TACTICAL URBANISM AND ITS POTENTIAL TO FOSTER MOBILITY TRANSITION ON NEIGHBORHOOD LEVEL.

Development of an institutional program that facilitates citizen-led, temporary projects in Hamburg, Germany.

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Tactical Urbanism and its potential to foster mobility transition on neighborhood level.

Development of an institutional program that facilitates citizen-led, temporary projects

in Hamburg, Germany.

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"First we shape the cities
– then they shape us."

JAN GEHL (GEHL, 2013, P.9)

ABSTRACT

Motorized vehicles are responsible for numerous environmental impacts through their emissions, noise, infrastructure, and space requirements. Not only do they drive climate change, health problems, traffic accidents, and environmental damage, but they also occupy public space in cities, directly affecting their livability. Addressing these impacts requires a holistic mobility transition that includes not only a change in fuel or mode of transportation, but also in mobility behavior and culture.

Tactical Urbanism in the form of street experiments, pilot projects, and temporary demonstrations is one possible tool to overcome the challenges associated with achieving long-term transition. Time-limited, low-cost projects led by residents can demonstrate the benefits of a transformation and initiate behavioral change.

Several cities around the world take advantage of Tactical Urbanism and have established their own institutional programs to facilitate action. In Hamburg, district offices and civil society have had good experiences with street experiments such as 'Ottensen macht Platz' or the temporarily car-free city hall district. However, a municipal program seems to be missing.

Therefore, this thesis focuses on exploring the characteristics and conditions for such a program to promote mobility transition in Hamburg's neighborhoods. Through reviewing literature, examining case studies, and interviewing local actors, requirements are identified; namely providing a clear framework with long-term goals, creating a lasting vision, identifying funding, engaging official actors, and providing low-threshold opportunities for a variety of stakeholders to actively participate in different ways. Using these characteristics, a potential program is outlined at the end of this paper.

Keywords: Tactical Urbanism, street experiments, real-world labs, mobility transition, livability, community engagement, participation, Hamburg

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ABBREVIATIONS

ADFC	German Bicycle Association (Allgemeiner Deutscher Fahrrad-Club)
AR	Administration Representative
BCE	Before the Common Era
BID	Business Improvement District
BIS	Department for Interior and Sport (Behörde für Inneres und Sport)
BVM	Department for Traffic and Mobility Transition (Behörde für Verkehr und Mobilitätswende)
DIY	Do-it-yourself
DOT	Department of Transportation
EU	European Union
EC	European Commission
HVV	Transport Association Hamburg (Hamburger Verkehrsverbund)
ibid.	ibidem, at the same place (used for resources)
ISFP	Innovating Streets for People (program in New Zealand)
KBA	Federal Office for Motor Traffic (Kraftfahrt-Bundesamt)
LSBG	Agency for Streets, Bridges and Waters (Landesbetrieb Straßen, Brücken und Gewässer)
NACTO	National Association of City Transportation Officials (in the U.S.)
NGO	Nongovernmental Organization
P2P	Pavements to Parks (program in San Francisco)
SDGs	Sustainable Development Goals
StVO	National Road Traffic Regulations (Straßen-Verkehrsordnung)
TU	Tactical Urbanism
UN	United Nations
VCD	Traffic Club Germany (Verkehrsclub Deutschland)
WHO	World Health Organization

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1

INTRODUCTION
THE CHALLENGE OF REDUCING CAR DOMINANCE

1.1 Cars and their impact on the environment

Motorized vehicles are responsible for numerous harmful effects on the environment. In 2019, road transportation accounted for 26 percent of total greenhouse gas emissions in the EU (EEA, 2021a), of which about 61 percent were caused by cars (EEA, 2021b). Germany emitted around 22 percent of the EU's total greenhouse gasses, or about 810 million metric tons of carbon dioxide equivalent (EEA, 2021a). Fossil fuel combustion in road transport accounted for 20 percent of this, of which 63 percent were caused by cars (EEA, 2021b). Not only on roads, but in the sector as a whole, emissions hardly changed between 1990 and 2021, as **FIGURE 2** below illustrates. While other areas reduced their share (UBA, 2022), the development in the transport sector is almost stagnant.

Million metric tons of carbon dioxide equivalent (CO_2e)
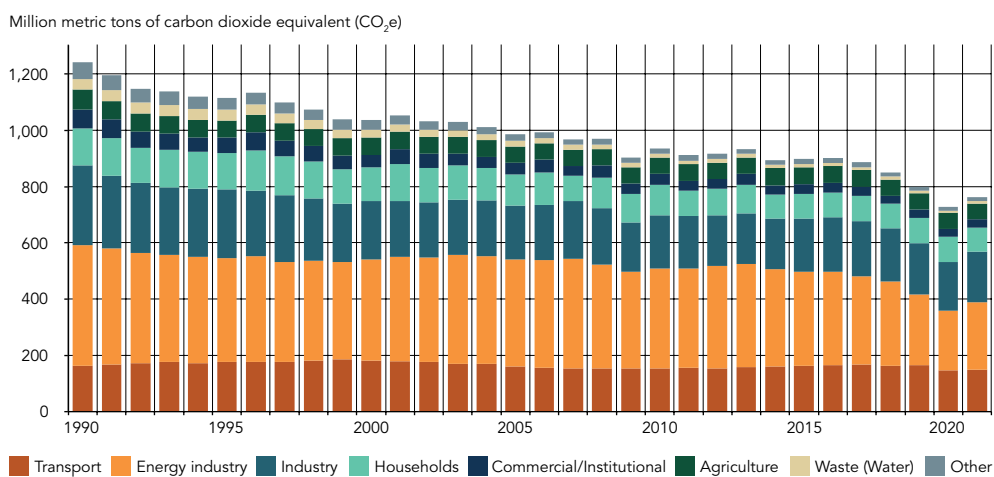
FIGURE 2:
National greenhouse gas inventory *(Author, 2022; adapted from UBA, 2022)*

A steadily increasing number of private vehicles in Germany (KBA, 2022) and worldwide (VDA, 2022), as well as the fossil fuels still in use, have canceled out the gains made by more fuel-efficient vehicles (Hennicke et al., 2021).

This development is expected to increase pressure on the environment in the future, as internal combustion engines are a driver of global warming and climate change with their major role in generating greenhouse gas emissions (cf. IPCC, 2021).

Noise and air pollution

In addition to greenhouse gasses such as carbon dioxide, methane, and nitrous oxide (cf. IPCC, 2021), combustors emit other types of air pollutants. Particulate matter from soot and tire wear, nitrogen oxides, and other constituents can cause cardiovascular and respiratory diseases as well as cancer in affected individuals and their descendants (HEI, 2010; WHO, 2021a). According to Schneider et al. (2018), nitrogen dioxide (NO_2) caused 6,000 premature deaths and 50,000 years of life lost in Germany in 2014. Other calculations based on data from 2007 to 2011 found that particulate matter smaller than ten micrometers (PM_{10}) was responsible for about 47,000 annual deaths in Germany (Kallweit & Wintermeyer, 2013). Globally, people living and working in cities and near roads in particular have a high exposure rate and thus an increased risk of being affected (HEI, 2010; WHO, 2021a).

Traffic noise can also have negative effects on people's physical and mental health, such as cardiovascular consequences due to high stress levels (Münzel et al., 2014; Ndrepepa & Twardella, 2011), diabetes (Shin et al., 2020), sleep disturbances (Wothge, 2016), and mental illness (Stansfeld et al., 2020).

Accidents and injuries

Apart from pollution and noise, moving traffic itself is damaging human health directly. According to WHO (2021b), approximately 1.3 million people worldwide die each year as a result of traffic accidents. For children and young adults between the ages of 5 and 29, injuries sustained in traffic crashes are the leading cause of death. Most affected are vulnerable road users such as pedestrians, cyclists and motorcyclists. This group accounts for 50 percent of all road traffic deaths (WHO, 2021b). In Germany, 2,450 people died in road accidents in 2021 and around 301,000 were injured (Destatis, 2021a). The overall numbers are steadily decreasing, for example, due to mandatory seat belt use, speed limits, more safety equipment, and lower legal alcohol limits (Hennicke et al., 2021). However, the rising number of cyclists injured and killed in traffic accidents (Destatis, 2021b; 2021c), while the main culprit is still the passenger car group (Destatis, 2021d), underlines the disadvantage of vulnerable groups and the existence of opportunities for improvement.

General public health

The use of cars instead of active modes of transportation may also have indirect public health implications. In their review article, Nieuwenhuijsen & Khreis (2016) summarize evidence that lack of physical activity leads to a higher risk of death, while more physical activity is likely to reduce diseases such as cardiovascular problems, diabetes 2, dementia, and cancer (Nieuwenhuijsen & Khreis, 2016).

Public space and livability

The impact of traffic infrastructure on public space and quality of life is also not negligible. In a 2013 report, UN-Habitat showed that in some major cities, more than a third of the land is taken up by roads, leaving little space for other public uses. In addition, plenty of cars are parked for most of their lifetime. Evaluations conducted as part of the 'Mobility in Germany 2017' study revealed that 40 percent of private cars were not moved on a given day. Of those that were in use, they were only on the road for an average of 45 minutes, or only about three percent of the day. In other words, cars spend 97 percent of time unused (Nobis & Kuhnimhof, 2018). In addition to parked cars, moving vehicles also have an impact on social life. As early as 1969, Donald Appleyard observed that residents of busy streets in San Francisco seemed to have two to three times fewer friends and acquaintances nearby than residents of streets with less traffic. In addition, they visited their next-door dwellers less often and considered their neighborhoods less friendly and livable. Consequently, people living on busy streets had less social interaction and a lower sense of community (Appleyard & Appleyard, 2021). In addition, getting around by car reduces community and civic engagement overall, as two out of three trips are made alone (Urry et al., 2017). Furthermore, the ability to travel longer distances by car leads to suburban sprawl and fragmentation, which not only affects social life, but also leads to high infrastructure costs (ibid., 2017).

Natural environment

Private motorized transport not only has an impact on the climate and human health, but also on the natural environment. Particulate matter, nitrogen oxides, and sulfur dioxide affect both animals and plants (Hennicke et al., 2021; WWF, 2022) and lead to soil acidification (Hennicke et al., 2021). The paving of large parts of cities with impermeable concrete and bitumen increases the risk of flooding, as rainwater is no longer absorbed where it comes down, but accumulates in nearby rivers and swales. In addition, the water that flows over driveways and parking lots collects various types of pollutants and particles that cars have previously left behind. All of these constituents contaminate the water and enter nearby pervious surfaces, rivers, and oceans (Bruntlett & Bruntlett, 2021). Construction of new roads in areas not yet inhabited by humans can also destroy habitats and alter the pathways and movements of local species (WWF, 2022).

Mineral resources

The materials used in internal combustion engines and electric cars also impact the natural environment, as there are often problems with supply and disposal. Rare earths, cobalt, lithium, nickel and other metals are mined in countries in the global south. Due to the often less stringent regulations and requirements there, operators destroy vast landscapes, pollute the environment, and exploit local residents for profit (cf. Kalt, 2020; Prause & Dietz, 2020; Urry et al, 2017).

1.2 The challenge of addressing the negative impacts

Because of the multiple negative impacts on people and the environment, which are also summarized in the problem tree analysis in **APPENDIX A**, approaches must be found to address their root causes. While the sector's increasing greenhouse gas emissions (EEA, 2021c) can be partially countered by switching to renewable fuels, other impacts on natural and human health, such as loss of quality of life, are primarily caused by the overwhelming number and dominance of cars in public spaces (Appleyard & Appleyard, 2021). Motorized transport has been privileged in the streetscape for years, while other mobility modes have had to adapt to the remaining space (cf. Canzler & Knie, 2019; Manderscheid, 2020). Especially in urban environments, where cars take up a large part of scarce public space for driving or parking (UN-Habitat, 2013), this uneven distribution cannot be easily dismissed. Moreover, the urbanization trend means that more space is needed for housing in cities (Kundu & Pandey, 2020; UN-Habitat, 2013). This development further exacerbates the pressure on public space. However, since the amount of high-quality public and green spaces in a neighborhood has a direct impact on quality of life (Kaw et al., 2020), cities need to take action to provide a sufficient amount. To achieve two goals simultaneously - providing public space and reducing the impact of motorized traffic in a given neighborhood - a city can reclaim land from motorized traffic by, for example, reducing parking, implementing modal filters, or restricting access to affected streets (Aichinger, 2020).

This approach may result in more traffic on adjacent streets or longer travel times as people drive around the area (Aichinger, 2020). To avoid these displacement effects, the total number of individual cars must be reduced, and a holistic mobility transition is required. The biggest challenge, then, is to convince people to give up their cars and change their mode of transportation.

There are several reasons for private car ownership and the dominance of motorized traffic: owning a car is still a sign of status, freedom, independence and comfort (Flore & Kröcher, 2021), while other modes of transport seem to be less convenient, e.g. due to a higher price, lack of infrastructure or irregular departures. Furthermore, incentives to exchange the car for a more sustainable mode of transport seem to be absent (ibid., 2021). These conditions lead to a general lack of sustainable mobility behavior and a stagnation of the mobility transition that has been aspired to for a long time (ibid., 2021) (cf. **APPENDIX A**, see also **CHAPTER 2**).

Initiating long-term change requires a diverse set of tools. Although recommendations for action and concepts were already available more than 30 years ago, politicians and authorities are very hesitant to implement binding measures to reduce motorized individual transport (cf. Flore & Kröcher, 2021). On the one hand, those in charge are afraid of angering voters and losing their support if they opt for restrictive measures (ibid., 2021). On the other hand, the decision-making and implementation processes tend to be slow due to the large amount of paperwork, the various interest groups involved, lack of resources, and regulations (von Schönfeld & Bertolini, 2017).

