



POLICY FORMULATION ON CHANGING TRAVEL HABITS

A analysis of the City of Reykjavík's policy and comparions with other Nordic cities

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1 Introduction – about the project

This report is one in a set of four reports and a memorandum that summarise the results of the project *Enabling City Transformations (ECT): Developing the Future of the Climate Neutral City*. The project was carried out in collaboration between the City of Reykjavík and VSÓ Consulting, with professional assistance from NetZeroCities and funded by the European Union through a grant to which the City of Reykjavík gained access on the basis of the city's Climate City Contract.

The ECT project is linked to the City of Reykjavík's goals for a carbon-neutral city and the transformation that needs to take place to achieve them. Transport and travel habits are an important factor in this development and are determined, among other things, by the city's planning, access to different modes of transport and incentives that influence the choice of travel mode. The project specifically looked at the role of parking in this context, considering how its availability, location and design can affect travel habits, land use, development and carbon footprint. The aim of the project was to increase knowledge of these connections, carry out analyses and submit proposals for tools that can be useful to the City of Reykjavík in its continued policy-making. The topic was examined from different perspectives, including from the experience and views of stakeholders, policy-making and governance tools of municipalities in the Nordic countries, and the environmental impact of different parking solutions. The project's components are interconnected and together form a basis for recommendations on continued policy-making in the field of travel habits and parking.

The project's output is summarised in four reports and a memorandum:

- *Policy formulation on changing travel habits – analysis of the City of Reykjavík's policy and comparison with Nordic cities:* A literature review of how different parking policies can be implemented in different ways and a review of the available data on their impact on travel habits. A case analysis of the City of Reykjavík's policy on changing travel habits and the role of parking policy in that context. The City of Reykjavík's policy is compared with the approach of two Nordic cities at a similar latitude, Trondheim in Norway and Umeå in Sweden.
- *Parking solutions of the future – community views:* An analysis of stakeholder views on parking solutions and changing travel habits, based on interviews with property developers, real estate agents, bank employees and residents in densification areas. The aim is to shed light on the experience and perspectives of different parties and how parking arrangements can affect development, housing and travel habits.
- *Mobility hubs and the carbon footprint of parking solutions: prospects and possibilities of parking solution.* The development of the use of multi-storey car parks is examined and how they have acquired a new role in neighbourhood planning as mobility hubs. The carbon footprint of a multi-storey car park and an underground car park were compared. Also, how circular building can affect the use of buildings as well as the challenges that often arise in the design of underground car parks.
- *The Travel Habits Game:* A memorandum and data explaining *The Travel Habits Game*, a simple workshop model that is set up and presented as a board game, where participants have to choose actions together to achieve the goal of changing travel habits. The aim of the game is both to steer discussions and investigate people's attitudes towards actions, but it can also be used as part of education and awareness-raising.

- *Recommendations on policy-making for changing travel habits:* A summary of the main results of the project, which draws together recommendations based on research, analyses and other components of the ECT project. The recommendations are intended to be useful for the City of Reykjavík's continued policy-making on changing travel habits and parking issues.

2 Summary and main results

This report analyses the City of Reykjavík's formal policy framework for affecting changes in travel habits, with a particular emphasis on the role of parking policy. The analysis is based on the “push/pull” concept for influencing travel habits, taking inspiration from the European framework for Sustainable Urban Mobility Plans (SUMP).

The report begins with a brief review of literature on changes in travel habits. It then presents a list of key parking policy instruments and examines them in detail from a “push & pull” perspective. Examples from other countries, particularly the Nordic countries, are used to demonstrate how different parking policy instruments can be implemented. Evidence from academic and grey literature is used to shed light on the relationship between individual parking policy instruments and actual changes in travel habits. The City of Reykjavík's overall policy framework for changing travel habits is then analysed in detail and compared with those of two Nordic cities: Umeå in Sweden and Trondheim in Norway. These cities are, in some respects, comparable in size to Reykjavík or the Capital Area and have succeeded in changing travel habits in recent years. Based on the research and this comparison, the report identifies opportunities to use Reykjavík's parking policy more systematically to support changes in travel habits.

The main proposals resulting from the analysis are as follows:

- **A comprehensive parking policy**

A comprehensive parking policy and action plan could be developed to cover a broad range of parking policy instruments, rather than focusing solely on parking standards, and rather than only considering on-street parking fees from an occupancy optimization perspective. Public parking garages, parking free purchase schemes, pedestrianised streets, and guidelines for parklets are examples of instruments that already exist in Reykjavík but are not yet clearly integrated into a comprehensive parking policy aimed at driving changes in travel habits.

- **Better integration of parking policy with the development of other modes of transport**

Changes to the supply, price, and arrangement of parking, as defined in a new comprehensive parking policy, should clearly follow the development of The City Line (the planned BRT system), Strætó (the public bus service) and walking and cycling infrastructure. This would help ensure that realistic alternatives are available when access for private cars is restricted. Long-term parking measures could begin immediately, while some short-term measures might be more appropriate later, as alternative modes of transport become more viable.

- **A clear approach to workplace parking**

The new parking policy should place particular emphasis on workplace parking and establish a clear and multifaceted approach to its management. This is an important component in the action plans adopted by other Nordic cities. Alongside such measures, steps would be needed to prevent parking demand from being displaced onto nearby streets. These could include fees and other restrictions on on-street parking as well as more focussed exploitation of public parking garages.

The report presents several approaches that Reykjavík could use for this purpose. One option would be to further develop workplace transport contracts (“samgöngusamningar”) as an instrument for imposing opportunity costs on the use of workplace parking. A standardised framework for such agreements could be established and implemented via incentives and guidance in Reykjavík's parking standards, somewhat similar to how they

are already presented there. It would also be possible to negotiate directly with individual employers to support the implementation of these improved transport contracts. Experiences with “HjemJobbHjem” in Trondheim shows that such an approach can have a considerable impact on travel habits.

In the longer term, Reykjavík's current “bílastæðagjöld byggingaraðila” system, referred to in this report as a “parking free purchase scheme”, could also be redesigned. Experience from Umeå shows how such a system can be used to reduce overall supply of workplace parking while giving the municipality greater control over its location and pricing. The report argues that this type of arrangement could even be implemented without introducing minimum parking requirements.

Another option would be to introduce clearer provisions governing the distance between parking facilities and buildings. For certain types of development and in certain areas, parking spaces could, for example, be required to be at least as far from the building entrance as the nearest public transport stop. This type of arrangement is used in Stavanger, for example.

- **More specific rules on governing fee zones**

The current procedural rules for fee zones do not clearly take into account the possibility that low utilisation of parking spaces within an existing fee zone may be the result of overly high utilization of free parking in neighbouring areas. Nor do the rules clearly address situations in which parking fees imposed by private operators displace parking demand onto nearby streets. The rules also do not define the circumstances in which underutilised parking spaces could be removed and the space allocated instead to other uses. With clearer provisions on these issues, the rules could be better utilised to support changes in travel habits.

- **Policy instruments that could be used to enable the reduction of on-street parking**

The City of Reykjavík has set a goal of reducing on-street parking supply but has not clearly defined which policy instruments should be used to achieve this. The report highlights the following methods for consideration:

- Adapting the rules governing fee zones, as discussed above,
- Areas in which parking is only permitted where signage indicates, rather than vice-versa (Sw. parkeringsförbudsområde),
- Date-based parking restrictions (Sw. datumparkering) outside paid parking zones,
- Resident-only parking zones (Norw. boligsoneparkering),
- Mobility hubs and smaller transport interchanges,
- Parking spaces converted into parklets at the initiative of residents,
- Pedestrianised streets.

- **Transport assessments (“samgöngumat”) and transport policies (“samgöngustefnur”) within the parking standards could be more precise**

The current provisions governing transport assessments and transport policies in the city's current parking standards could be developed in various ways:

- Clearer criteria or examples could be provided regarding arguments that may justify an increase above the recommended number of parking spaces. There are currently clear guidelines on what may justify a reduction, but not on what may justify an increase. Without clear criteria, there is a risk that more parking spaces will be provided than would plausibly be needed.

- As is done in other Nordic cities, reductions in the total amount of parking spaces could also be advised based on proximity to main cycle routes and/or important services in the local area. Currently, proximity to public transport is the only consideration in the parking standards.
- Transport policies could specify a more numerous and diverse list of possible actions. Separate lists could be developed for residential and commercial developments, with each action linked to a specified reduction in the number of parking spaces according to its expected effectiveness. This would give developers clearer incentives and more opportunities to reduce parking spaces by selecting more effective measures. Umeå, Stockholm, and Gothenburg demonstrate three different systems for listing and incentivizing more effective measures. Among the new measures that could be considered are:
 - Information packs for new residents or other building users explaining the available travel options and measures, along with regular information about them.
 - Access to shared electric bikes or cargo bikes with opportunities to try them out for a specified period and/or a digital booking system for their use.
 - Free annual bicycle servicing.
 - Information screens showing real-time information about public transport services in the area.
 - Special facilities for receiving and temporarily storing deliveries, such as furniture and refrigerated goods.
 - Shared workspaces in residential buildings.
 - Free public transport passes for new residents or building users, if a transport contract ("samgöngusamningur") does not apply.
 - That all parking spaces be located at least 500 m away from the building.
 - That the cost of parking be separated from the price or rent of the property.
 - Introducing parking fees.
 - Improved transport contracts, as described above. If implemented correctly, they can play a similar role to workplace parking fees.

● **Use encouragement measures to support major changes**

Financial incentives, information provision and other supportive measures can facilitate changes in travel habits, particularly in conjunction with improvements to the transport system, new developments, and restrictions on parking arrangements. Such encouragement measures are likely to be most effective when targeted at places and times where realistic alternatives to private car use are available and where there is a clear opportunity to influence travel habits.

Examples of such measures include subsidies, trial periods for alternative modes of transport, information on travel times by bicycle, events to encourage winter cycling, grants for the purchase of equipment for winter cycling or cargo bikes, and incentive packages for companies such as those offered via the HjemJobbHjem initiative in Norway.

3 Scope

Urban travel habits patterns produce many consequences, ranging from the economical and sociological, to the environmental and physiological. Cities and travel habits that are predominantly car-oriented tend to have many negative impacts, in these regards. So, many cities around the world are using planning and a great variety of policies to affect, shift, or change travel habits. Elsewhere in the world and especially in the EU, there is a common, effective framework for planning all of these policies so that they work well together and have the greatest impact on travel habits. This framework is the Sustainable Urban Mobility Plan (SUMP). One of the main things that this framework tells us to do as planners is to combine multiple policies into “push/pull” policy packages – changing travel habits requires both increasing the attractiveness of non-car modes of transport (“pull”) and decreasing the attractiveness of the private car (“push”), and policies that are designed to do each of these things should be designed together so that they enhance each other. Parking policy is a critical part of the “push/pull” equation. It is usually the “push” in any “push/pull” policy package. So, it cannot be ignored in the planning process if our goal is to change travel habits.

This report serves two purposes. The first is to flesh out this “push/pull” conceptual framework for changing travel habits, explaining how it applies to different elements of the urban environment and transportation system. Then, through this lens, identify the various parking tools that can be used to change travel habits, listing available evidence for their effectiveness where possible. This is carried out in sections 4, 5, and 6.

The second purpose of this report is to survey the official plans and policies in Reykjavík as a case study, identifying how individual measures are intended to work together to change travel habits. Through comparisons to two similar case studies from two other Nordic cities, alongside the theoretical basis provided in the earlier half of the report, gaps/opportunities in the current plans of Reykjavík are identified with a focus on how parking policy might be integrated more effectively towards changing travel habits and meeting Reykjavík's goals. This is carried out in sections 7 and 8. Results and recommendations are summarized in section 9.

Apart from the introduction of the “push/pull” concept in section 4, each section is intended to stand as a resource on its own with no need to read the others, but together they form a more coherent picture of parking policy and the approach to changing travel habits in Reykjavík.

4 Sustainable urban mobility planning and the “push/pull” approach to changing travel habits

Policy for encouraging changes in travel habits is not only about what is done. It is also about how these actions are planned and how they are made to synergize with one another as parts of a cohesive whole. Countries on the European mainland and among the Nordics offer a wealth of experience to draw from in both regards that Reykjavík may be able to learn from, especially when it comes to parking policy. A unified framework for planning urban mobility has gained major relevance in the past two decades. It is called the Sustainable Urban Mobility Plan. A brief overview of this is a useful starting point for understanding best practices and a theoretical framework for changing travel habits.

A Sustainable Urban Mobility Plan (or SUMP) is a strategic planning document that covers a city's entire functional area (i.e. the city and all relevant commuting zones), and which explicitly integrates itself with other policy areas that impact, or are impacted by, the mobility system (e.g. land use planning). A SUMP triples as a long-term mobility plan for satisfying the mobility needs of people and businesses in the area, as a package of practical near-term actions and targets, and as a monitoring system thereof. Importantly, the goals embodied in the SUMP are fundamentally grounded in increasing quality of life for people in the area, and in converting the city to be in line with climate change, social, and economic policies (EU, 2023).

In many European cities a SUMP or SUMP-like plan is the document that currently guides which policy instruments are used to influence mobility, including instruments related to parking. SUMP will only become more prominent in the near future. It is now mandated in the EU that member states have SUMP support programmes in place at the national level, and that all 431 TEN-T cities (i.e. designated as important urban nodes) adopt a SUMP by the end of 2027 (EU, 2024). The integrated position of a SUMP in relation to other forms of planning is shown in Figure 4.1, the 8 core principles of SUMP are shown in Figure 4.2, and key differences with more traditional planning frameworks are listed in Figure 4.3.

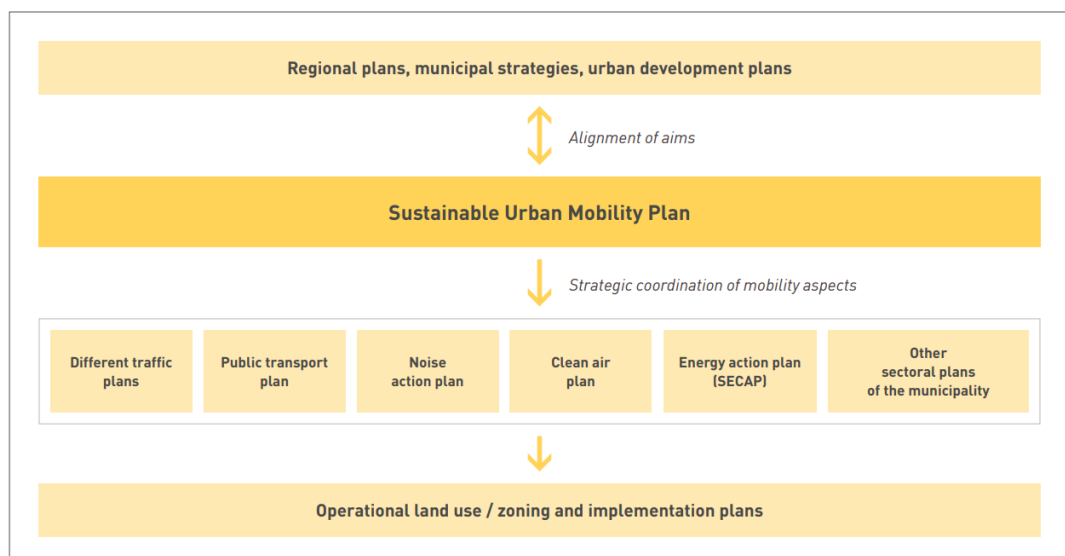


Figure 4.1: Relationship between SUMP and other forms of planning. Source: EU (2026)

1. Clear and measurable goals and objectives.
2. Long-term vision and a clear implementation plan.
3. Assessment of current and future performance.
4. Integrated development of all modes of transport while prioritising the most sustainable ones.
5. Integrated approach to passenger mobility and urban freight transport and logistics.
6. Participatory approach and coordination with other relevant initiatives.
7. Monitoring, review, reporting and quality assurance.
8. Guidance and support at European level.

Figure 4.2: The 8 core principles of SUMPs. *Source: EU (2026)*

Traditional Transport Planning		Sustainable Urban Mobility Planning
Focus on traffic	→	Focus on People
Primary Objectives: Traffic flow capacity and speed	→	Primary Objectives: Accessibility and quality of life , including social equity, health and environmental quality, and economic viability
Mode-focused	→	Integrated development of all transport modes for people and goods and shift towards sustainable mobility
Infrastructure as the main topic	→	Combination of infrastructure, market, regulation, information and promotion
Sectoral planning document	→	Planning document consistent with related policy areas
Short and medium-term delivery plan	→	Short and medium-term delivery plan embedded in a long-term vision and strategy
Covering an administrative area	→	Extending beyond city boundaries taking into account real traffic flows
Domain of traffic engineers	→	Interdisciplinary planning teams
Planning by experts	→	Planning with the involvement of stakeholders and citizens using transparent and participatory approaches
Limited impact assessment	→	Systematic evaluation of impacts to facilitate learning and improvements

Figure 4.3: Differences between traditional transport planning and SUM planning. *Source: EU (2026)*

Although the content and actual structure of SUMPs differ between contexts, all have one thing in common: the planning process. This process is what makes a plan a SUMP. The process for building a SUMP is outlined in great detail by the EU in a set of consistent, publicly accessible guideline documents (EU, 2023; EU, 2026), while the relevance of parking policy at each step in the process is specifically outlined in an additional topic guide document (EU, 2022). The SUMP guidelines define the principles of the SUMP

planning process; its structure; its scope; which characteristics of the mobility system to consider in the formation of goals; when and how public participation could be solicited; and how to form systems of assessment and monitoring. It is broken down step by step (see Figure 4.4), and each step is described in the guidelines in terms of its aims, what tasks must be performed and when, and examples from real cities are also provided at each step.



Figure 4.4: Steps of the SUMP process. Source: EU (2026)

One particular step in the SUMP process is especially relevant for explaining a theoretical basis for changing travel habits. It is *Activity 7.2: define integrated measure packages*. A measure package (sometimes called a policy package) is a combination of complementary measures/policies/actions, often from different categories, which are coordinated to mutually enhance one another and together address a problem more effectively than individual measures would alone. A type of package that is frequently pointed to as being the most effective for changing travel habits is a so-called “push/pull” (i: hvatar og takmarkanir) or “carrot and stick” measure package.

In these packages, measures that are designed to disincentivise certain behaviours (e.g. to make driving a private car less desirable) are combined with measures that incentivise alternatives (e.g. to make riding public transport more desirable).

“Push/pull” packages are advocated for by planners in many European cities, and they are highlighted as especially relevant to parking policies in both the SUMP guidelines (EU, 2026) and the parking topic guide for SUMP (EU, 2022). Parking policy is often the “push” in any “push/pull” measure package, and therefore should not be ignored if the goal is to change travel habits.

As a simple example, parking spots could be removed or parking fees could be increased in the city centre to discourage some car use, while making space for or funding the development of enhanced bus connections in the city centre. Parking policy “pushes” users away from behaviours that are sought to be reduced while targeted investment in

public transport “pulls” users towards behaviours that are sought to be increased. The “pull” enhances the effect of the “push”, and vice versa. The “push” measures also often provide resources (e.g. funds or space) to be used by the “pull” measures. If this use of resources is communicated transparently to the public, it can also often boost public acceptance of the policies. This idea has been widely stated by planners (EU, 2026; EU 2022) and has a growing base of empirical evidence (e.g. Thaller et al., 2024; Zawadzki, Vrieling & van der Werff, 2022).

The idea that a city which has followed the SUMP process and implemented these “push/pull” policy packages shall then also have more success in changing travel habits, compared to a city that has not, is yet to be studied robustly. However, limited research among cities in Czechia has demonstrated that representatives in cities with SUMP tend to report more positive experiences with several transport measures (including public transport improvements, promotional campaigns, and stricter parking management) compared to their counterparts in cities without SUMP that have implemented those same measures (Jordová & Brůhová-Foltýnová, 2021). SUMP cities also seem to implement a larger variety of actions in the transport system on average (ibid). So it would seem that this SUMP framework – spanning across municipal boundaries, comprehensively planning for all modes of transport in “push/pull” policy packages, and implementing these in clear action & monitoring plans – is a useful one. In any case, the “push/pull” concept is very useful for understanding how large-scale changes to travel habits are produced. Where exactly such “pushes” and “pulls” can appear within the urban environment and transport system, and how these specifically relate to travel habits, is the subject of the next section of this report.

5 What do we know about changing travel habits?

5.1 How do travel habits develop?

Travel habits have long been a subject of research within planning, transport studies, geography, and the social sciences. Early research focused primarily on explaining travel choices in terms of individual characteristics, such as age, gender, and socioeconomic status. In recent decades, however, the understanding of travel habits has developed considerably. Today, it is generally accepted that travel habits are shaped by the interaction between individuals and the environments in which they live and work. The characteristics of the built environment, the transport system, and people's daily activities may therefore influence travel choices just as much as individual factors.

The choice of travel is therefore not necessarily the result of a conscious decision made before every journey. It is also shaped by the available options and the conditions of everyday life. The locations of home and workplace, access to services, the structure of the transport system, travel time, cost, and access to different modes of transport all influence which mode is chosen. When these factors remain relatively stable, established travel patterns can develop and become part of an individual's daily routine. Travel habits is therefore best understood as the result of interactions between several influencing factors rather than as the result of any single factor.

Demographic and socioeconomic factors continue to influence travel habits, but the built environment has an independent effect, irrespective of individual characteristics. Research shows, among other things, that population density, the locations of homes and workplaces, the quality of public transport and access to parking are associated with the likelihood of choosing a car rather than another mode of transport. This increased understanding has led to greater emphasis on integrating urban and transport planning to

create conditions that make it easier for people to choose more sustainable modes of transport.

Changes in travel habits are rarely achieved through a single, isolated measure. Instead, they result from interactions between land-use planning, the transport system and measures affecting accessibility and the choice of transport mode. Different policy instruments can reinforce one another when implemented together. For example, research indicates that high-quality public transport has a greater effect on travel choices when combined with restrictions on parking availability. Similarly, the effects of dense development can be strengthened through parking controls. This reflects the “push/pull” approach discussed in the chapter on Sustainable Urban Mobility Plans (SUMP), in which integrated packages combine measures that make sustainable modes of transport more accessible and attractive (“pull”) with measures that reduce the relative advantages of private car use (“push”). This interaction is important because the measures support one another: sustainable modes become easier to use, while travelling by private car becomes less economical or convenient.

5.1.1 The Built environment

The built environment has a significant influence on travel habits. Urban planning affects the distances between everyday destinations, access to services and the modes of transport that are viable in daily life. However, travel habits is not determined by planning alone; it is also influenced by people's needs and circumstances. The locations of homes, workplaces and services, together with the structure of the transport system, therefore affect both travel distances and the choice of transport mode (Næss et al., 2019; Næss et al., 2021).

Dense, mixed-use development can shorten distances and enable more people to reach their everyday destinations on foot or by bicycle. It can also create better conditions for public transport by concentrating more residents, workplaces and services within the same area. Conversely, dispersed development and segregated land uses can increase travel distances and dependence on the private car (Banister, 2008).

The location of development within the wider urban area also matters. Travel distances are influenced not only by proximity to the nearest services but also by the location of the home in relation to the city centre and other areas with high concentrations of jobs and services. Residents living closer to the city centre generally travel shorter distances and drive less than those living farther away (Næss, 2003; Næss et al., 2019). A similar pattern can be observed in the Reykjavík Capital Region, where residential location is associated with both travel distances and the choice of transport mode, particularly for journeys to and from work. Population density and proximity to other urban centres are also associated with travel habits, although to a lesser extent (Næss et al., 2021).

The importance of proximity to the city centre does not stem solely from the distance to the centre itself. City centres generally contain a greater concentration of jobs and services, providing a wider range of potential destinations within a relatively short distance. People do not necessarily use the service or travel to the workplace closest to their home. Consequently, the location of the home in relation to areas where jobs and services are concentrated may have a greater influence on travel distances than proximity to services in the immediate neighbourhood (Næss et al., 2021). Land use and transport planning must therefore be coordinated when creating conditions that support changes in travel habits. The locations of housing, jobs and services affect how far people need to travel, while the structure of the transport system affects which modes are viable. Planning that shortens distances and improves access to alternative modes can reduce the need for car journeys and create better conditions for walking, cycling and

public transport (Banister, 2008; Næss et al., 2021). From a “push/pull” perspective, greater density and a more diverse mix of land uses can therefore be regarded as “pull” measures because they make alternatives to the private car more accessible and viable.

5.1.2 ***Transport systems and accessibility***

The transport system has a major influence on which modes of transport are viable in everyday life. The availability of different modes is important, but so too are their convenience, speed and cost. Travel time, cost and the quality of the transport system therefore influence the choice of transport mode. To provide realistic alternatives to the private car, other modes must be capable of meeting people's everyday travel needs (Banister, 2008; Tyrinopoulos & Antoniou, 2013).

Travel time is important, but its individual components also matter. A journey by public transport generally involves more than the time spent in the vehicle. Passengers must walk to and from stops, wait for services and, in some cases, transfer between routes. These parts of the journey may affect how it is perceived more strongly than an equivalent amount of time spent in the vehicle. Walking and waiting as part of a journey are generally perceived as more burdensome than the same amount of in-vehicle travel time (Wardman et al., 2016). Total travel time therefore does not provide a complete basis for comparing different modes of transport. Two journeys of equal duration may be experienced very differently depending on the time spent walking, waiting and transferring. The location of stops, service frequency and connections between routes can therefore strongly influence whether public transport represents a realistic option. Reliability is also important, as uncertainty regarding journey times and possible delays can affect both the experience of a journey and people's travel choices (Wardman et al., 2016; Tyrinopoulos & Antoniou, 2013). Travel time is thus weighted differently depending on which part of the journey it represents, such as walking, waiting, accessing public transport, searching for a parking space or travelling in the vehicle itself (Wardman et al., 2016).

The same applies to the private car. The journey does not end when the car arrives at the destination; one also has to find a parking space and get from there to the final destination. The time spent searching for a parking space can therefore affect how advantageous the car is as a mode of transport. The time spent searching for a parking space is considered more burdensome than the corresponding travel time in a vehicle (Wardman et al., 2016). Parking conditions are therefore an integral part of the transport system and can affect the competitiveness of the private car relative to other modes.

Walking and cycling routes must similarly function as practical components of everyday journeys. It is not sufficient to consider only the length or extent of the network. Routes must connect residential areas, workplaces, schools, services and public transport stops, while also being continuous and safe. Walking and cycling form part of many public transport journeys because passengers must travel to and from stops. The quality of walking and cycling networks can therefore affect both journeys made entirely by these modes and the accessibility of public transport. Accessibility concerns not only the distance to a destination but also how easily it can be reached using different modes of transport. This is where land use and the transport system are directly connected. Land use largely determines where people live and where jobs, schools and services are located, while the transport system affects how easily people can travel between these places. Coordinated land-use and transport planning can shorten distances and create conditions in which a wider range of transport modes is viable for everyday journeys (Banister, 2008). Land use and the transport system can therefore generate two complementary “pull” effects: land use can shorten travel distances, while a high-quality

transport system makes it easier to complete those journeys without using a private car. Land use and the transport system can thus create two kinds of “pull” effects that reinforce each other; land use can shorten distances, while a good transport system makes it easier for people to make these journeys using modes of transport other than the private car.

5.1.3 ***Parking and car accessibility***

The availability of parking affects the convenience and cost of using a private car for everyday journeys. Almost every car journey begins and ends at a parking space, meaning that parking conditions at both the origin and destination are important. The supply, location and cost of parking can influence not only the choice of transport mode but also car ownership and use. Convenient access to parking at home makes the car readily available from the beginning of a journey. The distance between the home and the parking space is also important: the farther people must walk to reach their car, the less likely they are to use it. This is particularly relevant in dense urban areas, where shops, services and other everyday destinations are located nearby. When a car is not parked directly outside the home, some of its relative advantage for short journeys is reduced (Christiansen et al., 2017).

Conditions at the destination are equally important. This is particularly evident for journeys to and from work, where convenient access to workplace parking increases the likelihood of travelling by private car. A limited supply of workplace parking may have a greater effect on the choice of transport mode than parking charges alone. Charges nevertheless have an effect, particularly when combined with restrictions on supply (Christiansen et al., 2017). Measures that restrict the supply, accessibility or free use of parking can therefore reduce the relative advantage of travelling by private car.

Parking is also closely related to land use and population density. Parking occupies space that could otherwise be used for buildings or other activities, while requirements for extensive parking provision can limit the density achievable within a development. Higher minimum parking requirements have consequently been associated with lower residential densities and higher levels of car ownership (Manville et al., 2013). Parking therefore affects the choice of transport mode not only by making car use easier or more difficult (“push”) but also by influencing urban development and, in turn, the conditions supporting alternative modes (“pull”).

“Push” and “pull” can therefore work together. The effect of parking conditions on travel choices depends on the wider environment in which they operate. Limited access to parking has a greater effect in dense urban areas, where travel distances are shorter and other modes can more easily replace the car. Similarly, high-quality public transport can have a greater influence on the choice of transport mode where parking availability is limited (Christiansen et al., 2017). Restrictions on access by car (“push”) and measures that improve conditions for alternative modes (“pull”) can therefore reinforce one another. Parking and car accessibility must consequently be considered alongside land use and the transport system when seeking to change travel habits.

5.1.4 ***Incentives and restrictions***

Even where high-quality infrastructure and viable alternatives are available, people will not necessarily change their travel habits. Incentives can make alternative modes easier or more economical to use and thereby influence travel choices. Such incentives may take various forms, including reduced travel costs, information provision and other measures that facilitate the use of alternatives to the private car. Incentives do not necessarily have to be financial. Information about available travel options, assistance

with journey planning and workplace-based measures can also make it easier for people to choose another mode. Financial incentives can, however, alter the relative cost of different modes, for example through subsidised fares or financial support for the forms of transport being promoted. The effects of these measures vary according to the type of incentive and the circumstances in which it is applied (Xiao et al., 2022).

Incentives complement the conditions created by the built environment and the transport system. Walking and cycling infrastructure or public transport services can be improved, while people can also be actively encouraged to use them. Incentives can similarly be combined with measures that reduce the relative advantages of private car use, such as the restrictions on car access discussed above. The interaction between these two approaches is often described in terms of “pull” and “push” measures (see Chapter 4): alternative modes are made easier or more economical to use, while the advantages of the private car are reduced.

