an implementation theory with which there exist two main orientations; a top-down and a bottom-up approach.

The first approach we will discuss is the top-down approach. Top-down looks at how effective policies are implemented. It focuses on the implementation process being steered from the ones setting the goals, i.e. politicians. Thereafter, a bureaucratic control and a clear process should follow in order to successfully implement the measures.

The model I use is a model which describes six factors that are needed to successfully implement policies. We will discuss these six factors one by one.

### **Top-down implementation**

1. The first factor mentions that the goals should be clear and consistent.
  - a. What do you think about the goals that are stated in the cycling program?
  - b. How clear are these goals? Are they measurable? Are they time-framed?
  - c. Are the goals connected to sustainable development? Are economic, social, and environmental goals included?
  - d. Is there a consensus about the goals horizontally, vertically, or between administrations?
  - e. Are the goals for cycling connected to other transport policy?
  - f. Are the goals for cycling connected to city planning?
  - g. Do you follow-up the goals?
  - h. What status does the goals for cycling have in comparison to other transport modes?
2. The second factor mentions that there should exist a clear link between the problem and the solution.
  - a. What problems do you see with cycling in Gothenburg?
  - b. What or what types of measures do you think are necessary to solve these problems (e.g. infrastructure, operation & maintenance, behavioral measures)?

- c. What connection between local goals, local problems, and choice of measures exist?
  - d. What status does the measures for cycling have in comparison to other transport modes?
3. The third factor describes that there should exist legal support to enhance compliance in the implementation process.
  - a. What support do you have access to for implementing measures (e.g. strategic or technical documents)?
  - b. What support is missing in your work that would have helped you better implement measures?
  - c. What legal requirements exist in your work that ensures that measures are implemented?
  - d. Is there enough financial support?
  - e. What status does cycling measures have in relation to other transport modes when it comes to financial measures?
4. The fourth factor describes that those implementing the measures should have enough competence.
  - a. Do you consider your organization to have the right competence to successfully implement cycling measures?
  - b. What education do you have and how has it helped you implement cycling measures?
5. The fifth factor mentions that there should exist support from sovereigns, such as politicians and managers, but also from interest groups.
  - a. What support from these actors exists for implementing cycling measures?
  - b. How are cycling measures prioritized in comparison to other transport modes?
6. The sixth and last factor mentions that no changes in socioeconomic conditions should undermine the implementation of policies.
  - a. How would the implementation of cycling measures be affected by a change in political ruling?
  - b. What role does the state of the market play?

### **Bottom-up implementation**

We will now shift focus from the top-down to the bottom-up approach. This approach focuses on the cooperation on officials and how these interacts with each other with different actors to find new solutions. Moreover, it focuses on experimentation, creativity and knowledge exchange. This orientation also focuses more on implementation in its wider sense, i.e. the policy formation process and how/ if the implementation process is continuously developed.

1. Internal work
  - a. How does the routines/ working tasks look when implementing cycling measures?
  - b. How free and flexible are you to experiment with new solutions?
  - c. How do you work with following up the measures?
  - d. What specific problems/ difficulties arise when implementing cycling measures?



- e. How does the status of the working tasks look for cycling in comparison to other transport modes?
2. Actors and cooperation
    - a. How is the responsibility divided between you and other municipal administrations?
    - b. What cooperation exist between the different administrations?
    - c. What other actors are involved in the implementation process?
    - d. Which actor do you believe should be more involved in the process?
  3. Policy implementation from a holistic perspective
    - a. What role has the formation process of the cycling program had?
    - b. What could had been done differently in this process? Was any actor missing?
    - c. How do you work with developing the cycling program?

### **Top-down vs. bottom-up**

We have now discussed two different orientations of implementation theory; top-down and bottom-up. Which orientation do you consider describes the implementation process of cycling measures in Gothenburg?

### **Round-up**

The purpose of this interview was to understand how cycling measures are implemented in Gothenburg, and what barriers and success factors that exist. Is there anything that you would like to add?