Tactical urbanism in the form of low-cost, temporary road interventions seems to be a promising tool to overcome these obstacles (cf., i.a., Agora Verkehrswende, 2020; Canzler & Knie, 2019; Flore & Kröcher, 2021; Hennicke et al., 2021; Syberg et al., 2021; also presented in the objective tree analysis in **APPENDIX B**). Although not a new movement (cf. Lydon & Garcia, 2015), Tactical Urbanism became popular again during the COVID-19 pandemic (cf. **FIGURE 3**). By implementing quick-to-install, low-cost, and non-permanent tactical elements (cf. Lydon & Garcia, 2015), cities were able to quickly respond to the increasing number of bicyclists (Nikitas et al., 2021) and the desire for high-quality outdoor spaces by redistributing streets (cf., i.a., COVID Mobility Works, n.d.; van Lieben, 2020).

FIGURE 3:
COVID-19 Pop-up bike lane in Barcelona
(Moreno, 2020)

In addition to rapid implementation, other advantages are the experimental nature and the ability to adjust measures before they become permanent (Lydon & Garcia, 2015). In general, people are more willing to accept experiments because they are not final, and if they have the opportunity to experience a change rather than just reading about it in theory, they are also more willing to support a move toward a permanent solution and change their behavior (Rieger & Rußmann, 2021). In addition, local tactical interventions often have a higher acceptance and success rate, and thus a greater chance of permanently changing citizens' mindsets, because Tactical Urbanism usually starts with the users and changes the direct environment of the initiators (Lydon & Garcia, 2015).

Today's programs in cities around the world, often institutionally led, take advantage of this fact and have successfully implemented several projects by involving citizens in the planning and implementation of parklets, plazas, or open streets to reduce the dominance of the car and promote active mobility (see case studies in **CHAPTER 4**). In Hamburg, civil society and district authorities have had good experiences with street experiments (see stakeholder interviews, **APPENDIX E ET SEQQ.**). However, a concrete city-wide program that facilitates the implementation of local user-induced projects is still missing.

1.3 Research goal

The main objective of this Master's thesis is to propose an institution-led program in Hamburg, which would enable local, citizen-driven tactical interventions with the goals of reducing the number of private cars, creating sustainable mobility behavior, and thus promoting the mobility transition (cf. objective tree analysis in **APPENDIX B**). Achieving the goals would likely result in a higher quality of life in the neighborhoods, a thriving sense of community, reduced health implications, and a decreased impact on climate change through saved emissions, as shown in **APPENDIX B**. The scopes included are:

- The study of appropriate tactical measures for a mobility transition.
- The identification of characteristics of successful existing programs.
- The determination of key stakeholders and engagement strategies.
- The evaluation of Hamburg-related preconditions and challenges.

1.4 Research questions and hypothesis

To achieve the research goal, the following questions are examined:
What are the characteristics and conditions for an institutional program in Hamburg with the goal of promoting citizen-initiated, local, tactical actions that contribute to the mobility transition at the neighborhood level?

The sub-questions are:
- Which tactical interventions foster mobility transition and livability?
- What are requirements for a successful instutitional program?
- Which conditions lead to projects being converted into permanent solutions?
- Which key stakeholders must be involved and how?
- How to overcome challenges of previous projects in Hamburg?

The author assumes that a successful institutional program is embedded in a larger framework, appeals to a variety of stakeholders in different ways, and provides low-threshold and easy opportunities for application and participation. The various research methods used to test these assumptions are summarized in **CHAPTER 1.6** on the following page.

1.5 Justification of the research topic

The implementation of Tactical Urbanism as a tool, its benefits, drawbacks, and potential have already been studied in various scientific publications. Numerous guides are available (cf., i.a., Arup, 2020; GIZ et al., 2020). Communities around the globe have implemented institutional programs with own manuals (see case studies in **CHAPTER 4**). COVID-19, however, acted as a catalyst for rapid change. It made Tactical Urbanism popular again, as municipalities could benefit from its quick-to-implement and time-limited nature (cf. COVID Mobility Works, n.d.; van Lieben,

2020). Although the role of Tactical Urbanism in achieving long-term change for the mobility transition is recognized (cf., i.a., Bertolini, 2020; Fernandes Barata & Sansão Fontes, 2017) and civil society and district authorities in Hamburg have already had good experiences with experiments and pilot projects (cf. stakeholder interviews, APPENDIX E ET SEQQ.), a citywide program to support citizens in implementing temporary, local projects seems to be lacking. To the author's knowledge, the potential of such a program has not yet been explored.

1.6 Research methodologies

The wide range of analytical methodologies used in this work are illustrarted in FIGURE 4. An initial literature review was conducted for an overview of the impact of motorized traffic on the environment, the transport sector in Germany in general, and the conditions for mobility transition and behavioral change. Due to the focus on the Free and Hanseatic City of Hamburg, mainly German literature sources were evaluated. The information gathered was used to create a problem tree analysis (see APPENDIX A), which helped to identify the main issue with its associated causes and impacts. The problem tree was then transformed into an objective tree (see APPENDIX B) to determine the scope, purpose, and outcomes of the project. With the identified problems and goals in mind, the research question and hypothesis were formulated. For answering those, a thorough research on Tactical Urbanism was conducted.

THEORETICAL PART

INITIAL LITERATURE OVERVIEW	Impact of motorized traffic Transport sector in Germany Mobility transition and behavioral change
PROBLEM & OBJECTIVE TREE	Identification of key issue, causes and impacts Determine scope, purpose and outcomes Frame research question and hypothesis
IN-DEPTH LITERATURE REVIEW	Tactical Urbanism origin and characteristics Benefits, weaknesses and conditions

EMPIRICAL PART

CASE STUDY EVALUATION	Analysis of existing programs Conditions for success and barriers Lessons learned
GUIDELINE-BASED INTERVIEWS	Insight into tactical projects in Hamburg Stakeholders from different backgrounds Golden rules for a future program

PROPOSAL DEVELOPMENT

A HAMBURG VISION	Incorporation of theory and empiricm Identification of measures and actions Characteristics aligned with findings

FIGURE 4:
Methodological
approach
(Author, 2022)

Various English language sources were consulted. Since Lydon & Garcia (2015) are the movement's namesakes, their book 'Tactical Urbanism. Short term action for long term change' represents the key literature in this section. Research in this area has shown the origin, definition, and distinction of TU from other actions. It also provides an overview of the benefits, weaknesses, and general conditions for the successful implementation of tactical actions that enable lasting change in mobility. Case studies were examined to provide insights not only on requirements and applications in general, but also on existing institutional programs. Since many cities around the world have implemented their own strategies, pioneering places with well-known interventions such as the cities of Ghent, New York City, and San Francisco, as well as the country of New Zealand, were chosen for closer examination. The selected programs cover different nations, apply various measures, and are initiated by diverse actors. The valuable lessons learned about the development, application, and implementation process, timing, funding, actors, participation, impact, and barriers are summarized for each case study as lessons that can then be used to develop a program.

Interviewing stakeholders from diverse backgrounds provided insights into the challenges of previous tactical projects and local conditions in Hamburg. Potential interviewees were contacted via email, as outlined in the sample inquiry in **APPENDIX C**. The goal was to speak with stakeholders from a variety of projects and have a roughly evenly distributed background among them. Fortunately, 15 positive responses were received from 17 individuals or institutions contacted. While 13 interviews were conducted individually, twice two people were interviewed at once. In one case, additional information was followed up by a second person via email. An interview guide was created by adapting the questions in **APPENDIX D** to the specific stakeholder and project. This helped structure the input. At the request of the interviewee, the guiding questions were delivered prior to the meeting. All interviews were conducted online, either via ZOOM or Skype for Business, and generally lasted between 30 and 45 minutes. A recording of most sessions ensured that all key contributions were captured. After the respective interview, key findings were summarized on two pages each in **APPENDIX E ET SEQQ**. These interview summaries served as a basis for comparing the different projects and approaches on topics such as timing, budget and funding, regulations, measures, stakeholders, participation formats, evaluation, and knowledge transfer. The considered themes led to the establishment of 11 'golden rules' for the development of a future program in Hamburg.

Taking into account the findings from the literature research, the case studies and the interviews, the final section of this thesis was prepared. It specifies conditions and characteristics for the program. A logical framework matrix was created to provide an overview of the measures and to frame to program objectives. In the end, the results are summarized and discussed critically. In addition, an outlook part mentions research needs and possible nexts steps in the process of implementing the new program in Hamburg.

1.7 Research limitations

This paper focuses exclusively on Tactical Urbanism as a tool to promote the mobility transition and the development of characteristics and conditions for a possible program in Hamburg. Other instruments, such as financial incentives, tolling, or the development of mixed-use, walkable neighborhoods, could also promote a mobility transition or support the implementation of tactical measures in the urban environment, but are outside the scope of this thesis. The same is true for potential programs in other cities or countries, which are not covered in this work.

Due to limited time, not all topics can be analyzed in detail and are therefore only touched upon superficially. The large amount of available literature also carries the risk of omitting applicable parts. Therefore, the review does not claim to be complete and the results are based solely on the books and papers selected by the author. In any case, a complete evaluation of all available literature is not possible.

The qualitative, empirical part with case studies and interviews also has its limitations. First, the selection of appropriate samples is a subjective decision of the author. Although many cities around the world have already implemented their own Tactical Urbanism programs, not all can be studied. The conclusions drawn at the end of the paper will only result from the selected studies and therefore might be limited. In addition, the selection of case studies from other cities or other countries carries the risk that they may not be fully applicable due to regulations and administrative structures that may differ from those in Hamburg.

The use of qualitative interviews as a method also limits the outcomes. The conversation partners are selected by the author and only a certain number can be chosen due to the effort required to prepare, conduct and analyze the interviews. The suggestions and findings will be subjective and not universal. In addition, to facilitate the retrieval of answers, the questions will be prepared based on the author's current knowledge and experience at the time of the interviews. Speaking time will be limited, which could also restrict the results. In addition, the evaluation of the interviews and the selection of important statements and findings by the author are based on subjective assessment. Presumably, not all contributions can be included in the program and not all are given the same importance.

The final results focus on a municipal program in Hamburg. The conditions and characteristics identified may not be transferable to other cities in Germany or worldwide. Furthermore, they are based on current regulations. If these change, the proposed framework may no longer be useful.

The author assumes that municipalities would be willing to establish such a program and that residents would request it. If this were to be evaluated first, more research time would be needed to assess the general attitudes of these stakeholders. If rejected, the program would not be implemented and would not lead to the desired effect of promoting neighborhood-level mobility transition, improving quality of life, and addressing climate change. However, due to limited time, an investigation of the general conditions was not possible and an assumption was made.

FIGURE 5:
Bicycle lane
(Getty Images, n.d.)

2

MOBILITY TRANSITION
THE NEED FOR A HOLISTIC APPROACH

2.1 Historic background

Against the backdrop of increasing negative impacts on climate change, human health, public space, and nature (cf. **CHAPTER 1.1**), the transition to more sustainable modes of transportation is becoming urgent. Although leaders and parts of the population have been aware of the impacts of traffic growth as well as possible solutions in the past (cf. **CHAPTER 1.2**; Flore & Kröcher, 2021; Hesse, 2018), only little seems to have happened since then. A look into the historic evolution of private car ownership can help to identify reasons for the stagnation.

The history from its introduction to today's predominant means of mass transportation is relatively short, but nevertheless, or perhaps because of that, a great success story (Canzler & Knie, 2019). It began in the late 19th century, when recently discovered fossil oil was cheap and the possibility of large-scale production entered the market. This development made alternatives to horse-drawn carriages and steam trains affordable and popular (Urry et al., 2017). However the transition in Germany was relatively slow compared to the United States, as **FIGURE 6** shows, because a broad population could not afford to own a car (Canzler & Knie, 2019).

Number of private cars per 1,000 inhabitants in selected countries
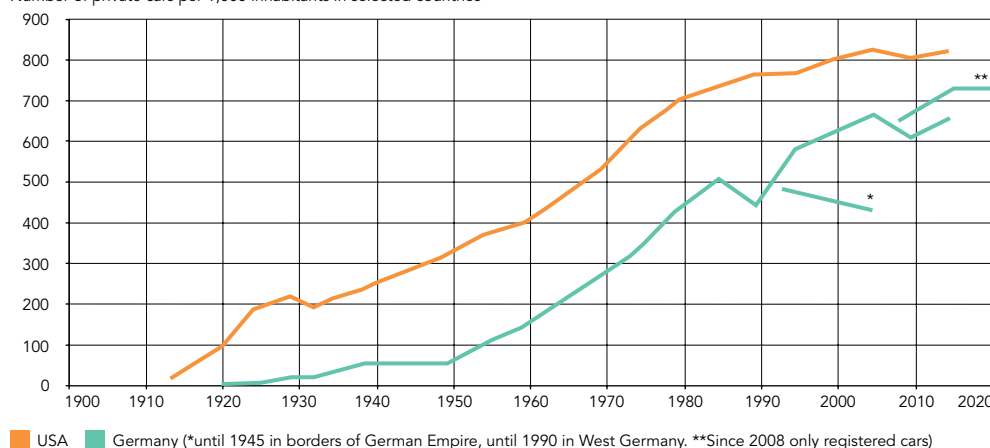

USA ■ Germany (*until 1945 in borders of German Empire, until 1990 in West Germany. **Since 2008 only registered cars)

FIGURE 6:
Number of private cars per 1,000 inhabitants *(Author, 2022; adapted from Canzler & Knie, 2018)*

Soon, however, the car acquired an iconic character in Germany as well, representing progress, modern life, freedom, and individuality (Canzler & Knie, 2019; Goodwin, 2010; Manderscheid, 2020; Rajan, 2006). The common opinion was that everyone should be able to buy a car and use it without restrictions (Canzler & Knie, 2019). Due to increasing traffic, public space was allocated for use by motorized transport and a clear direction for individual transport was sealed at the latest with the emerging concept of car-oriented cities and the 'Charta of Athens' published in 1943. Functions such as working, living and leisure were spatially separated from now on. Narrow and dark old towns served only as 'transit zones' on the way to spacious settlements with single-family homes (Canzler & Knie, 2018; 2019).