Combining incentives and restrictions may be important to the success of interventions. Comparisons of different measures suggest that the effects of incentives alone are less clear than those achieved when restrictive measures are used or when the two approaches are combined. However, the findings are not conclusive, and outcomes vary depending on the measures and circumstances involved (Xiao et al., 2022). One example of this interaction is HjemJobbHjem in Trondheim, Norway, where restrictions on workplace parking are combined with incentives to use alternative modes of transport. Among companies participating in the project, the proportion of journeys to work made by car decreased by 40% between 2021 and 2025 (Trondheim Stafetten, n.d.). Incentives therefore form part of a broader framework in which land use, transport systems, car accessibility and other measures work together to create conditions that support changes in travel habits.

6 Parking policies

As described in section 5, the degree to which car trips are fast, convenient, and pleasant *relative to trips by other modes* is a significant factor relating to the likelihood that a person will choose to drive a car instead of using a different mode. As stated previously, policies that aim to improve infrastructure for non-car modes and reduce travel distances are essential for influencing only one side of this equation (increasing the quality of trips by non-car modes; “pull”). Parking policy, on the other hand, is widely regarded by planners in Europe as a key lever for influencing the other side of this equation (reducing the quality of car trips; “push”). Parking policy can achieve this by affecting parking supply, parking pricing, and the distance people must walk to reach parking. As stated, parking policy can additionally impact the “pull” side of the equation by contributing to urban density, and resources appropriated via parking policy can additionally be used to improve other modes.

What does all this look like in practice? Having reviewed literature related to the SUMP guidelines (EU, 2026), SUMP parking topic guide (EU, 2022), knowledge from several European cities (e.g. Fosli, 2020), and a past review of parking policy effects (Rye et al., 2023), a list of the most prominent parking policy instruments is provided in this section. Each instrument is first described, then evidence related to their potential effects on travel habits is provided. The same evidence may be referenced for multiple instruments where it is repeatedly relevant.

6.1 Parking standards

Parking standards are a particularly crucial and somewhat complex parking policy instrument. To describe them adequately, slightly more space and more numerous examples will be provided to them in this section compared to other instruments in section 6.

6.1.1 Description

Parking standards (or parking norms) are a primary tool used by planners to control the overall supply of parking in a city in the long term. They are legally binding regulations imposed on building developments, setting either a minimum number of parking spaces that must be included with the development, or a maximum number of parking spaces that cannot be exceeded. A maximum is typically used to limit the supply of parking in locations where it is sought to encourage the use of other modes ("push"), and a minimum is typically used to guarantee a supply of parking where it is sought to encourage or enable the use of that mode ("pull"); parking standards can be considered "push" or "pull" measures depending on how they are used.

Parking standards can also specify provisions related to the distance between the development and the provided parking facilities. If parking facilities are allowed to be placed farther away from developments, this can enable the parking supply to be used as a "push" measure, discouraging car use via longer walking distances. Some cities use their parking norms to impose minimum distance requirements. For example, Stavanger's parking standards state that parking facilities for developments in central areas shall be placed at least as far from the development as the nearest public transport stop (Stavanger Kommune, 2023). Where parking standards are used as a "push" measure to discourage car use, parking for disabled people is usually an exception. This is also true of most other "push" measures.

Parking standards can be applied to both car parking and bike parking. If parking maximums are used in modern practice, they typically apply to car parking, and where bike parking standards are used, they are typically set as minimums (EU, 2022; Fosli & Langeland, 2021; see also Göteborgs Stad, 2021; Umeå Kommun, 2024; Stockholms Stad, 2025; Trondheim Kommune, 2026a; City of Vancouver, 2024a). The exact standards typically differ within a single jurisdiction based on a set of geographical zones (e.g. whether the building will be in the centrum, or nearby a main public transport line), building purposes (e.g. apartments, shops, or offices), and other building characteristics (e.g. whether an apartment has 1 room or 4 rooms). I.e. based on an approximate idea of the relative amount of parking that would be needed, or demanded, at the development. However, according to a review performed in the Oslo region, the exact values are often simply based on existing practice and only to a small extent based on systematic knowledge of parking occupancy and traffic impacts (Fosli, 2020).

To improve upon this, many cities include additional provisions in their parking standards to more precisely estimate the need for parking. This usually results in reducing the recommended/required/maximum parking amounts and therefore overall parking supply in the city. For example, reductions in the standard amounts can be based on the mixture of land uses at the development; different user groups typically use the parking at different times of day and therefore fewer total spots are needed to meet demand. This kind of provision is made in the parking standards of Reykjavík (Reykjavíkurborg, 2026a), Gothenburg (Göteborg Stad, 2021), Vancouver (City of Vancouver, 2024a), and some municipalities in Norway, for example (See Fosli, 2020).

Standard amounts can also be reduced based on more detailed analysis of existing or future accessibility to local services and infrastructure for sustainable modes – beyond

what is already implied by the geographical zones in the parking standard. Reykjavík's car parking standards, for example, suggest a specific reduction in parking supplied for developments within 400-600m of at least two public transport stops that are of a high quality, although the parking standards do not specifically state what can be considered "high quality".

Gothenburg, as another example, requires a more extensive and specific set of reductions. These are based on whether the development will be within a specific distance from a high quality public transport stop (which is clearly defined), whether it will be within a specific distance from a part of the city's main bike infrastructure, and whether it is within a specific distance from several specific kinds of services, including schools and healthcare. Further reductions are required for developments within a certain distance of some especially critical public transport nodes (Göteborg Stad, 2021). Umeå, Sweden, is another example of a city whose parking standards suggest reductions based on proximity to local services, suggesting a 10% decrease in parking amount if the development is within 300 m walking distance from a grocery store.

Beyond these examples from practice, academics have recently suggested assessment schemes that are even more rigorous and specific for determining parking standards entirely on a case-by-case basis, including measurements of local modal split, local walkability characteristics, speed limits, and job/population density (Stojanovski, 2022). Some cities, like Stockholm, perform this sort of detailed accessibility analysis ex-ante for the entire city, and use it to form more precise geographical zones for their residential parking standards (Stockholms Stad, 2025). This reduces the analytical burden on developers.

To not provide any clear standards and instead mandate that parking provision be determined in dialogue with the city on a case-by-case basis adds flexibility. However, it has been argued to also increase uncertainty and costs surrounding development (e.g. see Kimley-Horn, 2012), especially in the absence of transparent analysis/calculation guidelines. Therefore, open case-by-case analyses are typically mandated only judiciously by planners.

Reykjavík, for example, sets specific standards for all building types except for sport facilities and theatres, which must instead be determined on an open case-by-case basis in collaboration with the city (Reykjavíkurborg, 2026a). Allowed parking amounts for schools and healthcare facilities are also measured on a case-by-case basis in Reykjavík, but the process is made somewhat clearer by a guideline which states that the amounts shall be based on the number of employees and/or patients/students. For schools, a general range of 0,2 to 0,5 spots per employee is suggested. However, no clear range is suggested for students at universities.

The parking standards in Umeå, Sweden, make similar distinctions between these kinds of buildings and everything else (Umeå Kommun, 2024). Oslo's parking standards also mandate case-by-case analysis only for sport facilities, theatres, and churches, but provide three additional guidelines to help make the process clearer. These are: (1) to consider the possibility of shared-use of existing parking in the area, (2) that the amount of car parking supplied shall contribute to reduced car use, and (3) that the amount of bike parking supplied shall be adequate for at least 25% of the building's users to be able to bike to/from it (Oslo Kommune, 2022). Lastly among these cities, Stockholm's parking standards mandate case-by-case analysis on the widest set of building types. As stated above, Stockholm provides clear parking standards for residential buildings, but only residential buildings. The allowed parking amounts for all other building types are determined on a semi-open case-by-case basis in dialogue with the city (Stockholms Stad, 2025). Brief guidelines are given to describe what the analysis shall generally

include (geographical area, capacity of the surrounding traffic system, access to mobility infrastructure) and starting points are given to help give developers a general idea about the outer limits of parking quantities for various building types e.g. the appropriate amount of parking for an office building must be determined on a case-by-case basis, but the result shall not fall outside a range of 0 to 5 places per 1.000 m². These examples show that where case-by-case analysis is required in parking standards, the degree to which this imposes uncertainty and costs on developers is strongly considered and, ideally, mitigated.

This more generally demonstrates the notion that parking standards also indeed affect the kinds of developments that developers will tend to build. As stated by Fosli (2020), parking standards can affect where businesses tend to be located. This function is used intentionally in cities such as Trondheim, where the office parking maximum is relatively strict and does not vary at all according to geographic zone (Trondheim Kommune, 2026a). Thus, office building developers are incentivised to build only in locations that are most accessible by non-car modes, so workplaces are eventually concentrated where alternatives to the car are most strongly present. In this way, parking standards can be used as a kind of “pull” measure.

A final characteristic of modern parking standards relates to incentivising non-parking investments rather than merely considering surrounding conditions. It has been argued that a more cost-effective alternative to developers providing parking themselves is to instead have them implement measures that reduce the demand for parking (e.g. see Shoup, 1999). That is, to have developers make investments that improve the quality of non-car trips for users of the building; “pull” measures. As this lowers parking demand, parking amounts can then be reduced. Following this line of thinking, cities have added provisions to their parking standards which encourage developers to make these kinds of investments in exchange for reducing the amount of parking prescribed or recommended in the standard.

Umeå, Sweden, provides a straight-forward example (Umeå Kommun, 2024). In their car parking standards, they state that minimums can be reduced by set percentages for each individual measure that is implemented among a specified list of alternatives: providing bike service stations, providing especially attractive bike parking facilities that meet certain specifications, providing e-bikes or e-cargo bikes to be shared amongst building users, providing a similar service for a car to be shared amongst building users and/or the general public, providing free public transport cards to new residents of the building, providing a delivery room capable of storing grocery deliveries, and providing a room where second-hand items can be exchanged between users of the building. Freiburg, Germany, is a similar example to this (EU, 2022).

Stockholm, on the other hand, mandates that all developers – regardless of geographical zone or building type – must provide most of the above measures as a baseline, in addition to free trials for the car sharing system, as well as regular information campaigns about these measures and opportunities for car-free transport in the area (Stockholms Stad, 2025). Beyond this required baseline, Stockholm offers a list additional voluntary measures, each of which gives a certain number of points. If a certain number of points is reached, it leads to a specific reduction in parking spaces. This list only explicitly applies to residential buildings, though, and only ostensibly applies to commercial developments. Some examples of these additional measures are yearly free bike service for residents, providing public co-working space inside the building, or agreeing to provide the parking supply at least 500 m from the development. This latter measure is especially interesting, as it is a “push” measure to discourage car use rather than a “pull” measure to encourage use of other modes. An interesting variant of this points-based system can be found in

the parking standards of Gothenburg. There, parking minimums can be reduced with a selection of voluntary “pull” measures, but if the developer chooses to do this then a specific set of those measures must be implemented first as a baseline (Göteborg Stad, 2021). Thereafter, the developer is given the freedom to mix and match a variety of measures into sets, but must include at least one measure that has been designated by the city as especially effective.

Reykjavík, as a final example, also provides alternatives like this in their parking standards (Reykjavíkurborg, 2026a). They firstly suggest that developers replace private vehicle parking places with parking spaces that are reserved for shared cars, at a rate of 1 car share space per 3 to 5 replaced private car spaces. Developers that do this must negotiate with a third-party car sharing service to occupy these spaces, and the service shall be accessible to the general public. All residential developments exceeding a certain size are required to provide at least one such parking space. In a later section of the parking standard, developers are further encouraged to implement other “pull” measures and reduce their parking supply further as part of a “transport policy” or “samgöngustefna”.

The standards supply a list of potential alternatives: providing access to a car that can be shared by users of the building, providing especially high-quality bike parking with access to a bike service station, ensuring that walking connections to nearby public transport are of high quality, discussing with the municipality about how to further improve this kind of accessibility, and requiring that businesses which use the building offer transport contracts to their employees (“samgöngusamningar”). These contracts do not have a standardized form and are not described further in the parking standards, but in practice they typically involve the employee agreeing to commute with non-car modes a minimum number of times per week (often, three) in exchange for e.g. receiving a discount on a public transport card, or receiving a flat amount of money.

Beyond this list of measures, the parking standards in Reykjavík encourage developers to implement their own ideas. Apparently, if any combination of measures is implemented, a reduction in the parking standard by 10% is suggested. Where an implemented collection of measures is “especially diverse”, a reduction by 15-20% is suggested, although the criteria for determining this is not clearly defined. Compared to the examples from the other cities, the example of Reykjavík provides less structure but more flexibility with regards to reducing parking supply alongside implementation of “pull” measures. Although it must be said that the parking standards in Reykjavík do not seem to give developers as clear of an incentive to invest in, for example, three “pull” measures instead of two.

6.1.2 ***Impact on travel habits***

Although parking standards can serve multiple functions, as discussed above, their main function is to change the total supply of parking available in a city over the long term, and thereby affect travel habits. Regarding this main function, evidence relates parking standards to changes in travel habits in two key ways. Firstly, by directly associating higher parking standards with changes in car ownership or use. Studies of this kind appear to be relatively difficult to perform and few in number. Secondly, by associating parking supply or parking availability to rates of car ownership across various locations. Studies of this kind are more common.

Regarding the first kind, evidence links the presence of (high) car parking minimums to higher rates of car ownership. One study compared overall average car parking requirements in neighbourhoods across most of New York City to car ownership rates of residents in those areas between 2005-2009, finding that a 10% increase in parking

requirements was associated with a 4% increase in vehicles per person (Manville et al., 2013). They also found it was associated with a 6% reduction in population and housing density. This density is also generally linked to travel habits, as referenced previously in section 5. The negative impact of car parking minimums on urban density is commonly cited as a primary reason to avoid them (e.g. Shoup, 1999; EU, 2022).

Another study of this kind compared multiple cities instead of multiple areas within a single city (McAslan and Sprei, 2023). Combined with the evidence above, their results can be argued to demonstrate that the relationship between high parking minimums and car ownership is strongest when a baseline level of accessibility to non-car modes is maintained. This study compared averages of current residential car parking minimums and current car ownership rates in 56 municipalities in Sweden in 2020, finding that across all municipalities there is a positive relationship between higher minimum parking requirements and higher rates of car ownership. Across all municipalities simultaneously, the relationship was not especially strong. The association also generally held up amongst groups of municipalities that were of a similar size to each other.

The association found in this study was only especially strong amongst commuting municipalities nearby Stockholm, Gothenburg, or Malmö, where at least 40% of the working population commute outside of their home municipality. One plausible explanation for the stronger relationship here is that limiting the sample to municipalities in this category means that the sample will have less diverse levels of access to quality infrastructure for non-car modes of transport. That is, they all at least have access to the relatively high-quality transportation systems of their neighbouring cities. This kind of variable control did not exist in the other samples they analysed. Thus, the relationship between higher parking minimums and car ownership seems to be strongest when this level of accessibility to alternative modes of transport is maintained.

Regarding evidence of the second kind, total parking availability on the city scale has been linked to increased car use. One study analysed total parking stock and car use in 9 American cities, each across 3 time periods between 1950 and 2009. They found that an increase in parking provision from 0,1 to 0,5 spaces per person, city-wide, was associated with an increase in car use equal to 30 percentage points (McCahill et al., 2016). Instead of looking at city-wide parking supply, Christiansen et al. (2015a) analysed the effect of residential parking availability on car ownership by interviewing residents in Oslo, Trondheim, Bergen, Stavanger, and Sandsnes, Norway. They found that 81% of households with direct access to parking on their own property owned at least one car, while only 47% of households who could only access parking on the street owned at least one car. Performing a regression analysis and controlling for income and housing type, they found that the effect of this kind of difference in parking availability is approximately twice as impactful on the probability of owning a car as the effect of being a family with small children (Rye et al., 2023 citing Christiansen et al., 2015a).

Parking availability at the workplace, specifically, appears to have perhaps the strongest evidence linking it to car use. Christiansen et al. (2017) analysed Norwegian national travel survey data from 2013/14, where respondents stated whether parking was easy to find at their workplace, and whether it was subject to a fee. Controlling for differences in sociodemographics, public transport service quality, and urban density, they found that parking availability and fees at the workplace significantly impact the probability that a person will drive a car to work, and this is valid nationwide. Compared to a scenario where parking spaces at the workplace are both free and abundant, a parking supply that is limited, but still free, corresponded to about 56% lower odds that a person will drive a car to work. For comparison, abundant workplace parking that is subject to a fee corresponded only to roughly 11% lower odds of driving a car to work. i.e. still somewhat

effective, but not nearly as much as reduced supply. Workplace parking supply restrictions and fees were most effective when working together, though, corresponding to roughly 69% lower odds of a person driving to work. The authors conclude that strict maximum car parking standards specifically at workplaces can significantly reduce car use on trips to work over the long term, and that these stricter parking standards can be combined with fees to maximize effectiveness.

A 2023 literature review from the UK investigated the effects of various parking policies. It referenced the above studies among others, and likewise concluded that parking availability and parking pricing are very effective together for influencing travel habits. It stated: “there is strong evidence based on papers with robust methodology that modal split [i.e. the rate of car usage] is influenced by parking pricing and parking availability. These factors can reduce car modal split by 25-50% compared to a baseline where there is ample free parking.” (Rye et al., 2023). They also concluded that restrictive parking standards are linked to reductions in total distances travelled by car and rates of car ownership. Authors generally stress that the effectiveness of such changes to parking supply depends on the availability of alternatives to the car, i.e. the use of “pull” measures alongside parking policy is crucial.

Apart from this primary way of influencing travel habits via parking supply/availability, parking standards can also affect travel habits by imposing requirements or allowances related to the distance between parking facilities and developments. There is some strong evidence which relates the distance from parking facilities with travel habits, mainly related to the residence. The same nation-wide study in Norway previously cited above found that larger walking distance to parking from one's own residence significantly reduces the probability of that person choosing the car for any trip originating at the home (Christiansen et al., 2017), even when controlling for sociodemographics and accessibility characteristics. An earlier analysis of the same dataset demonstrated that an availability of residential parking between 100m and 200m, instead of directly on the residential property, corresponded to a 25% decrease in car use (Christiansen et al., 2015b). These authors conclude that a distance requirement such as Stavanger's, i.e. where the parking standard requires that parking facilities be placed at a distance at least as far away as the nearest public transport stop, can be effective at reducing car use (Christiansen et al., 2017). Studies that specifically analyse the effect of distances to workplace parking were not found in the course of this project. However, earlier 2001 national travel survey results from Norway at least demonstrate a vague association (TØI, 2002). There, 76% of people who had free and plentiful parking directly at the workplace drove a car to work, while 64% of people who only had access to free street parking did so and only 37% if the street parking was subject to a fee. This relationship was not controlled for other factors such as access to public transport, which likely strongly accounts for much of this association, but it is interesting nevertheless.

To summarize, evidence suggests that parking standards can have a strong influence on travel habits and peoples' tendency to own or use a private car. Lower parking supply at the residence has a stronger link to car ownership, while lower parking supply at the workplace is more so linked to car use specifically for trips to the workplace. Distances between residence and parking facilities, and probably also workplace and parking facilities, can likewise affect car use. The effectiveness of parking standards as a “push” measure very likely strongly depends on the availability and quality of alternative modes of transport. Parking standards are, likewise, a long term measure. So they are perhaps also best paired with other shorter term policy measures.

6.2 Parking fees & costing

In addition to parking supply, the price of parking is another primary lever used by cities to regulate the use of the car. Parking fees, or costing, refers to any measure that places a direct monetary cost on the use of individual parking facilities, thereby making the cost of travelling (by car) directly visible to the traveller. This visibility is especially potent compared to a scenario where the parking is instead completely free.

In general, higher parking fees discourage car use; that is, parking fees are generally used as a “push” measure, and they are most effective at changing behaviour if good alternatives to the car trip exist. This alternative can be either a less-costly destination, an alternative mode of transport, or perhaps making no trip at all. An important condition for affecting travel habits, however, is that the cost should be experienced by the user directly – as a choice or purchase decision. Where the cost of parking is hidden in rent, bundled into other charges, or absorbed through a general salary arrangement, the parking can be considered effectively free to the user, and the incentive to reconsider car use is substantially weaker (e.g. see the literature review performed by Rye et al., 2023).

Discounts on fees can also be provided to encourage the use of specific vehicles over others. Reykjavík, for example, provides 50% discounts on monthly residential parking permits for (one) electric vehicle, and a similarly discounted parking permit is provided to carshare vehicles owned by carshare companies.

Apart from generally discouraging (or, from a lack thereof: encouraging) car travel, parking fees have also been used to increase the efficiency with which existing parking spaces are used. That is, users can be discouraged from taking up a space for too long in a high-traffic area, which could otherwise be used by several people in the same time period. 85% occupancy rate across a zone is generally considered efficient use of the parking resource, in this regard. If the occupancy rate is higher, it could drastically increase the amount of traffic that is simply searching for a parking spot. Search traffic has been shown to comprise as much as 30% of all traffic volumes in cities with poor parking management (e.g. see Simicevic et al., 2013). Thus, parking fees can be used to increase traffic efficiency, even if not decreasing the overall number of car trips. Rather than simply being used to generally discourage car use, this latter kind of demand management is the main explicit goal of the on-street parking fee zones in Reykjavík, for example (Reykjavíkurborg, 2019a; 2019b).

A 2023 literature review of the impacts of parking policies on travel habits concluded that car parking costs significantly influence car ownership and car use in general, stating that fees from €1 to €3 per day can reduce car km by between 0.3% and 3% at entire city or nationwide scales, while reductions between 6% and 16% have also been measured in other studies. They state that the reduction is highly sensitive to the proportion of people who are affected by the charge and whether it is implemented alongside overall parking capacity reductions. They conclude that parking fees and overall supply restrictions, together, can reduce car use by 25-50% compared to a baseline where there is ample, free parking (Rye et al., 2023).

6.2.1 Charging methods

There are several ways of applying a cost to parking. The most conventional approach is a flat parking fee, such as a traditional on-street parking fee or a charge for using a shared parking facility. These fees can be limited to specific areas or zones, and can be structured in different ways: they may be charged hourly, daily, or otherwise. Longer term parking permits, such as monthly residential parking permits, provide an alternative approach. In general, more frequent fees provide a more continuous connection between the traveller, their assessment of the cost, and their decision to park. More frequent fees

are therefore likely more impactful on behaviour when compared to an equivalent monthly fee (e.g. see Christiansen et al., 2017). Because of this, monthly permits are best used when the goal is to be less obtrusive.

Alternatively to flat fees, fees can instead be progressive, i.e. with the hourly price increasing as the parking duration increases and thereby also acting as a disincentive to park for long periods of time. Progressive fees are employed in several Norwegian cities (e.g. see Trondheim Parkering, 2021). If the goal is to match parking demand most efficiently, fees can even vary dynamically according to peak and off-peak periods. Such systems have not yet been widely used, but they have been tested in, for example, San Francisco and Seattle.

Rather than the more traditional fee structures above, parking costs can also be imposed less directly through taxation or levies. These are usually used to impose costs on parking that is not publicly owned, such as at workplaces. They can also vary in terms of how they eventually carry over to the user. Nottingham, UK, gives the most prominent example of a tax of this kind (Rye et al., 2023). In Nottingham, a tax is levied on employers city-wide based on the quantity of long-term parking spaces the employer maintains specifically for employees at the workplace. However, health facilities, emergency services, and workplaces with fewer than 10 employees are exempt. All revenues are then used to fund transport infrastructure improvements – especially for non-car modes. When the tax is levied, there is no explicit requirement that the cost be transferred to the employees themselves, but in Nottingham this occurred in about 53% of cases (ibid).

Even if the cost was not transferred to the user, this kind of taxation also resulted in employers reducing overall parking supply for employees, either by completely removing the parking spots or changing them to short-term visitor parking spots. This makes the tax double as a tool to control private parking supply after a development has already been built, but existing parking standards must allow for this.

In Nottingham, these combined effects of imposing parking costs on users and somewhat restricting workplace parking supply resulted in the workplace parking tax being successful at shifting travel habits city-wide. Between 2010 and 2017, it was found to have resulted in 8,6% of car commuters shifting to other modes, and the total number of people using public transport rising by 9,6% (ibid). 13,4% of all commuters using non-car modes stated that their decision was due, at least partly, to the workplace parking tax.

There are not many other examples of a tax such as this, however. One example of a possible alternative to this tax can be seen in the mobility strategy of Trondheim, Norway. There, the city is planning to impose a tax on workplace parking as an employer-provided benefit to the employee (Trondheim Kommune, 2022a). That is, to tax parking spots in the same way that employer-provided cell phones or public transport passes would be, and meanwhile remove said tax on public transport passes. As of writing, this has not yet been implemented, but it could be a more direct way of using taxation to impose or alleviate costs associated with car trips and public transport trips.

6.2.2 *Imposing costs on workplace parking*

The taxation schemes above are indicative of a larger, prominent question in the domain of parking fees: how can costs be imposed on workplace parking? It is relatively simple to levy fees on public street parking, but the same is not true of workplaces. Workplace parking represents a particularly important application of fees because it is commonly provided to employees at no direct cost, yet evidence suggests that parking fees at the workplace are likely more effective at shifting travel habits than other parking fees elsewhere (e.g. see Simicevic et al., 2013).

For example, a review from the USA in the 90's showed that introducing fees on otherwise free employee parking reduced the share of people that drove alone to work by an average of 41%, shifting predominantly to carpooling if quality public transport was not available or predominantly to public transport in cities where it was adequately available (Willson & Shoup, 1990).

The importance of imposing costs on workplace parking has been repeatedly mentioned in Icelandic literature. As pointed out in the official analysis report in the 2024 update of Transportation Agreement for the Capital Area (Viðræðuhópur ríkis og sveitarfélaga höfuðborgarsvæðisins, 2024), a 2018 report from Mannvit (Mannvit, 2018) on methods for boosting public transport ridership in the capital area noted that charging for parking at the workplace could have a large effect on the choice to use a car. The Mannvit report cites evidence from the 2001 Norwegian national travel survey that 75% of people with access to free parking at work commuted to work by car, while only 50% of people did if the parking was subject to a fee. A 2017 master's thesis (Skúladóttir, 2017) which surveyed self-reported travel habits of people in the capital area of Iceland likewise found that "difficulty finding a free parking place at work/school" was related to a lower probability of driving a car. The 2024 report finally argues that, as a 2019 survey by EFLA found that 86,5% of people in the capital area either never or seldom need to pay for parking at their workplace, the potential for using workplace parking fees as an instrument to shift travel habits in the capital area of Iceland is high and methods for doing so should therefore be sought out.

So, what methods are available for imposing costs on workplace parking? The research gathered in this report suggests three primary categories of methods for doing this. Taxation, explained above, is the first and perhaps simplest method. The second method is to gain direct public control of the parking facilities themselves, then simply subject the parking to a traditional fee. This is possible through a parking free purchase scheme, or "friköp" scheme, which is described in its own sub-section 6.7 below. Such schemes are specifically used to impose parking fees on commuters in Umeå, Sweden, for example (Umeå Kommun, 2013). The third way is to implement incentives that result in employers choosing to impose parking costs of their own accord. This third method will be discussed in the remainder of this section.

A policy-level incentive to impose costs on workplace parking can appear in many different forms. The UK provides an example of a wide-reaching but somewhat weak incentive. In the UK, workplace travel plans are required by law for large employers. These are plans where the employer implements measures to mitigate private car use – usually "pull" measures that promote the use of non-car modes for commuting. Individual municipalities must publish guidelines to assist in the creation of these workplace travel plans. In some municipalities, but not all, parking management and parking fees are strongly suggested as integral components of a travel plan (e.g. Hampshire County, n.d.). In other municipalities such as Essex, free consultations are provided to employers if they are looking to implement car parking management measures as part of their travel plan, thus providing a minor incentive (Essex County Council, n.d.). A 2010 review of these workplace travel plans demonstrated that plans at companies which also imposed costs on workplace parking were more effective than travel plans that were not. Solo car commuting reduced by 24% at companies which imposed costs on parking and 10% at those that did not (Cairns et al., 2010).

Norway provides a converse example where creating this kind of workplace travel plan is voluntary, but incentives to include parking fees in the plan are much stronger. This is done through an initiative called HjemJobbHjem – specifically the variant of it found in Trondheim. Through this initiative, the municipality directly negotiates with employers to

form agreements on a case-by-case basis. If the employer agrees to impose a parking fee or otherwise restrict car parking, the municipality offers them free or favourable prices on company e-bikes, a yearly bike service to offer employees, and/or a 30-50% subsidy to construct sheltered bike parking facilities. They can additionally offer employees a 25% discount on public transport tickets, 50% discount on the bikeshare system, and a discount on winter cycling equipment such as studded tires (AtB, n.d.). This is funded approximately 50% by the state.

The scheme has demonstrated some success. At least 62 companies have taken part since 2019 and among them, between 2021 and 2025, the share of car trips to work among their employees decreased by 40% (Trondheim Stafetten, n.d.). For comparison, an earlier variant of HjemJobbHjem currently exists in the Stavanger area which does not impose any requirement to introduce parking fees. It instead charges employers a small membership fee in exchange for advising and the kinds of benefits listed above. Between 2016 and 2018, the share of car trips to work had reduced by 13-19% (Kolumbus, 2023 citing Müller-Eie, Bayer & Leknes, 2019) among 516 participating companies, and about 85% of these employees had access to free parking (Müller-Eie, Bayer & Leknes, 2019). Although these statistics were not gathered on the same timescales, this suggests that this kind of workplace subsidy initiative is up to twice as effective for individual employers if the employer is made to introduce a parking fee – similar to the difference measured earlier in UK travel plans (Cairns et al., 2010). However, both variants are clearly effective, and the larger volume of participating employers in the Stavanger variant should not be ignored – 639 employers are currently members there, and the popularity of the initiative is likely much higher (HjemJobbHjem, n.d.).

The final examples policy-level incentives to impose costs on workplace parking are found within parking standards. As explained in section 6.1, developers can save money by constructing fewer parking spots at their development. This creates grounds for an incentive. In cities such as Vancouver, developers can opt to implement one of four mobility packages in exchange for a reduction in parking minimums. One of the alternatives is to agree to provide parking spaces to users of the building for lease only, not for purchase (City of Vancouver, 2024b). As with the workplace parking tax in Nottingham, there is no guarantee that this cost is transferred directly to the employee, but this could serve a similar function.

Reykjavík's parking standards also explicitly encourage developers to not package the cost of parking spaces automatically with the purchase or rent of their units, and to instead offer purchase or lease of the parking spaces separately (Reykjavíkurborg, 2026a). However, unlike in Vancouver, this section of the parking standard in Reykjavík does not suggest a reduction in total parking amounts to coincide with this measure, so no incentive is provided.

Reykjavík's parking standards do, however, suggest reductions in overall parking amounts in exchange for a different measure that is (arguably) related to parking fees. Developers are encouraged to, among other things, require employers who use their building to offer transport contracts ("samgöngusamningar") to employees in exchange for reduced parking amounts. As stated in section 6.1, these contracts do not have a standardized form, but typically involve the employee agreeing to commute with non-car modes a minimum number of times per week (often, three) in exchange for e.g. receiving a discount on a public transport card, or receiving a flat amount of money. So, while this does not impose a traditional parking fee, it can be argued to effectively impose a cost on using the parking facility. That is, by choosing to use the parking facility more than about twice per week, the employee relinquishes the amount of money, or the free public transport pass, that they could have had instead. A lump sum, rather than a free public

transport pass, would be more universally experienced as a true cost, however, and whether the employee must actually sacrifice the parking in exchange for this reward depends entirely on whether the arrangement is enforced. As with any parking fee, it will not truly affect behaviour unless the user must actually pay something in return for what they are receiving. The extent to which Icelandic transport contracts are enforced, or are perceived as such, is not clear.

Research has shown that this kind of opportunity costing could be effective at shifting travel habits. In California, law required that employees at large companies were offered a choice between using their company-funded free parking spot, or “cashing out” and receiving the monthly value that the employer would have paid for that parking spot as a lump sum instead. A study of 8 such companies in the 1990's showed that this measure was associated with a 17% reduction in solo car commutes alongside an increase in carpooling by 64%, public transport ridership by 50%, and active modes by 39% (Shoup, 2025).

Where employees must already pay monthly fees for workplace parking permits, another study has shown that flexible reimbursement schemes can even further reduce car use and boost public transport use. Authors in Minnesota tested 4 different incentive and costing schemes across multiple companies. One of the alternatives was, for example, to simply provide employees who had paid for parking with a free public transport pass. Another alternative was providing them with the public transport pass, then informing the employee that they will be reimbursed for the daily cost of their parking pass for each day that they do not use the parking. If employees used the public transport pass, they were reimbursed for the price of parking, minus the value of a daily public transport ticket. If the employee used neither the parking nor the public transport pass, they were reimbursed the full amount. The results indicated that simply giving public transport passes to employees who had already paid for a monthly parking pass had a negligible impact on travel habits. Authors found that only the schemes which flexibly reimbursed users for days where they did not use the parking had a statistically significant effect on travel habits – corresponding to a 3x increase in the share of commutes made by public transport (Lari et al., 2014).

A scheme like this has the potential to enable employees to convert their monthly parking permit into a public transport pass, or simply cash, at no extra cost to anyone. However, the question of what to do with the unused parking facilities would need to be resolved. It is also interesting that this scheme essentially converts the monthly purchase of a parking pass into a daily purchasing decision. As referred to at the beginning of this section, monthly fees tend to not be as impactful on travel habits as daily or hourly fees, likely at least partly because users who pay a monthly fee for parking will feel that they need to utilize the parking often in order to get their money's worth. That is, the daily price of parking technically decreases for the holder of a monthly parking permit with every additional day they use it (Christiansen et al., 2017). The flexible reimbursement scheme referenced above potentially resolves this issue without relying on the harshness of traditional daily parking fees.

Returning to the topic of Icelandic transport contracts, they could serve a similar function to this if the terms are right and enforcement is guaranteed. According to the 2017 thesis work cited above, about 34% of employees in the capital area had access to a workplace transport contract (Skúladóttir, 2017). So, this could be an instrument with high potential for imposing costs on workplace parking following the logic above.

6.3 Time limits

Parking time limits are a policy instrument used by planners to regulate how long vehicles may remain parked in designated spaces, typically to encourage turnover and ensure that parking is available to a wider range of users. In city centres of a size comparable to Reykjavík, limits are often around 1 to 3 hours, although shorter limits may be applied in particularly high-traffic locations.

Unlike parking fees, which can have a general discouraging effect on any car trip, parking time limits only have a discouraging effect on trips that would require longer term parking. Time limits are often imposed on public street parking within busy shopping areas, for example, to guarantee a certain amount of parking spaces for visitors, i.e. spaces that are not taken up for the whole day by employees or residents. If parking is fully occupied on such streets, this can greatly increase the amount of traffic that is simply searching for a parking space, which can be as high as 30% of all traffic in cities with poor parking management (see Simicevic et al., 2013). It is generally believed that, if the occupancy rate of parking is maintained at around 85%, search traffic can be minimized while maintaining an efficient use of the parking spaces. Parking time limits are used to achieve this, alongside fees. This is how they are used in Reykjavík, for example (Reykjavíkurborg, 2019a). Long term parking spaces are often then accommodated elsewhere, concentrated in shared-use facilities such as parking garages.

The available evidence does not suggest that parking time limits are associated with a change in the rate of car use, but they do affect whether drivers use on-street parking or shared, off-street parking. A 2023 literature review of the impacts of parking policies did not identify any evidence of parking time limits significantly affecting car modal split (Rye et al., 2023). An earlier study in Belgrade, Serbia additionally found that an increase or decrease in parking time limits was not associated with any changes in the decision to use a car altogether, but were significant for determining which type of parking facility a driver chose to use: on-street parking or shared, off-street parking (Simicevic et al., 2013). They additionally found that commuters are the most sensitive user group to changes in parking time limits, as well as parking fees.

6.4 On-street parking removal

On-street parking removal refers to any measure that reduces the total supply of public, on-street parking. This has the double purpose of discouraging car travel via the reduced parking supply, as well as freeing up the space to be used for something else – often something that improves the quality of the nearby built environment, such as outdoor seating, or infrastructure that improves the quality of non-car modes, such as bike lanes, bus lanes, or a wider, greener sidewalk. In this way, on-street parking removal is a “push” measure, but is also often necessary for the implementation of other “pull” measures. When on-street parking is removed, it is usually crucial that it is indeed replaced with some other quality use of the space. This is important for public acceptance of the measure in addition to simply being a good principal for efficiently using space resources. This idea is widely stated by planners (e.g. see EU, 2026; EU 2022) and has a growing base of empirical evidence (e.g. Thaller et al., 2024; Zawadzki, Vrieling & van der Werff, 2022). Following the general “push/pull” concept of changing travel habits used throughout the rest of this report, on-street parking removal should also coincide with “pull” measures off-site as well, such as general improvements to the public transport system, to have a maximal effect on travel habits.

Beyond simply mandating the removal of specific parking spaces, there are several policy tools or ideas which help facilitate the removal of on-street parking. Perhaps the simplest example is to transform a parking spot into a priority spot for e.g. car share vehicles or

electric vehicles. A variant of this is to replace the parking spot with an entire micromobility or logistics hub – often called a “mobility hub” – where several e-scooters and/or cargo bikes can be parked instead of a single car, without obstructing the nearby walking infrastructure. A strong example of mobility hubs can be found in Berlin. There, the public transport authority has developed a sophisticated mobility-as-a-service app called Jelbi where users can plan routes and gain access to public transport, rental bikes, e-scooters, and rental cars all in one place. Coinciding with this service, Berlin has replaced several street parking spots with mobility hubs where users can pick up or drop off the various micromobility or rental vehicles. The public transport authority partnered with at least 11 private sector mobility companies to ensure adequate services were available at each hub. Mobility hubs that include car share vehicles are currently placed closer to key public transport stops, while those that only include micromobility vehicles are more so spread throughout the city (Jelbi, 2026; Vinci, 2024).

Reykjavík has established about ten hubs for e-scooters called “return zones for shared vehicles” or “Hoppspots”, but it does not seem to be consistent whether they replace parking spaces, and it is unclear how the arrangement is designed to ensure that vehicles are available in these areas (Borgarvefsjá, n.d.). These return zones seem to primarily serve as control measures to prevent e-scooters from being left on the sidewalk, rather than being reliable, multi-modal mobility hubs. Another conception of mobility hubs as reorganised multi-storey car parks is discussed in more detail in another report written in the course of the current project [*Multi-storey car parks as mobility hubs and the carbon footprint of parking solutions - Future prospects and possibilities of parking solutions*, 2026].

Rather than implementing these kinds of individual on-street parking replacements themselves, municipalities can also empower the general public to make applications with their own ideas. These are called parklet applications, or “hvílustæði” applications in Icelandic.

Cities such as Munich provide a good example of this kind of instrument (München Unterwegs, 2026). There, official guidelines and an application process were issued where any citizen can apply to replace up to two street parking spots with a parklet. This can be, for example: greenery, community gardens, bookshelves, exchange shelves, seating, bike parking, bike repair stations, or even a neighbourhood pingpong table. The alternative uses of the parking spot must be non-commercial, as the goal with these parklets is to foster public space where people are not required to spend money. A separate application scheme exists for private entities who wish to replace street-parking outside of their business with, for example, outdoor restaurant seating. Parklets are explicitly temporary, with the possibility to become permanent. Breisässerplatz is one example of a parklet becoming permanent (CDK Team, 2025). To facilitate the process of becoming permanent, protocols for citizen dialog and Citizen Dialogue Kits have also been developed (ibid).

To encourage people to initiate parklets, the city of Munich commissions the services of a non-profit consultation company, who is experienced with parklets, to provide advice, ideas, and answer questions from curious citizens. Reykjavík has also recently published their own set of guidelines and applications for parklets (Reykjavíkurborg, 2023a) which are quite similar to the ones in Munich, but the city does not seem to promote these very much or offer advice to curious citizens. Ideas provided by the municipality also appear to be less diverse than in, for example, Munich. In any case, guidelines for parklets are a policy instrument that exists in Reykjavík, and which have the potential to make on-street parking removal a matter of citizens' initiative instead of municipal initiative.

Other policy tools for facilitating removal of on-street parking deal with setting regulations upon entire zones rather than focussing purely on individual parking spots. Some cities, such as Umeå, Sweden, designate large portions of their urban area as “forbidden zones” where parking a car on the street is forbidden by default, and so parking is only allowed where signage explicitly indicates. That is, rather than looking out for signage that warns of parking restrictions, drivers must look for signs that indicate parking is allowed. This arrangement can perhaps simplify the process of removing street parking spaces. Another instrument employed by Umeå as well as several other smaller cities in Sweden is called date parking, or “datumparkering”. In datumparkering zones, only one side of the street may be parked upon on any given day, which alternates each day. The justification for this is to enable street maintenance activities, snow ploughing, garbage collection, and facilitate traffic safety (Umeå Kommun, n.d.). This is a potentially interesting policy tool for effectively removing on-street parking spaces, i.e. a “push” measure, but it does not allow for alternative uses of the space to maximize the “push/pull” effect for shifting travel habits.

Another zone-based instrument for removing on-street parking is to designate resident-only parking zones. That is, areas where only residents who hold a valid permit are allowed to park. This effectively removes the on-street parking for certain user groups only (short-term visitors or commuters) while ensuring it for residents. This can possibly be a double-edged sword when it comes to shifting travel habits in the city, as it could discourage car use for these targeted user groups, but perhaps encourage car use for residents in the area. As explained in other sub-sections above, the travel habits of commuters is particularly sensitive to parking policies (e.g. see Simicevic et al., 2013 or Viðræðuhópur ríkis og sveitarfélaga höfuðborgarsvæðisins, 2024). Moreover, studies have demonstrated that residences who have access to on-street parking, rather than on their own property, are significantly less likely to use a car, even controlling for accessibility characteristics and sociodemographics. This is likely partly due to the distance a person must walk to reach the parking (Christiansen et al., 2017; Christiansen et al., 2015b).

All this considered, resident-only parking zones may not be an unreasonable tool to use for shifting travel habits. Trondheim, for example, specifically targets commuters with parking policies in their mobility planning documents, and resident-only parking zones are one tool they employ to restrict street parking opportunities for this user group in areas that are most accessible by other modes on transportation (Trondheim Kommune, 2022a).

Pedestrian streets are a final example of a policy instrument which can be used to remove parking spaces on an entire street and transform it into a cohesive public space instead. This has been done on sections of Laugarvegur in Reykjavík, for example (Reykjavíkurborg, 2026b).

Evidence suggests that on-street parking removal is generally effective at shifting travel habits. A 2023 review of the impacts of parking policies concluded that parking capacity reductions at a city and neighbourhood level are positively related to reductions in overall car use and car kilometres (Rye et al., 2023). One study they pointed to found that an increase in parking provision from 0,1 to 0,5 spaces per person, across several US cities, was associated with an increase in car use equal to 30 percentage points (McCahill et al., 2016). Another key study they referenced on this point was from Paris, which reduced its city-wide on-street parking from 172 800 spaces in 2003 to 158 700 spaces in 2007. Simultaneously, Paris increased the portion of on-street parking spaces which were charged a fee from 71% to 98%. This corresponded to a city-wide decrease in car kilometres by 13% during the morning peak period (Kodransky & Hermann, 2011). A

number of success factors for on-street parking removal were pointed to in the 2023 literature review, including surveying occupancy rates on all parking in the vicinity before initiating removals, communicating the actions fully and transparently to the public, and keeping actions simple enough so as to not be misconstrued. As with any “push” measure, though, it must be remembered that success relies on alternatives to the car being available. In general, all other evidence linking general parking supply to travel habits reviewed in section 6.1.2 can also be applied to on-street parking to a certain extent.

6.5 Shared-use parking solutions

Shared-use parking facilities serve multiple developments, user groups, or destinations, rather than being dedicated exclusively to a single building or development. By allowing parking spaces to be shared among different users, these facilities can consolidate parking provision and therefore be far more space efficient than providing the same amount of parking spots at individual units. Moreover, if parking is shared amongst users who use the parking at different times, fewer individual parking spaces are needed. Both of these factors make shared-use parking facilities an important instrument for decreasing parking's land use footprint and increasing urban density. By concentrating parking at one location, they can also decrease search traffic. If shared-use facilities are fully open to the public, it is important that they are also subject to a parking fee to ensure more efficient allocation of the limited resource. It appears that shared-use solutions can have an impact on travel habits in two main ways. This fostering of urban density is the first way. As stated in section 5, density is one crucial “pull” component for encouraging changes in travel habits. The second way that shared-use parking facilities can impact travel habits is by increasing walking distances between parking facilities and residences or destinations. Shared-use facilities are specifically used in this way in the plans of Umeå, Sweden, for example (Umeå Kommun, 2013).

Shared-use parking facilities can be created in many ways. Public parking garages are the first, perhaps simplest example. For private developments, shared-use can also be encouraged within parking standards as a means to reduce the total number of parking spaces that must be constructed for an individual development, and therefore to reduce the cost for the developer. This is done in Reykjavík, for example (Reykjavíkurborg, 2026a). However, if the parking facility is only open to users of a single development, there is still potential that the parking is not efficiently used throughout the day. Moreover, since the parking facility is still likely to be provided on-site, this kind of shared parking encouragement does not necessarily coincide with an increase in walking distance for car users, so this form of shared-use may not fully realize the possible impacts on travel habits it could otherwise have.

Where multiple developments are concentrated in a single area, governments can encourage and assist developers to share parking facilities amongst themselves instead of using their pre-existing individual facilities. The Beijing government, for example, published a set of guidelines in 2017 to help existing developments move towards shared-use systems (see Xiao, Xu & Gao, 2018). This kind of arrangement is perhaps likely to be most effective prior to development, though. Alongside parking standards, policy instruments such as a parking free purchase (or “friköp”) scheme can more clearly guide, or even require, a group of developers to pay into a fund that the municipality then uses to accommodate them with shared parking facilities. This kind of scheme is explained in its own sub-section 6.7 below.

Finally, shared-use facilities can also be implemented post-construction via innovations in organization. In Saint Niklaas, Belgium, for example, the city partnered with several

supermarkets to allow residents to use their parking for free, or at a monthly fee, outside of business hours (EU, 2022). The city currently has 5-6 such car parks. There are even emerging technologies that enable private citizens to rent their own parking spaces out to others for certain time periods (Aredeshiri et al., 2021). Pilot projects in Beijing, for example, have tested such apps with several companies being recruited as users (see Xiao, Xu & Gao, 2018). Though these kinds of arrangements could have high potential, challenges can arise where users remain parked in the facility beyond the times that were agreed upon with the business.

Evidence linking shared-use parking facilities to shifts in travel habits, as stated at the beginning of this section, relates to the fact that they foster urban density (eventually encouraging use of non-car modes), and can increase walking distances between parking spots and destinations (discouraging car use). In this way, a shared-use parking facility *instead* of a private facility can be both a “pull” and a “push” measure simultaneously. The evidence relating urban density to shifts in travel habits is briefly reviewed in section 5. As reviewed in the section on parking standards, there is some strong evidence which relates the distance from parking facilities with travel habits, but mainly related to the residence. A nation-wide study of the 2013/14 Norwegian national travel survey found that the walking distance to parking from one's own residence significantly reduces the probability of that person choosing the car for any trip originating at the home (Christiansen et al., 2017), even when controlling for sociodemographics and accessibility characteristics. An earlier analysis of the same dataset demonstrated that an availability of residential parking between 100m and 200m, instead of directly on the residential property, corresponded to a 25% decrease in car use (Christiansen et al., 2015b). Studies that specifically analyse the effect of distances to workplace parking were not found in the course of this project. However, earlier 2001 national travel survey results from Norway at least demonstrate a vague association (TØI, 2002). There, 76% of people who had free and plentiful parking directly at the workplace drove a car to work, while 64% of people who only had access to free street parking did so and only 37% if the street parking was subject to a fee. This relationship was not controlled for other factors such as access to public transport, which likely strongly accounts for much of this association, but it is interesting nevertheless.

6.6 Park & ride

Park & ride refers to public parking facilities located outside of or at the edge of an urban area, where users can leave their car and continue their journey into the urban area via public transport instead. They are typically associated with high-quality public transport systems, particularly rail, and are located at larger stations. Although rail systems are perhaps the most common use case for park & ride, the city of Ottawa in Canada provides an example of park & ride being used alongside a relatively successful bus rapid transit system (i.e., the same kind of bus system as Borgarlinan in the capital area of Iceland). Park & ride generally provides an opportunity to extend the catchment area of public transport into areas where walking or cycling to stations is less practical.

Park & ride can encourage car users to adopt public transport by allowing them to drive part of their journey while completing the longer portion by public transport. However, it also creates additional parking supply and may therefore incentivise more car use. It also competes for valuable space in the vicinity of public transport stops, where it may otherwise be possible to build a much denser mix of land uses, and support changes in travel habits that way. Park & ride can therefore be considered both a “pull” measure for public transport, but also a “pull” measure for the car. For this reason, park & ride is most effective when implemented alongside “push” measures that reduce parking supply closer to destinations, or which restrict that parking in some way. The incentives and

restrictions put in place to encourage use of the park & ride facilities as intended, and discourage use that is not related to public transport, are likewise important. In the Trondheim region in Norway, for example, discounts or complete waivers on parking fees are offered to public transport ticket holders, and users must register their license plate alongside their public transport ticket to be permitted to park at the facilities (Trøndelag Fylkeskommune, 2025)

Park & ride is relatively prominent in Norway. The regional planning documents surrounding Trondheim, Bergen and Stavanger each identify it as an important instrument in their regional transport strategies. Although its role is generally considered alongside measures that manage parking supply more thoroughly across cities (“push”) and support denser urban forms (“pull”).

Evidence suggests that park & ride is associated with an increase in the use of public transportation, which can range depending on the incentives and restrictions in place at each facility (e.g. see Transport Scotland, 2012). However, a 2023 literature review on the impacts of parking policies concluded that park & ride is only associated with an overall reduction in car kilometres across a city if the facilities are located far away from the periphery of an urban area (Rye et al., 2023). That is, park & ride must be located close to journey origins and far from journey destinations. In six of the eight papers they surveyed which linked car use to park & ride, an increase in overall car kilometres was found where park & ride facilities were located closer to journey destinations (ibid). They state that this is likely because people who previously made entire journeys by public transport switched to using the car for a portion of their trips, and that in some cases the facilities may be used by people in the general area who are not using public transport. In short, park & ride may be used to introduce more people to using public transport, but it may not be a long-term solution for reducing overall car travel on its own.

6.7 Parking free purchase schemes (Friköp)

In this section, “parking free purchase schemes” refer to a specific type of parking policy instrument that can go by many other names, depending on the country. In general, this policy instrument either allows, encourages, or even mandates that developers pay a one-time fee, an ongoing subscription, or sometimes a loan, to the municipality in lieu of building an amount of parking facilities that was calculated via the parking standards. For an explanation of parking standards, see section 6.1.

The logic for determining the exact fee amounts varies widely, but it is generally attempted to make paying the fees more cost effective for developers than building parking themselves. In exchange for this, the municipality agrees to use these revenues to fund shared-use parking facilities (e.g. public parking garages) that users of the development are promised some level of access to. In some cases, the funds can instead be used to improve infrastructure for other modes of transport. This is possible in several cities across North America (Schleck, 2021; Le Frois et al., 2019), such as Vancouver (EFLA, 2018a), and Umeå, Sweden, is a Scandinavian example (Umeå Kommun, 2024; Upab, 2022).

In North America, this scheme has been called “parking in-lieu fees” or “park & walk systems” (e.g. Shoup, 1999; le Frois et al., 2019). In Scandinavian countries, it has been called “friköp” or “frikjøp” i.e. “free purchase schemes” (e.g. Umeå Kommun, 2013; Fosli, 2020). This system also exists, or at least was previously used, in Iceland. There, it is somewhat vaguely referred to as “bílastæðagjöld” or “bílastæðagjöld byggingaraðila”, which translates to “parking spot fees for developers” (e.g. EFLA, 2018a). In this section, we will continue to refer to this tool as “free purchase schemes”.

Ever since the City of Reykjavík switched to using parking maximums instead of minimums, this system has largely fallen out of use. The same is true of several cities in Norway, for example (Fosli & Langeland, 2021; Hanssen & Christiansen, 2013). However, this section of this report attempts to argue that this needn't be the case.

Through a review of some existing literature on the topic (EFLA, 2018a; Shoup, 1999; Kimley-Horn, 2012), a review of municipal experiences using free purchase schemes in Sweden (Slott, 2016), a review of the uses of parking policies in the Oslo region (Fosli 2020; Fosli & Langeland, 2021), the other literature reviewed in section 6 of this report, and a detailed analysis of how a free purchase scheme is incorporated into the strategy for shifting travel habits in Umeå, Sweden (section 7.2 of this report), the following potential benefits of free purchase schemes were identified in the course of this project:

- Enable developments that would be impossible or unfeasible due to parking minimum requirements.
- Reduce the cost of developments where building on-site parking would be feasible, but more costly than replacing it via the free purchase scheme.
- Increase the portion of parking facilities around the city that are shared-use, rather than private. For a detailed description of how this can positively affect travel habits, see section 6.5 of this report. One effect of this is, compared to a scenario of only private parking, the overall number of parking spaces in the city is reduced.
- Where multiple developers are simultaneously involved in the development of a large area, streamline the process for accommodating all developments in a few shared-use facilities rather than many private parking facilities.
- Support more walkable street designs, where many different entrances to private parking lots are replaced with entrances to a smaller number of shared-use facilities. For a brief outline of how walkability can positively impact travel habits, see section 5 of this report.
- Enable public control over a higher proportion of parking facilities that serve private developments. Thus, parking fees can be controlled and the difficulties associated with levying parking fees on private entities, outlined in section 6.2, can be partly solved. Moreover, the location of the parking facilities can be controlled, so the effect of walking distance on reducing car use can be leveraged – especially for commuters.

In 2018, EFLA was commissioned by the City of Reykjavík to write a memo on the topic of free purchase schemes outside of Iceland (EFLA, 2018a). There, they briefly reviewed what free purchase schemes look like, some (but not all) main benefits of them, and they identify several municipalities in Scandinavia and North America where the schemes are used or not used. It is recommended that readers here also consider reading that 2,5-page EFLA memo. It is possible, though, that the EFLA memo missed some key considerations about free purchase schemes – especially on the topic of how they can be used strategically to support a shift in travel habits. This is not unreasonable, as the scope of their assignment was not the same as this one. However, since that memo was used to guide policy decisions related to the free purchase scheme in Reykjavík, it is useful to highlight the capabilities of free purchase schemes by arguing in direct contradistinction to their findings. So, that memo must be addressed in some detail here.

The authors there argue in their conclusion, reasonably, the following: free purchase schemes *require* parking standards to have car parking minimums as a pre-requisite.

High car parking minimums are known to inflate construction costs, reduce urban density, generate an over-supply of car parking and therefore generally encourage more car travel (e.g. see section 6.1 of this report). If a free purchase scheme is used, though, the revenues from it would be better used to implement measures that improve the quality of other modes (i.e. “pull” measures), instead of constructing shared-use parking facilities and further increasing parking supply in the city. Finally, the authors argue, if this is the goal of the free purchase scheme (that is, to reduce overall parking supply and enable the implementation of other “pull” measures), this goal would be better served through simpler provisions within the parking standards that encourage developers to reduce overall parking amounts and implement “pull” measures themselves. Such provisions already exist in Reykjavík’s current parking standard (see the latter half of section 6.1.1 or 7.1.4 of this report). For all of these reasons, the memo’s conclusion suggests that free purchase schemes are not useful in a city if there are no minimum car parking standards. Even if a free purchase scheme was used alongside car parking maximums, they argue elsewhere in their memo that a free purchase scheme risks incentivising developers to generate more car parking, rather than less, which is counter to the goal of using parking maximums. All of these are logical concerns. However, some of them are flawed. Each of the reasons given above must be dealt with individually.

6.7.1 *Do free purchase schemes require car parking minimums?*

The reasoning above is largely based on the premise that minimum parking requirements are a necessary prerequisite for payment in lieu of parking. The analysis carried out in connection with this project suggests that this may not necessarily be the case. Although no examples were found of cities where such an arrangement is used without minimum parking requirements, there does not seem to be a strong mechanistic argument for why this should be impossible.

Three points in particular seem to explain why parking free purchase schemes have indeed been linked to minimum requirements:

- 1) To provide a strong enough incentive for developers to use the scheme; e.g. some developments can be unfeasible due to high minimum standards and free purchase can be used to escape this unfeasibility.
- 2) The system needs to generate enough revenue to sustain itself. Minimum requirements can help ensure sufficient participation and revenue for the system to be viable.
- 3) Some defined amount of parking, that the developers are paying the municipality to replace, must be specified via the parking standards. I.e. minimum standards provide the exact amount of parking that can be paid for and replaced in the terms of the free purchase agreement.

Point (1) ignores two things. Firstly, it could be possible for parking free purchase to be mandated in certain areas of the city and for certain building types. This is not mentioned in the EFLA memo. Umeå, Sweden, is an example where this is done. There, all commercial buildings across much of the city centre are only allowed to arrange for car parking via the free purchase scheme (Umeå Kommun, 2024). I.e. if any car parking is going to be provided for new buildings of this kind, it must be done via the free purchase scheme. This completely removes the need for an incentive at all, in these cases. A mandate like this can also help to provide the baseline revenue needed for the scheme to continue functioning, which therefore also addresses point (2).

The second thing that point (1) misses is that, even if free purchase is not mandatory, a developer who wants parking supplied for their building can still be financially incentivised to reduce the construction costs for it via free purchase. Umeå is again a good example

for this point. There, not only is the best price per parking space negotiated on a case-by-case basis between the developer and a publicly-owned parking company, but the price is also paid as a 25-year loan instead of a one-time fee, and the developer can choose to instead have some of the price go towards funding municipally-lead accessibility improvements for sustainable modes at their property. If the latter is chosen, this is in lieu of some shared-use parking spots. So, developers can make their money back – with interest – or a portion of that money can instead go towards sustainable infrastructure that can increase the value of their property in the long term. Such systems are not addressed in the 2018 EFLA memo. These advantages could outweigh the operational costs required to perform such case-by-case negotiations.

It should be noted that loan-based systems like this do not appear to be used in Norwegian free purchase schemes, where flat fees are specified instead. It is not legally possible to require use of the free purchase scheme in Norway (Fosli & Langeland, 2021; Hanssen & Christiansen, 2013). These could be significant factors relating to why free purchase schemes in Norway tend to become defunct after cities switch from parking minimums to parking maximums.

Finally, if the issue of financial incentives is resolved and developers would be interested or required to use the free purchase scheme even in the absence of parking minimums, Reykjavík's own parking standards already provide a basis for resolving point (3). Reykjavík's parking standards are unique in that they define a maximum amount of parking alongside a different, lower, "recommended" amount of parking (Reykjavíkurborg, 2026a). This is the amount that a developer must always start from, and relative to which argue for increases or decreases. A hypothetical free purchase scheme that is adapted to suit the parking standards in Reykjavík could, for example, only allow free purchase if the total amount of parking supplied to the development is not larger than the "recommended" amount, and only if that value has also been decreased via the transport analysis and via the implementation of a set of "pull" measures. This could even be defined as *the* parking maximum in all cases where free purchase is used. It would also help to mitigate the effect of over-incentivization resulting in an over-supply of parking throughout the city, which was another concern raised in the 2018 EFLA memo outlined above.

An alternative to this setup could be to establish the "recommended" value as the maximum that a developer is allowed to provide on-site, and if the developer wants more parking than this, they can only get it via the free purchase scheme, up to the true maximum. This would take inspiration from how some German cities have applied free purchase schemes (Kimley-Horn, 2012).

6.7.2 *If a free purchase scheme uses car parking minimums, do they need to be high and does this preclude the use of maximums?*

If car parking minimums are indeed required as a pre-requisite to any free purchase scheme (which, as argued above, is dubious), the 2018 memo argues that this is a problem for free purchase schemes, because high car parking minimums are known to cause many issues. What this argument misses, however, is that the car parking minimums do not necessarily need to be high.

Vancouver provides an example of a parking standard that defines car parking maximums for most building types, but also a small minimum for visitor parking. Vancouver's free purchase scheme then only applies to this small minimum amount (City of Vancouver, 2024a). Therefore, car parking minimums may not need to be high in order to exploit some of the benefits of free purchase schemes.

Trondheim, Norway, provides another example of a city that employs both a maximum for car parking alongside a small minimum in most geographical zones and for most building types (Trondheim Kommune, 2026a), although no free purchase scheme is currently used there.

6.7.3 ***“Pull” measures are different if they are implemented in the context of free purchase schemes***

Another point within the 2018 argument outlined above is this: if the goal of a free purchase scheme is to contribute to a shift in travel habits away from the car, then the revenue from a free purchase scheme is better used to implement “pull” measures that improve accessibility or quality for non-car modes instead of providing shared-use car parking facilities. Since such developer-funded “pull” measures are already incentivised within Reykjavík's parking standards, they argue, there is likely no need for a free purchase scheme. This argument, however, is also missing some important points. Namely, the expected effect of certain “pull” measures is not the same if they are implemented in the context of a free purchase scheme, and the set of “pull” measures does not need to be restricted to only what the developer can implement themselves.