World War II and its enormous damage made way for a reconstruction with more space for car traffic, but still many residents could not afford a car. In the meantime, however, the number of registered cars in a country was generally considered as a sign of a state's prosperity, while a high number of public transport was an indicator of underdevelopment (Canzler & Knie, 2019). Therefore, measures were taken to make car ownership more popular, and the expansion of motorized transportation became a central task of the state (ibid., 2019; Manderscheid, 2020). In the late 1950s, several fiscal incentives were introduced, such as large tax breaks for work-related travel by car and a restriction on the fuel tax that had been in place since 1939 (Canzler & Knie, 2019; Klenke, 1995). These inducements led to more citizens purchasing a private car. In the following years, the number of registered motor vehicles increased (cf. **FIGURE 6**) and the amount of kilometers driven exploded (Canzler & Knie, 2019). The German state invested in road infrastructure and introduced car-friendly regulations in building and traffic laws. Parking regulations required the provision of enough space to place the car, and motorized traffic was given priority over all other road users to facilitate traffic flow. At the same time, public transportation was neglected by regulating passenger traffic and placing it under government supervision. Public transport was treated rather as a buffer than a real alternative for a long time (ibid., 2019). While more and more people were able to afford their own vehicles and take advantage of living in spacious suburbs, anyone without a car was at a disadvantage (ibid., 2019; Manderscheid, 2020).

As the number of people owning cars increased, undesirable impacts developed (highlighted in **CHAPTER 1.1**). Noise and air pollution, as well as increasing CO_2 emissions, made parts of the population aware of the need to change and take action, and led, for instance, to the founding of the 'German Bicycle Association' (Allgemeiner Deutscher Fahrrad-Club, ADFC) in 1979 and the ecological 'Traffic Club Germany' (Verkehrsclub Deutschland, VCD) in 1986 (Flore & Kröcher, 2021; Hesse, 2018). In 1990, almost all problems were addressed and concepts to deal with them were developed, explain Flore & Kröcher (2021). To tackle the emissions not only in transport but overall, national and international targets were set in treaties such as the Kyoto Protocol, the Paris Climate Agreement, and the Federal Climate Action Plan 2050.

The Kyoto Protocol

Approved in 1997 and enforced eight years later, the Kyoto Protocol committed signatory countries for the first time to reduce their greenhouse gas emissions by implementing policies and measures mandated by the United Nations Framework Convention on Climate Change (UNFCCC). The protocol was in effect between 2008 and 2012 and was extended to 2020 with additions through the Doha Amendment in 2012. Targets were set individually and were legally binding. Countries must report regularly on their achievements (UNFCCC, n.d.-a). Germany committed and achieved to reduce its total greenhouse gas emissions by more than 21 percent from 1990 levels between 2008 and 2012 and was on track to reduce its production further (König et al., 2011; cf. also EEA, 2021a). Because the percentages were overall targets that were not broken down by sector (cf. UNFCCC, 1997), they were not appropriate for measuring greenhouse gas emissions from transport alone.

The Paris Agreement

Following the Kyoto Protocol, the Paris Agreement was introduced in 2015 and entered into force in 2016. Unlike its predecessor, which only required industrialized countries to reduce their emissions, the binding Paris Agreement called for all nations to take action on climate change for the first time. The treaty aims to limit global warming to "well below 2, preferably 1.5 degrees Celsius, compared to pre-industrial levels" (UNFCCC, n.d.-b). The 193 member states commit to developing plans that specify their nationally determined contributions (NDCs) to reduce their emissions. A report on the results must be submitted every five years. To achieve the main goal of the Paris Agreement, climate neutrality must be reached by the middle of the 21st century (UNFCCC, n.d.-b). Clearly, efforts must be made in all sectors, including transport.

Federal Climate Action Plan 2050

In its 2010 energy concept, the German government already formulated the goal of reducing greenhouse gas emissions by 80 to 95 percent compared to 1990 levels (Die Bundesregierung, 2010). In order to develop a strategy for achieving the reduction and implementing the Paris Agreement, the German Climate Action Plan 2050 was adopted in November 2016 (BMUB, 2016). For the first time, it contains not only general but also sector-specific targets. For example, the transport sector must reduce its emissions by between 40 and 42 percent until 2030, compared with 1990 levels. In line with the Paris Agreement, Germany sets itself the goal of decarbonizing transport to become nearly greenhouse gas neutral by 2050 (BMUB, 2016).

2.2 Current status in Germany and Hamburg

Despite ambitious plans, greenhouse gas emissions from fuel combustion in transport in Germany are now almost at 1990 levels (cf. EEA, 2021a; UBA, 2022; see also **FIGURE 2** on page 3). Energy consumption in transport even increased slightly by 2019 to almost one-third of all sectors (cf. EEA, 2022). By reducing travel during the COVID-19 lockdown, Germany was able to cut back consumption in 2022 and achieve its climate goals (Die Bundesregierung, 2021; Saar & Marggraf, 2021).

Reasons for the persistently high emissions and energy consumption are the increase in trips and distances (Nobis & Kuhnimhof, 2018), the trend toward cars with more engine power, and the increase in motorized vehicles (BMVI, 2021). While a total of 36.8 million passenger cars were registered in 1991 (BMV, 2004), the number increased to 41.1 million by 2008 (BMVI, 2021), not including other motorized vehicles such as motorbikes, tractors, and trucks. The Federal Office for Motor Traffic (KBA) evaluated that 59.6 million vehicles were registered in Germany in January 2022, excluding trailers (KBA, 2022). About 81 percent of these vehicles, 48.5 million in total, were passenger cars, of which 43.2 million were privately owned (ibid., 2022). The share of alternative fuels was only 5.6 percent (ibid., 2022). The numbers are illustrated in **FIGURE 7** below.

FIGURE 7:
Registered vehicles in Germany, 01/2022 *(Author, 2022; with numbers from BMVI, 2021 & KBA, 2022; Car icon: Coquet, n.d.)*

59.6 M VEHICLES

48.5 M CARS

43.2 M PRIVATE

2.7 M ALT. FUEL
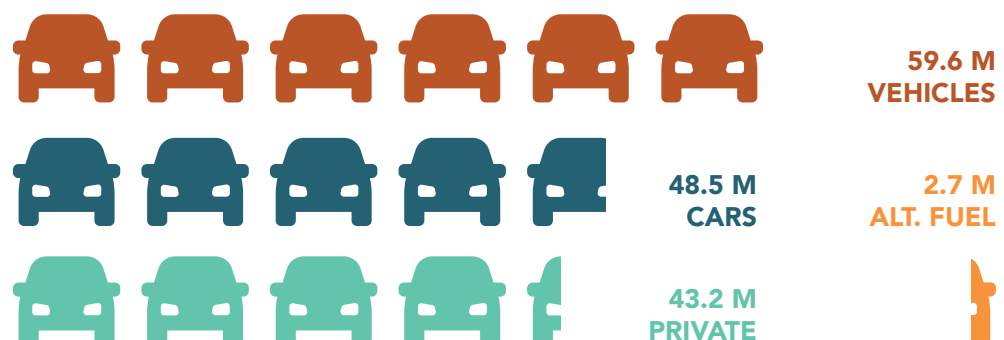
People in rural or provincial settings are more likely to own a car than the ones in metropolitan areas (Nobis & Kuhnimhof, 2018). In Hamburg, the city relevant to this study, about one million motor vehicles were registered on January 1, 2022, 1.5 percent of the vehicles registered nationwide. Of these, 813,847 were passenger cars, 80 percent of which were privately owned (KBA, 2022). Of the passenger vehicles, only 1.6 percent were electric and 4.8 percent hybrid vehicles (KBA, 2022). A comparison of annually registered vehicles published by the Statistik Nord with KBA figures also shows that the stock of motor vehicles, and thus also of private passenger cars, is steadily increasing (Statistik Nord, 2022).

Putting the number of cars in relation to Hamburg's population shows that in the last seven years between 440 and 450 cars were distributed per 1,000 inhabitants. The number is generally lower in the dense, central districts, while more cars are registered in the outer districts. In 2021, the number of private cars per 1,000 inhabitants was 341 (Statistik Nord, 2022).

Modal split journeys

Modal split person kilometers
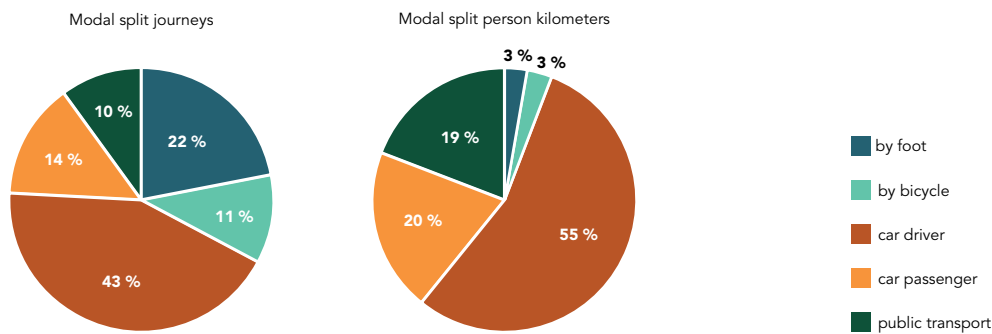
FIGURE 8:
Modal split in Germany *(Author, 2022; adapted from Nobis & Kuhnimhof, 2018)*

The distance traveled by car has also increased. Whereas in 2003, 875.6 billion passenger kilometers were covered by motorized individual transport in Germany, in 2019 the figure was 917.4 billion (BMVI, 2021). A comparison of the traffic volume and the traffic capacity of the passenger car with other types of mobility underscores the hegemony of motorized individual transport on the roads. The study 'Mobility in Germany 2017' mandated by the Federal Ministry of Transport and Digital Infrastructure found that 75 percent of kilometers were covered by motorized individual transport (see **FIGURE 8**). In addition, 57 percent of all journeys were made by car, either as a driver or a passenger (Nobis & Kuhnimhof, 2018; also in **FIGURE 8**). The breakdown also depends on people's surroundings. While 66 percent of trips in small towns and rural areas are made by car instead of walking, biking, or using public transportation, the number drops to 38 percent in metropolitan areas, presumably due to better availability of other modes of transportation, shorter distances, and better opportunities to switch (Nobis & Kuhnimhof, 2018).

Modal split journeys
City of Hamburg

Modal split person kilometers
City of Hamburg
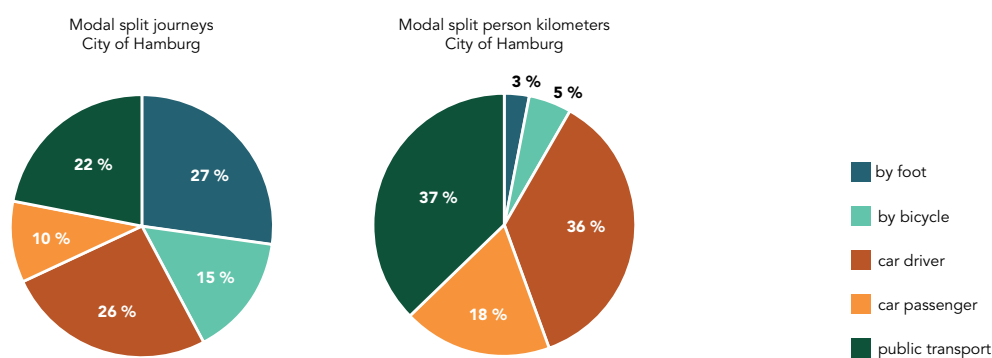
FIGURE 9:
Modal split in Hamburg *(Author, 2022; adapted from Follmer et al., 2019)*

For Hamburg, the study shows that more trips and kilometers are made by public transport, bicycle, or on foot compared to the German average (Follmer et al., 2019; see also **FIGURE 9**). However, the figures decline when looking at the metropolitan region or the entire HVV network (ibid., 2019).

In the Hanseatic city, 57 percent of households have access to one or more cars, while in the entire metropolitan region the figure is as high as 73 percent. Not only the location, but also the financial situation influences the number of cars owned by a household as people with a lower economic status are more likely to have only one or no car (ibid., 2019).

2.3 The influence of COVID-19 on mobility

The outbreak of the pandemic and the resulting travel restrictions abruptly changed mobility in most parts of the world, including Germany. Public life on streets and means of transportation were affected, especially in the cities. Social distancing measures led to the cancellation of events, the closure of stores and restaurants, and instructions to work or study from home, resulting in a decline in overall mobility at certain times (cf. Destatis, 2021e; Destatis, 2021f). According to the German government, the total number of passenger kilometers traveled fell to 822.4 billion in 2020, the 1994 level (BMV, 2004; BMVI, 2021).

Not only the distances, but also the modal split of trips changed during the pandemic, according to Knie et al. (2021). To reduce the risk of infection, people replaced trips by public transportation with individual modes of travel such as walking, bicycling, or using their private vehicle. Compared to **FIGURE 8** on the previous page, **FIGURE 10** shows that the total share of journeys by public transport decreased in 2020 and 2021, while the share of trips by private car and on foot increased (Knie et al., 2021).

Modal split journeys May 2020 — by foot 27 %, by bicycle 11 %, car passenger 8 %, car driver 48 %, public transport 6 %

Modal split journeys October 2020 — by foot 22 %, by bicycle 9 %, car passenger 6 %, car driver 55 %, public transport 8 %

Modal split journeys May 2021 — by foot 24 %, by bicycle 11 %, car passenger 7 %, car driver 51 %, public transport 7 %

Legend: by foot, by bicycle, car driver, car passenger, public transport

FIGURE 10: Modal split in Germany during COVID-19 *(Author, 2022; adapted from Knie et al., 2021)*

A comparison between large cities and rural areas shows that mainly urban dwellers have changed their mode of transport, while the shift in rural areas has been marginal (Knie et al, 2021). Although the general development seems to be positive, the long-term trend is toward increasing distances made (Nobis et al., 2019) as well as a rising number of private cars (KBA, 2022; VDA, 2022). As reported by the Federal Statistical Office in its September 2021 press release, the trend toward increased mobility can even be observed during the pandemic. Between July and September 2021, when COVID-19 numbers were low, mobility was about four percent higher than in 2019 (Destatis, 2021e).

While this shift in mobility appears to be more short-term, changes in movement patterns could have long-term implications for mobility behavior. Due to the aforementioned constraints, more people worked from home (Knie et al., 2021) and shopped online (Statista, 2021). This trend not only led to a decrease in private trips, but also to a change in the main purpose of trips, as evaluated by Knie et al. (2021). According to their representative study, fewer trips were made to or for work and education. More than half of the approximately 1,500 study participants would still want to work from home at least one day per week after lockdown (ibid., 2021).

This development could have positive effects on car ownership and greenhouse gas emissions. In addition, due to the abrupt change in their routines during the lockdown, some people may also reconsider the purpose of their trips and the modes of transportation they choose in the future. Therefore, the exceptional circumstances are an opportunity for everyone to evaluate the current state and implement changes for a sustainable future in cities (Agora Verkehrswende, 2020). To change behavior in the long term, the still prevalent benefits of car ownership described in **CHAPTER 2.1**, combined with the automotive industry's leading role for the German economy (Flore & Kröcher, 2021), need to be balanced to effectively reduce emissions. A holistic approach is necessary.

2.4 Holistic approach to transitioning mobility

The integral course must involve more than switching to renewable sources. 'Energy transition' only replaces one vehicle with another. Moreover, sustainable energy sources are still not abundant and a full transition will take time (Agora Verkehrswende, 2017). Therefore, to initiate a real change and reduce consumption, a holistic mobility transition is needed, including a change in transport modes, traffic system and mobility behavior (Agora Verkehrswende, 2017).

In this context, Manderscheid (2020) distinguishes between the above-mentioned 'energy transition', the 'transport transition', and the 'mobility transition'. According to her definition, the transport transition means reorganizing transport and reducing individual vehicles by replacing them with a mix of other modes such as public transport, cycling or walking, and new mobility options that offer 'mobility as a service', such as shared cars, bicycles and e-scooters or ride-hailing services (Manderscheid, 2020). This would reduce final consumption in the energy sector, while the remaining energy can be generated from renewable sources (Agora Verkehrswende, 2017). Nevertheless, the ability to be independent of the car and to choose between different modes of transportation is more common in urban environments, while those living in rural areas do not have the same number of options to choose from.

The term 'mobility transition' needs to be defined more broadly. It includes not only the technological, measurable elements of transport, such as the distances traveled or the movement of goods and people, but also their cultural, social, and behavioral context, as Manderscheid (2020) explains. Promoting sustainable mobility behavior and a sustainable mobility culture is therefore just as important as switching to renewable energy. Citizens' acceptance and lasting, unprompted structural change are necessary (Agora Verkehrswende, 2017).

2.5 Promoting a sustainable mobility behavior and culture

To identify ways to facilitate sustainable behaviors and a culture that promotes mobility transition, a common understanding of terms must be established. For this reasons, definitions of 'mobility', 'sustainable mobility' and 'sustainable mobility behavior and culture' are provided.

Mobility

Although the word 'mobility' is part of our everyday vernacular, its applications are complex and its distinction from 'traffic' is often blurred. The Merriam-Webster Dictionary (n.d.-a) defines mobility as "the quality or state of being mobile or movable." This general ability to move or be moved applies not only to transferring from one place to another, but also to a possible change in a person's social or socioeconomic position (Merriam-Webster, n.d.-a). However, this latter meaning is not considered in the present study. According to Becker et al. (1999), to satisfy the need or desire to be mobile, 'traffic' is used as an instrument in the form of transportation or infrastructure. Therefore, 'traffic' is the objective temporal locomotion in a space, while 'mobility' is the personal possibility to make use of locomotion, depending on spatial, physical and socio-economic conditions (Schwedes et al., 2018).

Sustainable mobility

The 1987 'Brundtland Report' defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, p. 41). The ability of the environment to meet the necessities of present and future inhabitants should limit our actions (WCED, 1987). Most researchers agree that not only environmental parameters, but also economic and social factors play a role (Purvis et al., 2018). The link between these three issues is often represented as three pillars, intersecting rings, or concentric circles, as in **FIGURE 11**. They are all equally important and cannot replace each other (cf. Purvis et al., 2018).

FIGURE 11: The different illustrations of sustainability *(Author, 2022; adapted from Purvis et al., 2018)*
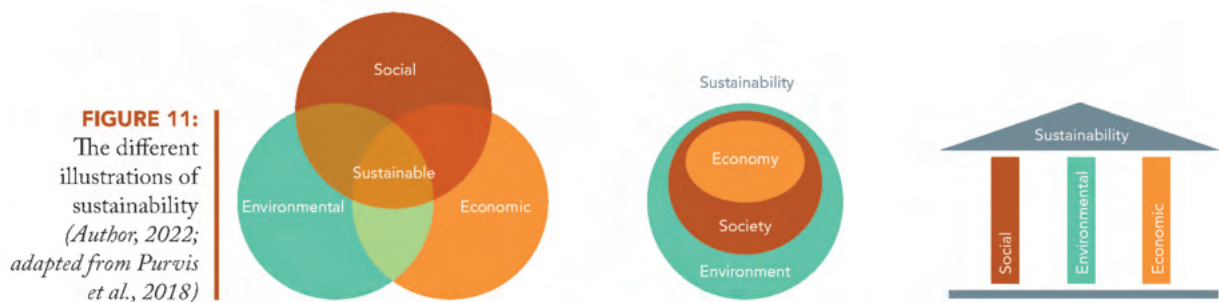
To achieve sustainable development in the three areas, all members of UN adopted the '2030 Agenda for Sustainable Development' in 2015 with 17 Sustainable Development Goals (SDGs). These goals include topics such as poverty, gender equality, education, economic growth, peace, affordable and green energy, and climate action, as illustrated in **FIGURE 12** (UN, n.d.; 2019).

Several goals relate to mobility, e.g., health, energy, infrastructure, and especially sustainability in cities and communities. The respective targets address issues like mortality rates from transport or air pollution, increasing use of renewable energy sources in all sectors, provision of infrastructure for different modes, and access to public transport (UN, 2022).

The European Commission (n.d.) has also identified 18 indicators of sustainable urban mobility. These include core topics such as affordability, accessibility, emissions, noise, or multimodality, but also broader issues like the quality of public space or functional diversity in cities (EC, n.d.).

The integration of mobility into different sectors in the SDG targets and the indicators of EC underline the importance of a holistic approach that includes more than emission reduction to achieve sustainable mobility.

Sustainable mobility behavior and culture

According to Schwedes et al. (2018), mobility behavior includes subjective choices based on individual physical, spatial, economic, and social opportunities that can be objectively observed, such as whether a person travels by bicycle or car, their destination, or the general volume of traffic. Traffic behavior describes the actions performed while traveling (Schwedes et al., 2018). Following the 'Brundlandt Report' (WCED, 1987), sustainable mobility behavior thus means using individual mobility options responsibly so that current residents and descendants in all regions of the world can continue to meet their (mobility) needs. This can lead, for instance, to the choice of environmentally friendly modes of transport, to a switch to non-fossil fuels and to a reduction of trips and distances by motorized vehicles.

Mobility culture can also induce such behavior. According to Bosen & Leicht-Schulten (2020), it is a broad concept that encompasses physical, emotional, and intellectual attributes (Bosen & Leicht-Schulten, 2020) and links the symbolic and material factors of mobility, transportation, and traffic (Götz & Deffner, 2009). The built environment, the design of infrastructure and open space, policies, public dialog, communication, and the mobility behavior of the cultural group and its members, as well as their lifestyle and travel style are part of the culture (Bosen & Leicht-Schulten, 2020). A sustainable mobility culture therefore includes not only environmentally friendly means of transport, sufficient infrastructure for them and a shift to sustainable behavior, but also discourse and knowledge transfer as well as the communication of sustainable mobility as part of a desired lifestyle.

Ways to induce the change of mobility behavior or culture

The reasons for individual mobility decisions can be manifold, e.g., cost, travel time, distances, or available infrastructure (Agora Verkehrswende, 2019; Bräuninger et al., 2012). As previously mentioned, they depend on the individual physical, spatial, economic, and social possibilities of the respective person or group (Schwedes et al., 2018). Therefore, one measure to change individual mobility behavior and culture is to give everyone the opportunity to travel sustainably, regardless of their age, ability, or socioeconomic background, for examply by increasing the access to public transport (ibid., 2018).

However, not only capabilities and opportunities but also motivation play a role (Michie et al., 2011) and non-measurable subjective emotional factors such as lifestyle, image, enjoyment and fun are also taken into account (Agora Verkehrswende, 2019; illustrated in **FIGURE 13**). In his 2008 essay "The New Paradigm of Sustainable Mobility," Banister also notes that reaching a destination does not always have to be the reason for a trip, but that travel itself can be an enjoyable activity.

Moreover, users do not always make their decisions rationally, but out of routine and unconsciously (Schwedes et al., 2018). They often underestimate factors such as the total time or total cost of a trip (Bräuninger et al., 2012). Achieving behavior change is therefore a longer process of information, awareness, and motivation - similar to learning, which is a process that involves information, experience, and addressing problems (Argyris & Schön, 1978).

In the context of behavior shift, Agora Verkehrswende (2019) refers to the transtheoretical phase model, originally introduced in medicine (cf. Prochaska et al., 1994; Prochaska & DiClemente, 2005), but now also applied in the transport sector. According to this approach, behavior change goes through the six phases of "precontemplation, contemplation, preparation, action, maintenance, and termination" (Prochaska & Velicer, 1997, p. 38; illustrated in **FIGURE 14** below).

While people in the first phase do not yet have the information, motivation, and awareness of the problem, they begin to address the issue in the second phase. However, they are still divided about whether or not to change. In the third phase, they have the motivation to prepare for change, but actual action, maintenance, and stabilization are needed to achieve behavior change (Agora Verkehrswende, 2019). To foster this process of behavioral shift, a wide range of preferably combined push and pull measures is required (ibid., 2019).

FIGURE 14:
Behavior phase
model *(Author,
2022; acc. Prochaska
& Velicer, 1997)*

Push and pull measures

Originally, these terms were used in the context of migration theory, in which people are 'pushed' out of one country on the one hand and 'pulled' into another on the other (cf. Lee, 1966). In the field of mobility, their main meaning remains. Push factors introduce restrictions and measures that make a certain activity less attractive or prevent it, while pull factors promote the attractiveness of a certain mobility behavior. Push factors are thus negative, while pull factors are positive (Bräuninger et al., 2012; Schwedes, 2016). In the mobility sector, push and pull strategies are mainly used to influence mode choice and vehicle ownership, i.e., to reduce the attractiveness of private cars and increase the enticement of other modes of transportation (Bräuninger et al., 2012).

Push measures to convince people to diminish the use of private motorized transport are mainly introduced via pricing such as road and congestion charges, tolls, parking fees, fuel price and vehicle taxes (Bräuninger et al., 2012; Reutter, 2011), or via other traffic regulations such as the extension of environmental zones and speed limits, the redesign of road space in favor of sustainable modes of transport, the reduction of parking spaces, and (temporary) street closures (Reutter, 2011, see also **FIGURE 15**). Nevertheless, people can voluntarily decide which travel option they choose. However, the presence of objective constraints influences subjective choice, depending on personal physical, spatial, economic, and social capabilities (Schwedes et al., 2018). This can be an increased travel time, the lack of (financial) resources, or the prohibition to drive to a certain area (Busch-Gertseema et al., 2015). Push measures are often seen as enforcement and restricting personal freedom of choice (Schwedes et al., 2018), which is why they are generally not well received in society (Flore & Kröcher, 2021; Levi et al., 2021).

PUSH MEASURES   **PULL MEASURES**

CHARGES, FEES TOLLS, TAXES   SPEED LIMITS

REDUCTION OF PARKING   ROAD CLOSURES

SUBSIDIES INCENTIVES   IMPROVE FOOT CONNECTIONS

EXPAND PUBLIC TRANSPORT   ENHANCE BIKE INFRASTRUCTURE

FIGURE 15: Exemplary push and pull measures *(Author, 2022; bus: i con, n.d.; bike: Vignesh, n.d.)*

Pull measures include improving public transport in terms of quality, comfort, availability, frequency, or price; expanding safe and convenient bicycle networks and pedestrian connections; subsidies; and providing sharing alternatives for cars, bicycles, and other vehicles (Agora Verkehrswende, 2019), as in **FIGURE 15**. All mobility options remain available while certain features are improved or added. The decision to switch or not is made voluntarily. Therefore, objective options to

change location remain, while subjective perceptions of travel increase according to individual mobility needs (Schwedes et al, 2018). This is why positive pull measures often achieve higher acceptance among the affected group (Levi et al., 2021).

Bräuninger et al. (2012), Levi et al. (2021), and Syberg et al. (2021), among others, emphasize that push and pull measures should always be implemented together and integrated into a broad framework, as individual actions have limited impact. Schwedes et al. (2018) recommends combining the two and selecting them depending on the objective. In addition, regulations and pull measures may or must be complemented in some cases by the introduction of economic instruments such as negative financial incentives for drivers. These economic instruments may have the purpose of increasing the price of private motorized transport while financing transport infrastructure for sustainable modes (Bräuninger et al., 2012). Other push measures can be pull factors at the same time, such as redesigning road space in favor of sustainable mobility options that make cycling and walking more attractive while reducing access or space for motorized vehicles.