Firstly, due to the fact that a publicly controlled shared-use parking facility may be located a longer walking distance away from the development, or that users can be subjected to a parking fee, certain “pull” measures may be more effective than others. So, certain “pull” measures that are already presented in the parking standards can benefit from being especially emphasized in the free purchase scheme. In Umeå, for example, if a developer participating in the free purchase scheme chooses to go the route of further reducing the amount of parking via “pull” measures, the municipality specifically requires them to establish membership in a car sharing service and provide heated bike parking on-site (Umeå Kommun, 2024). That is, these “pull” measures now provide especially obvious competitive advantages over the private car because they are on-site, while the car parking is not. Another “pull” measure from the parking standards, for example, is to provide users of the building with a free public transport pass. This would still require users to walk, so this “pull” measure does not seem to be enhanced as much as the others with the introduction of the free purchase scheme. For these reasons, wherever a parking standard suggests a certain percentage decrease in parking amounts alongside specific “pull” measures, the percentage perhaps should be larger if it is implemented in the context of the free purchase scheme. That is, “pull” measures in a free purchase scheme needn't be limited to a redundant repetition of what already exists in the parking standards, even if the list of “pull” measures is the same.

More importantly, though, is that some “pull” measures can be included in free purchase schemes that are not normally possible in a parking standard. The measures suggested in the parking standard normally have to be limited to what the developer can implement themselves. In a free purchase scheme, however, because the developer is paying an amount of money to the municipality, “pull” measures that can be implemented directly by the municipality are made possible as well. In Umeå, again, this is done. There, if a developer participating in free purchase chooses to go the route of further reducing the amount of parking via “pull” measures, they immediately pay a separate fee which is specifically used by the municipality to survey and improve accessibility for non-car modes to/from the property (Upab, 2022).

6.7.4 ***Public control and reduced parking demand***

Finally, the arguments outlined above from EFLA's memo were made without acknowledging some of the most important benefits of free purchase schemes in the context of policy for changing travel habits.

Firstly, the memo does not acknowledge that a free purchase scheme, especially if it is mandated for certain kinds of buildings, can be used strategically to introduce parking fees on user groups who otherwise would not have experienced any costs related to parking. Walking distances can also be increased for user groups who have high potential to switch transport modes, such as commuters in the city centre. As explained in section 6.2 and 6.5, there is solid evidence to suggest that these measures are likely to correspond to a significant decrease in car use – especially for commute trips.

Umeå is again an example of a city that explicitly plans to leverage this relationship via their free purchase scheme (Umeå Kommun, 2013; 2024). There, they plan to allocate shared-use facilities such that workers must walk longer distances (up to a maximum of 600m), and fees are generally increased throughout the city. This strategic use of free purchase could also be used to argue that the overall amount of parking supplied via free purchase should be lower than an amount that would be provided privately, on-site for the same property. Because demand is being reduced. This is in addition to the fact that a public shared-use facility – regardless of the fees or distances – does not need as many individual parking spaces to meet the same demand as several private facilities would.

The transfer of control over the parking facilities from private actors to the public is what allows for this; free purchase schemes enable the use of a wider variety of parking policy instruments where it could otherwise be impossible or very difficult to do so.

6.7.5 Conclusion & language of the law

In conclusion on the topic of free purchase schemes for parking, these may be more flexible and useful for shifting travel habits than previous reports in Iceland suggested. This may justify a more concerted approach to redesigning the virtually defunct free purchase scheme currently in Reykjavík. Especially important is that it could be possible to more obviously financially incentivise the use of such a scheme through a loan-based system, or mandate it for certain building types and areas, such that parking minimums are not required as a pre-requisite. Alternatively, small parking minimums can be used in combination with parking maximums. The most crucial consideration, though, is that free purchase schemes can be used strategically to enable the use of parking fees and walking distances to discourage commuters, in certain areas, from using the car. A strong example of this well-integrated use of a free purchase scheme is in Umeå, Sweden.

Any adaptations to the “bílastæðagjald” system in Reykjavík would likely need to alter the exact language of the applicable laws. Currently, the law is worded as pertaining only to parking that is “required” by the parking standard, despite no amount of car parking technically being required. Also, the law only refers to cases where it is “not possible” to provide the amount. If, for example, free purchase is offered as an attractive alternative to *any* developer in a certain zone on the condition that they have also chosen to implement some “pull” measures to reduce the specified recommended amount of parking, the language of the law may need to be altered to refer specifically to this recommended amount rather than parking “requirements”. Likewise, if the system is to be changed such that it can fund municipality-lead “pull” measures, the current laws must be changed so that funds are allowed to be used on things other than shared-use parking facilities.

7 Case studies

To contextualize the City of Reykjavík's policies for changing travel habits, two Nordic cities are examined in addition to Reykjavík: Umeå in Sweden and Trondheim in Norway. The purpose is not to find cities that are identical to Reykjavík, but to examine how cities facing partly similar circumstances have approached changing travel habits as a whole and what policy tools are used to do so. Here, a special emphasis is placed on how parking policy works together with other measures.

Umeå and Trondheim are both medium-sized Nordic cities where the private car plays a major role, much like in the Capital Area. As can be seen in Table 7.1, which compares travel habit surveys from 2022, the share of car journeys was lower in both comparison cities than in Reykjavík. The year 2022 was chosen for Table 7.1 because it offered the most recent data to compare all three cities, but the population figures are from 2026. Umeå stands out with a high proportion of cycling, around 23%, while in Trondheim the share of cycling was closer to 7%. Trondheim stands out with a high proportion of walking, around 24%. The share of public transport was similar in the two comparison cities, around 8–9%, compared to about 5% in the Capital Area of Iceland. In a more recent survey, from 2024, the share of public transport has grown to 11% in Trondheim, so this is an example of an area that is succeeding in reducing the use of private cars through increased use of public transport. An approximate comparison of population densities is displayed in Table 7.2. This shows that the cities are somewhat comparable considering the density of their main urban areas. Municipal-wide density in Trondheim is similar to Reykjavík's, but due to differences in how the administrative boundaries are set the cities are somewhat less comparable on the level of the commuting region.

These comparison cities thus provide an opportunity to examine different approaches to changing travel habits. In both cities, multifaceted parking policies are used in tandem with comprehensive policies for improving non-car modes – but in quite different ways. The case studies here and later comparison will focus both on which tools the cities use, and how they are applied together as an integrated whole. Lessons that Reykjavík can learn from this will then be discussed in chapters 8 and 9.

Table 7.1: Size and modal split in Reykjavík (capital area), Umeå, and Trondheim. Sources: Innviðaráðuneytið et al., 2025; Umeå Kommun, 2022; Miljøpakken, 2023a

Urban area	Population	Car mode share	Bike mode share	Public transport mode share	Walk mode share
Iceland Capital Area	~250.000	~72%	~5%	~5%	~15%
Umeå Municipality	~135.000	~54%	~23%	~8%	~13%
Trondheim Region	~320.000	~57%	~7%	~9%	~24%

Table 7.2: Comparison of recent population density measures. Sources: Náttúrufræðistofnun, n.d.; Wikipedia, n.d.; Citypopulation.de, 2023;2025;2026; SCB, 2023; Gagnahlaðborðið, 2026; Hagstofa Íslands, 2026

Population density (persons / km ²)	Main urban area	Municipality	Region
Reykjavík	3536	587	241
Umeå	2595	57	-
Trondheim	3377	639	45

i.e. Capital area
i.e. Trondheimsregionen

7.1 Reykjavík – policymaking and changing travel habits

7.1.1 Travel habits in Reykjavík

The Capital Area has long been characterised by high private car usage, and its development has largely been based on car travel. Urban development has spread over a large area but, in recent years, there has been an increased emphasis on urban densification and intensifying development within the current city limits. This development is important for travel habits, as the location of residential areas, distances between daily destinations, and the spatial structure of the transport system all influence which modes of transport are viable.

The latest travel survey for the Capital Area shows that the private car is still the dominant mode of transport in the area. Approximately 61% of journeys are made by private car drivers, 14% as passengers in private cars, 15% on foot, 5% by public transport, and 4% by bicycle (Innviðaráðuneytið et al., 2025). The travel survey covers residents of the entire Capital Area, not just Reykjavík, and therefore these figures describe the transport patterns of the region as a whole.

Hvernig fórstu/fór barnið þitt í ferðina?

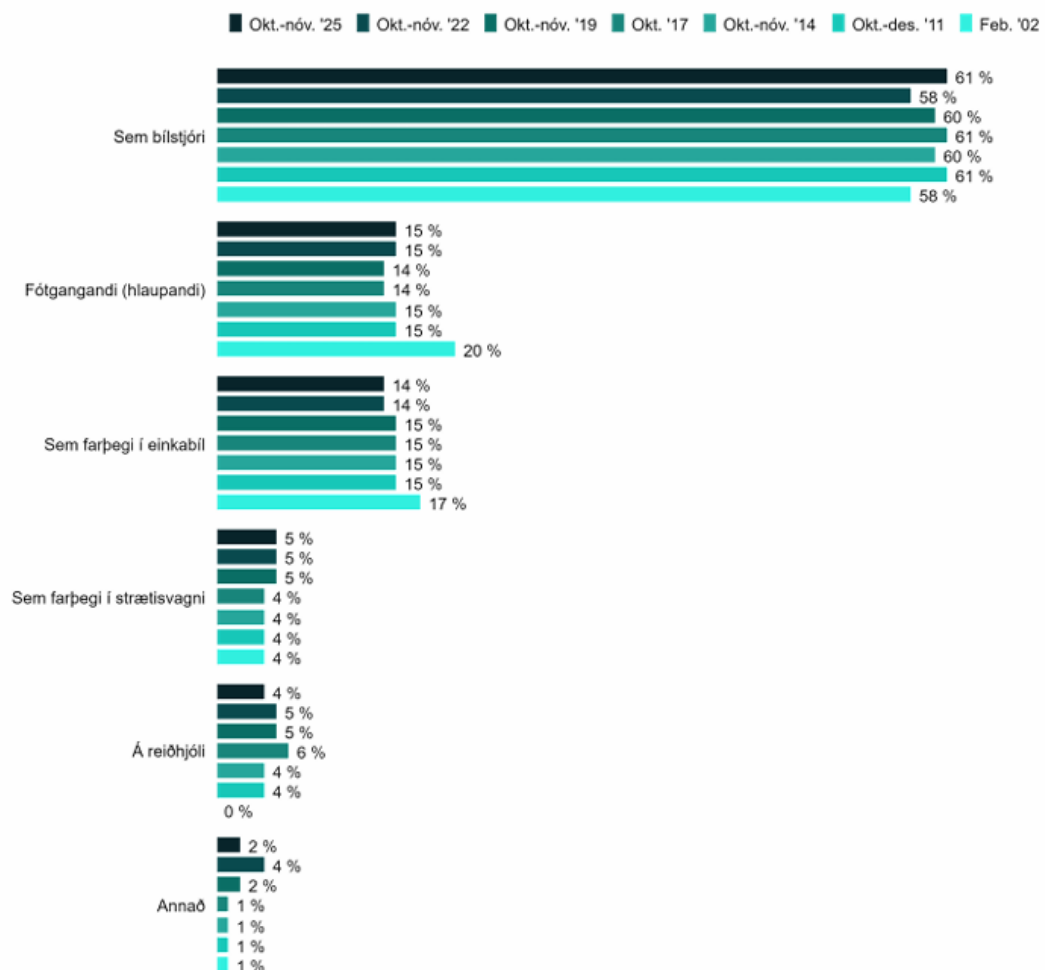


Figure 7.1: Modal split in the Capital Area - 2002–2025. Sources: Gallup. (2026). *Ferðir íbúa Reykjavíkur: Október–nóvember 2025.*

The long-term trend shows that the modal split in the Capital Area has changed relatively little over the years, and the private car continues to hold a dominant position, as shown in Figures 7.1 and 7.2. Despite the recently increased emphasis on urban densification and the development of other modes of transport, there has been no major change in the share of private cars in daily travel.

Samanburður á hlutfalli ferða með einkabíl eða öðrum hætti - 2002-2025

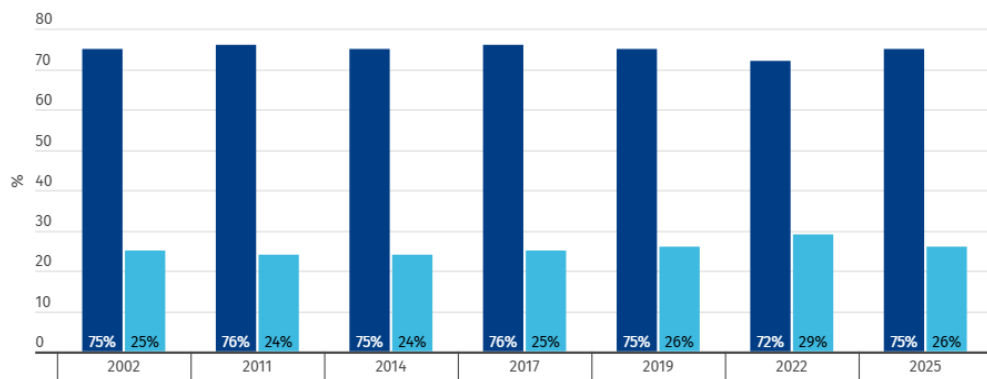


Figure 7.2: Comparison of modal share between private car (dark blue) and all other modes in the Capital Area - 2002–2025. Source: *Innviðaráðuneytið et al. (2025)*.

This transport pattern is an important backdrop to the City of Reykjavík's policy on changing travel habits. The following sections examine how the City of Reykjavík currently has set goals and plans to use various policy tools to influence this development.

7.1.2 Key policy documents

The City of Reykjavík has not put forward a specific, comprehensive SUMP plan in accordance with the EU SUMP guidelines. However, many elements of that approach are reflected in the city's policymaking, including the integration of land use and transport, an emphasis on walking, cycling and public transport, and the management of parking availability. The Reykjavík Municipal Plan 2040 specifically emphasises that land use and transport planning should be considered together and that decisions on densification, mixed-use development, parking requirements, street design and the development of other modes of transport should be coordinated.

The City of Reykjavík's policy on transport and changing travel habits is spread across several policy documents, plans and regulations. The Reykjavík Municipal Plan 2040 forms the main framework of the policy, but other specific policies, plans and regulations elaborate on its individual aspects.

The Capital Area Transportation Agreement is a joint framework between the state and the municipalities in the Capital Area for the development and financing of transport infrastructure. An updated agreement from 2024 covers, among other things, The City Line ("Borgarlínan"), walking and cycling infrastructure, main roads and other projects intended to improve transport across municipal borders in the Capital Area. The agreement is of a different nature to the City of Reykjavík's policy documents, as it is a regional agreement on the development and financing of projects. Nevertheless, it is very important for the implementation of the transport projects on which the city's own policy is based.

The Reykjavík Municipal Plan 2040 is the city's main policy document on the development of buildings, land use and transport. Part A of the municipal plan contains binding objectives and provisions on, among other things, land use, building volume,

density and the character of the built environment. The Part B sections of the municipal plan explain the premises and priorities of the policy and are intended as guidance for interpretation Part A and further planning.

Among the Part B sections related to transport and travel habits are **Green Transportation, A City for People and The City on the Straits**. *Green Transportation* deals with the development of the transport system and a shift in emphasis towards modes of transport other than the private car. *A City for People* deals with, among other things, the quality of the built environment, streets as urban spaces and local services, while *The City on the Straits* deals with the development of buildings, densification and mixed land use. Together, these sections reflect how transport, land use and the urban environment are interconnected in the city's policy on changing travel habits.

The Reykjavík Biking Plan 2021–2025 elaborates on the city's policy and action plan for cycling. Its main objective is to increase the share of cycling in journeys within the city and to improve conditions so that cycling becomes a viable option for daily travel. The plan links the objective of increased cycling to infrastructure development and other measures that support the use of the bicycle as a mode of transport.

The Walkable Reykjavík Policy 2036 sets out a vision for a city where walking is a safe, accessible and viable mode of transport. The policy supports the Reykjavík Municipal Plan 2040 and is based on land use, transport and urban design working together to create a more walkable environment. It is accompanied by an action plan for the years 2026–2031, where the objectives are translated into actions relating to, among other things, infrastructure, accessibility, safety, planning and winter services.

The Reykjavík Parking Standards elaborate on the **Car and Bicycle Parking Policy** of the municipal plan and form the basis for neighbourhood and local development plans and applications for building permits. In the regulations, the number of parking spaces is based on, among other things, the location of the development, and they advise to provide for fewer car parking spaces if certain conditions are met. Conditions for this include access to public transport, mixed land use, shared use and access to car-sharing services. The regulations thus take into account the location of the development and access to other modes of transport. While these regulations form one part of the city's *Car and Bicycle Parking Policy*, the **Procedural Rules on Price Changes in Fee Zones and Procedural Rules on the Implementation of New Fee Zones** form the other part. The implementation of these parking policies is discussed in more detail in section 7.1.4.

Figure 7.3 summarises the policy documents, plans and rules discussed above and shows how they are interconnected within the city's policymaking. It shows, among other things, the role of the Reykjavík Municipal Plan 2040 as the main framework for the policy, its connection to the advisory Part B of the municipal plan, and how more specific policies and plans relate to further planning. The Transportation Agreement is also shown in the context of this development due to its role in the development and financing of transport infrastructure in the capital area. The figure was created by the authors of this report based on existing policy documents and it is intended to provide a comprehensive overview of how policymaking related to transport and changing travel habits is structured.

The figure emphasises the documents considered to be most significant for the implementation of the City of Reykjavík's policies and actions that can influence travel habits. Other documents, which for example have a more advisory role, are therefore not shown. These include, among others, *People, Development and Urban Spaces*, which primarily contains general but non-binding regional-level guidance and recommendations on urban planning and the shaping of the built environment.

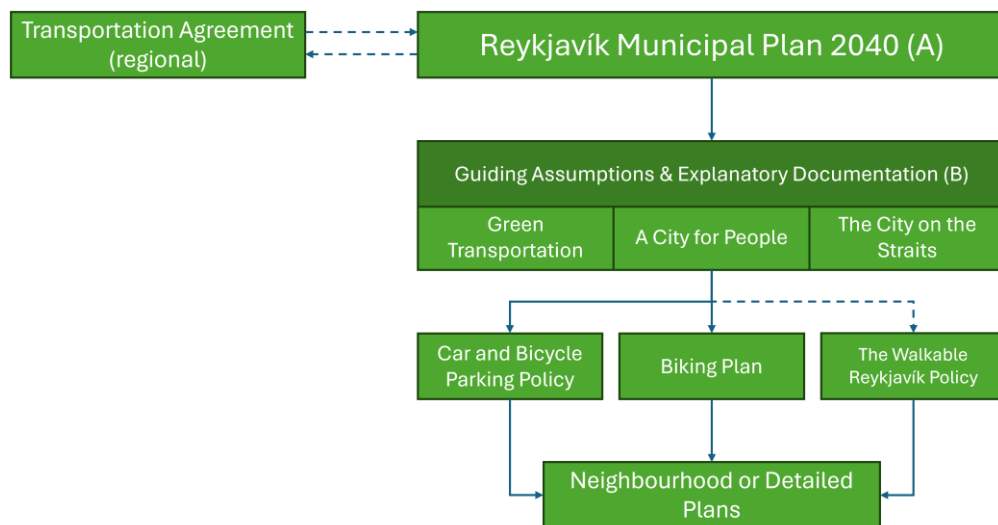


Figure 7.3: Main policy documents in Reykjavík related to changing travel habits, and their connection.

7.1.3 Key goals

The City of Reykjavík's policy documents set out objectives for developing urban areas and transport in a way that offers more options for daily travel. This includes an emphasis on denser and more mixed-use development, more robust public transport, and better conditions for walking and cycling. Development is also increasingly being directed towards areas where good public transport is available or planned (Reykjavíkurborg, 2021a; 2021b).

The Reykjavík Municipal Plan 2040 anticipates that the increase in population and jobs will not lead to a corresponding increase in car traffic. Instead, the increased demand for travel is to be met largely by changing travel habits. Urban densification and development within the existing city limits are to play an important role in this, as shorter distances and proximity to services and jobs can create better conditions for walking, cycling, and public transport (Reykjavíkurborg, 2021a; Reykjavíkurborg, 2021b). More specific policies elaborate on these objectives for individual modes of transport. The Reykjavík Biking Plan 2021–2025 set a target for at least 10% of all journeys in the city to be made by bicycle by 2025. The same target was set for the share of cycling among commute trips. To achieve this, emphasis is placed on, among other things, the development of cycle routes and improved services and facilities for cyclists (Reykjavíkurborg, 2021c).

The Walkable Reykjavík Policy 2036 emphasises making footpaths a safe and viable option for pedestrians for daily journeys. It looks at how planning, infrastructure, and the urban environment can improve conditions for pedestrians. The policy is accompanied by an action plan for the years 2026–2031, which sets out actions related to, among other things, accessibility, safety, infrastructure, planning, and winter services (Reykjavíkurborg, 2026c).

Parking is also part of this policy. In the parking standards, the supply of car parking is linked to, among other things, the location and conditions in each area. Recommended and maximum values are used, and deviance from the recommended value can be justified with a transport assessment (“samgöngumat”), though never exceeding the defined maximum (Reykjavíkurborg, 2026a). This allows for greater consideration of access to other modes of transport and the conditions in each location.

The objectives, however, extend beyond changing how people travel. Changes in travel habits are also linked to goals for reduced emissions, better air quality, public health, and the quality of urban space. Walking, cycling, and public transport are thus part of a larger

vision for the city's development and how land use, transport, and urban space evolve together (Reykjavíkurborg, 2021a; 2024). The key objectives can be summarised as follows (Table 7.3):

Table 7.3: Summary of main goals amongst the main policy documents. *Sources: Chapter 7.1.2.*

<i>Goal</i>	<i>How it appears in policy</i>
<i>Increase the share of walking, cycling, and public transport trips</i>	Construction of walking, cycling, and public transport infrastructure
<i>Reduce the growth of car traffic</i>	Changed travel habits and control of long-term parking supply
<i>Increase urban density and mixed-use</i>	Shorten travel distances and improve average proximity to workplaces and services
<i>Better integrate land-use and transport</i>	Concentrate developments into areas with the best mix of transport alternatives
<i>Improve public space</i>	Safer and more accessible environments for people
<i>Reduce pollution due to transportation</i>	Increase the share of walking, cycling, and public transport trips

7.1.4 Key policy instruments and tools

7.1.4.1 Walking and cycling infrastructure

The development of walking and cycling infrastructure is one of the tools the City of Reykjavík plans to use to improve conditions for active modes of transport. The Reykjavík Biking Plan 2021–2025 emphasises the continued development of the cycling network and better conditions for cycling. This includes, among other things, implementing new cycle routes, bike parking, and improved winter services on the main cycle routes (Reykjavíkurborg, 2021c). The same emphasis is set out in the Walkable Reykjavík 2036 Policy. The goal is to improve walking connections, accessibility and safety, including at bus stops and planned City Line stations. The actions specified in this action plan include improvements to walking routes, junctions, lighting, maintenance and winter services (Reykjavíkurborg, 2026c). Major projects for walking and cycling routes are also linked to and funded via the Capital Area Transport Agreement (Stjórnarráð Íslands, 2024). There, the development of walking and cycling paths is part of the joint development of transport infrastructure in the capital area. The National Transport Plan 2026–2040 also provides for the continued creation of main paths and for improving the safety of pedestrians and cyclists (Innviðaráðuneytið, 2026).

7.1.4.2 The City Line and strengthening public transport

The City Line (a planned bus rapid transit system) is one of the largest transport projects in the capital area and is intended to become the backbone of public transport in the region. It will be part of a larger public transport system and will connect to the current local bus (“Strætó”) route network. It is planned that The City Line buses will run mostly in dedicated lanes and have priority at junctions, with the aim of shortening journey times and improving the reliability of the service (Reykjavíkurborg, 2021a; 2021b).

However, strengthening public transport is not just about developing The City Line. Alongside it, the continued development of the Strætó system and improved connections to The City Line is planned, so that the systems work together as a single entity. Plans highlight the importance of improving the level of service, facilitate public transport journeys and ensure good connections to walking and cycling routes. The City Line and Strætó routes are also presented together as one of the main components of the Capital

Area Transport Agreement, which shows that the development of The City Line is part of a larger strengthening of public transport in the region (Stjórnarráð Íslands, 2024). The development of public transport is also closely linked to where new development is to take place in Reykjavík.

In the Reykjavík Municipal Plan 2040, development is directed inwards with densification and an increased mix of housing, employment and services. Special emphasis is placed on development corridors and areas in the vicinity of The City Line. The goal is for 80% of new housing by 2040 to be within The City Line's catchment area and for 80% of new jobs to be along The City Line (Reykjavíkurborg, 2021a). Thus, not only is a new public transport system being built, but a larger part of new development is also being directed to those areas where access to public transport will be best. The City Line and the strengthening of public transport are therefore linked to both the development of the transport system and the development of the built environment.

7.1.4.3 *Encouragement*

In addition to infrastructure development and parking management, the City of Reykjavík uses various incentives and encouragement measures to support the adoption of modes of transport other than the private car. These include transport agreements (“samgöngusamningar”) with employees, car sharing and improved facilities for cyclists, such as cycle parking, shower and changing facilities, and access to bicycles for journeys during working hours. Such measures can also be part of workplace travel policies and incentivized for new developments via the parking standards (Reykjavíkurborg, 2017; 2026a). The walkability action plan also includes plans to cooperate with schools to encourage more children to walk to school. The cycling action plan also includes yearly advertising campaigns, support of workplace cycling competitions (Icelandic: “Hjólað í vinnuna”), and discounted outloaning of e-bikes.

However, encouragement measures are given less weight in the policy documents under review here than infrastructure development and parking management, and they seem to be used primarily to support other policy instruments.

7.1.4.4 *Parking Management*

Parking management is an important part of the City of Reykjavík's transport and planning policy. It concerns both the number of parking spaces created in new developments and how the city manages the use of existing street parking spaces. The city's car and bicycle parking policy defines two particularly prominent tools: parking standards and procedural rules for fee zones (Reykjavíkurborg, 2026a; 2019a; 2019b; Rules on the use of parking meters and charging in the City of Reykjavík no. 1401/2021). With these, the city can influence the long term supply and location of all parking facilities, as well as the cost and use of street parking spaces.

The City of Reykjavík also uses other tools for the operation and management of parking, including residents' permits (Rules on residents' parking permits in the City of Reykjavík no. 1371/2025), business permits and multi-storey car parks. Special rules apply to these tools and they are part of the city's parking system, but in the policy documents under review here, they are not presented as specific policy instruments to support a shift in travel habits. There are also several other parking-related tools used in Reykjavík, such as public parking garages, that are not covered by any particular strategic policy or action plan. These will be discussed in a later chapter of this report.

7.1.4.4.1 *Parking standards*

Parking standards are used for planning and development in Reykjavík. The standards take into account location and land use, and the city is divided into two zones. Zone I

covers the city centre and areas with good access to The City Line and other high-quality public transport, while Zone II covers other parts of the city. Generally, fewer parking spaces are planned for in Zone I than in Zone II (Reykjavíkurborg, 2026a). For parking spaces, both a recommended and a maximum value are given. The recommended value is the number of spaces generally aimed for; changes relative to this value can be justified in the assessment process, but never exceeding the maximum. The maximum number of parking spaces in Zone I is generally the same as the recommended amount for the same type of building in Zone II. Thus, more parking spaces are recommended the further away one gets from the areas where access to other modes of transport is best (Reykjavíkurborg, 2026a). The current standards in Reykjavík are shown in Tables 7.4 and 7.5 below. The values and presentation of the tables have been adapted to some extent to facilitate comparison with corresponding data from the comparison cities in the later sections 7.2 and 7.3.

Table 7.4: Recommended and maximum car parking amounts for residential development according to Reykjavík parking standards. Amounts are specified per apartment unit, and vary based on location and the type of residential unit. *Source: Reykjavíkurborg (2026a).*

Category	Zone I (Nearby the City Line)			Zone II (Other)		
	Rec. car parking	Max. car parking	Min. bike parking	Rec. car parking	Max. car parking	Min. bike parking
<i>Per apt., 1 room</i>						
Multi-family	0,6	0,85	2	0,85	1,1	2
Single family	0,5 - 0,6	0,75 - 0,85	0 - 2	0,75 - 0,85	1 - 1,1	0 - 2
For students	0	0,2	1 - 2	0,2	0,5	1 - 2
<i>Per apt., 2 rooms</i>						
Multi-family	0,6	1,1	2	1,1	1,35	2
Single family	0,5 - 0,6	1 - 1,1	0 - 2	1 - 1,1	1,25 - 1,35	0 - 2
For students	0	0,2	1 - 2	0,2	0,5	1 - 2
<i>Per apt., 3 rooms</i>						
Multi-family	0,85	1,6	2	1,6	1,85	2
Single family	0,75 - 0,85	1,5 - 1,6	0 - 2	1,5 - 1,6	1,75 - 1,85	0 - 2
For students	0	0,2	2	0,2	1	2
<i>Per apt., 4+ rooms</i>						
Multi-family	1,1	1,6	2	1,6	1,85	2
Single family	1 - 1,1	1,5 - 1,6	0 - 2	1,5 - 1,6	1,75 - 1,85	0 - 2
For students	0	0,4	2	0,4	1	2

For residential housing (Table 4), the number of car parking spaces is based on each dwelling and takes into account, among other things, the number of rooms, the type of building and whether it is student accommodation. The recommended amounts generally increase as dwellings get larger and are also higher in zone II than in zone I. For bicycle parking, on the other hand, a minimum is set and the requirements are mostly the same between the two zones. A different approach is therefore taken than with car parking, where the location within the city has a greater impact. The parking standards also cover the location of car parking spaces and their connection to the relevant housing. Generally, it is stated that car parking spaces should be within the plot itself in a parking garage, or on a plot within a 400 m walking distance from the development. The City of

Reykjavík also encourages that car parking spaces are not automatically included with dwellings and commercial properties, but that residents and companies can buy or rent them separately (Reykjavíkurborg, 2026a).