For a holistic approach, a comprehensive strategy needs to be pursued that combines both types of measures and involves different transport modes and social strata to achieve acceptance among broad segments of the population and to effectively implement change. Only if an attractive offer of public transport or bicycle lanes is complemented by fewer privileges for drivers of private motorized transport, a change towards a more sustainable mobility culture and behavior and thus a mobility transition can take place (cf. Schwedes et al., 2018; Hennicke et al., 2021).

In addition to the political will to implement change, the pursuit of strategies focusing on communication, evaluation, and participation is crucial (Agora Verkehrswende, 2019; Banister, 2008; Schwedes et al., 2018). To raise awareness, educate, engage, and inform, potential communication tools must include image campaigns, mobility consulting, reframing, creating new values, co-creation, and temporary street experiments (Agora Verkehrswende, 2019). By integrating communication strategies and creating a holistic vision, a long-term change in mobility behavior and culture, and thus a mobility transition not only in the streetscape, but also in society, discourse, and the mindset of residents is possible (Banister, 2008; Schwedes et al., 2018).

Overcoming the obstacles in the implementation of push and pull measures
As the previous sections have shown, the urgency of a holistic mobility transition is emphasized by researchers and awareness of it has reached large parts of the population and politicians. However, binding measures to reduce motorized individual transport are still implemented only very hesitantly (cf. Flore & Kröcher, 2021). Apart from the importance of the automotive industry for Germany (Manderscheid, 2020) and the concern of losing economic power and jobs in this sector, the main obstacle to the introduction of particularly pull measures such as street closures or the reduction of parking space is the lack of acceptance of these measures among residents (Flore & Kröcher, 2021). While most people would welcome the introduction of play streets

and traffic reduction in their neighborhood, the same people would be opposed to such measures elsewhere because they would limit the accessibility of places (ibid., 2021). This is partly because owning a car is still a sign of status, freedom, power, and individuality, and changing this culturally embedded mindset. As a result, politicians are afraid of losing the support of citizens if they introduce unpopular measures. This could lead to a loss of votes in the next election. The City of Kassel, for example, planned to introduce restrictions such as traffic-calmed zones and drive-through bans in the early 1990s. Many residents were opposed, so the ruling party, the Social Democrats, lost nearly 20 percent in the following local election (ibid., 2021).

In addition, traditional planning processes often take a long time due to administrative procedures, the various stakeholders involved, the lack of resources, and the prevailing regulations (von Schönfeld & Bertolini, 2017). Positive experiences with the new space can therefore not immediately convince doubters.

However, past developments have shown that the opportunity to feel the vision and experience the new space in reality is an important factor in changing people's culture and is more successful than just writing about it in theory (Rieger & Rußmann, 2021). Glaser et al. (2020) also highlight experimentation, complemented by monitoring and evaluation, as a promising learning approach and thus incremental change in the urban environment. Banister (2008) furthermore argues that pilot demonstration projects can raise people's understanding and acceptance. Therefore the use of 'Tactical Urbanism' in the form of low-cost experiments, temporary road closures, or demonstration projects that incorporate co-design processes, monitoring and evaluation, and can be implemented faster than conventional planning measures seems to be a promising solution (cf., i.a., Agora Verkehrswende, 2020; Banister, 2008; Canzler & Knie, 2019; Flore & Kröcher, 2021; Hennicke et al., 2021; Syberg et al., 2021).

2.6 Limitation of scope

In summary, various push and pull measures, as well as information, education, and awareness, are needed to holistically change behavior and culture and promote a steady mobility transition. To reach their full potential, these actions should always be implemented together. Ideally, they would be integrated into an overall strategy with long-term goals. Therefore, in reality, the application of Tactical Urbanism in the form of road experiments, pilots and demonstrations alone would not be sufficient to achieve this goal. Additional in-depth analysis would be needed to select appropriate other measures that complement each other, such as tax incentives, speed limits, tolls, improving public transport or expanding bicycle infrastructure, and to develop a holistic strategy.

Since this thesis paper focuses exclusively on Tactical Urbanism as a tool to promote the mobility transition and the development of a program that includes tactical actions, other push and pull measures are outside the scope and are therefore not explored any further.

FIGURE 16:
Demonstration in
Garden Grove, U.S.
(Street Plans, 2022)

TACTICAL URBANISM
A NEW FORM OF URBAN PLANNING?

3.1 The rise of Tactical Urbanism

Pop-up environments, urban laboratories, and temporary street experiments became increasingly popular during the pandemic lockdown in 2020 and 2021. Because people were more likely to become infected indoors (Lewis, 2021), people in urban areas replaced trips by bus or train with individual mobility options such as walking or driving their own cars (Knie et al., 2021, see also **CHAPTER 2.3**). More people noticed the uneven distribution of public space. In addition, due to the higher risk of infection indoors and the closure of restaurants, culture, and stores, urban residents often spent their leisure time outdoors (Grima et al., 2020) and soon demanded more high-quality public spaces. To comply with COVID-19 containment measures and social distancing guidelines, municipalities around the world took advantage of the unexpected opportunity of the crisis to transform empty streets (cf. BBC, 2020) in favor of active mobility and outdoor recreational options, as experimental or interim solutions (c.f., i.a., COVID Mobility Works, n.d.; van Lieben, 2020).

What looks like a new movement has been applied for several years in different places around the world and under various names. According to Lydon & Garcia (2015), Tactical Urbanism (TU) became popular in the United States in the housing crisis in 2007. Other influential developments included the rise in global population, ongoing urbanization, changing demographics, and the increasing ability to connect online and through mobile services, note Lydon & Garcia (2015). Due to the lack of money during the financial crisis, local governments were unwilling or unable to quickly implement changes to road infrastructure. Frustrated citizens who wanted safe, livable, pedestrian- and bicycle-friendly communities began banding together to reclaim their streets without regulatory approval (Lydon & Garcia, 2015). Soon, municipalities recognized the opportunity of temporary, low-cost measures and citizen engagement as a planning tool for rapid, iterative, and accepted change and developed their own institutional programs (Hou, 2020; Lydon & Garcia, 2015).

Although enlivened by Mike Lydon and Anthony Garcia, they admit that Tactical Urbanism was not reinvented. Rather, today's movement is influenced by earlier civic-led, temporary or transient activities (Lydon & Garcia, 2015).

The establishment of the first street

According to Lydon & Garcia (2015), their inspiration dates back to between 7,000 and 3,000 BCE, when the first urban street was created by the inhabitants of a settlement on the island of Cyprus to serve as a safe space for walking, selling, and communicating. The street was collectively initiated, maintained, and agreed upon and fulfilled its function as a public space for all (Lydon & Garcia, 2015).

Play streets

A more recent, inspiring movement began in New York and London in the early 20th century. As motorized traffic became more dominant, conditions on the streets deteriorated for pedestrians. What was originally a social space became unsafe. An increase in child fatalities prompted local police in New York to temporarily close certain streets to traffic in the afternoon. A summer program followed in 1914, and over 70 play streets were introduced in the following years (Lydon & Garcia, 2015). In Germany, doctors also advocated for the benefits of play streets as early as the 1920s (Hamburger, 1921). However, West Germany and East Germany did not introduce a sign to this effect until the 1960s and 1950s, respectively (Das Bundesministerium der Justiz, 1970; Jedicke, 1956). Nowadays, the idea of play streets reappears. Lydon & Garcia (2015) give the example of Bristol, England, where parents initiated the temporary closure of a street in 2011. The City Council admitted the benefits and enacted a policy enabling citizens to implement a play street for up to three hours per week. The initiating parents formed the organization 'Playing Out' to help other parents, and within two years over forty play streets were established in Bristol (Duffin, 2014; Lydon & Garcia, 2015). In recent years, more and more temporary play streets have also been established in Germany, in particular in Berlin (c.f., i.a., Bündnis temporäre Spielstraßen, n.d.).

Dutch woonerfs

A second development that has influenced TU is the concept of 'woonerfs', residential yards or also called 'home zones', which emerged in the 1960s in the Netherlands. A group of residents were upset that their street was being used as a thoroughfare and the city government was not addressing the problem. So they gathered at night to change their street from a straight road to a serpentine. The result was that motorists had to slow down and the space was given back to the people. While the municipality initially ignored the initiative, the woonerfs were incorporated into the Dutch Traffic Regulations in 1976. Therefore, this measure is a good example of a bottom-up initiative that eventually gained institutional support (Appleyard & Cox, 2008).

Open streets and 'Ciclovías'

Precursors to temporary street closures can also be found in Seattle and Bogotá in the form of open streets. While the North American city was one of the first to introduce its 'Seattle Bicycle Sundays' in 1965, Bogotá launched its prestigious 'Ciclovía' ('bicycle lane') program 10 years later, in 1974 (Lydon & Garcia, 2015). In Germany, four 'car-free Sundays' were introduced in 1973 to save energy during the oil crisis (Iken, 2022). The concept has been increasingly taken up since the early and mid-2000s, especially in America and Europe (Lydon & Garcia, 2015). For instance, the 'car-free Sundays' are held each year in cities across Europe under the banner of European Mobility Week, which was launched in 2002 to help municipalities campaign for sustainable mobility (c.f.ICLEI, n.d.).

FIGURE 17:
Portable Park II under the highway
(A living library, 2011)

Portable parks, the first 'parklets'

The 'parklets' so popular today originated in the 1970s, when artist and landscape architect Bonnie Ora Sherk employed a series of artistic installations as a tactic to enhance 'dead spaces' in San Francisco (A living library, 2011; Cavagnaro, 2012). Her most important interventions, the 'Portable Parks', attracted particular public interest. This involved transforming three different sites normally used by cars into temporary recreational areas for four days (A living library, 2011). Her main tools for the transformation were grass, picnic tables, trees, and live animals borrowed from the San Francisco Zoo (Cavagnaro, 2012), as visible in **FIGURE 17**.

Additional inspiration

In their 2015 book, Lydon & Garcia cite other influences on today's TU practices such as mobile libraries, food trucks, and the New Urbanism movement. While most of them aim to reclaim or repurpose public space through (sometimes unsanctioned) tactical actions, these movements have little to do with the streetscape transformation that is the focus of this paper. Therefore, they will not be described further here.

3.3 Framing Tactical Urbanism

Mike Lydon and a group of colleagues coined the term 'Tactical Urbanism' when they published a collection of case studies in 2011 with the memorable name 'Tactical Urbanism; Short-Term Action, Long-Term Change, Volume 1' (Lydon et al., 2012; Lydon & Garcia, 2015). Based on the definition of 'tactical' as "of or relating to small-scale actions serving a larger purpose" or "adroit in planning or maneuvering to accomplish a purpose" (Merriam Webster, n.d.-b; cited in Lydon & Garcia, 2015, p. 3), TU is therefore defined as "an approach to neighborhood building and activation using short-term, low-cost, and scalable interventions and policies" (Lydon & Garcia, 2015, p. 2). It is an incremental approach applied with the intention of promoting change with the help of local users. In most cases, the aforementioned 'larger purpose' is to increase the quality of life and stay in public spaces by transforming plazas, activating underutilized areas, or reclaiming street space from motorized traffic and using it for public activities or active transportation (Lydon & Garcia, 2015). Because of this, and its temporary nature and manageable size, TU involves low risk and short-term commitment, but can trigger long-term change (Lydon et al., 2012), including in mobility behavior. The testing nature is often illustrated by referring to on-road interventions as 'street experiments' (cf. Bertolini, 2020) or 'real-wold labs' (cf. Anders et al., 2020; Bergmann et al, 2021). These terms emphasize the temporary nature of the project and the intention to test it, but not the tactical approach to a long-term transition. For the purposes of this paper, therefore, the focus will be on the term Tactical Urbanism.

3.4 A tool for a wide range of actors

Originally, TU began with unsanctioned, citizen-led interventions aimed at demonstrating the 'people's right to the city' by protesting, prototyping, or demonstrating changes that would otherwise have been prevented by conventional planning and bureaucracy. However, authorities soon noticed the success and support of actions and approved what was initially unauthorized. Some city leaders, developers, and businesses even adopted the approach, and installed top-down programs to respond quickly and build broader acceptance. However, engaging users, citizen groups, institutions, local businesses, and organizations through controlled, mediated, or invited participation processes remains critical to success (Lydon & Garcia, 2015). Anders et al. (2020) emphasize the relevance of engagement processes in real-world laboratories as well. In the best case, pertinent stakeholders from different disciplines should not only be informed, but also involved in the design and decision-making process, even to the point of developing their own ideas. The initiators should be open to different proposals and also to unforeseen outcomes. Universities and research institutes that are not tied to authorities can provide neutral impulses as well as monitor and evaluate the entire process (Anders et al., 2020). Engagement processes not only make citizens feel integrated and heard, but also foster a sense of community, social ties, and quality of life (Lydon et al., 2012).

3.5 'Do-it-yourself' Urbanism versus Tactical Urbanism

TU and DIY Urbanism are umbrella terms used similarly to represent small-scale, user-generated interventions and encompass movements such as pop-up, 'hacker', and guerrilla urbanism. Although the approaches overlap and the two terms are not uniformly defined (Finn, 2014; Hou, 2020; Lydon & Gracia, 2015), tactical and DIY actions sometimes need to be distinguished. "Not all DIY urbanism efforts are tactical, and not all Tactical Urbanism initiatives are DIY," summarize Lydon & Garcia (2015, p. 6/8). Finn (2014) explains that TU is part of a DIY movement, among other things. He refers to both approaches as "cousins" (Finn, 2014, p. 390).

While TU can also be used as a top-down approach by governments and authorities, DIY Urbanism initiatives are typically driven by individuals or civil society groups with the intention of solving problems when city agencies do not (Finn, 2014; Lydon & Garcia, 2015). Therefore, as mentioned earlier, TU interventions may be sanctioned, while DIY Urbanism, although not exclusively, emphasizes more rebellious, activist movements (Lydon & Garcia, 2015).