Table 7.5: Recommended and maximum car parking amounts for commercial developments according the Reykjavík parking standards. Where standards are not calculated per unit of area, another unit of calculation is specified. M is parked where no standard amounts are specified and amounts must be calculated in consultation with the city on a case-by-case basis. *Source: Reykjavíkurborg (2026a).*

Category, per 1.000m ²	Zone I (Nearby the City Line)			Zone II (Other)		
	Rec. car parking	Max. car parking	Min. bike parking	Rec. car parking	Max. car parking	Min. bike parking
Office	5	13,3	5 - 30	13,3	25	5 - 30
Industry	3,3	10	2 - 6	10	13,3	2 - 6
Warehouse	0,7	2,8	2 - 6	2,8	4,2	2 - 6
Grocery store	10	15,4	20 - 30	15,4	25	20 - 30
General store <500m ²	5	10	20 - 30	10	25	20 - 30
General store >500m ²	10	15,4	20 - 30	15,4	25	20 - 30
Restaurant	10	15,4	20 - 30	15,4	25	20 - 30
Hotel	0,1 per room	0,3 per room	10 - 20	0,3 per room	1 per room	10 - 20
Pre-school	M	M	0,4 per employee + 0,2 per student	M	M	0,4 per employee + 0,2 per student
Primary school	M	M	0,3 - 0,6 per student	M	M	0,3 - 0,6 per student
Secondary school	M	M	0,3 - 0,6 per student	M	M	0,3 - 0,6 per student
University	M	M	0,3 - 0,6 per student	M	M	0,3 - 0,6 per student
Healthcare facilities	M	M	0,2 - 0,4 per bed	M	M	0,2 - 0,4 per bed
Sport facility	M	M	0,15 - 0,3 per max. guest	M	M	0,15 - 0,3 per max. guest
Cinema	M	M	0,1 - 0,2 per max. guest	M	M	0,1 - 0,2 per max. guest

For commercial developments (Table 7.5), the number of spaces depends on the activity. It is usually also based on the size of the premises, but for certain activities, the number of employees, students, visitors, beds or rooms is also taken into account. The difference between zones I and II is also clear here and can be considerable for certain activities, including offices, industry and retail. For some categories, however, “M” is marked in Table 7.5. This means that no specific benchmark is set for the number of car parking spaces; instead, the parking need must be assessed separately in each case in consultation with the City of Reykjavík. This applies, among other things, to healthcare facilities, sports facilities, and cinemas. For schools, the need for car parking is also

assessed separately, but it is elsewhere specified that this must take into account the number of staff and students. A general range of 0.2–0.5 car parking spaces per school employee is used as a basis for such an assessment, but this range is meant to be more flexible than the amounts specified in the table (Reykjavíkurborg, 2026a). For university students, however, no general range like this is proposed. Finally, the minimum requirements for bicycle parking are given as a specific range for many categories and can take into account location, proximity to public transport and conditions for cycling.

A transport assessment (“samgöngumat”) is a tool within the parking standards that the City of Reykjavík uses to further assess transport needs for new developments and whether there are grounds to deviate from the recommended amounts for the number of car parking spaces. The purpose is also to systematically assess how a development supports the city's objectives for changing travel habits. The assessment covers travel to and from planning areas and should be carried out in parallel with planning work, so that its results can influence the design of the development and not just be an assessment carried out afterwards (Reykjavíkurborg, 2026a).

A transport assessment is not required for all developments. According to the regulations, an assessment must be carried out if a development includes more than 50 dwellings or hotel rooms, more than 5,000 m² of residential housing, 1,000 m² of retail premises, 5,000 m² of office space, 10,000 m² of freight or warehouse space, or if more than 100 car parking spaces may be planned. A transport assessment must also be carried out if the development is a mixed land use of residential and commercial premises, if the development is within a 400 m radius of a bus stop with a “good or high” level of public transport service, or if the development is on a transport and development corridor.

The City of Reykjavík may also request a transport assessment in other cases, including if a development is near an area where traffic is heavy and delays occur during peak hours, or if there is a risk of negative impacts on traffic safety. Even if a transport assessment is not required according to the above, the need for car parking must always be assessed using the tables above. The transport assessment is based on five steps, the first four of which are always considered: shared use of car parking spaces, car-share spaces, implementation of a transport policy (“samgöngustefna”), and proximity to public transport with a good or high level of service. The final fifth step applies only to larger developments where a more detailed assessment of the impact on the adjacent built-up area and road network is needed. Initially, the need for car parking is calculated according to general standards, but in a transport assessment, the final number is assessed in light of these factors and can therefore be lower than the initial standard (Reykjavíkurborg, 2026a).

- Shared use of car parking spaces
 - Can reduce the need for car parking when different land uses have peak demand at different times of the day. The parking standards show an example where shared use reduces the recommended number of spaces by almost 15%, from 62 to 53 spaces, and another example where the number of spaces is reduced by just over 21%, from 112 to 88. The ratio, however, depends on the combination of land uses and how well the spaces can be used by different users.
- Car-share spaces
 - Is another way to reduce the need for car parking. In zone 1, for developments of 50 dwellings or more, it is possible to exchange 3–5 general car parking spaces for one car-sharing space. For developments of 100 dwellings or more in Area 1, at least one space for a car-sharing service is required. A similar reduction may be considered in zone 2 if the development is near a bus stop with a good or high

level of service. The developer or plot holder must make an agreement with a third-party car-sharing service to arrange for the use of the car-sharing spaces (Reykjavíkurborg, 2026a)

- Transport policy (“samgöngustefna”)
 - Can also have a direct impact on the number of parking spaces. The rules assume that with the implementation of a transport policy, it is possible to reduce the recommended number of parking spaces by 10% and in some cases by 15–20% if the policy is “very multifaceted”. Such a policy may include, among other things, providing a car-sharing vehicle, requiring transport agreements to be offered to employees, especially attractive bicycle storage, and improved pedestrian and public transport connections. In the rules, these points are presented as examples of possible measures, not as an exhaustive list. It is not specified how many or which measures are needed to achieve a 10% reduction or when a transport policy is considered “very multifaceted” and a 15–20% reduction is applicable. If parking spaces are reduced on this basis, the implementation of the transport policy must be part of the planning provisions (Reykjavíkurborg, 2026a).
- Proximity to good public transport
 - Can also reduce the need for parking spaces. For residential housing in zone 1, the recommended number of spaces can be reduced by 10% if the development is within a 400–600 m walking distance of two stops that each have a good or high level of service, and which each provide access to at least two routes. In zone 2, however, the lower parking standards of zone 1 shall be used if a development is within a 400 m walking distance of a stop with a high level of service. The rules do not further define what constitutes a good or high level of public transport service (Reykjavíkurborg, 2026a).

For larger development sites, the city may request the fifth step be performed: a more comprehensive transport assessment. This involves assessing, among other things, the current conditions for pedestrians and cyclists, a 20-minute walking and cycling radius, the location and precise service level of public transport, the road network, and traffic conditions. Furthermore, an assessment is made of the estimated trip generation resulting from the development regardless of travel mode, the modal split, and what measures can increase the share of sustainable travel modes. The results can thus affect both the number of parking spaces and the design of the development itself, although no clear criteria for reducing parking spaces are specified alongside the possible results.

7.1.4.4.2 Procedural rules for fee zones

The City of Reykjavík uses fees and time limits to manage the use of parking spaces on city land. According to the City of Reykjavík's car and bike parking policy, this management is based on the Procedural Rules on Price Changes in Fee Zones and the Procedural Rules on the Implementation of New Fee Zones. The objective defined in these documents is to manage the demand for parking spaces and to promote their use by different groups, such as residents, visitors, and people seeking services in the city (Reykjavíkurborg, 2019a; 2019b).

According to the procedural rules on price changes, fee zones can have different fees, timeframes of validity, and maximum time limits depending on the circumstances in each area. The pricing tier in each zone is based on the average occupancy rate at peak hours, which is stated to be measured at least once a year. The aim is for the average occupancy of parking spaces at these times to be between 60–85%. If occupancy exceeds 85%, it is assumed that the fee can be raised to the next price tier and/or a maximum time limit can be imposed on the spaces. If occupancy is below 60%, however,

it is assumed that the charge can be lowered a tier. This allows for a efficient regulation of the demand for parking spaces through changes in price and time limits. Currently, time limits are only used in fee zone 1, where the maximum time is three hours. When assessing changes, it is also possible (but not explicitly necessary) to consider other factors, such as changes in nearby streets, construction and planning changes that may affect the occupancy of spaces (Reykjavíkurborg, 2019a).

According to the procedural rules on the implementation of new fee zones (Reykjavíkurborg, 2019b), new charging zones can be implemented where the City of Reykjavík decides or where local stakeholders submit a request to the City of Reykjavík. In both cases, this leads to the peak hour occupancy rate in the area being measured and, similar to the other rules, a new charging zone shall be implemented if the maximum occupancy exceeds 85%. However, the City of Reykjavík also reserves the right to decide that a new charging zone can be introduced even if the occupancy rate does not exceed this limit, if it is believed that such a change will contribute to the objectives described above. Unlike the procedural rules on price changes, the procedural rules on the implementation of new charging zones do not define regular measurements of the occupancy rate in areas where there is not already a fee for on-street parking. Nor do they clearly define what events or circumstances should lead to an analysis of the occupancy rate, except when stakeholders themselves submit a request to that effect.

Alongside the fee zones, resident parking permits are available for residents in most fee zones. The permits, provided that conditions are met, authorise parking free of further charge within the area for which the permit is valid. However, the resident permits are subject to certain restrictions and are not valid, for example, in fee zone 4 or on certain streets and areas in the city centre (Reykjavíkurborg, 2025).

7.1.5 Interplay of policy instruments and intended effect on travel habits

The main parking management tools discussed above work in conjunction with measures aimed at improving conditions for other modes of transport to change travel habits. This chapter analyses how these tools are connected and work together, with a special focus on parking management.

To get a complete picture of the City of Reykjavík's approach, the city's policy instruments and tools were examined based on the theoretical discussion and planning approach presented earlier in this report, and in light of the main objective being changed and more sustainable travel habits. In Figure 7.4, this interpretation by the authors is presented as an interconnected system. There, 4 main categories of action (blue) are seen to contribute to the main goal of changing travel habits (green), via several different "hows" (grey). The policy instruments and tools described throughout chapter 7.1 are pictured in pink, and these are the main *planned* sources where the "hows" are actually implemented. Connections between boxes represent either a causal connection between a tool and an effect, or otherwise where multiple tools are dependent on one another. To focus the subject matter and improve readability, more detail is provided for the elements related to parking, and less detail is provided for the other elements.

Figure 7.4 does not show a single direct measure, but rather an interplay between urban development, the transport system, parking management and encouragement measures. The objective is to change the underlying conditions that affect travel choices, so that more modes of transport become viable in daily life and the private car does not have the same advantage as before. The Reykjavík Municipal Plan presents this approach clearly and emphasises coordinating decisions on densification and mixed-use development, parking requirements, street design and improvements for public transport, cycling and walking.

On the left side of Figure 7.4, you can see the measures that are intended to improve other modes of transport – “pull” measures. These include the development of cycling and walking routes, public transport and urban planning. These factors are more closely related than separate projects. Densification and mixed-use development shorten distances and increase the number of people who live and work near services and public transport trunk routes. At the same time, this creates better conditions for more frequent and robust public transport. The city's policy specifically provides for the density and diversity of land use to be greatest along the main public transport routes and in the vicinity of stations.

The development of The City Line and the densification of development are closely linked. Increased development and mixed land use are planned along transport and development corridors and in the vicinity of stations. This increases the number of people who live and work with good access to public transport, which in turn strengthens the basis for more frequent and better service. Walking and cycling infrastructure is connected to this same system. It is not only useful for those who travel the entire way on foot or by bicycle, but also improves access to public transport. The municipal plan specifically points out that a public transport user is, on average, a pedestrian at both the beginning and end of their journey, and therefore bus stops need to be well connected to the path system and services in the immediate vicinity. The cycling plan also emphasises considering the connections between cycling infrastructure and other modes of transport and places cycling within a holistic vision for the development of urban areas and transport.

On the right side of Figure 7.4, the side of the policy that relates to reducing access to parking and managing its use is shown. I.e. “push” measures. Here, the interplay with land use and public transport is particularly clear. The parking standards provide that the need for parking is determined, among other things, by location, access to public transport, shared use of spaces, car sharing and the transport policy of the development site. Thus, the supply of parking is not seen as a fixed consequence of new development. As conditions for other modes of transport improve, greater opportunities are also created to reduce the number of parking spaces. A transport assessment then links these tools together in practice. It examines how different land uses can share parking, whether car sharing is part of the development, what transport policy applies and what access there is to public transport. The result may be that the need for parking is reduced or that the design of the development changes. This makes a transport assessment one of the clearest examples of how land use, transport and parking policy are not treated as separate issues. All of this leads to a reduction in the total number of parking spaces in Reykjavík in the long term.

Figure 7.4 also shows that the goal is not only to reduce the supply of parking spaces but also to make better use of the existing space. For example, mixed land use brings opportunities for shared use, as the demand for parking varies depending on the time of day. Parking spaces at offices are often most used during the day, while those at residences are used in the evenings, so shared use can reduce the total number of spaces that need to be built. Less land for parking can then create more room for denser development, urban spaces, and infrastructure for other modes of transport. In this way, parking policy can in turn support the urban development goals that were initially established.

Parking charges and time limits work in a slightly different way. The primary aim is not to decide how many parking spaces will be created, but rather how existing spaces are used. The city's procedures link parking charges to the goals of the municipal plan and demand management, but price changes are primarily based on maintaining efficient

utilisation of existing spaces. This is therefore a somewhat different role than that of the parking standards. Parking fees support the management of the system, but in the current rules, they are less presented as a direct tool for changing travel mode choices.

The incentive measures shown at the very top of Figure 7.4 are an addition to this larger change in development and the transport system. Workplace events, information provision, and other similar measures can make it easier for people to use the options that have been developed. However, they do not in themselves change the fundamental premises of travel choice in the same way as land use, the transport system, and the supply of parking. Their role is therefore primarily to support the changes created by other policy tools. Overall, the figure does not show a direct path from a single tool to changed travel habits, but rather a system where the measures support each other. Denser and more mixed development can shorten journeys and strengthen public transport. Better public transport and walking and cycling connections then make it possible to reduce the supply of parking. A smaller and better-utilised supply of parking can, in turn, free up land for development and urban spaces and reduce the advantage of the private car. Encouragement measures can then help people to use the options that become available. Changed travel habits are thus conceived as the result of these factors developing together, not as the consequence of a single, isolated action.

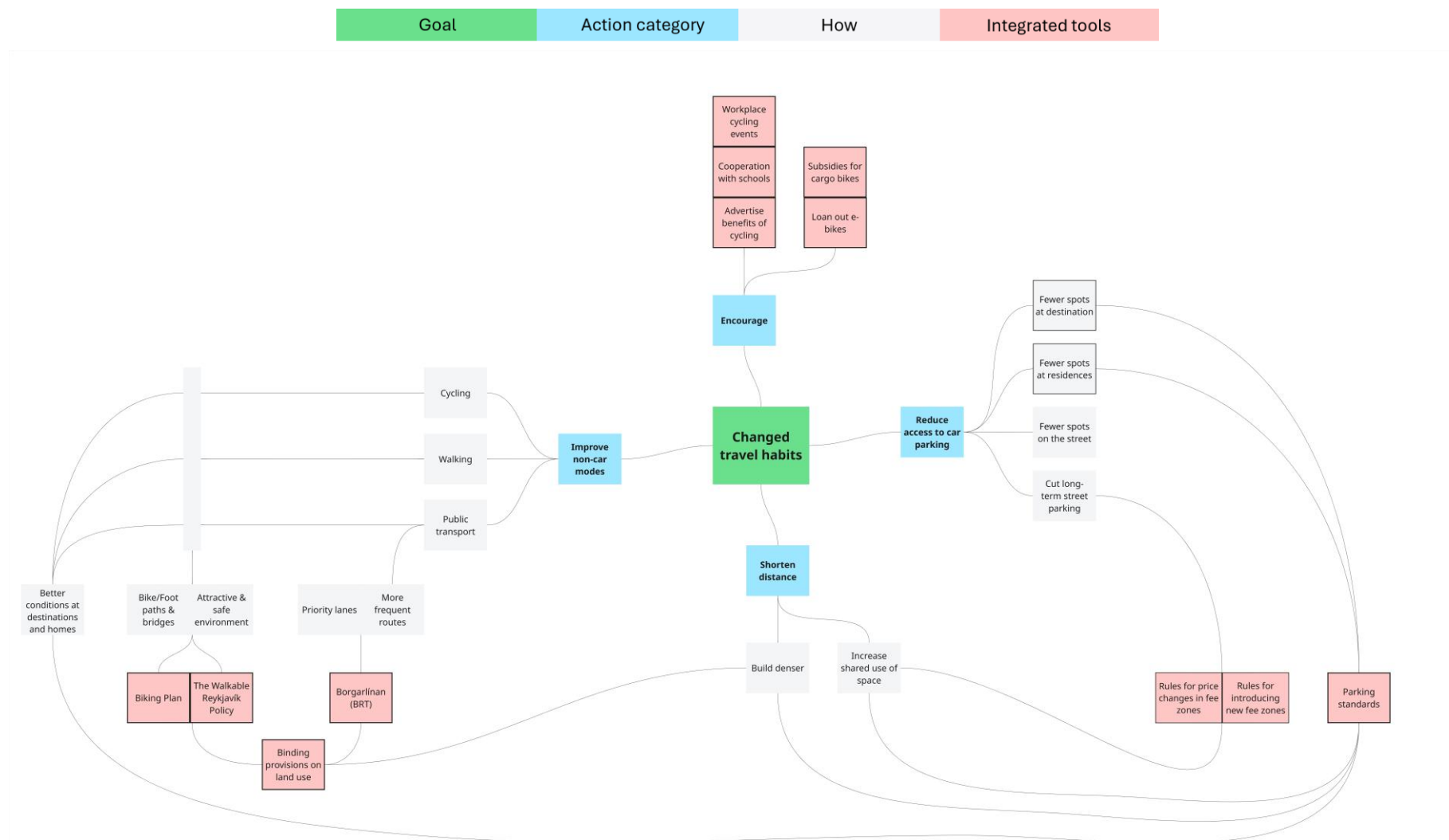


Figure 7.4: Reykjavík's system for changing travel habits.

Figure 7.4 shows that an analysis of the City of Reykjavík's policy documents indicates that the city primarily bases its strategy on influencing the conditions that shape travel choices, rather than directing measures directly at travel habits themselves. The main emphasis is on integrating land use and transport, developing infrastructure for sustainable modes of transport, and managing the supply of parking in the long term. The assumption is that when these factors work together, sustainable modes of transport will become a more accessible and competitive option for daily journeys, which will gradually lead to a change in travel habits. The figure also shows that the policy instruments are not presented as independent measures but as parts of an integrated whole. Urban densification and mixed land use are intended to shorten travel distances and improve access to services and workplaces. At the same time, emphasis is placed on the development of The City Line and other public transport, along with a continuous walking and cycling network, so that more modes of transport become a realistic option for daily journeys. The analysis of the policy documents therefore indicates that the City of Reykjavík views the interplay of these tools as the main prerequisite for achieving its goals of changing travel habits.

Parking management plays an important role. However, it cannot be inferred from the policy documents that it is intended to bring about changes in travel habits on its own. On the contrary, it seems primarily intended to support other policy instruments by aligning the supply of parking with the goals of denser development, more robust public transport, and improved access for pedestrians and cyclists – thus aligning “push” with “pull”. The parking policy is thus interpreted as a supporting tool that enhances the impact of other measures, rather than as the main tool for reducing car traffic. Two main priorities in Reykjavík's parking management were identified:

1. **Fewer parking spaces at destinations** in the long term. To reduce the use of private cars for journeys to work, services, and other destinations.
2. **Fewer parking spaces at residences** in the long term. To reduce the need for parking and support changes in residents' travel habits.

The main control instrument for achieving these goals is the parking standards.

7.2 Umeå – policymaking and changing travel habits

7.2.1 *Travel habits in Umeå*

Umeå is a municipality in Västerbotten County in northern Sweden. According to population figures from Statistics Sweden (SCB), just over 135,000 people lived in the municipality in the first quarter of 2026 (SCB, 2026). Umeå is the most populous municipality in this rather sparsely populated region and it is about twice the size of the Capital Area in Iceland in terms of land area. Public transport in Umeå is largely based on a robust bus system with nine routes. Three of these have especially frequent services and larger buses. In addition, there are two train stations in Umeå that connect the municipality to smaller neighbouring municipalities with regional trains. Umeå is an interesting city to compare with Reykjavík as they are located at similar northern latitudes and face comparable challenges regarding climate and winter conditions. Despite this, travel habits in Umeå have developed in a completely different way than in the Capital Area of Iceland. Umeå's 2022 travel survey showed that about 54% of all journeys were made by private car, 23% by bicycle, 13% on foot and 8% by public transport (Umeå Kommun, 2022). For comparison, private car journeys in the Capital Area of Iceland accounted for about 72% (Innviðaráðuneytið et al., 2025). Umeå is an example of a city where cycling plays a much larger role in daily journeys than in many other places in the Nordic countries, and the importance of the private car is considerably less than in Iceland's Capital Area.

Travel surveys conducted in Umeå over a longer period show that the modal split has changed considerably in recent decades, though not necessarily in the way one might expect (Lindelöw et al., 2016). The results of the surveys show that cycling has long played an important role in Umeå. In 1989, the proportion of journeys made on foot or by bicycle reached its peak – about 49% of all journeys. After that, however, there was a significant change in travel habits, and car use increased from 45% in 1989 to 57% in 2006. This can be attributed to a sharp rise in car ownership, helped by economic factors and an emphasis at that time on lower density and car-oriented development (Kågeson, 2014; Gunnarsson, 2015).

Major changes were made to Umeå's municipal plan in 2011 and 2018 with the aim of reducing the use of private cars. Measures included an increased emphasis on urban densification, improved public transport and better conditions for cycling, as well as the introduction of a stricter parking policy. Thereafter, the trend of sharply increasing car use halted, measuring at 58% in 2014, before reversing to 54% in 2022. This reversal perhaps demonstrates the success of Umeå's recent policy-making.

7.2.2 Key policy documents

The structure of the land-use and transport planning system in Umeå is relatively focussed, and can be seen in the Figure 7.5 below. While the municipal strategy outlines the most general goals of the municipality regarding population growth and sustainability, and this is somewhat influenced by broad goals set out in a regional plan, the 2018 översiktsplan ("overview plan" or, hereafter, "municipal plan") is the main document outlining specific goals, approaches, and tools to be used in the areas of land use, transport, and parking policy.

These sections of the municipal plan were made following the SUMP guidelines (see section 4). As such, the municipal plan also specifically mandates the subsequent creation of 6 strategy, action & monitoring plans ("programs") on the subjects of freight traffic, traffic safety, walking, cycling, public transport, and parking. These concentrate the topic-specific strategies expressed in the översiktsplan into practical action plans with clearly assigned responsibilities, as well as clear guidelines for monitoring and follow-up. Each individual action plan expands on the approaches and tools highlighted in the municipal plan for the given subject area, and each is intended to be packaged with reference to all 5 other action plans to mutually contribute to the many goals expressed in the municipal plan. The municipal plan and action plan programs then go on to inform all legally-binding detailed plans.

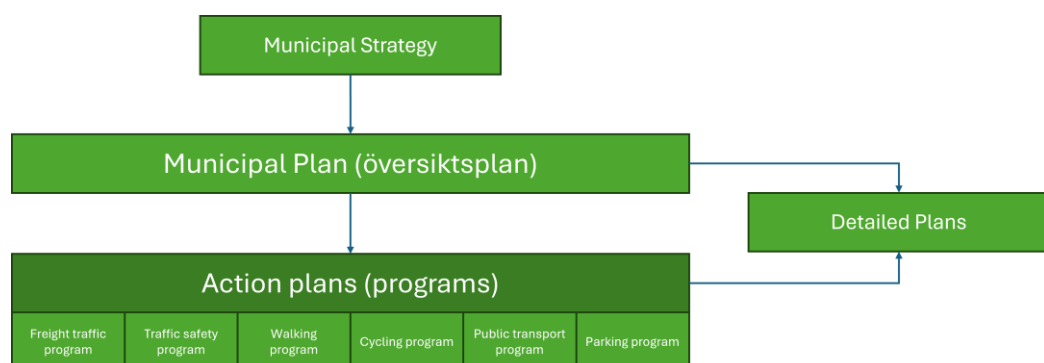


Figure 7.5 Policy document structure in Umeå. Source: Umeå Kommun. (2018a)

7.2.3 *Key goals*

As in Reykjavík, Umeå's objectives extend beyond transport and are linked to climate issues, public health, urban development and the quality of the built environment, among other things. Transport is part of the city's comprehensive strategy for sustainable development. Umeå's policies emphasise that the city's growth should not lead to increased car traffic. The objective is for the number of residents, jobs and services to increase without an increase in car traffic. To support this, greater emphasis is placed on walking, cycling and public transport for daily journeys and on reducing the use of private cars (Umeå Kommun, 2016; Umeå Kommun, 2018a). Another important objective is to promote continued densification of development, where shorter distances between homes, workplaces, services and recreation reduce the use of private cars. The integration of land use and transport plays a key role in this.

Umeå's main objectives can be summarised in the following points:

1. To increase the share of walking, cycling and public transport in daily journeys.
2. To reduce car-dependent travel patterns and to decrease the share of cars in daily journeys.
3. To build densely and to integrate land use and transport so that distances are shortened and accessibility improves.
4. To promote a climate-friendly, healthy and accessible city.

7.2.4 *Key policy instruments and tools*

This section will briefly review the main tools intended to promote changes in travel habits, how they are applied in Umeå and what their main purpose is, with an emphasis on parking issues. Section 7.2.5 discusses in more detail how these tools work together towards the municipality's objectives.

7.2.4.1 *Measures to improve sustainable modes of transport*

The programs that are not related to parking are strong policy instruments that organize a long list of actions and tools aimed at improving and promoting modes other than the car. Since the main focus of this report is car parking, these will not be exhaustively described here, but they include for example: introducing traffic calming measures on an inventory of dangerous streets, creating a checklist for walking infrastructure to be included in all detailed plans, investigating and expanding the set of walking/cycling paths that require winter maintenance or improvement, building new cycle paths and bike parking facilities in connection with key destinations and public transport stops, altering several specific intersections to prioritize bus traffic, investigating bus priority lanes, increasing frequency of some key bus lines, and performing promotional campaigns in tandem with finished infrastructure projects (Umeå Kommun, 2014; 2018b; 2019a; 2021). Some of the more specific promotional actions mentioned are seasonal events to encourage people to try cycling in the winter.

7.2.4.2 *Parking standards*

Parking standards are a key tool used by Umeå to control the amount of parking spaces constructed at new developments over the long term. The system in Umeå involves minimum standards for car parking as well as minimum standards for bike parking, across 3 geographical zones. The minimums are determined considering both what is realistically required, but also that the amount of parking available at destinations and homes should generally decrease over time in order to reduce car use. A summary of the current standards for residential and commercial developments can be seen in Tables 7.6

and 7. These standards were solidified and have remained mostly unchanged since the first parkeringsprogram in 2013, although a new extra small class of residential apartment was introduced in 2017 with lower parking requirements in the centrum. The reason given is that smaller apartments, especially student apartments, generally have much lower rates of car ownership. This new category also aligned with the work on a new översiktsplan, published in 2018, which established a greater emphasis on dense development near the centre. These small apartments appear to be generally intended only for students and only for zone A, but this is not explicit in the policy documents.

The geographical zones in Umeå, rather than being based on development corridors in proximity to transport arteries, are instead based on whether the area is downtown, urban but not downtown, or outside the urbanized area. Residential standards are also divided into categories according to apartment size or if the building is a single family house. Car parking requirements generally increase by 20-30% between zone A and B, then 0%, 10%, or 30% between zone B and C. The car parking requirements also double between small and medium-sized apartments, increase by 10-30% between medium- and large-sized apartments, and increase by 25-60% between large-sized apartments and single family homes. Bike parking requirements are higher than car parking requirements and are more consistent across zones and residential categories, with the exception of student housing units, which are assumed to accommodate only a single resident each, and single family homes which have much higher bike parking requirements. The bike parking minimums are usually about 2-3x higher than the car parking minimums.

Minimum parking requirements for commercial properties are quite high in Umeå, especially for shops and restaurants in zone A. The requirements for shops are highest in the city centre and decrease outside of it, contrary to other categories of commercial properties. The reasons for this are not clearly stated but are in all likelihood related to Umeå's emphasis on their parking free purchase system (see section 7.2.4.3). For buildings with specialised activities, such as schools, hospitals and sports halls, the number of parking spaces is assessed in consultation with the municipality and is then marked with an "M". For bicycle parking, fixed standards are mostly used, unlike those used in Reykjavík, with the exception of office buildings. The requirements are generally the same in zones A and B but lower for restaurants and hotels in zone B, and generally lower in zone C. There are also lower requirements for grocery shops than for other shops; the reason for this is not explained in the documents. Unlike for residential properties, the requirements for bicycle parking are similar to or slightly lower than the requirements for car parking.

Table 7.6: Minimum parking standards for cars and bikes in Umeå, residential. *Source: Umeå Kommun. (2024)*

Category	Zone A (Centrum)		Zone B (Urban area outside centrum)		Zone C (Other)	
	Min. car parking	Min. bike parking	Min. car parking	Min. bike parking	Min. car parking	Min. bike parking
<i>Per apt. ≤35m²</i>	0,3	2,5	0,8	2,5	0,9	2,2
<i>For students</i>	0,3	1,5	0,8	1,5	0,9	1,2
<i>Per apt.: 35m² < X < 55m²</i>	0,6	2,5	0,8	2,5	0,9	2,2
<i>Per apt. ≥55m²</i>	0,75	2,5	0,9	2,5	1,2	2,2
<i>Per single-family house</i>	1,2	4	1,5	4	1,5	4

Table 7.7: Minimum parking standards for cars and bikes in Umeå, commercial. *Source: Umeå Kommun. (2024)*

Category	Zone A (Centrum)		Zone B (Urban area outside centrum)		Zone C (Other)	
	Min. car parking	Min. bike parking	Min. car parking	Min. bike parking	Min. car parking	Min. bike parking
Office	10	13 - 20	15	13 - 20	20	7 - 10
Industry	-	6	8	6	11	3
Warehouse	-	6	8	6	11	3
Grocery store	22	12	18	12	18	8
General store	22	20	18	20	18	8
Restaurant	20	20	30	10	30	5
Hotel	5	5	7	4	9	2
Pre-school	M	0,3	M	0,3	M	0,2
Primary school	M	0,3 - 0,7	M	0,3 - 0,7	M	0,3 - 0,7
Secondary school	M	0,7 - 0,8	M	0,7 - 0,8	M	0,4 - 0,6
University	M	0,7 - 0,8	M	0,7 - 0,8	M	0,7 - 0,8
Healthcare facilities	M	0,2 - 0,3	M	0,2 - 0,3	M	0,1
Sport facilities	M	0,2 - 0,6	M	0,2 - 0,6	M	0,2 - 0,4

Additionally, Umeå specifies a detailed list of acceptable walking distances between parking facilities and developments, depending on type and location. This comes from their intentions to utilize walking distance to discourage car use – especially for commuters. For residential buildings, the maximum distance is 300 m if the building is outside of the city centre and 500 m if inside the city centre. For commercial buildings, these corresponding maximums are 300 m and 600 m. However, these only apply to resident parking and employee parking. The distance maximums for visitor parking related to residential buildings and shops are lower, at 200 m and 300 m, respectively.

Finally, in all urban areas (zones A and B), there are also several ways for developers to reduce the minimum amount of parking by specific amounts through provisions for other modes of transport, similar to the “samgöngumat” in Reykjavík’s parking standards. That is, developers are incentivised to implement “pull” measures to reduce overall parking amounts. These reductions in Umeå can add up to a maximum of 40%. A 5% reduction is given if a developer provides access to a bike service station, 5% for providing bike parking that meets certain geometric standards, 5% for offering an e-bike sharing system (10% if they are e-cargo-bikes), 10% for providing access to a car sharing system (15% if the system is also made available to the general public), or a 5-10% reduction is given if a residential developer provides new residents with a free 120- or 240-day public transport card (Umeå Kommun, 2024). A 10% reduction is also given if there is a grocery store within 300m, and a 5% reduction is given if a room is provided where residents can leave or take reusable items that are no longer desired by other residents (“Återbruksrum”).

7.2.4.3 *Friköp/Free purchase*

Alongside parking minimums, Umeå has a strong free purchase scheme which allows developers to fund public, shared-use garages instead of building their own private facilities. Umeå puts emphasis on making this alternative as economically attractive as possible so that developers will choose to take part in it (Slott, 2016), but it is also mandatory for all commercial developments in much of the city centre. A publicly owned company called Upab is responsible for negotiating with individual developers on a case-by-case basis to find an optimal price that they may pay in lieu of building their own minimum parking. This price is then paid to Upab as a 25-year loan, which is later returned with interest to the developer, in exchange for a guarantee that users of the new building will be able to find that minimum amount of parking in a public shared-use facility within 600m during that period. This system has existed in Umeå since the 1970's as an alternative available for workplace developers, but was expanded in the 2013 parking program to also be available to residential developers, and to be completely mandatory for commercial developers in the centrum (Umeå Kommun, 2013; Upab, 2022). In combination with the relatively high parking minimums, this scheme results in a larger degree of public control over the amount, fee, and location of parking available in the city. In the long term, it also allows Umeå to decommission parking facilities in favour of other uses if they are no longer needed.

In 2017, Umeå introduced an addition to this system called “grönt parkeringsköp” or green free purchase. Developers who are participating in the free purchase scheme can also choose to additionally reduce the minimum number of parking spaces by 40% (and, therefore, the total amount they must pay as a loan) if they agree to implement a few specific “pull” measures: connect the building to a car-sharing system, and provide heated bike parking and change rooms on-site. They must also immediately pay a small fee equal to ~17% of the remaining loan (i.e., after reducing the loan amount by 40%). These funds are then earmarked to be used by the municipality to analyse the accessibility to/from the property, and to implement “mobility management” measures specifically aimed at improving accessibility and use of sustainable modes to/from that property (Upab, 2022). Since the standard free purchase scheme does not necessarily directly reduce the total amount of parking available in the city (it only transfers control of the parking), this addition to the free purchase scheme builds upon it by incentivising an overall reduction in parking amounts, incentivising the developer to implement specific “pull” measures that may be especially attractive when car parking happens to be farther away, while also providing the developer with “pull” measures implemented by the municipality (not the developer) to improve accessibility and potentially increase property values.

7.2.4.4 *Public parking garages*

Since the free purchase scheme funds and necessitates public, shared-use parking facilities, Umeå also places a clear emphasis on the construction of public parking garages and outlines their role. Their parking program includes a discussion of where to locate new facilities, for what kinds of users are the individual garages intended, and how to price them relative to street parking. In the plans, garages shall be provided on the periphery of the centrum for those who work in the centrum, while garages within the centrum are intended for more short-term uses or parking for disabled people. The overarching commitment is to accommodate most car parking needs in the centrum with these shared-use facilities, leaving the remaining street parking either more expensive or time-limited. This is noted to have a double benefit of boosting the efficiency with which space is used, as well as reducing the competitiveness of the car by increasing the average distance a person must walk from the parking to reach their destination.

7.2.4.5 *Fee zones and forbidden zones*

The last key parking-related tools in Umeå relate to the regulation of street parking. The overall aim of these is to reduce or restrict street parking and incentivise use of shared-use facilities. First, it is necessary to understand that Umeå utilizes a zoning tool to simplify the process of restricting parking. Most of the urban area is covered by so-called “parkeringsförbudsområde” (parking-forbidden areas) or “datumparkering” (date parking).

Parking-forbidden areas are areas where it is forbidden, by default, to park on the street. Therefore, only areas where parking is actually permitted will have signage saying that this is the case. The boundary of these areas has been successively expanded in the most recent plans to cohesively encompass all of the downtown area as well as the most densely developed urban areas outside the main downtown area. The intended effect of this is that it is simpler to understand and enforce stricter parking regulations. Areas that are not parking-forbidden are generally covered instead by date parking. This is a system that essentially makes it so that only one side of the street is available for parking on any given day, and the side alternates every day. The intended effect is to enable activities like snow ploughing and waste removal, but a side effect is that the stock of street parking is cut in half and it is less easy to own several cars, as a car cannot be left in one place for days at a time.

Alongside the expansion of parking-forbidden areas, Umeå also plans a general expansion of fee areas wherever parking is allowed therein, and a general increase in the fees themselves with the aim of making the car less competitive as a mode of transport. Hourly fees for street parking across the various zones appear to have increased from 6, 15, and 20 SEK in 2013 to 9, 20, and 28 SEK respectively, representing an increase of roughly 30-50% (Umeå Kommun, 2013; Berring & Peciva, 2013; Upab, 2025). Where fees are not applied, 3-hour time limits generally are applied instead. Fees on the street are specifically coordinated with those in the parking garages such that the parking garages are more attractive, and time limits are also intended to have this effect. Since these plans took effect, Umeå has reported that the stock of downtown street parking places has decreased from 380 to 250, while the stock of parking places in public garages has increased from 1.000 to about 1.400 (Umeå Kommun, 2019b).

7.2.5 *Interplay of policy instruments and intended effect on travel habits*

The tools above are crucial components of Umeå's approach towards changing travel habits, and each one is supported by the others. This section will describe and visualise how these are all tied together and how they are integrated as a single cohesive strategy.

First, relatively high parking minimums are combined with a unique and strong free purchase scheme. This is perhaps a crux of the current parking strategy in Umeå. Its aim is to enable wider control of parking in the centrum, especially workplace parking. It thereby also enables control of both the fees employees must pay to park and the distances they must walk to reach their workplaces. The parking program specifically states that funds from the free purchase scheme shall be used to build new shared-use parking garages on the periphery of the centrum, and spots shall be allocated such that workers must walk longer distances (though still within 600m). Fee zones are expanded and prices are coordinated to incentivise workers and other users in the centrum to park at these shared-use facilities, while street parking is left more expensive or time-limited - meant primarily for highly-invested short-term visitors, residents who are not part of a free purchase agreement, or disabled people, who are exempt from restrictions. Meanwhile, it is planned to generally increase all parking fees, everywhere, and remove some street parking to make space for the walking/cycling/public transport measures found in the other programs (Umeå Kommun, 2013; 2018b; 2021). These parking measures are

explicitly intended to make the car less competitive compared to other modes, as well as to support the densification of the built environment and more efficient use of space. That is, parking policy is mainly a system of “push” measures, but includes some “pull” aspects.

Apart from this, the parking standard also incentivises lower amounts of parking alongside a clear list of optional “pull” measures for other modes. The green free purchase system provides an additional set of “pull” measures that can be implemented on top of this, performed by the developer and the municipality itself, corresponding to another large decrease in parking amounts. Together with all of the planned infrastructural improvements to other modes found across the 6 program documents, Umeå has a well integrated system of “push” and “pull” measures. Each of the 6 policy programs also works alongside guidelines expressed in the översiktsplan to inform all detailed land-use plans on a case-by-case basis. The land-use plans also contribute to the actual densification of the built environment.

The entirety of this approach was interpreted through the lens of the theory and planning practices presented in earlier sections of this report and the overarching goal of changing travel habits towards being more sustainable and less car-dominated. This interpretation is visualized below as a single interconnected system or “theory of change” (Figure 7.6). There, 4 main categories of action (blue) are seen to contribute to the main goal of changing travel habits (green), via several different “hows” (grey). The policy instruments and tools described throughout section 7.2 are pictured in pink, and these are the main *planned* sources where the “hows” are actually implemented. Connections between boxes represent either a causal connection between a tool and an effect, or otherwise where multiple tools are dependent on one another. To focus the subject matter and improve readability, more detail is provided for the elements related to parking, and less detail is provided for the other elements.

The analysis highlights three main priorities in the use of parking-related policy instruments:

- 1. To reduce the number of parking spaces at destinations, especially workplaces.**

Flexible minimum requirements and the parking free purchase system allow the municipality to direct parking from individual plots to shared public garages.

- 2. To reduce the long-term use of on-street parking.**

Fees and time limits encourage on-street parking to be used for short-term parking rather than long-term parking, with long-term parking being directed to shared public garages instead.

- 3. To increase the walking distance between parking spaces and workplaces**

The expansion of charging zones and the reduction of on-street parking support these priorities and can free up space for pedestrians, cyclists and public transport. Charging also makes the cost of car journeys more visible and increases the incentive to choose other modes of transport.

Umeå's parking policy is thus largely based on the interplay of several targeted “push” measures. In contrast, emphasis is also placed on “pull” measures to increase the safety and quality of walking and cycling routes, improve public transport and implement various BRT elements into the bus system. Development is also directed towards the main transport corridors, and various encouragement measures are used to promote walking, cycling and the use of public transport. It therefore combines “pull” measures that improve conditions for sustainable modes of transport and support denser development

with “push” measures that are intended to reduce the use of private cars. Parking-related control measures play a key role in this, particularly by controlling the number, location and fees for parking spaces.

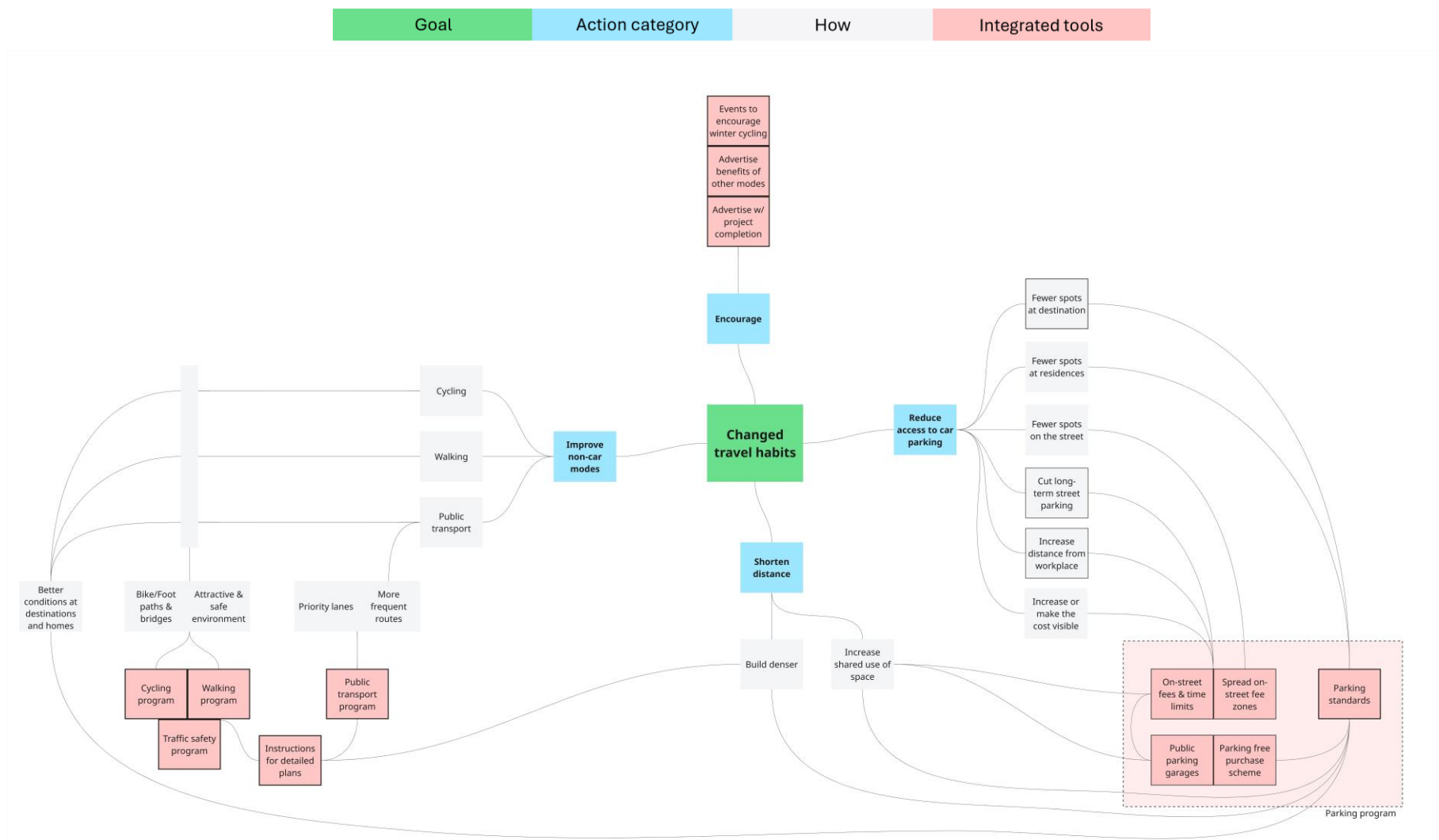


Figure 7.6: Umeå's system for changing travel habits.

7.3 Trondheim – policymaking and changing travel habits

7.3.1 *Travel habits in Trondheim*

Trondheim is a municipality in the Trøndelag region of Norway and sits at a similar latitude to the capital area of Iceland. The municipality itself has a population of about 220.000 (Trondheim Kommune, 2026b) and roughly the same areal size as Reykjavík municipality. It also attracts significant traffic from the smaller neighbouring municipalities in the region. Including the population of this entire commuting area (“Trondheimsregionen”) brings the total inhabitants to 320.000 across an area approximately eight times the size of the capital area (Trondheimsregionen, n.d.). The public transport network mainly consists of a strong local bus network and new BRT system. Three BRT lines were first introduced in 2019 equipped with high frequencies, large busses, and upgraded bus stops, but extensive priority lanes are currently yet to be implemented. Apart from this, Trondheim is also served by a regional rail network, which largely serves as a commuter rail for neighbouring municipalities. In addition to the fact that it has a similar northern geography and a population which is comparable to what the capital area of Iceland may eventually grow into, Trondheim is an especially interesting comparison city for Reykjavík due to its strong regional cooperation and recent success in reducing car use. The most recent region-wide travel habit survey from 2024 reports that about 52% of all trips across Trondheimsregionen are performed by private car, 8% by bike, 26% by walking, and 11% by public transport (Miljøpakken, 2025).

Compared to past surveys, these numbers show a steady trend towards lower car use overall, relatively sharp growth of public transport, and somewhat higher use of walking and cycling (Miljøpakken, 2025). In 2009, car trips comprised 61% of total trips in the region with walking, cycling, and public transport at 23%, 6%, and 7% respectively (Miljøpakken, 2013). Progress was somewhat slow up to 2019 where these same numbers were 58%, 22%, 8%, and 10% (Miljøpakken, 2020). In 2022 they were 57%, 24%, 7%, and 9% (Miljøpakken, 2023a), and in 2024 they more sharply changed to 52%, 26%, 8%, and 11% (Miljøpakken, 2025).

These surveys coincided with the beginning of Trondheim’s strong regional cooperation in 2009 (called “Miljøpakken”) towards the shared goal of deemphasizing car-oriented development and more strongly investing in infrastructure for sustainable modes. This is also when the municipal-level planning started more intently including measures towards increasing the use of sustainable modes and decreasing the use of the car, including stricter parking regulations. Trondheim has also viewed parking standards, specifically, as a primary tool to reduce car traffic since 1994 when they decided to convert minimum parking requirements for office buildings to maximums in all but the most outer zones. Their use of parking standards also became more consistently and progressively restrictive for car parking after 2009 (Trondheim Kommune, 2018; Hanssen & Christiansen, 2013; Trondheim Kommune, 2026a).

In any case, Trondheim is interesting as a comparison city that has been successfully shifting travel habits towards more sustainable modes, especially public transport, largely through policies that are coordinated at the regional level.

7.3.2 *Key policy documents*

The structure of the land-use and transport planning system in Trondheim is relatively complicated and has a strong regional dimension, seen in Figure 7.7 below. The regional urban growth agreement (“Byvekstavtale”), first ratified via Miljøpakken in 2019, is currently perhaps the most foundational document for mobility-related planning and it establishes the overarching goal of zero-growth in car traffic for all municipalities in

Trondheimsregionen. That is, that all growth in traffic shall be accommodated by sustainable modes rather than by the car (Miljøpakken, 2023b). This agreement also establishes several sub-goals related to transport and land use, legally-binding guidelines which outline approaches to be used in all municipal-level planning in the region, and how actions related to transport and land-use should be coordinated between municipalities.

Importantly, this agreement also mandates that a coordinated regional parking policy shall be created, specifically to help limit car use and contribute to the zero-growth goal, and that all municipal transport, land-use, or parking plans adhere to this coordinated regional parking policy (Miljøpakken, 2023c). This document considers 7 key parking-related topics (park & ride, centrum parking, workplace parking, parking at public agencies, parking at sport facilities, residential parking, and management) and outlines several specific ways municipalities should approach each topic to contribute to the mobility-related goals specified in the regional urban growth agreement.

Apart from this, the regional urban growth agreement sets out a large and diverse portfolio of infrastructure projects around the region which are aimed at improving conditions for sustainable modes of transport. These projects are funded roughly 50% by the state, 40% by local road tolls, and 10% by the local municipalities. Finally, the agreement outlines a suite of indicators and yearly reporting standards related to the transport, land-use, and parking goals. Although it was not explicitly made following the SUMP guidelines, the regional urban growth agreement in Trondheim functions similarly to a SUMP in some ways.

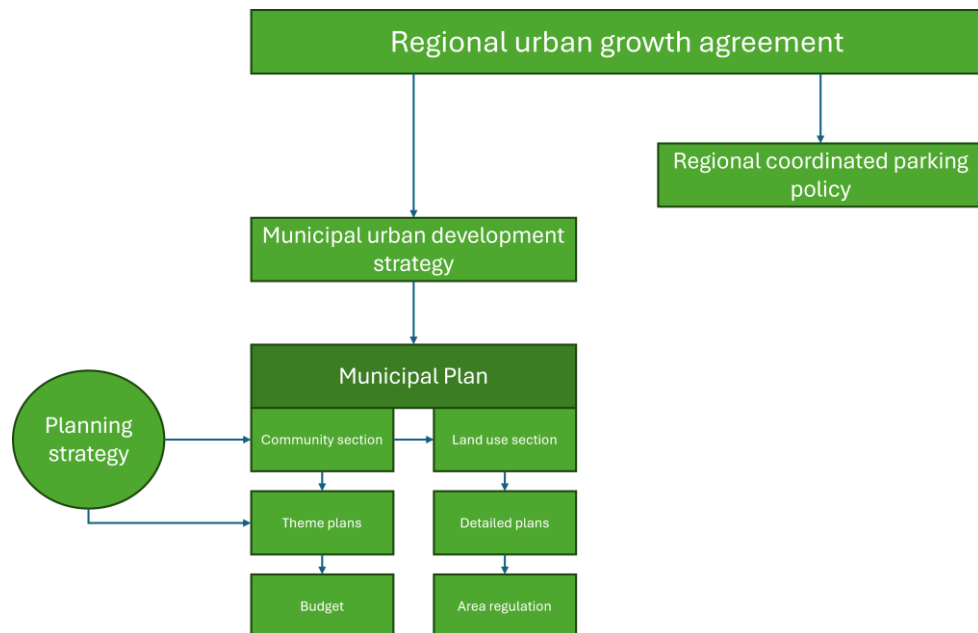


Figure 7.7: Planning document structure in Trondheim. Source: *Trondheim Kommune. (2022b)*

The contents of the regional urban growth agreement are formally transferred to Trondheim's municipal-level planning via the municipal urban development strategy ("byutviklingsstrategi"). This document also maps where the main development corridors shall be located within Trondheim specifically, in line with the guidelines and projects prescribed in the regional urban growth agreement (Trondheim Kommune, 2020). These documents then go on to inform the social part ("samfunnsdel") of the actual municipal plan. The samfunnsdel is formally regarded as the main strategic planning instrument in Trondheim (Trondheim Kommune, 2022b). This is where the transport and land-use strategies of the previous documents are listed alongside all other overarching goals or strategies of the municipality. Following from the samfunnsdel are theme plans

("temaplan") which more concretely expand on key topic areas and can include detailed action plans and policy packages – for example, an urban mobility action plan. Every 4 years, the overall planning strategy ("planstrategi") of the municipality is updated, which outlines whether the existing samfunnsdel will continue to be adopted, and exactly which theme plans shall be created, changed, or dropped.

Following the first regional urban growth agreement and the subsequent samfunnsdel, a theme plan called the mobility strategy ("mobilitetsstrategien") was called for in the planning strategy and came into force in 2022 (Trondheim Kommune, 2022a). If the regional urban growth agreement can be considered to fill the roll of a SUMP at the regional level, this mobility strategy document can be considered to fill the roll of a SUMP at the municipal level. In this document we find transport-related goals in their most specific form, and elaborated on in the most numerical detail. Goals, strategic approaches, and action plans forming cohesive policy packages are provided in 7 categories: walking, cycling, public transport, traffic calming, parking policy, streets as public space, and shared mobility.

Together, the action plan sections of the regional urban growth agreement (Miljøpakken, 2023b), the approaches to parking outlined in the coordinated regional parking policy (Miljøpakken, 2023c), and the municipal mobility strategy (Trondheim Kommune, 2022a) essentially provide a full picture of the transport-related policies and planned actions in Trondheim. All of these documents then go on to inform the land-use part ("arealdel") of the municipal plan, which formalizes the land-use related development priorities presented in the regional urban growth agreement and municipal urban development strategy. The arealdel includes a suite of legally-binding development guidelines, a detailed development map, as well as the parking standards.

7.3.3 Key goals

As in Reykjavík and Umeå, transport and land use are closely linked in Trondheim's policies. The objectives also extend to climate issues, public health and quality of life. The main focus in transport matters is a so-called zero-growth target, which means that increased demand for transport due to population growth must be met with sustainable modes of travel without increasing car traffic. The urban growth agreement sets out three main objectives that support this focus:

1. That the share of environmentally friendly modes of travel increases faster than the population in the agreement area.
2. To reduce the need for travel and to facilitate and ensure safe journeys with environmentally friendly modes of travel through integrated planning of development and transport.
3. To promote a climate-friendly, healthier, safer and more accessible city.

The objectives are all interconnected and support a main focus of changing travel habits towards sustainable modes of travel and reducing the importance of the private car.

7.3.4 Key policy instruments and tools

The main policy instruments for achieving Trondheim's objectives are set out in the urban growth agreement, coordinated regional parking policy and the municipality's mobility strategy. This section will review the measures and tools that are planned to be used to promote changes in travel habits, with an emphasis on parking policy. Their interplay is discussed in more detail in section 7.3.5.

7.3.4.1 *Measures to improve sustainable modes of transport*

The measures found within the action plans that are aimed at directly improving conditions for non-car modes are numerous and diverse. The breadth of infrastructure projects and initiatives within this category can perhaps be attributed to the strong regional-level cooperation and road-toll financing system embodied in the regional urban growth agreement and Miljøpakken, as described in section 7.3.2. Measures within regional-level documents have impacts at both regional and municipal levels, and the same is true for measures in the municipal-level mobility strategy to a lesser extent.

Although there are planned measures to improve all sustainable modes, there is a special emphasis in Trondheim on solidifying the new BRT system. Since the main focus of this report is car parking, these measures to improve sustainable modes will not be exhaustively described here, but they include for example: establishing requirements for traffic calming on all streets that are not key car traffic arteries, increasing the number of pedestrian streets ("gågater"), building/strengthening shortcuts for walking traffic ("snarveier") where potential for walking is high, establishing legal priority of walking traffic in the development of areas near local centres and schools, strengthening bike path networks and bike parking around local centres, expanding winter maintenance of the bike network, expanding bus route coverage, increasing frequency on key bus routes, building large sections of bus priority lanes on several key streets, eliminating taxation on benefits where employers pay for employees' public transport tickets, and strengthening train frequencies and connections with the main bus network.

There is also an apparent emphasis on a variety of tools that have more to do with information or encouragement. These are also mostly coordinated and funded at the regional level via Miljøpakken and involve things like general subsidies for bicycles and bike equipment, advertising campaigns highlighting the cons of car ownership and the benefits of sustainable modes, as well as transparency-related tools such as a web map where *all* progressive infrastructure projects can be viewed in detail (see Miljøpakken, 2026).

7.3.4.2 *Parking standards*

Similar to other case studies, parking standards play a key role in the approach of Trondheim towards changing travel habits over the long term. Parking standards in Trondheim became consistently and progressively more restrictive for car parking after the establishment of Miljøpakken around 2009 (Trondheim Kommune, 2018; Hanssen & Christiansen, 2013; Trondheim Kommune, 2026a). Since then, following the regional urban growth agreement in 2019, the zoning system for the parking standards has become more expansive – now including up to 6 different functional zones instead of 3. This was done to align with the more recent, multi-layered land-use development strategy which considers the main centrum separately from various other local centums (see Trondheim Kommune, 2020). Car parking maximums were also imposed across most building types, and in all geographical zones at this time. The most recent parking standards in Trondheim (Trondheim Kommune, 2026a) can be viewed in Tables 7.8 and 7.9 below.

The geographical zones in Trondheim are numerous and are based on both localized development centres and proximity to main thoroughfares for public transport. Geographical differentiation of parking standards is applied most of all to residential developments, less so for schools and healthcare facilities, and not at all for offices, businesses, and other private services.

Table 7.8: Parking standards in Trondheim, residential. *Source: Trondheim Kommune. (2026a).*

Category (not including guest spots)	Per 100m ²		Per apt.	
	Min. car parking	Max. car parking	Min. bike parking	Min. bike parking
Zone 1a (Centrum)	-	0	3	1,5
Zone 1b (Nearby centrum)	-	0,4	3	1,5
Zone 1c (Local centre)	0,1	0,7	3	1,5
Zone 2 (Nearby public transport artery or local centre)	0,2	0,9	3	1,5
Zone 3 (Other development areas)	0,4	1,1	3	1,5
Single-family house	2 per unit	-	-	4
Zone 4 (Other)	0,6	1,5	3	1,5
Single-family house	2 per unit	-	-	4

The residential car parking standards (Table 7.8) are relatively simple, almost always assessed per square meter rather than per housing unit, and are not divided into categories according to apartment size or if the building is a single family house, except in the most outer zones. In most cases both a minimum and a maximum apply. Parking standards start very strict in and around the centrum – it is actually not allowed to build any parking in the centrum itself – but a small minimum exists for the other local centres and beyond. Minimums increase sharply with each subsequent zone by 50-100%. Parking maximums by contrast do not grow as sharply between most zones, increasing by about 20-30%. Minimum bike parking requirements are on the other hand consistent across all zones, where the higher value between 1,5 per apartment or 3 per 100m² is used. Bike parking minimums are generally much higher than car parking minimums – by a factor of 30x in local centres, 15x nearby them or public transport corridors, and 5x - 7,5x elsewhere. Bike parking minimums are only 2x greater than car parking minimums for single family homes in the outer zones. It should be noted that the values in Table 8 do not include a small amount of guest parking, which must be evaluated separately in each case and always entails a minimum of 1 visitor parking place per developed residential building

Regarding car parking requirements for commercial buildings (Table 7.9), the maximums in Trondheim are relatively low and often consistent across geographical zones. The main categories of office, business, and other private service have the same maximums across every zone. This relates to Trondheim's plans to concentrate development of these kinds more so in the dense zones 1 and 2 – especially offices (see Trondheim Kommune, 2020). For reference, the maximum here of 1 parking place per 1000m² of office building is the same as the maximum imposed in Oslo, in their city centre. The difference is that, in Trondheim, this strict maximum does not get alleviated in outer areas.

Table 7.9: Parking standards in Trondheim, commercial. *Source: Trondheim Kommune. (2026a).*

Category, per 1.000m ²	Zone 1 (Centrum + local centres)		Zone 2 (Nearby public transport artery or local centre)		Zone 3 (Other development area)		Zone 4 (Other)	
	Max. car parking	Min. bike parking	Max. car parking	Min. bike parking	Max. car parking	Min. bike parking	Max. car parking	Min. bike parking
Office	1	25	1	25	1	25	1	25
Industry	M	M	M	M	M	M	M	M
Warehouse	M	M	M	M	M	M	M	M
Commerce (shop/business)	10	30	10	30	10	30	10	30
Private services	5	30	5	30	5	30	5	30
Hotel	M	M	M	M	M	M	M	M
Pre-schools	1	30	5	30	20	30	30	30
Primary schools	1	0,4 per employee + 0,33 per student	1	0,4 per employee + 0,33 per student	2	0,4 per employee + 0,33 per student	2	0,4 per employee + 0,33 per student
Secondary schools	1	0,4 per employee + 0,7 per student	1	0,4 per employee + 0,7 per student	2	0,4 per employee + 0,7 per student	2	0,4 per employee + 0,7 per student
Universities	M	M	M	M	M	M	M	M
Healthcare facilities	3	10	5	10	7	10	8	10
Sport facilities	M	M	M	M	M	M	M	M
Cinema	0	35	0	35	1	35	2	35

Trondheim also differs from Reykjavík in which categories of building must be evaluated case-by-case and which categories instead receive clear maximums. In Trondheim, specific maximums apply to preschools, primary schools, and secondary schools. This is not the case in Reykjavík. The bike parking amounts in Trondheim are also aimed at getting more children to bicycle as the children progress from primary school through secondary school.