Moreover, not all DIY activities are tactical. 'Yarn bombing', the knitting or crocheting of street furniture or trees, as **FIGURE 18** shows, is an example of such an intervention. The initiators intend to make the streets more colorful, but usually without the goal of achieving long-term changes in infrastructure (Lydon & Garcia, 2015). Guerrilla urbanism as a form of DIY Urbanism can also be distinguished from Tactical Urbanism, according to Hou (2020). The guerrilla approach aims to disrupt and challenge the system with unsanctioned and unscripted actions, but without being a stepwise tool for urban planners and institutions (Hou, 2020).

3.6 Temporary and 'phase 0' interventions

In addition to citizens demonstrating their 'right to the city' through tactical actions and institutional actors using TU for temporary but time-limited interventions, a third practice is widespread. The so-called 'phase 0' approach is applied by governments or

investors to test a project before it is permanently implemented (Lydon & Garcia, 2015). Fernandes Barata & Sansão Fontes (2017) illustrate the different objectives of temporary and 'phase 0' approaches. While the former has a defined application period that can be repeated weekly, monthly, or annually without aiming for a long-term change in infrastructures, the latter is implemented with the intention of gradually changing a place (Fernandes Barata & Sansão Fontes, 2017; Lydon & Garcia, 2015). Both approaches have the potential to influence citizens' mobility behavior (Fernandes Barata & Sansão Fontes, 2017) and can serve as resource-efficient alternatives to slow conventional planning (Lydon & Garcia, 2015).

3.7 Conventional, strategic planning contra tactics

Lydon & Garcia (2015) and others highlight TU as an alternative approach to standard urban planning strategies. To understand how 'strategies' and 'tactics' can be distinguished and used side by side, the respective terms need to be clarified. Both were introduced in the military domain before being applied to other fields such as science, knowledge, politics, and urban planning (de Certeau et al., 1980; de Certeau, 1984; Haydn & Temel, 2006; Lydon & Garcia, 2015). According to French philosopher and urbanist Michel de Certeau et al. (1980), strategies in the context of urban planning are applied by powerful actors such as municipalities, scientific institutions, or businesses to influence specific goals, external targets, or stakeholders. A clearly defined physical or institutional location as a control base is required (de Certeau et al., 1980). Thus, the pursuit of a strategy is often complex and requires long-term planning. In contrast, de Certeau et al. (1980, p. 6) refer to tactics as "the calculated action which is determined by the absence of a proper place." They explain that tactics must interact with the environment on an occasional basis because of the lack of affiliation. Therefore, they fill out gaps and react without prior planning (de Certeau et al., 1980). Particularly weak actors such as citizens can benefit from this characteristic to overcome the often dominant, slow, expensive, and complex strategies of cities, emphasize Lydon & Garcia (2015). However, as mentioned earlier, not only citizens but also governmental authorities can use the tactical approach to cope with recalcitrant citizens, outdated laws, or lack of resources. Short-term, adaptive actions within a long-term strategy can close the gap between supply and demand, as changes can be implemented quickly (Hou, 2020; Lydon & Garcia, 2015). Measuring, monitoring,

FIGURE 19:
Strategic and stepwise planning
(Author, 2022)
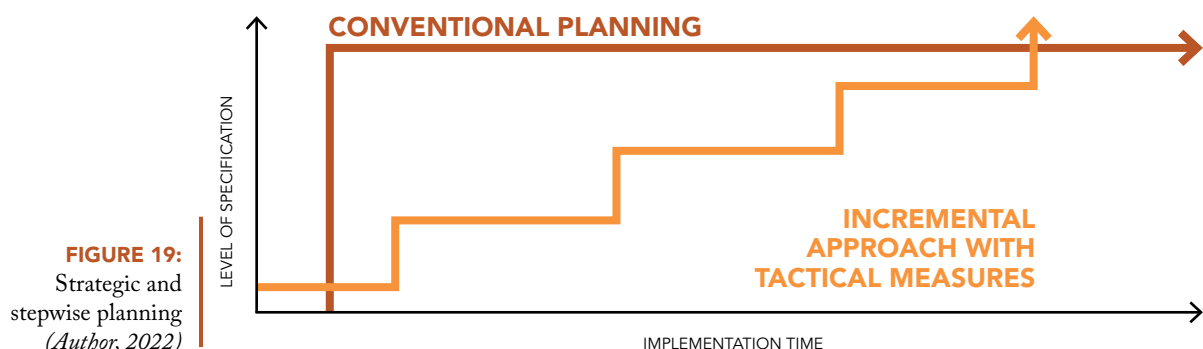
and evaluating indicators help refine interventions based on data, feedback, and suggestions from residents, and ultimately develop a durable installation that meets a wide range of needs (Gehl, 2016a; illustrated in **FIGURE 20** and **FIGURE 21**). In this way, users and authorities can work together on an incremental approach and advocate for a shared vision of their urban environment. Nevertheless, integrating citizen-initiated tactical actions with potentially unexpected outcomes into the current strategic planning remains the greatest challenge (Silva, 2016). Therefore, ways to overcome this challenge and the potential of an institutional program for bottom-up approaches in Hamburg are analyzed in this research.
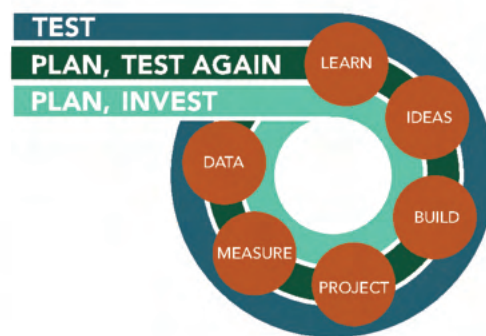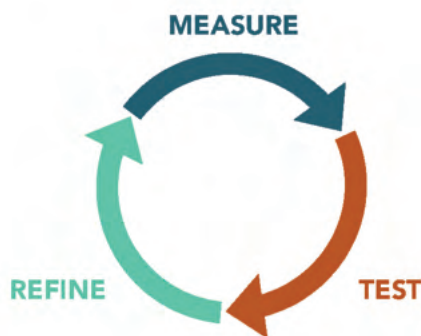
FIGURE 20:
(left) Measure-test-refine *(Author, 2022; adapted from Gehl, 2016a)*

FIGURE 21:
(right) Build-measure-learn *(Author, 2022; adapted from Lydon & Garcia, 2015)*

3.8 Critical view on Tactical Urbanism

The challenge of matching a bottom-up tactical approach with a top-down strategy is also one of the points criticized at TU. Silva (2016) finds the aiming for both rather contradictory, as the former emphasizes a user-centered approach with simple goals and unpredictable outcomes, while the latter is usually an authoritarian, comprehensive approach focused on achieving long-term goals.

Municipal officials using tactical interventions as a tool to implement change quickly, especially during COVID-19, can also lead to a neglect of citizen engagement and public consultation, as noted by Combs & Pardo (2021) through a review of several professional articles. This lack of stakeholder involvement can lead to dissatisfaction or even lawsuits, as the case of pop-up bike lanes in Berlin showed (Krause et al., 2020). Mould (2014), referring to the meaning of the terms 'tactical' and 'urbanism', adds that TU's use as a tool for institutional intervention has made it less tactical and more a form of urbanism that loses sight of its original experimental, non-sanctioned nature. Furthermore, he argues that TU is often misrepresented and misused as an alternative to regular strategic planning without acknowledging its original anarchic nature (Mould, 2014). Spataro (2016) even goes a step further, stating that the way TU is used as a planning tool devalues the achievements of the original tactical interventions in response to governments' carelessness.

Bertolini (2020) argues that most of the street experiments he discusses in his paper focus on the event itself and risk losing sight of long-term goals and thus lasting change. Among other experts, he and Vecchio et al. (2021) therefore point out that monitoring and maintenance are needed for long-lasting effects. Stehlin

& Tarr (2017) add that only the tactical interventions that support other or larger community goals have the potential for lasting implementation. This criticism may also be a prerequisite for interventions.

Vecchio et al. (2021) argue, that local experiments can only address a small portion of existing problems and are often only used as part of a strategy to increase economic development. Once goals are achieved, TU is no longer considered a tool. Also, conventional measures still seem to be preferred over temporary interventions (Till & McArdle, 2015).

Furthermore, critics, especially in North America, question the social, cultural, and economic equality of TU. Even initiator Mike Lydon, in an interview with Wilson (2020), admits that some client cities have wanted to introduce open streets on the waterfront or as part of a representative project. However, these measures would only serve a certain clientele. In the same interview, his colleague Tony Garcia emphasizes the importance of involving the local community to achieve equity. Implementing a simple tactical intervention might not address the real problems residents face (Wilson, 2020). In discussing equity, LaFrombois (2017) notes that the location and design of an intervention is influenced by the people who define the TU practice. Stehlin & Tarr (2017) and Henneberry (2017) emphasize this by arguing that change is only accepted by a particular group of people, often localized by race or class. While change is desired by those groups with good standing and financial resources, lower class interventions tend to be undesirable (Henneberry, 2017).

In addition, Finn (2014) and Mould (2014) argue that TU improving unattractive neighborhoods can lead to gentrification processes as more people, such as young professionals, want to live there. This can lead to displacement of original dwellers (Finn, 2014; Mould, 2014).

Although critics question the solely positive impact of Tactical Urbanism, the issues raised do not necessarily mean that TU will be averted at all. Nevertheless, the arguments must be considered such as by pursuing long-term goals, setting value on equity between all districts, the involvement of diverse stakeholders with different backgrounds and social classes, and the prevention of displacement.

3.9 Conditions for the implementation of tactical interventions

Legal conditions in Germany

Originally, tactical interventions were carried out without asking for permission but they have become an instrument of the authorities (Lydon & Garcia, 2015). Since the purpose of this paper is to explore the possibilities for an institutional program in Hamburg, the legal conditions for sanctioned projects in Germany are analyzed. In general, temporary measures can be regulated in a variety of ways. However, most of the legal options available to citizens are not merely tactical and do not allow for permanent changes, such as registering demonstrations (applied for 'Parking Day'), organizing neighborhood festivals (applied for short-term street closures), or obtaining other special permits. Therefore, these options are not explained in

detail. Nevertheless, even temporary actions can promote long-term transformation (Fernandes Barata & Sansão Fontes, 2017; Lydon & Garcia, 2015).

Another option is to conduct 'traffic experiments'. The 'experimentation article' in the German Road Traffic Regulations (StVO) allows authorities to restrict or prohibit access to certain areas to study traffic behavior, traffic flow, accident occurrence, and to test planned traffic safety and regulatory measures (StVO, 2020, §45 (1)). However, its application was limited in the past because §45 (9), sentence 3 required justification for increased danger. In 2020, however, municipalities were given more leeway. The existence of an increased risk situation is no longer a requirement (see StVO, 2020, §45 (9)). Cities can now experiment without knowing the outcome, but they may only take temporary actions that are compatible with other articles of the StVO. In order to allow more diverse measures, another change of the StVO is necessary and intended (BMVI et al., 2019).

Additional facilitating conditions

Complementary to the legal requirements, there are other conditions that enable successful tactical measures to achieve lasting acceptance. Bertolini (2020) identified key criteria for 'transition management' in the publications of Nevens et al. (2013) and Roorda et al. (2014) that are also applicable to tactical street experiments. Originating in socio-technical transition research and focusing on sustainable change (Grin et al., 2011), 'transition management' is defined as "a governance approach that aims to create space for new paradigms and practices" (Roorda et al., 2014, p. 2). Important characteristics for successful transition experiments are that they must be radical, challenging, feasible, strategic, as well as communicative and mobilizing (Nevens et al., 2013; Roorda et al., 2014). According to Bertolini (2020), a street experiment is radical if it differs from basic practices, i.e., if it focuses on promoting active mobility rather than motorized transport. The experiment is challenging if it aims at long-term changes and addresses societal challenges. Therefore, it should be integrated into an overarching strategy and combined with other measures or regulations. An intervention is financially and temporally feasible if it can be implemented quickly and with existing resources and the constraints are short-term or tolerable. It is strategic if lessons are learned about how to achieve change through data collection, monitoring, and evaluation of a wide range of indicators. Finally, a street experiment is communicative or mobilizing when many people can be reached through visible actions, public events, online publication as well as participation and engaged processes with all types of stakeholders (Bertolini, 2020).

Glaser & Krizek (2021) applied the criteria in their research on COVID-19 related emergency street actions and validated them by comparing measures in 55 U.S. cities. Successful projects appear to be more often integrated into or linked to strategies and have greater support and commitment from public officials and the public. Particularly 'innovative' cities seem to combine feasibility, focus on a challenge, and communication or mobilization in their projects (Glaser & Krizek, 2021).

3.10 Applications and tools for Tactical Urbanism

TU is suitable for various applications because it is flexible in size and appearance. It can be used as a tool to design new places and improve existing ones. Lydon & Garcia (2015) mention several interventions in their comprehensive book. Not all of them aim to promote sustainable mobility and reduce the dominance of private cars. However, in the context of this paper, the focus is on these goals. According to Lydon & Garcia (2015, p. 9), applicable interventions include "Intersection repairs," "Park(ing) Day" or "parklets," "open streets," "play streets," "pavement to plazas," or "pavement to parks" programs. However, their classification is not a universally accepted definition. The National Association of City Transportation Officials (NACTO), a coalition of 89 North American cities and agencies working on a common approach to transportation issues (NACTO, n.d.-a), published a guide to street experiments in times of COVID -19. "Streets for Pandemic: Response and Recovery" lists applications such as "managing speeds," "sidewalk extensions," "safe crossings," "slow streets," "open/play streets," "bike & roll lines," and others (cf. NACTO, 2020, p. 20 et seqq.).