The commercial categories whose car parking maximums increase the most towards the outer areas are preschools and healthcare buildings. Bike parking minimums are generally much higher than car parking maximums in most building categories, and mostly across all zones. The difference is most extreme for offices and cinemas (25x – 35x) and least extreme for business (3x) or healthcare (1,25x – 3x). It should however be noted that an additional minimum of 1 car parking space per building must be provided for offices, businesses, and private service, and 1 space per 1.000m² must be provided for schools, healthcare buildings, and cinemas. Those provisions are for commercial vehicles and are not reflected in the values in Table 7.9.

Lastly, unlike in Umeå or Reykjavík, there is no attempt to incentivise developers to implement “pull” measures for the improvement of other sustainable modes (other than the bike parking requirements) via the parking standards.

7.3.4.3 *HjemJobbHjem imposing prices on workplace parking*

Similar to Umeå, using parking policy as a tool to reduce the number of people who drive a car to the workplace is a key emphasis in the plans of Trondheim. However, Trondheim takes a different approach on this matter. Beyond the strict parking maximums for office buildings, a main instrument for targeting workplace parking is an initiative operated by Miljøpakken called HjemJobbHjem. This initiative offers employers in the region some specific benefits in exchange for agreeing to restrict car parking at their workplace. That is, the public sector negotiates directly with employers to simultaneously disincentivise car use and incentivise use of other transport modes.

Agreements are formulated on a case-by-case basis, but employers generally must agree to impose a price or otherwise restrict workplace parking, as well as survey company travel habits yearly. In return they can receive free or favourable prices on company e-bikes, bike services to offer employees, prizes to offer in competitions to encourage sustainable travel (e.g. hjólað í vinnuna), and a 30-50% subsidy to construct sheltered bike parking facilities. They can additionally offer employees a 25% discount on public transport tickets, 50% discount on the bikeshare system, and a discount on winter cycling equipment such as studded tires (AtB, n.d.). The scheme has demonstrated some success. At least 62 companies have taken part since 2019 and among them, between 2021 and 2025, the share of car trips to work among their employees decreased by 40% (Trondheim Stafetten, n.d.). This could be up to twice as effective as a similar scheme that does not impose any requirements to restrict car parking, as mentioned in section 6.2 of this report.

Apart from HjemJobbHjem, Trondheim has also targeted workplace parking by initiating plans to impose benefits taxation on company-provided parking spots (Trondheim Kommune, 2022a). I.e. the employee would be taxed for a workplace parking spot in the same manner that, for example, a company-provided cell phone would be taxed. This is an alternative way to impose costs on parking that are directly felt by the employee and which could influence travel habits as a “push” measure. However, it does not appear that this planned benefits taxation has yet been put into force, so it cannot be described further here.

7.3.4.4 *Fee zones, pricing, and on-street restrictions*

Increasing restrictions on street parking is an important element of Trondheim's action plans for affecting travel habits. This takes the form of increased and intensified parking fees, time limitations, and the expansion of resident-only zones.

In central Trondheim a time limit of 3 hours is generally applied for street parking, and the hourly price for it increases with each consecutive hour i.e. 56 NOK for the first hour, 67 NOK for the second, and 79 NOK for the third. This is to discourage long-term parking and boost the efficiency with which space is used. In other local centres within Trondheim municipality there are traditional fees, and in the local centres of the outer municipalities there are new time limitations and plans to eventually introduce fees on existing free parking.

Plans in Trondheim aim to increase the cost of using a car across the board, and mention a general increase in parking fees, in combination with increased road tolls, as a main instrument for this (Trondheim Kommune, 2022a). As an example of Trondheim's actions in this regard, the current street parking prices referenced above are the results of price increases relative to 2020/2021 values by factors of 50%, 65%, and 50% respectively (Trondheim Parkering, 2021).

Additionally, street parking availability is also generally reduced in and around the centrum by the planned spreading of resident-only zones (“boligsoneparkering”). These are areas in which only residents who pay for a monthly resident card shall have permission to park; residents can park anywhere on the street where there is not any additional signage indicating a fee and non-residents can only park where such additional signage exists. The expansion of these areas is also intended to mitigate possible spillover effects where people or commuters seek out free parking in outer areas in response to increased restrictions and HjemJobbHjem around local centres. In one recent resident-only zone expansion coinciding with fee increases, car parking spaces available to non-residents were decreased from 400 to 300. This correlated with a decrease in circulating traffic within the resident zone by 38% and a doubling of the turnover rate at parking spaces around the zone where fees were increased (EU, 2022).

7.3.4.5 *Park & ride and public parking garages*

While parking restrictions are imposed on streets and workplaces, Trondheim plans to accommodate remaining car traffic either (a) nearby local centres by making parking garages there more attractive, or (b) outside of local centres by making park & ride facilities more attractive. In both cases, emphasis seems to be on improving the user-friendliness of the existing infrastructure itself and making the price more favourable, rather than focussing on building more facilities. At public parking garages in central Trondheim, hourly fees are made to be the same as they would be for the first hour of on-street parking – so still relatively high - but the hourly price does not progressively increase with every hour as it does on the street. Monthly passes for non-residents are also available to a greater extent at these garages than on the street. In both cases, longer-term users – such as commuters – are incentivised to use garages instead of the street. Meanwhile, park & ride facilities have already been made available at virtually every regional commuter rail station and discounts for public transport ticket holders – or restricted parking capacity for non-ticket holders – incentivise the use of these facilities as intended.

7.3.5 *Interplay of policy instruments and intended effect on travel habits*

The main parking tools described above, alongside tools for improving other modes, contribute to a comprehensive overall approach for changing travel habits. This section will describe and visualise how these tools are integrated to work together as a whole, with a focus on parking.

First, relatively strict parking standards are applied to control access to car parking over the long term, and the standards for residential and commercial developments are not strict in the same ways. Residential developments are differentiated from each other at a high geographical resolution, i.e. 6 different geographical zones apply, and in most cases a small minimum is combined with a maximum. This allows Trondheim to restrict household parking intensely (but at varying degrees) in very precise areas, and less intensely elsewhere. Parking standards for schools and healthcare facilities also retain some of the geographical variability associated with residential developments, but offices, businesses, and other services each have only one, relatively strict standard that is applied across all zones. This difference in flexibility between commercial and residential parking standards underpins Trondheim's focus on incentivising commercial developments to be located in areas that are most accessible for public transport and bike infrastructure, and reducing access to car parking at these locations – especially for workplaces (offices).

In tandem with these mandatory, long term restrictions imposed via parking standards, workplace parking and travel habits is also targeted in the near/medium term on a more

voluntary basis via the HjemJobbHjem initiative. This serves both to restrict the price or quantity of workplace parking while also removing barriers to using other modes of transport. The price of workplace parking is also targeted by the planned, but not yet implemented, benefits taxation on workplace parking. Thus, Trondheim combines multiple tools to restrict workplace parking in both price and quantity across various timescales, and at varying degrees of voluntariness. Spillover effects of these workplace-specific restrictions are meanwhile controlled via the broader plans to intensify the price and time restrictions of street parking, spread resident-only parking zones and therewith remove some public street parking spaces to make way for public spaces or infrastructure for other modes of transport. Simultaneously, improved user-friendly designs and pricing at public parking garages and park & ride facilities provide alternative, shared-use parking solutions to attract some displaced car drivers.

These measures that serve to restrict car parking in general and improve space use efficiency thereby also support and synergize with the more specific and intense restrictions on workplace parking. Although the degree to which space is used efficiently in resident-only parking zones, specifically, is questionable. The parking-related instruments all together form a strong system of “push” measures across both the long and short/medium term, with some “pull” measures also mixed in.

On the other hand, Trondheim also balances this system of “push” measures by implementing a broad variety of infrastructure improvements (especially for public transport), promotional campaigns, and subsidies. These are financed in large part by road tolls, which themselves are also somewhat used as a “push” measure to discourage car travel. All of this rests on top of a land use planning strategy that concentrates developments across multiple local centres or along public transport corridors, as well as land use guidelines that inform individual detailed plans and serve to make the built environment more attractive and safe for people that are not inside cars.

The entirety of this approach was interpreted through the lens of the theory and planning practices presented in earlier sections of this report and the overarching goal of changing travel habits towards being more sustainable and less car-dominated. This interpretation is visualized below as a single interconnected system or “theory of change” (Figure 7.8). There, 4 main categories of action (blue) are seen to contribute to the main goal of changing travel habits (green), via several different “hows” (grey). The policy instruments and tools described in section 7.3 are pictured in pink, and these are the main *planned* sources where the “hows” are actually implemented. Connections between boxes represent either a causal connection between a tool and an effect, or otherwise where multiple tools are dependent on one another. To focus the subject matter and improve readability, more detail is provided for the elements related to parking, and less detail is provided for the other elements.

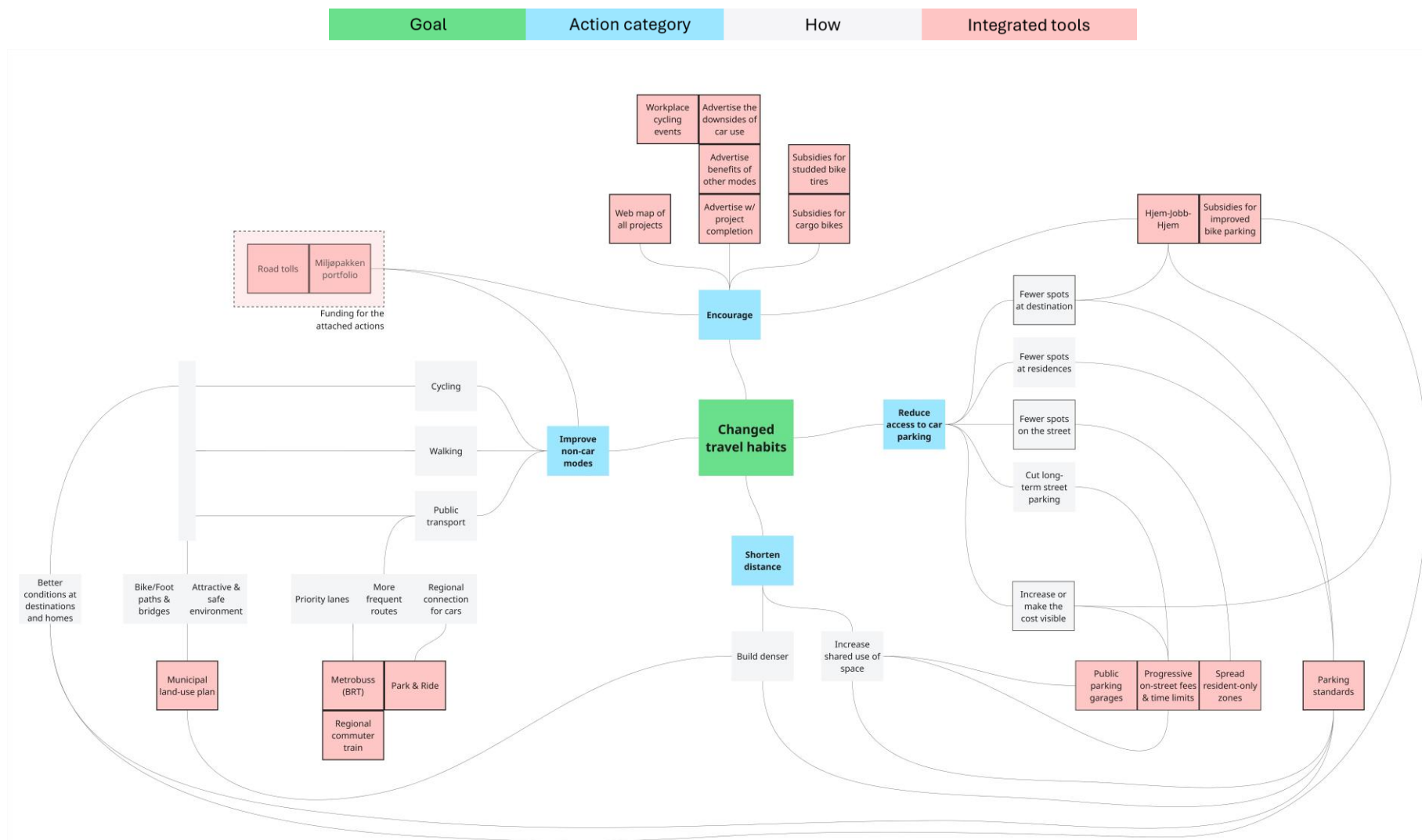


Figure 7.8: Trondheim's system for changing travel habits.

It was observed that Trondheim places particular emphasis on three key points regarding parking in its policy on changing travel habits, which are identified on the right-hand side of Figure 7.8:

1. Reduce access to parking at destinations, especially at offices or workplaces

In the long term, strict maximum requirements are set for the number of parking spaces at these buildings, and in the short term through agreements with employers via HjemJobbHjem.

2. Increase and/or make the price of parking more visible, especially at workplaces but also on the street

The aim is both to reduce the incentive to use a private car and to prevent the demand for parking from shifting to nearby streets.

3. Overall reduction in available on-street parking

The aim is to reduce car use and prevent parking restrictions at workplaces from increasing demand for on-street parking. At the same time, space can be freed up for the infrastructure shown on the left-hand side of the diagram. The main control measure is the expansion of residential parking zones.

When it comes to parking measures as a whole (pink), they seem to be divided into three groups: parking standards for long-term development, general management of on-street parking and garages, and negotiations aimed specifically at workplaces.

These rather strict parking measures are met with infrastructure improvements, promotional campaigns and subsidies on the left and at the top of the diagram. All of this is largely financed by road tolls, which themselves are also used to some extent to influence travel habits. But with this funding, as in both Reykjavík and Umeå, Trondheim strives to improve safety, reliability and quality for pedestrians, cyclists and public transport through various methods – especially with a powerful BRT system. Trondheim's land-use plan also directs the majority of development towards dense construction along major transport corridors, but also particularly dense around many different local centres. Trondheim also places a relatively strong emphasis on measures aimed at encouragement or incentives, as can be seen at the top of the diagram. This includes a variety of subsidies and advertising campaigns that are all coordinated at a regional level.

Overall, like Umeå, Trondheim combines this wide range of “pull” measures related to sustainable modes of transport, density and incentives, with a selection of “push” tools where parking is used to make the car less competitive both in general (e.g. general fee increases) but especially for employees in areas with good access to non-car modes of transport (e.g. parking free purchase in Umeå or strict parking standards and HjemJobbHjem in Trondheim). Trondheim focuses on workplace parking in both the long and short/medium term, whereas Umeå only does so in the long term.

8 Comparison & opportunities in Reykjavík

To shed light on different ways to promote a shift in travel habits, the City of Reykjavík's policy was compared with that of Umeå in Sweden and Trondheim in Norway. The cities were chosen because they are in similar northern latitudes to Reykjavík and have worked systematically to increase the share of sustainable modes of transport. Despite their different sizes, they face similar challenges related to high car use, urban sprawl and climate targets. Umeå and Trondheim are particularly interesting for comparison as both cities have clear policies and action plans for parking that are linked to their goals of changing travel habits. However, the cities take different approaches and emphasise different policy instruments, combining them in different ways. The comparison therefore provides an opportunity to examine not only which policy instruments are used, but also how they work together and how the overall policy is structured.

In this section, the case studies from section 7 as well as the literature reviewed in section 6 are used to identify strengths in Reykjavík's overall official strategy for changing travel habits, as well as gaps in that strategy – especially with regards to how parking policy is integrated within it.

8.1 Overall goals and policy structure

The main objectives in the three cities are in many ways comparable: to reduce the importance of the private car, increase the share of sustainable modes of transport, reduce emissions and integrate the development of urban areas and transport. The main difference therefore lies not in the objectives themselves, but in how they are implemented through individual policy instruments and measures. In Reykjavík, fairly clear objectives for changing travel habits are set, but their implementation is spread across many policy documents, plans and projects. The difference between the cities is therefore partly related to which policy and action plans are in place and how they are linked and presented.

Regarding how all of the tools are integrated and packaged via municipal-level planning documents, the strategies expressed in the main planning documents of all three cities, including Reykjavík, strongly emphasize the importance of integrating actions in the domains of urban environment, density, transport infrastructure, and parking. In this way, all three cities' resemble SUMPs and go on to implement a strong mixture of "pull" measures, with at least some "push" measures. However, the document structure in Reykjavík is not as clear as that of the two comparison cities – at least not immediately.

In Umeå and Trondheim, clear diagrams that demonstrate the structure of the relevant planning and action plan documents (i.e. see sections 7.2.2 and 7.3.2 of this report) is provided in their main planning document. Through this structure, it is also easy to understand what mobility action plans exist, or can be expected to exist. Perhaps most importantly, all action plans and policy documents that are relevant to urban mobility are collected on a single webpage, or an obviously connected set of webpages, and can be easily identified, even without knowing the document structure.

In Reykjavík, any strategic- or action-plan documents of this kind, apart from the A and B parts of the municipal plan, are somewhat difficult to learn about. Stefna um Gönguvæna Reykjavík, for example – Reykjavík's action plan for improving walkability – was not clearly mentioned in other planning documents and came as something of a surprise in early 2026. Reykjavík's biking action plan is another example, but it is at least mentioned briefly in the text of the municipal plan. There is seemingly no diagram or planning strategy available to the public that explains which documents of this kind shall be created and put into force. They are likewise spread across various webpages without obvious links between them.

When it comes to enabling the integration, implementation, and follow-up of Reykjavík's various action plans, this lack of structural transparency is perhaps not helpful.

Regarding the relationship between regional and municipal mobility planning, Trondheim offers an interesting comparison with Reykjavík. The transportation agreement in the capital area and Miljøpakken are quite similar in key ways. Both are ambitious, regional-level agreements that essentially function as investment portfolios for new sustainable transportation infrastructure (but also new roads) and, in the case of Miljøpakken, several other measures to encourage people to use non-car modes, and even parking-related measures such as HjemJobbHjem. Both are financed in large part by the state, and proportionally by the constituent municipalities, though Miljøpakken also gets about 40% of its funding from road tolls in the region. The biggest difference, however, is that Miljøpakken is interlinked with Trondheim's regional urban growth agreement, and a regionally coordinated parking policy. Both of these are legally binding documents that essentially require all of the values expressed via Miljøpakken about promotion of sustainable modes, urban density, and discouragement of car use to be carried over into all municipal level planning and, among other things, a multifaceted municipal parking strategy is required to be created to serve these goals. So, the SUMP principle of regional coordination (i.e. planning for the entire "functional urban area") is more so fulfilled in Trondheim, especially when it comes to parking policy. In the Capital Area, the administrative structure is different. Some important transport projects and objectives cover the region as a whole, while land use, parking management and various other control measures are largely the responsibility of individual municipalities. There is no similar requirement for a coordinated parking policy for the municipalities in the Capital Area.

In the context of this report, the most significant difference on the topic of policy structure is that both comparison cities have a multifaceted parking strategy that is coupled with a multifaceted parking action plan. One of the most important differences highlighted by the comparison relates to the structure of the parking policy. Both comparison cities have a comprehensive parking policy linked to an action plan on parking issues. Reykjavík does not have a comparable comprehensive parking policy or action plan. For example, the city has set a numerical target for reducing parking spaces on public land, but this has not been followed up with a comprehensive implementation plan that defines where, when and how the spaces should be reduced. The Municipal Plan does, however, briefly refer to the fact that such a plan will be prepared later (Reykjavíkurborg, 2021a). So far, the reduction of spaces has rather been part of individual planning and urban space projects.

Reykjavík also does not regularly survey total parking supply in the city, whether on public land or otherwise (Reykjavíkurborg, 2023b) – they only measure the number of *paid* parking spots on public land. Umeå and Trondheim, conversely, regularly monitor some form of total parking supply in central areas every 2-3 years (Umeå Kommun, 2013; Miljøpakken, 2023b). These measures would be important for guiding the implementation of a diverse parking action plan. Rather than a multifaceted parking strategy or action plan, Reykjavík's official planning documentation on the topic of parking is essentially limited to the parking standards (Reykjavíkurborg, 2026a), and the rules that direct parking fees and time limits to maintain on-street parking occupancy at around 60-85% (Reykjavíkurborg 2019a; 2019b). In contrast to the comparison cities which direct a larger variety of parking policy instruments with clear strategic intention to shift travel habits, it is clear that Reykjavík currently has access to many tools – such as public parking garages, parking free purchase schemes, or transport contracts ("samgöngusamningar") – that it may not be directing with strategic intention, due to a lack of any parking strategy or action plan document.

8.2 Policy tools that “pull”: to increase urban density and encourage use of sustainable modes

All three cities seem to put similar emphasis on increasing urban density, promoting public transport via BRT or BRT-like improvements, improving cycling infrastructure, and improving walkability. There are some differences between what is emphasized and to what degree, but all three cities plan to implement a variety of large “pull” measures to encourage the use of all non-car modes of transport. Thus, this may not be seen as a primary distinguishing factor between the cities in the context of our analysis. However, some differences are worth noting.

Firstly, Trondheim uses some parking policy instruments as “pull” measures in addition to their more typical use as “push” measures. Park & ride is a simple example of parking policy as a “pull” measure, where new parking is used to encourage more people to use public transport. However, more interestingly, Trondheim uses their parking standards as a “pull” measure to increase urban density in a much more focussed manner than in Reykjavík or Umeå. In Trondheim, car parking maximums for office buildings are especially low and do not vary based on geographical zone, which leads these developments to be built much more so in the densest development areas with the best access to non-car modes. Thus, the parking standards help improve the quality of non-car modes for commuters – they don't *only* reduce parking supply. Parking standard restrictions are not used in exactly this way in Reykjavík or Umeå. Trondheim's more extensive geographical zoning system for other kinds of development, which is based on multiple local centres, may also help to make the areas where workplaces are eventually located even more dense and accessible for non-car modes of transport.

Secondly, the current and relatively advanced quality of non-car transport infrastructure in the comparison cities seems to influence what other “pull” measures they can currently focus on. Umeå seems to put special emphasis on building bike parking at all public transport stops to promote “bike & ride”, alongside improvements to bus route frequency and bus priority infrastructure. Umeå has already established a strong cycling culture, so to further enable cyclists with long-distance options via public transport is a logical next step. Trondheim, on the other hand, appears to currently have the strongest and highest quality public transport system of the three cities, with some segments of BRT recently coming into use and more on the way. Although Trondheim still plans to continue improving infrastructure for non-car modes of transport, they also implement a more numerous and diverse set of encouragement measures that are aimed at incentivising travellers to start using the infrastructure that already exists. This includes a number of one-time subsidies for private citizens and companies, concerted advertising campaigns, and the incentives within the HjemJobbHjem initiative. The relatively advanced quality of the public transport system in Trondheim is perhaps what enables this pronounced emphasis on encouragement, compared to Reykjavík or Umeå. Reykjavík should consider ramping up their use of such measures, using Trondheim as an example, as they further develop their public transport or cycling infrastructure.

The current state of non-car transport infrastructure also likely supports the ability of the comparison cities to be more ambitious in their plans to use “push” measures such as higher parking fees, or the rapid introduction of workplace parking fees via HjemJobbHjem, to affect travel habits in the short/medium term. This should be kept in mind throughout the next section of this report.

Lastly, the fact that approximately 40% of the funding for most “pull” measures in Trondheim comes from a single “push” measure – road tolls – cannot be ignored. Although a deeper discussion of road tolls falls outside the scope of this report, it should be noted that these are used in the plans of Trondheim both as a “push” instrument, akin

to parking policies, but also as a substantial funding instrument where road toll revenues are specifically earmarked for sustainable “pull” measures. This tool should, of course, be considered for use in the capital area – especially as infrastructure for non-car modes continues to develop and quality alternatives to the car become more available. However, beyond being briefly mentioned as a “push” instrument, road tolls do not feature very prominently in Trondheim’s municipal mobility strategy; parking policies feature much more prominently. As such, road tolls will not be discussed further here.

8.3 Policy tools that “push”: to discourage car use in favour of sustainable modes

In general, Umeå and Trondheim were both more specific and ambitious in their explicit intentions to use parking policy to discourage car use in favour of other modes of transport. Reykjavík only really explicitly intends to use parking standards to do this – generally restrict total parking supply over the long term and encourage a slow shift away from the car. As stated before, on-street parking fees and time limits are also used strategically in Reykjavík, but only to optimize the rate at which existing parking is used. That is, not to discourage its use or change the amount that is supplied; to change travel habits. In contrast, the comparison cities leverage a much wider variety of parking tools, specifically to discourage car use, which also function in the short/medium term in addition to the long term.

If Reykjavík is to make a comprehensive parking strategy and action plan, as recommended above, the case studies and literature review provided in this report offer guidance on what to include in such a plan. This section will address what were identified as key points regarding the planned use of “push” measures across all three cities, and identify ways that Reykjavík could start using “push” measures more strategically, to complement the many “pull” measures planned in Reykjavík. As Reykjavík implements more “pull” measures to encourage the use of non-car modes over time, such as Borgarlínan (the planned BRT system), the “push” measures described below will become even more tenable and effective. Some are perhaps more suitable further into Reykjavík’s development, while others could be implemented immediately.

8.3.1 Targeting workplaces: supply, fees, and walking distance

In both of the comparison cities, the use of parking policy specifically to target workplaces and commuters is central to their parking strategies. As identified in section 6 (especially 6.1.1 and 6.2), there is strong evidence to suggest that parking at workplaces is a key leverage point for shifting travel habits, and documentation in the capital area has already acknowledged this. Despite this, however, Reykjavík has not clearly integrated workplace parking into their strategies or action plans for changing travel habits.

Reykjavík could, however, somewhat affect workplace parking through their current parking standards. There are two areas in the current document that stand out. First, Reykjavík currently suggests that residential and commercial developers lease parking spaces to building users or offer them for purchase, separately from other costs associated with the real estate. As reviewed in section 6.2, this has the potential to reduce total parking supply at individual workplaces or, if the costs are transferred to the users, total parking use by individual employees at commercial developments. However, no direct incentive for developers to do this is provided in the current parking standards, such as suggesting a reduction in overall parking amounts. This is despite the fact that this measure would likely correspond to a reduction in parking demand, on average.

Secondly, and perhaps more importantly, the current parking standards do suggest a reduction in overall parking amounts if developers agree to require users of the building

to make transport contracts (“samgöngusamningar”) available to employees. As argued in section 6.2, this is a tool with high potential to impose costs on workplace parking in a manner that is more acceptable to the public compared to traditional daily parking fees, but its effectiveness depends on the exact terms of the contract and the degree to which it is enforced.

Currently, these contracts do not have a standardized form, and the degree to which they are enforced is unclear. That is, there is probably a high degree of untapped potential related to how transport contracts can be intentionally used to impose costs on workplace parking and shift travel habits. Namely, contracts should offer visible lump-sum payments instead of public transport tickets, contracts should be clearly and obviously enforced (as is done with any other kind of parking fee), and the money that an employee is missing out on by not signing a transport contract should be made clear to them. These were identified as necessary conditions for transport contracts to impose true costs on workplace parking, and to produce real shifts in travel habits accordingly. In short, apart from the fact that Reykjavík could benefit from a more multifaceted strategy to target workplace parking, the two tools it currently uses that happen to affect workplace parking could also be more successful if adjusted in the ways outlined above.

But the examples of Umeå and Trondheim demonstrate that a multifaceted approach to targeting workplace parking can involve much more than just this. In Umeå, workplace parking is targeted mainly through the use of their loan-based parking free purchase scheme, which is mandatory for commercial developments in certain areas, but otherwise financially incentivised for any developer. Through this scheme, the municipality funds shared-use parking facilities and gains direct control over the workplace parking of many developments. With this control, they strategically impose parking fees on commuters and increase the walking distance between parking and the workplace.

As reviewed in section 6 of this report, there is good evidence to suggest that this would have a significant impact on reducing car use. The free purchase scheme also integrates “pull” measures for the improvement of non-car modes, incentivising developer-lead “pull” measures that are especially synergistic with more-distant/fee-based parking, and enabling municipality-lead “pull” measures to improve accessibility to/from the property and potentially boost property values. Meanwhile, Umeå restricts on-street parking with higher parking fees, stricter time limits, and forbidden zones to control possible spillover effects of this, in addition to disincentivising car use in general.

As outlined in section 6.7, Reykjavík already has a history of using a free purchase scheme, but specific adjustments to it could enable a more strategic and successful use of the scheme along these lines – arguably without resorting to parking minimums. Namely: (1) the optimal price could be determined case-by-case in consultation with a publicly-owned parking company instead of having a single set price, (2) the price could be paid as a 25-year loan instead of a one-time fee, (3) further financial incentives could be provided via municipality-lead “pull” measures that increase property values, (4) the use of the free purchase scheme could be mandated for certain building types in certain areas, and (5) the allowed amount of parking supplied via free purchase could explicitly refer to the recommended amounts within Reykjavík’s parking standards, and on the condition that the amount has been reduced via “samgöngustefna”. Section 6.7 of this report provides further details on these points.

Trondheim targets workplace parking in yet another way, in the long term but also in the short/medium term. They use two strong tools to do this and, similar to Umeå, control spillover effects with other on-street parking regulations. First, as outlined above in section 8.2, Trondheim’s parking standards impose very strict parking maximums on offices, which do not change based on geographical zone. This results in a higher

proportion of workplaces tending to be located in areas that are prioritized for development, with the best accessibility for non-car modes – in addition to the fact that the buildings will have a rather limited parking supply. Evidence reviewed in section 6.1.2 suggests that this combination of “pull” and “push” could have a strong effect on shifting travel habits in and of itself, but it also maximizes the effectiveness of any future workplace parking fees.

To actually introduce those workplace parking fees, Trondheim uses their second tool, which operates in the short/medium term rather than in the long term. Through the HjemJobbHjem initiative, Trondheim directly negotiates with employers, offering them various subsidies and discounts related to non-car modes of transport, in exchange for the employer agreeing to introduce parking fees or otherwise restrict parking. In this, Trondheim allows employers to choose to introduce parking fees, rather than sometimes forcing them via a free purchase scheme as is done in Umeå. HjemJobbHjem was found to result in a 40% decrease in car modal share for commuting among participating companies. As argued in section 6.2, this could be twice as effective at shifting travel habits for an individual company compared to a similar scheme that provides incentives but does not impose workplace parking restrictions. Although, a scheme of the latter kind can still be successful and (probably) more popular.

In any case, this system of direct negotiations between municipality and employer could be promising in Reykjavík, especially if the familiar framework of transport contracts (“samgöngusamningar”) is involved, as indicated at the beginning of this section. Moreover, judicious use of strict parking maximums on certain kinds of workplaces can maximize the effectiveness of such a policy, in addition to contributing to shifts in travel habits on its own.

In general, Reykjavík's car parking standards are relatively generous to workplaces compared to the two comparison cities, since Umeå limits certain workplaces via the free purchase scheme and Trondheim limits most workplaces, and especially offices, via strict maximums.

8.3.2 ***Parking standards: specificity & breadth***

In several ways, Reykjavík's parking standard is relatively sophisticated compared to those of the comparison cities, and it exhibits many strengths. It is not minimum-based, which the evidence reviewed in section 6.1 suggests is highly beneficial both economically and for shifting travel habits over the long term. It also offers a relatively flexible system to incentivise developers to build less car parking when it is not needed and implement various “pull” measures that improve conditions for non-car modes of transport. Trondheim, for example, does not make such provisions at all in their mixed minimum/maximum-based parking standards, and Reykjavík includes parking reductions based on shared use while Umeå does not. The recommendation-based parking maximum system in Reykjavík is also unique and adds to this flexibility. Although this is a main strength of Reykjavík's parking standards, this review has found that further specificity could potentially increase effectiveness without sacrificing too much flexibility, and a wider breadth of provisions could be included. The flexibility in Reykjavík could sometimes be the result of language that is overly vague. In some cases, this seems to result in gaps within incentive structures and, in the worst case, it could leave the door open for weak arguments resulting in the allowance of more parking where it is not needed, rather than less. This section will list the key ways in which Reykjavík's parking standards differ from the other cities in terms of specificity and breadth, and make suggestions accordingly.

8.3.2.1 *Accessibility-based parking reductions*

Reykjavík's instructions lack some specificity and breadth compared to other cities on this topic. Reykjavík's standards recommend reductions in parking amounts based on whether a development in zone 1 is within 400 – 600 m of at least two public transport stops with a "high level of service", or in zone 2 within 400 m of at least one stop, but they do not define what a high level of service is. Other cities define this directly in their parking standards. Umeå, for example, defines it as any stop with at least 6 departures per hour at any peak hour. In Gothenburg, it is any stop with at least 6 trips per hour between 6:00-8:30 and 15:00-18:00 on weekdays. Having access to just one stop is also adequate for a reduction in parking amounts, in these cities.

Apparently, in practice, a definition of 10 trips per hour "on average" is suggested to developers during the "samgöngumat" process in Reykjavík (see EFLA, 2018b). If this is the case, it is unclear why this definition would not simply be included in the parking standards document itself to provide clarity for prospective developers and ensure that parking amounts are reduced when accessibility is indeed high. Moreover, this definition of 10 trips per hour would demand a considerably higher level of service than the definitions in the other cities above (especially considering reductions within zone 1 require at least *two* stops of this quality to be accessible). The definition is also still unclear about the time of day at which the service frequency should be calculated. These things could be easily changed in Reykjavík's standards, perhaps resulting in more consistent parking reductions.

More various kinds of accessibility could also be considered in Reykjavík's parking standards, as demonstrated somewhat in Umeå, and also in Gothenburg and Stockholm. In Gothenburg, it is not just proximity to high quality public transport that causes reductions in parking amounts, but also proximity to the main bike network in the city and proximity to a minimum amount of grocery stores, schools and healthcare services. In Umeå it is somewhat simpler, where a 10% reduction in parking amounts is suggested if the development is within 300 m walking distance of a grocery store. If there is adequate publicly available data, similar provisions could be added to Reykjavík's parking standards to further align the document with Reykjavík's integrated approach to changing travel habits – public transport is not the only "pull" measure that Reykjavík is planning to implement.

Stockholm provides an alternative to Gothenburg's more rigorous system, where a multifaceted calculation of accessibility is performed across the city ex-ante by the municipality itself, and this map then informs how geographical zones are partitioned at a high resolution. This way, developers don't have to calculate accessibility themselves. Both of these systems could result in a more accurate assessment of parking demand in Reykjavík, leading to a lower supply of parking where existing "pull" measures are best and therefore also leading to a higher degree of change in travel habits.

8.3.2.2 *Voluntary "pull" or "push" measure-based parking reductions*

On the topic of voluntary "pull" measures that are suggested to developers to reduce parking amounts, Reykjavík's system for this is again somewhat vague compared to other cities with similar systems reviewed here. Namely, other cities provide lists of several specific "pull" measures (and sometimes, "push" measures) which all correspond to various, specifically defined reductions in car parking. In contrast, Reykjavík's parking standards vaguely state that if *any* "pull" measures are implemented it is possible to reduce parking by 10%, and in some cases 15-20% if the set of "pull" measures is very multifaceted. "Very multifaceted" is not defined. This seems to result in a lack of clear incentives for developers to implement, for example, 3 "pull" measures instead of 2; if

both options still only reduce parking costs by 10%, why bother implementing an extra measure? This system also misses a chance to embed knowledge about which “pull” measures are most effective, and which are less effective. It would be desirable to clearly incentivise the most effective “pull” measures, and generally make incentives to provide sets of several “pull” measures clearer.

A simple alternative to Reykjavík's current system would be to list specific percentage reductions for each individual “pull” measure. This is done in Umeå, e.g. providing a bike service station corresponds to a 5% reduction in parking, while providing a private carshare vehicle for users of the building corresponds to a 10% reduction – which increases to 15% if the vehicle is also made accessible to the general public. Developers can mix measures to reduce parking by up to 40% total.

Stockholm provides a different, flexible system without sacrificing too much specificity. There, a list of 15 “pull” measures is provided, each corresponding to a specific number of points. When developers implement measures up to a total of 10 points, a specific reduction in parking amounts applies, then again at 20 points.

Gothenburg provides another good example. There, a list of 13-14 measures is provided, and the developer can choose any 3 among them in order to receive a specific percentage decrease in parking amounts. However, amongst those 3, they must include at least 1 measure that the city has designated as especially effective. After doing that, they can choose whether they want to do the same thing again, but needing only 2 measures total, and so again with 1 measure. Any of these alternative systems above could result in more numerous and more effective “pull” measures being implemented compared to what is incentivised under the current wording of the system in Reykjavík.

Even with Reykjavík's maximum/recommendation-based parking standards, the basic logic of the incentive is still the same as with minimums: to ensure developers that if they implement “pull” measures, they won't need as much parking and therefore don't need to spend as much in constructing it. It therefore makes sense to provide developers with specificity – specific numbers related to specific “pull” measures or sets of measures, with higher numbers or higher priority for better measures. Gothenburg is, in general, an excellent example to take inspiration from in this regard.

Apart from merely being more specific in what parking decreases apply and when, Reykjavík could also suggest a much wider variety of “pull” measures to choose from – and even some “push” measures. Currently, Reykjavík only explicitly provides developers with 6 “pull” measures to gain inspiration from: Providing access to a carshare parking spot used by a third party car sharing company, providing access to a private car that can be shared by users of the building, providing especially high-quality bike parking with a bike service station, ensuring that walking connections to nearby public transport are of high quality, discussing with the municipality about how to further improve this kind of accessibility, and requiring that businesses which use the building offer transport contracts to their employees (“samgöngusamningar”). Beyond these 6 items, Reykjavík encourages developers to come up with their own ideas. Other cities demonstrate that this list could be much longer, though, and a separate list could even be provided for residential developments vs office/workplace developments. Some especially interesting “pull” measures found in other cities' parking standards were:

- Information packets to inform new building users of all relevant “pull” measures. This is usually a pre-requisite in the parking standards of other cities reviewed here. This can also involve more regular advertising about the “pull” measures.

- Providing e-bike or cargo bike pools for users of the building, providing a long or short free trial period for such mobility services, and/or providing a digital booking system for such mobility services.
- Providing a free annual bike servicing for building users.
- Providing real time information screens for public transport in the area.
- Providing a large delivery room to enable secure delivery of especially large wares, providing refrigerated delivery rooms to enable food deliveries, providing a free trial for such home deliveries, and/or providing a room where building users can leave or take second-hand items.
- Providing shared office spaces within residential buildings
- Providing free public transport cards for new users of the building. This is a common “pull” measure listed in the parking standards of other cities, but this could somewhat overlap with the existing transport contract (“samgöngusamningur”) “pull” measure in Reykjavík.

Additionally, Gothenburg and Stockholm provide examples of “push” measures being suggested in the same way as these “pull” measures. Importantly, they also correspond to specific decreases in parking amounts. Reykjavík could also consider specifying these in their own parking standards *alongside* incentives such as parking amount reductions:

- Locating the car parking facilities at least 500 m away from a development.
- Offering mixed-use parking permits instead of reserved parking spots.
- Selling parking spots separately from the main real estate units.
- Establishing a parking fee system for employee parking.
- Establishing a parking fee system for visitor parking.

8.3.2.3 *When are increases relative to the recommended parking amounts justified?*

Reykjavík's parking standards are unique in that developers must begin from a somewhat low, “recommended” amount of parking, and make arguments for why their amount of parking should be higher or lower than this amount. For decreases, Reykjavík's parking standards provide clear criteria that developers can use to decide that they do not need as much parking. However, no examples of acceptable or unacceptable arguments for *increases* relative to the recommended amounts are provided.

This, of course, adds to the flexibility that is a key strength of Reykjavík's parking standards, but it could also lead to unnecessary uncertainty or open the door for poor arguments being accepted. Providing a few examples of what is or is not considered reasonable grounds for parking increases could perhaps lead to more clarity for prospective developers, and fewer instances of parking quantities that exceed the recommended amounts.

In Gothenburg, for example, one section of the parking standards deals exclusively with project-specific adaptations of their minimum parking amounts – suggesting specific decreases *and* increases in certain common scenarios, such as when expected employee or visitor densities are significantly lower or higher than certain threshold values.

8.3.2.4 *Distance requirements & ranges of parking ratios for university students*

Two other provisions that could possibly improve the ability of Reykjavík's parking standards to shift travel habits in the long term were found in this review. Firstly, as mentioned in section 6.1.1, Reykjavík's parking standards require university parking amounts to be determined case-by-case, with reference to the expected number of employees and students. They provide a reasonable range for the number of parking spots per employee, but not for students. Despite students having a potentially much higher propensity to change their travel habits, practical experience has shown that developers in Reykjavík choose a parking ratio for students that is very similar to the ratio for staff. Providing a different range for students that is based on evidence about their relatively higher propensity for using non-car modes could be a beneficial addition to Reykjavík's parking standards.

Secondly, minimum distance requirements could be considered in Reykjavík. In Stavanger, certain developments within the most central areas are required to provide their parking facilities at least as far away as the nearest public transport stop. Given the evidence reviewed in section 6.1.1 related to distance, and the fact that parking distances are a key element in the parking strategy of Umeå for changing travel habits, a clause like this could be highly effective in Reykjavík.

8.3.3 *Using public parking fees strategically*

Currently, the only officially planned use of public parking fees in Reykjavík is found within the rules for the changing of fees in fee areas, and the rules for the introduction of new fee areas (Reykjavíkurborg 2019a; 2019b). In general, these documents exclusively relate to optimizing the efficiency with which existing on-street parking is used. There is no mention to, for example, use fees or time limits to discourage commuters from using on-street parking, or to coordinate the fees with those of public parking garages. Also, when occupancy rates are low, the possibility of triggering an analysis of parking occupancy in surrounding areas is ignored in the current rules, despite the fact that low occupancy in a fee zone could be due to high occupancy in a free-parking zone immediately next to it. Moreover, where private actors introduce parking fees in certain areas via apps e.g. EasyPark, no protocol for controlling spillover effects is currently specified.

In general, the comparison cities used parking fees strategically in three ways: (1) to control the spillover effects resulting from their more targeted parking policies (i.e. workplace parking restrictions), (2) to strongly and clearly incentivise people to use public parking garages instead of street parking, and (3) through the expansion of fee areas and overall fee increases across the board, generally discourage car travel in favour of other modes. With the creation of a more comprehensive parking policy, Reykjavík should also consider these three approaches with public parking fees, and questions about expanding existing fee areas should be triggered if occupancy rates are known to be overly low within them, or in areas where private actors have introduced parking fees via apps.

8.3.4 *Controlling on-street parking supply*

As previously mentioned, Reykjavík has set a numerical target for the reduction of parking spaces on public land, but this has not been followed up with a comprehensive action plan defining where, when, and how the spaces should be reduced. The reduction of parking spaces has rather been part of individual planning projects. In the comparison cities, the tools to be used to manage the supply of on-street parking are more clearly defined, and there is also a greater emphasis on measurement and follow-up. Several

methods emerged that can be used for a more targeted reduction of on-street parking spaces:

Clearer provisions for removing on-street parking spaces within existing fee zones

- The procedural rules for fee zones (Reykjavíkurborg, 2019a; 2019b) could define in more detail the circumstances under which a reduction in the total number of on-street parking spaces is considered. For example, when the space can be used for the infrastructure of other modes of transport or for public spaces. According to the current arrangement, low utilisation of on-street parking only explicitly leads to reductions in fees, rather than a reduction in parking spaces.

Forbidden zones

- Instead of traditional management with paid zones, similar to Umeå. Such an arrangement can simplify the removal of on-street parking spaces.

Date-based parking restrictions (i.e. datumparkering)

- Suitable for areas outside fee zones, similar to Umeå. The arrangement means that parking is only permitted on one side of the street according to the date and can therefore, in practice, reduce the available parking supply by up to half on certain streets. It can also simplify street maintenance and services. The limitation of this approach, however, is that the parking spaces are not freed up for other uses.

Resident-only zones

- By reserving certain on-street parking spaces for residents, the supply for people who drive to work is reduced, as is done in Trondheim. This effectively removes parking supply for commuters and gives it to residents. If used, this should be paired with other parking policies that target commuters, such as a mandatory parking free purchase scheme (as in Umeå), stricter parking standards for office buildings (as in Trondheim), or direct negotiations with employers to limit parking (e.g. HjemJobbHjem).

The literature review in section 6.4 also revealed more tools that can be used to remove on-street parking spaces:

Using parking spaces for mobility hubs

- This is done in cooperation with micromobility companies, as in Berlin. Such a change involves both a reduction in parking spaces and a complementary “pull” measure that facilitates the use of other modes of transport. Several “return zones for shared vehicles” or “Hoppspots” exist in Reykjavík, but it is unclear to what extent they were intended to replace on-street parking spaces. They seem primarily aimed at preventing e-scooters from being left on the sidewalk. Reykjavík could use mobility hubs more systematically to replace on-street parking and instead establish multifaceted mobility hubs.

Placing more emphasis on resident-driven parklets

- Among other things, with a more concerted effort to make the public aware of this as an option and make successful parklets permanent.

Linking plans for pedestrianised streets more clearly to parking policy

- So that the reduction of on-street parking spaces in this context are well integrated with the larger plan for parking.

8.3.5 *Unintegrated tools*

Finally, this review has found that Reykjavík currently has access to parking policy instruments that it does not direct with clear strategic intention to help reach goals of changing travel habits – at least not within public, official action plans or documentation.

The clearest example of this is public parking garages. Despite existing in Reykjavík, these are not mentioned in a strategic capacity within planning documents. In the plans of both Umeå and Trondheim, public parking garages are emphasized to accommodate long-term users while on-street parking is more heavily regulated, and this justifies considerations about fee harmonization and enhancing the user friendliness of parking garage designs. In some cities such as Umeå, which employs a free purchase scheme as a primary tool for controlling parking, the construction of new public parking garages is central to their plans for changing travel habits.

On that topic, a free purchase scheme (or “bílastæðagjöld” system) also exists in Reykjavík, but since switching to a maximum-based parking standard it is not used in any strategic capacity and is apparently defunct. Umeå demonstrates that a re-worked free purchase scheme could (1) offer more financial incentives to developers, e.g. via a loan-based system and municipality-lead “pull” measures (2) be mandated for certain building types in certain areas, and (3) be offered for bike parking.

In short, as argued in section 6.7, it may be possible to adapt this system to suit Reykjavík's maximum- and recommendation-based parking standards. The strategic way that the free purchase scheme is used in Umeå to concentrate control of workplace parking and shift commuter travel habits suggests that it is a tool with high potential. It should be noted too, though, that any eventual overhaul of the “bílastæðagjöld” system in Reykjavík could also consider changing the name, as it is easy to confuse the current name as referring to any ordinary parking fee. If the system is overhauled to be an attractive or mandatory option for some developers, a new name could increase the visibility of the system.

Lastly, as stated in the previous section, Reykjavík currently has access to policy tools related to parklets (“hvílustæði”) and pedestrian streets (“göngugötur”), but they do not strategically direct these in any parking action plans.

9 **Results**

The key arguments and comparisons made in this review have been distilled into a list of recommendations for the City of Reykjavík to potentially improve its current policy for changing travel habits, with special focus on the role of parking. Most recommendations are then visualized as additions to Reykjavík's current comprehensive strategy for changing travel habits, in Figure 9.1.

9.1 **System-level recommendations**

Reykjavík should define and specify all relevant mobility-related action plans and strategies in a main planning document (e.g. the municipal plan), including which action plans or strategies are already in use and which ones are yet to be created (e.g. the cycling action plan, and the walkability action plan). A visual structural diagram would be helpful. Reykjavík should also collect all of these mobility-related planning documents on one webpage, or with clear links between webpages.

One of the documents outlined above should specifically and comprehensively deal with parking. Reykjavík should develop a dedicated parking strategy and action plan which considers the full breadth of parking policy instruments they have at their disposal - not just parking standards, and not only considering parking fees from an occupancy

optimization perspective. Public parking garages, free purchase schemes, pedestrian streets, and instructions for parklets are examples of tools that exist in Reykjavík but which are not currently planned to be used in the context of an overall parking strategy. In this document, regular parking measurements should be defined to keep track of total parking supply – not just paid on-street parking – in key areas of the city.

Although the capital area's transportation agreement is strong, Reykjavík could also benefit from a higher degree of regional cooperation. Miljøpakken in Trondheim is a good example. Namely, some kind of legally-binding, detailed, regionally coordinated parking policy guide could be published to support the effectiveness of other measures within the "samgöngusáttmáli". The current parking guidelines in *People, Development and Urban Spaces* are comparatively unspecific and lacking in legal weight, which is why they were not reviewed in section 7.1.

9.2 Mobility strategy-level recommendations

Throughout all of Reykjavík's plans related to urban mobility, establishing and integrating the "push/pull" concept for packaging policies and shifting travel habits could be useful. Significantly reducing car modal share from a point of dominance generally requires both improving the attractiveness of alternative modes ("pull") as well as reducing the attractiveness and spatial dominance of the car ("push").

Since "push" measures require "pull" measures to be in place in order to be most effective, and vice versa, the comprehensive parking strategy in Reykjavík can emphasize long-term "push" measures immediately. Some short/medium-term "push" measures identified in this report could also be implemented immediately. As infrastructure for sustainable modes continues to develop (i.e. "pull"), Reykjavík should consider implementing a higher volume of short/medium-term "push" measures via their parking strategy, and with greater intensity.

Also as this infrastructure continues to develop, Reykjavík should consider expanding the use of "pull" measures that are focussed on encouraging people to start using the new infrastructure. Examples of this are events for encouraging winter cycling, private subsidies for winter or cargo cycling equipment, and commute incentive packages for companies in the vein of HjemJobbHjem in Norway.

9.3 Parking strategy-level recommendations

As part of Reykjavík's new parking-specific strategy and action plan, Reykjavík should specifically outline a multifaceted approach to targeting workplace parking. This is a central component of the action plans of other Nordic cities. Alongside this, spillover effects should be controlled via judicious on-street parking regulations and use of public parking garages.

Two tools that Reykjavík currently utilizes have high potential for targeting workplace parking and shifting commuter travel habits, but they should be adjusted in some specific ways in order to realize this potential. First, the parking standards currently recommend that developers sell or lease parking spaces separately from real estate units. This should be made to correspond to specific reductions in total parking supply. This would more clearly incentivise separating costs in this manner, as is done in other cities, instead of merely recommending it. Second, the parking standards in Reykjavík suggest that developers require employers who use their building to offer transport contracts ("samgöngusamningar") to employees. This corresponds to a reduction in overall parking amounts. A standardized framework for such contracts should be created and specified in the standards. Contracts should offer direct lump-sum payments instead of public transport passes, this opportunity cost should be presented clearly to employees, and the

clause that employees shall not drive/park their car at work more than X days per week should be clearly and reliably enforced via e.g. parking lot entrances. The process for introducing this requirement on employers should also be clearly outlined for developers, to make it as easy as possible.

Outside of improvements to these existing tools for targeting workplace parking, Reykjavík should consider the approaches of Umeå, Sweden, and Trondheim, Norway. In Umeå, the car parking for all commercial developments in certain central areas is not allowed to be provided privately. A loan-based parking free purchase system (i.e. “bílastæðagjöld” system) must be paid into instead. The revenue is used for public parking garages, but the developer can also choose to pay less (and receive less shared parking) to instead let the municipality spend some of the revenue on improving accessibility for sustainable modes, specifically to/from their property. Through this, parking is less likely to be over-supplied, Umeå gains control over commuter parking facilities, and they leverage this control to impose parking fees and increase walking distances for commuters. Even where the free purchase scheme is not mandatory, this system offers unique financial incentives for developers. Due to its high potential to be used in this way to shift commuter travel habits, Reykjavík should consider overhauling their inactive parking free purchase (“bílastæðagjöld”) system to target workplace parking, and to suit their current maximum- and recommendation-based parking standards. More details about this are presented in section 6.7, 8.3.1, and 8.3.5 of this report.

Alternatively, Reykjavík could consider Trondheim's approach to targeting workplace parking in both the long term and the short/medium term. For the long term, Reykjavík could consider judiciously implementing strict maximums on certain workplace categories, uniformly across all geographical zones, in order to concentrate workplace development in areas with high accessibility and to prime these workplaces for effective use of other parking policies. For the short/medium term, Reykjavík should also consider launching an initiative akin to HjemJobbHjem in Trondheim, where they negotiate directly with employers to impose parking fees or restrictions in exchange for subsidies and discounts related to non-car transport modes. Transport contracts (“samgöngusamningar”), in the specific form outlined above, could also be used to impose said parking restrictions in a less controversial way.

Apart from workplace parking, Reykjavík should modify the existing rules that govern on-street parking fee changes and new parking fee zones. If annual occupancy measurements are shown to be low, a further analysis should be triggered. The analysis should address two questions: (1) Are the low occupancy rates here due to neighbouring free parking that is over-occupied? (2) Are the parking spots with low occupancy rates needed, or can they be replaced with something more useful? When private actors impose parking fees on their own lots e.g. via EasyPark, an analysis of spillover effects should also be triggered.

In addition to this change, Reykjavík should consider using on-street parking fees and fee areas to (1) control the spillover effects resulting from their more targeted parking policies (i.e. workplace parking restrictions), (2) strongly and clearly incentivise people to use public parking garages instead of street parking, and (3) through the expansion of fee areas and overall fee increases across the board, generally discourage car travel in favour of other modes.

Finally, Reykjavík should outline the specific tools they intend to use to reduce on-street parking supply, and replace it with something beneficial. Reykjavík could consider utilizing the following tools to do this, among others:

- The rules for on-street parking fee changes and new fee areas, as described above
- Forbidden zones instead of traditional fee zones (i.e. “parkeringsförbudsområde”)
- Date-based parking for areas outside of fee zones (i.e. “datumparkering”)
- Resident-only zones (i.e. “boligsoneparkering”)
- Mobility hubs and mobility stations
- Citizen-lead parklets
- Pedestrian streets

9.4 Recommendations for the current parking standards

Reykjavík's parking standards are a relatively sophisticated, well-rounded, and flexible tool for shifting travel habits compared to other cities. However, our review revealed that Reykjavík's current parking standards could be improved in several ways while still maintaining their general structure. Among other things, this mostly relates to refining the incentive structure for voluntarily reducing overall parking amounts.

Where parking amounts are reduced based on proximity to public transport, it is recommended that "high quality public transport stops" are clearly defined within the parking standards document itself. The city should also consider whether their definition is unreasonably high, compared to other cities.

Other kinds of accessibility should also be included in the parking standards and affect overall parking amounts. Proximity to the regional bike network or proximity to an adequate mixture of local services should be considered for inclusion here. This accessibility could also be calculated ex-ante to reduce the burden on developers.

Regarding the voluntary “pull” measures that developers can choose to implement within a transport policy (“samgöngustefna”) to reduce their parking amounts, specific reductions should be more specifically linked to individual measures, and the most effective measures should be incentivised accordingly. This can be done by setting a unique percentage decrease for individual measures as in Umeå, a point-and-threshold based system as in Stockholm, or a bundle-and-priority based system as in Gothenburg.

Alongside this, the current list of examples of voluntary measures is rather short in Reykjavík's parking standards compared to other cities. Reykjavík should consider providing a much more extensive list of measures for developers to choose from, or to gain inspiration from. A list of possibilities is included here:

- Information packets for users of the building
- E-bike or cargo bike pools, trial periods, and/or providing a digital booking system for such mobility services
- Free annual bike servicing
- Real-time information screens for public transport in the area
- Delivery rooms for furniture or refrigerated items
- Shared office spaces within residential buildings
- Free public transport cards for new users of the building, if a transport contract (“samgöngusamning”) does not apply

Beyond this, Reykjavík should also consider adding voluntary “push” measures to the list, also corresponding to specific reductions in parking amounts. These measures can

decrease parking demand in much the same way as “pull” measures. Examples from other cities include locating the parking at least a certain distance away from the development, selling parking separately to building users, or establishing a full parking fee system.

Reykjavík should also consider adding specific examples or criteria to establish when increases, relative to the recommended amounts, are justified. Specific increases can even be suggested for specific cases. Without establishing such a precedent, the door is left open for poor argumentation being accepted and parking supply increasing unnecessarily.

For university developments, Reykjavík should specify a suggested range of parking ratios per student, as they already do with staff. The difference between the range for students and the range for staff should be based on evidence related to the respective travel habits of these two groups.

Finally, Reykjavík could consider adding a fair distance requirement for parking facilities in certain central areas, as is done in Stavanger. There, parking facilities for some developments must be at least as far away as the nearest public transport stop.

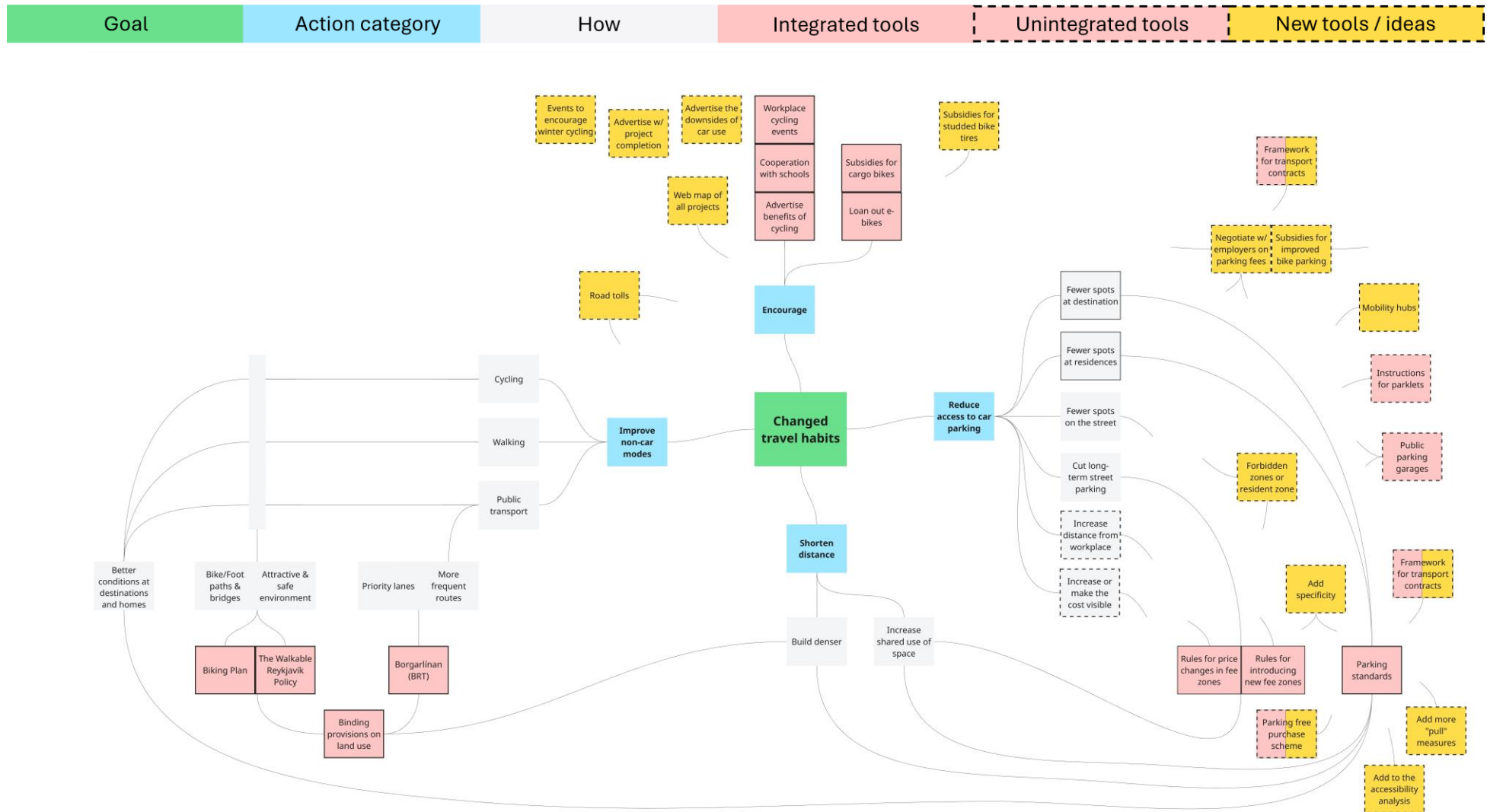


Figure 9.1: Reykjavík's system for changing travel habits and existing tools that are not integrated in policy documents and new ideas from other cities.

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