Apparently, a common classification of tactical street interventions is not yet established. In addition, the classifications by Lydon & Garcia and NACTO do not appear to be general enough, but focus on direct action or purpose. Through extensive research, a more general classification was found, proposed by Luca Bertolini, a professor in the field of Social and Behavioral Sciences at the University of Amsterdam (cf. UvA, 2022). As an expert in the program group 'Urban Planning', he has already published several works on sustainable mobility, transition management and street experiments (cf. ibid., 2022). In his paper "From 'streets for traffic' to 'streets for people': can street experiments transform urban mobility?", Bertolini (2020) assigns tactical street interventions to one of the following categories, depending on how they change the road space: "re-marking streets", "re-purposing parking space", "re-purposing sections of streets" and "re-purposing entire streets" (cf. Bertolini, 2020, p.737 et seqq.). Since this study will focus on how Tactical Urbanism can promote mobility transition, the classification of converted street areas seems to be applicable. Therefore, for the overview on the next page and for the case studies that follow in **CHAPTER 4**, this generic division will be used. The **BOX ON THE RIGHT** serves the purpose of summarizing what is included in each of the four different categories and illustrating it with one exemplary photograph.

To run the various applications, a number of tools are used. As TU is about short-term, low-cost, simple, but scalable actions (Lydon & Garcia, 2015), the tools and materials involved should be inexpensive, easy to assemble and disassemble, and flexible to use. In 2016, 'the street plan collaborative' by Mike Lydon and Anthony Garcia created a free manual for use. The materials and tools are grouped according to their function. Although their collection of materials is quite extensive, they emphasize their exemplary nature and the suitability of other locally available instruments with the same functionality (SPC, 2016).

EXEMPLARY APPLICATIONS

A *Repurposing entire streets*

The most radical, but, depending on the size, often only short-term option for reclaiming space from motorized traffic is the rededication of entire streets, for example through open streets programs or car-free days, as shown in **FIGURE 22**. Sustainable mobility and social interaction are promoted while motorists are forced to drive around (Bertolini, 2020).

FIGURE 22:
Temporarily car-free highway in Essen, Germany *(Vollmer, 2010)*

B *Repurposing sections of streets*

FIGURE 23 shows that this option transforms underutilized road areas or squares into vibrant public spaces by banning cars or giving them a secondary role. This type of transformation not only promotes amenity, but also increases the percentage of pedestrians and bicyclists in the area. The street loses its main character as a space for traffic (Bertolini, 2020).

FIGURE 23:
Bute-Robson Plaza Vancouver, Canada *(City of Vancouver, 2020)*

C *Repurposing parking space*

Instead of using much of the public space for stationary traffic, cities can reclaim parking, for example, by installing parklets, as in **FIGURE 24**, with amenities such as benches, plants, or bike racks. This creates a temporary public park where people can meet and hang out while reducing the amount of space devoted to motorized traffic (Bertolini, 2020).

FIGURE 24:
Occupied parking spot in Brazil *(Nunes de Oliveira, 2016)*

D *Remarking streets*

Changing markings can result in reducing space for motorized traffic in favor of other modes, such as adding pop-up bike lanes, or increasing safety by slowing cars through intersection repairs (cf. **FIGURE 25**) or adding crosswalks. Removing markings from streets to create shared space can also help pedestrians and bicyclists (Bertolini, 2020).

FIGURE 25:
Colorful crossroad in Costa Rica *(SUTP, 2020)*

The various tools and their uses are shown in **FIGURE 26** and **FIGURE 27** on the left. The labels 1 to 6 on the selected photos indicate the functions according to the SPC (2016) manual. The following tools and materials can be applied:

(1)   *Barriers elements* set up a physical or visual barrier to motorized traffic that provides safety and accessibility. Materials can include standard barriers (**FIGURE 26)**, traffic cones, and planters as in **FIGURE 27**, and others (SPC, 2016).

(2)   *Surface treatments* define zones or enhance the appearance. Applied are artificial grass and chalk color in **FIGURE 26** and colorful paint in **FIGURE 27**. Other treatments can be tape, matting, or gravel surfacing (SPC, 2016).

(3)   *Landscaping elements* like plants (**FIGURE 27**), turf (**FIGURE 26**), or trees create comfort and enhance the visual aspects of the project. Furthermore, landcaping can bring climatic benefits but must be properly maintained (SPC, 2016).

(4)   *Street furniture* that is not connected to consumption is important to transform the space into a livable place to pause and gather. The projects in **FIGURE 26** and **FIGURE 27** use hay bales, benches and crates (SPC, 2016).

(5)   *Signs* are required, for example, to inform users, direct traffic, post notifications and attract attention. Official traffic signage such as those in **FIGURE 27** or project-specific ones (**FIGURE 26**) can be used (SPC, 2016).

(6)   *Programming* in the form of low-threshold events and activities such as sporting events as in **FIGURE 26**, street parties (**FIGURE 27**), joint art projects or concerts are essential for activating and enlivening the space (SPC, 2016).

3.11 Tactical Urbanism in summary

This chapter provided an overview of Tactical Urbanism as a tool to foster long-term change by allowing citizens to temporarily transform public space with low-cost, non-complex interventions and experimental ideas (Lydon & Garcia, 2015). The background, similar movements, main characteristics, as well as conditions and critical issues were identified, such as inclusion in a strategy, the goal of radical transformation, the importance of citizen engagement and different stakeholders, and the use of communicative measures. In addition, exemplary applications, tools, and materials were characterized. The topics and findings form the basis for the implementation of Tactical Urbanism projects in Hamburg, but do not provide sufficient details for the establishment of an institutional program. Therefore, the following chapter evaluates international Tactical Urbanism projects using the exemplary applications demonstrated in this chapter as case studies.

FIGURE 28:
Noriega Street
Parklet - Matarozzi
Pelsinger Builders
(Campbell, 2012)

BEST CASE STUDIES
LESSONS FROM CITIES AROUND THE WORLD

4.1 Approach and choice of cases

The previous chapter provided a general overview of Tactical Urbanism, its distinction from a strategic approach, and the conditions for its implementation. Four different forms of exemplary applications were mentioned, namely **A** 'repurposing whole streets', **B** 'repurposing sections of streets', **C** 'repurposing parking space' and **D** 'remarking streets', according to Bertolini (2020) (cf. **CHAPTER 3.10**). However, the aforementioned practices can be implemented differently in varying locations, depending on stakeholders, funding, timeframe and selected actions. Since the focus of this thesis is to assess the potential of an institutional program for bottom-up approaches in Hamburg, case studies were selected to analyze how other 'first mover' cities have developed their programs, their goals, as well as the advantages and disadvantages of each.

To gain diverse insights, each of the case studies focuses on different applications and has varying original initiators or stakeholders. While successful programs could be identified for A, B, and C in Ghent, New York City, and San Francisco, a pioneer that exclusively assists citizens in 'remarking streets' was difficult to find. On the one hand, popular programs such as the 'Ciclovías Temporales' in Bogotá are led by municipal authorities but involve little to no public engagement (cf. Estubiñan et al, 2020). On the other hand, North American programs were excluded for this application to show not only programs with different applications, but also from different locations around the world. Choosing German projects or programs such as the 'Summer Streets' in Munich (cf. Portal München, 2022) would also have been an option. However, since they are mostly inspired by the pioneer programs and the projects in Hamburg form the basis for the analysis in **CHAPTER 5**, collecting international inspiration seemed reasonable. Therefore, as a fourth case study, a 'hybrid' program in New Zealand was selected that includes all four forms and was recognized for funding tactical actions during COVID-19 (Reid, 2020).

FIGURE 29:
Ghent's 'leefstraat'
(Stad Gent, 2017a)

Context: Ghent, the second largest city in Belgium (Eurocities, n.d.) and now known for its circulation plan (cf. Stad Gent, n.d.-a), began addressing the impact of motorized traffic more than a quarter century ago. Since 1996, the city of about 264,000 inhabitants (Eurocities, n.d.) has been a member of the Climate Alliance, an association of European cities and municipalities working together to reduce greenhouse gas emissions (Hölscher et al., 2016). As early as 1997, Ghent's mayor, Frank Beke, introduced pedestrianization in the city center (Energy Cities et al., 2016), and in the following years, the city has continuously worked to combat car-induced climate change by developing emission and energy reduction plans. Since 2007, Ghent has also intensified its efforts with the goal of becoming carbon neutral by 2050 (Hölscher et al., 2016).

Project evolution: To engage all types of stakeholders in the transition, the Ghent Climate Alliance ('Gents Klimaatverbond') was established in 2009 and the city became one of five partner cities in the EU project 'MUSIC', 'Mitigation in Urban Areas: Solutions for Innovative Cities', which started in 2010 (Hölscher et al., 2016). As part of the project's transition management approach, Ghent invited 20 citizens from different backgrounds to so-called 'climate arenas' (Hölscher et al., 2016) where they worked on ideas for climate neutrality and overcoming obstacles as well as learned from each other (Lab van Troje et al., 2016). When the arenas officially closed in 2012, some stakeholders wanted to further elaborate their visions and founded the Lab van Troje ('the Trojan Lab') and developed the concept of 'Leefstraten' ('Living Streets') (Lab van Troje et al., 2016). They presented it to the

local government, which granted permission to use the space, and the first two Living Streets were implemented in 2013 (Energy Cities et al., 2016). An informal evaluation of participants supported the preparation of 'Living Streets 2.0' in 2014 (Lab van Troje et al., 2016). Over the next few years, the popularity of the initiative increased. A growing number of people wanted to implement Living Streets with the support of the Trojan Lab. By 2017, the predetermined final year of the initiative, a total of 51 streets had been temporarily transformed (Lab van Troje, n.d.). Inspired by the success of the Living Streets, the City of Ghent continued the program. In 2022, it will enable the implementation of 32 'Leefstaten' (Stad Gent, n.d.-b).

Purpose: With the Living Streets initiative, the Trojan Lab aimed to promote the transformation of Ghent into a carbon-neutral, sustainable and livable city by triggering a modal shift. The streets function as real-world laboratories to test and evaluate car independence, future mobility options, and the creation of a vibrant public space while engaging citizens and creating a sense of community (Lab van Troje et al., 2016). The experiments showed that the redesign worked well and the positive results should encourage the introduction of permanently car-free streets (Peters, 2015). Today, the main goal of the program is to promote social cohesion by creating a space where people can meet, gather, and play (Stad Gent, n.d.-b).

Application and implementation: While the 'Leefstraten' were originally managed by the Trojan Lab (Lab van Troje, 2018), the responsibility now lies with the City of Ghent (Stad Gent, n.d.-b; n.d.-c). The application procedures now and then are similar. Currently, citizens can apply for a living street by filling out an online form (cf. Stad Gent, 2022a). Roads can be closed to traffic during the summer, between April and October, and for two to six months. Submission deadlines and start dates are specified (Stad Gent, n.d.-b). With their application, initiators must provide detailed information on responsible parties, location, engagement formats, and layout (cf. Stad Gent, 2022a). The municipality has introduced regulations that are available on its website (cf. Stad Gent, 2022b). In these, the city recommends to start planning the intervention and involving neighbors at least 22 weeks before the launch, with ten weeks for mandatory preparatory talks, consultations, meetings, surveys, information postcards, and drawings, as well as 12 weeks for the legal approval. After that, the residents are the ones who implement the Living Street themselves (Stad Gent, n.d.-b; n.d.-c).

Key elements: A tactical approach is taken to the establishment of Living Streets. For a period of two to three (Lab van Troje, n.d.) or now two to six months (Stad Gent, n.d.-b), low-cost materials and furniture such as turf, sand, planters, benches, and tables are used to transform the streets. These allow for quick installation, flexibility, and complete removal (Stad Gent, n.d.-c). The City of Ghent emphasizes that "residents decide. Nothing is mandatory!" (Stad Gent, n.d.-c) and the Lab van Troje

stressed that each neighborhood has different conditions. Therefore, each Living Street is different (Lab van Troje, n.d; 2018). Apart from materials and furniture, the original program between 2013 and 2017 emphasized experimenting with alternative modes of transportation or routes to trigger behavior change (Lab van Troje et al., 2016; Lab van Troje, 2018).

Budget and funding: The initiators are responsible for the expenses related to their 'Leefstraat'. However, in the online application form they can also apply for picnic tables, benches, artificial grass and planters for their projects, which will be provided and delivered by the City of Ghent. In addition, a grant of 100 euros can be requested for decorations such as plants, sand, pallets, or nails (Stad Gent, 2022a). According to Lab van Troje (2018) members, they retrieved national funding for the second and third years of the Troje-led initiative. They also received logistical and material support from partner companies and organizations (Lab van Troje, 2018).

Stakeholders: Living Streets are citizen-initiated projects. Therefore, their role as stakeholders is crucial. As mentioned above, a group of initiators is responsible, but the involvement of all street residents in the preparation of the intervention is important (Stad Gent, n.d.-b; n.d.-c). In applications, the group must specify what formats it will use to meet this requirement (cf. Stad Gent, 2022a). The city's website lists conversations, consultations, surveys, and meetings as ways to engage (Stad Gent, n.d.-b). The role of initiators is also to address issues such as alternative parking, waste collection, maintenance, and events (Lab van Troje, 2018; Stad Gent, 2017b). The city's responsibility is to guide the instigators during the application and implementation phases, provide materials (Stad Gent, n.d.-c; 2022b), coordinate decision-making, involve other departments and companies, take care of signals (Stad Gent, 2017b), and evaluate the project after completion (Stad Gent, 2022b). In the original program, Lab van Troje also supervised the projects. It advised the initiators, raised funds and sponsors, and provided contacts (Stad Gent, 2017b). Other companies and organizations can support the implementation with their expertise, material or financial resources, according to Lab van Troje (2018).

Positive impacts: Evaluation results could only be obtained for the first program led by the Trojan Lab. Together with the consulting firm Traject, the lab conducted a survey among residents after the second 'Leefstraat' edition in 2014. Of the 139 responses, 79 percent were satisfied, 84 percent would participate again and 86 percent would recommend others to participate as well. Most of them also appreciated the sense of community: 83 percent felt sufficiently included, 78 percent had more contact on the street, and 64 percent got to know other or new neighbors, sometimes even from adjacent streets (Lab van Troje, 2018). In addition to social cohesion and a sense of shared ownership, residents also emphasized peace, traffic safety, and space gains. A previous edition observed increased use of sustainable forms of mobility during and

slightly increased use after the completion of the 'Leefstraat' (Stad Gent, 2017b). According to Steven Clay, whose street participated in the 2015 edition, neighbors motivated each other to temporarily give up their cars (Peters, 2015).

Challenges: Clay mentions that other car owners temporarily parked their vehicles in nearby streets (Peters, 2015). In this context, some affected residential streets criticized that they had to pay for the enjoyment of the 'Leefstraat'. In general, not everyone supported the Living Streets from the beginning. Some residents complained about parking pressure, limited accessibility, and changing habits. Older people had difficulty with the limited mobility options (Stad Gent, 2017b). Other complaints were related to noise pollution, as some streets were partying late into the night (Peters, 2015; Stad Gent, 2017b).

Municipal authorities are generally in favor of 'Living Streets'. However, they need to be committed, which requires a lot of work and time. This can be a challenge. They have also observed that not all citizens are autonomous enough to organize their projects on their own. Some expect the city to take care of certain things, especially legal issues and communication (Stad Gent, 2017b).

Long-term effects are questionable. Although the program was initiated with the idea of promoting lasting change, only one 'Leefstraat' has been made permanent so far (Energy Cities, 2020). Many residents would have liked to keep their street, but prevailing ordinances seem to prevent this (Energy Cities, 2020).

Lessons learned:

ACTORS
Designate responsible parties for each street, but actively involve all.
Support dedicated volunteers who supervise the program.

FORMATS
Let local leaders also manage the participation, but assist them.
Initiate different formats and let residents imagine 'what if...?'

TIMEFRAME
Allow sufficient time for preparation, engagement, and approval.
Set periods for implementation, e.g., one to six months in the summer.

FUNDING
Find sponsors or start crowdfunding for materials and money.
Install low-threshold contigent funds for small amounts.

TOOLS
Provide optional materials, but be open to suggestions from residents.
Incorporate and experiment with sustainable forms of mobility as well.

LONGEVITY
Focus on experimentation as a means for lasting change.
Adapt regulations to the experimental, step-by-step approach.

(Icons: Author, 2022)

Context: After World War II the car-centric city was a trend not only in Europe but also in the United States. The tendency to decentralize cities caused people to move to the suburbs and travel greater distances by car. The increase in traffic prompted city governments to expand road capacity by narrowing sidewalks, widening streets, and building freeways in urban centers (Lydon & Garcia, 2015). New York City also introduced one-way streets along major thoroughfares to reduce conflicts between road users. However, on some main streets such as Broadway, these measures delayed traffic even more (Lydon & Garcia, 2015). Growing distances, chaotic crosswalks, noise, air pollution, as well as declining safety and comfort for pedestrians and bicyclists made New York's public space, and especially the busy Times Square intersection, an uninviting place (NACTO, 2016).

Purpose: As part of PlaNYC, a plan pushed by Mayor Michael Bloomberg and his Transportation Commissioner Janette Sadik-Khan to rebalance public spaces and streets, the 'Plaza Program' was launched in 2007 (Sadik-Khan & Solomonow, 2017). It is an initiative led by the Department of Transportation (DOT) with the goal of transforming underutilized street space into high-quality, vibrant public spaces (Bertolini, 2020; Lydon & Garcia, 2015). This program focuses on areas that lack open space while experiencing high pedestrian volumes. It aims to improve walkability, safety, street life, and the economy (NACTO, 2016). By working with local communities, businesses, and organizations, publicly accessible, high-quality, yet cost-effective public spaces are created that preserve the character of the neighborhood (NACTO, 2016).

Program evolution: Although established in a proper plan only in 2007, the idea of transforming underutilized traffic space existed earlier. In the 1990s, DOT began initial experiments in repurposing sections of streets as plazas. By using low-cost, temporary materials requiring little maintenance, new plazas could be easily implemented while providing protection against traffic (Lydon & Garcia, 2015). The initial projects were successful and DOT transformed some of them into permanent plazas. However, public awareness was low due to the lack of inclusion in a comprehensive framework and incomplete knowledge (Lydon & Garcia, 2015). Only with an intervention in Brooklyn in 2006, the approach gained popularity and importance. This led to the creation of the 'Plaza Program' (Lydon & Garcia, 2015). In 2009, the largest and most popular project, the temporary transformation of Times Square, began. Due to its success, Mayor Bloomberg arranged in 2010 to make the changes permanent. Construction started in 2012 and was completed in 2015 (Lydon & Garcia, 2015). By 2018, the tenth anniversary of the program, the City of New York had realized 74 plazas (NYC DOT, 2018).

Application and implementation: The creation of new plazas is possible on property owned and managed by the New York City DOT. BIDs, neighborhood groups, and nonprofit organizations in all boroughs that are registered in New York State and have a spatial relationship to the desired plaza may apply annually, but must show a willingness and ability to maintain it (NYC DOT, 2022a; 2022b). Partners must include letters of affirmation from landowners, the community board, and local organizations with their proposal. In addition, after selection and before final approval, DOT reaches out to the public by publishing notices and discussing designs, construction, and concerns at workshops. DOT is responsible for design and implementation (NYC DOT, 2022a). However, partners are encouraged to attend meetings with designers and help with their local expertise (NYC DOT, 2022b). Staff from other departments are also involved. After the workshops, final plans are demonstrated to community council members for approval. The timing ranges between one and three years (NYC DOT, 2022a). While for temporary projects, the city supplies the partner with standard furniture and official signs (Gehl, 2018), permanent plazas are constructed by the DOT (NYC DOT, 2022a).

Key elements: The program is a phased approach with three stages: the 'One Day Plaza,' the 'Interim Plaza,' and the 'Permanent Plaza' (NYC DOT, 2022a). Impact data is collected before, during, and after the temporary phases and evaluated at DOT (NYC DOT, 2022a; 2022b). If the redesign meets expectations in areas such as quality and sense of community, the interim design is transitioned to permanence (Fernandes Barata & Sansão Fontes, 2017). In general, temporary, low-cost, off-the-shelf materials such as bicycle racks, folding tables, chairs, and standard street barriers offer users the ability to act quickly, flexibly, and responsively in design and limit costs (NACTO, 2013; 2016). With these tools,

advocates can begin programming the space earlier and opponents can be reassured because the installations are not yet permanent and can be easily dismantled (NACTO, 2013). The Public Space Unit has also worked with engineers to develop guidelines that ensure accessibility and safety for all types of users, especially people with disabilities (NACTO, 2016).

Stakeholders: The primary stakeholders in this program are the New York City Department of Transportation and the local partner (Lydon & Garcia, 2015). Within DOT, a team of four people handles the program (NACTO, n.d.-b). The group of initiators is responsible not only for maintenance, but also for involving adjacent parties and funding plans, insurance, and events at the plaza. Neighborhood-based programs such as markets or performances by local artists are recommended to create a sense of community and increase acceptance in the area (NACTO, 2013; 2016).

Budget and funding: The long-term PlaNYC 2030 secures funding for the 'Plaza Program' (NACTO, n.d.-b). According to NYC DOT (2022b), approximately one percent of its budget is allocated to the program. In its application guideline, NYC DOT (2022a) explains that a certain number of projects are funded in each round, depending on the availability of resources. Each year, one or two permanent plazas, one or two interim plazas, and up to ten one-day plazas are targeted. Funds are tied to actual budgeting and expenditures and depend on the partner's capacity and experience. In addition, applicants are obligated to submit a budget and funding plan for ongoing maintenance, management and operations. The city recommends also reaching out for public or private funding from other sources to cover expenses (NYC DOT, 2022a).

Positive impacts: Through the 'Plaza Program', New York City has repurposed more than 120,000 m² of land by 2018 (NYC DOT, 2018). By collecting before-and-after data and continuously monitoring projects, NYC DOT has been able to demonstrate long-term impact (NYC DOT, 2022-b). Evaluations show that new plazas can potentially increase pedestrian comfort and safety and reduce conflicts between user groups by making intersections denser and clearer as well as by slowing traffic speeds (NACTO, 2013). This leads to a decrease in accidents and air pollution and an increase in pedestrian traffic (NACTO, 2016). For motorists, travel time decreased when the plaza was established in Times Square (NYC, 2013). In addition, programming the plaza activates not only the place itself, but also the surrounding neighborhood. Adjacent businesses can benefit, as the plaza design brings more people to the area, promoting local economic vitality (NACTO, 2013; NACTO, 2016; NYC, 2013). Gehl (2016b) emphasized in their Public Life Urban Justice Study, which evaluated plazas in five boroughs over an 18-month period, that the new projects play a role in socially diversifying neighborhoods by attracting people from all backgrounds and income levels.

Challenges: For former Transportation Commissioner Janette Sadik-Khan and Seth Solomonow (2017), previously chief media strategist at DOT, the program's biggest challenges were transforming the prevailing local government structures to make them ready for street experiments. In addition, they and also Janoff (2022) mention that recruiting local partners for maintenance was tough at the beginning but this was resolved by establishing a partnership. Without proper maintenance, vandalism and theft are possible (cf. Barron, 2018).

Janoff (2022) notes that providing the opportunities not only to centrally located, well-resourced BIDs, but also to neighborhood initiatives in less prestigious areas, was also a challenge. The city gained civil organizations as partners (Janoff, 2022) and eventually established the 'OneNYC Plaza Equity Program' to support low-resource neighborhoods with funding and services (NYC DOT, 2022c). Today, plazas appear to be evenly distributed (cf. Kunstadter, 2016). However, funding does not, resulting in under-resourced neighborhoods having fewer contigents for maintenance, programming, and other tasks (Gehl, 2016b). Due to the diversity of locations and initiatives involved, each plaza is unique. Therefore, adapting design and services, such as maintenance, is demanding (Janoff, 2022). Gehl (2016b) analyzed that the user group is not always diverse and socially connected. However, it does represent the population structure of the neighborhood in question (Gehl, 2016b). In addition, some critics express concerns about the potential gentrification effects of plazas (cf. Barron, 2018).

Lessons learned:

ACTORS
Deploy committed institutional stakeholders as program teams.
Address also resource-poor local communities and NGOs.

FORMATS
Let initiators gather initial confirmations but reach out, too.
Events in the plaza can create a sense of community and acceptance.

TIMEFRAME
Set annual deadlines and estimate timeframes for implementation.
Use different pilot periods for different purposes.

FUNDING
Require applicants to submit budgets and funding plans.
Make funding levels dependent on the resources of the initiators.

TOOLS
Provide materials and guidelines to applicants.
Make initiators responsible for maintenance and events.

LONGEVITY
Install a phased approach - temporary, interim, and permanent phase.
Document impact through monitoring and evaluation of changes.

(Icons: Author, 2022)

FIGURE 31:
Ourcadia Parklet
by OPA
(Griffith, 2013)

Context: As discussed in **CHAPTER 1.1**, motorized private vehicles occupy a large portion of physical space (UN -Habitat, 2013). Apart from the roads on which cars travel, they also require parking. Especially in cities, where not everyone has a private garage, many vehicles are left in public areas, in parking garages or along roads for most of their lives (Nobis & Kuhnimhof, 2018). However, high-quality public space in cities is often scarce and pressure on undeveloped land is increasing due to the growing urban population (Kundu & Pandey, 2020; UN-Habitat, 2013).

Purpose: To address both of these issues, 'parklets' are installed to temporarily repurpose parking areas. Placing easy-to-install, low-cost structures in parking lots reduces space occupied by cars while promoting social interaction and economic activity (Littke, 2016; with Panganiban & Ocubillo, 2014; Pratt, 2010, 2011). Therefore, reclaiming parking is one way to change behavior by encouraging people to rethink the distribution of public space (Bertolini, 2020; Lydon & Garcia, 2015).

Key elements: Parklets are temporary parks in former parking lots that expand space for pedestrians. While they were originally intended to be public (Groundplay, n.d.-a), commercial parklets can also be installed today. They vary in type and quality, but must have the minimum size of one parking space and the 'Shared Spaces Manual' limits their use to a maximum of two. The manual includes other regulations such as dimensions, location, spacing, structural and safety requirements, as well as designated use. As long as the requirements are met, the owner of the parklet can decide on the shape, materials, and furniture (City & County of San Francisco, 2021).

Origin: Apparently, the first parklet was established in 2005 when Rebar Design Studio occupied a metered parking lot for two hours and called this action 'Park(ing) Day'. They temporarily created a small park by placing a bench, grass and a potted tree. The small event quickly gained popularity and Rebar was asked to initiate similar interventions. The studio decided to launch an 'open source' project instead and created a manual to help people design their own parklets (Lydon & Garcia, 2015). The idea and the brochure were a success and today 'Park(ing) Day' is an annual event in cities around the globe (Lydon & Garcia, 2015).

Institutional program: The City of San Francisco adopted Rebar's idea in 2008 (Main Street America & AARP, n.d.). The city enlisted local businesses and property owners as partners and eventually introduced its first temporary sidewalk extension called 'parklet' in 2010 (Groundplay, 2020). To support the 'Parklet Program' as part of the 'Pavements to Parks Program' (P2P), San Francisco established an official process in 2013 and published a manual outlining the steps local businesses, nonprofits, and community groups can take to apply for, design, fund, and implement a parklet (Groundplay, n.d.-a). In 2017, P2P and a second program called Living Innovation Zones (LIZ) were officially renamed 'Groundplay' (Groundplay, n.d.-b). As of fall 2021 and due to COVID-19, parklets have become a part of the 'Shared Spaces Program' with their own manual (Groundplay, n.d.-a). In July 2022, supervisors voted to adopt an ordinance to make shared spaces permanent (Bitker, 2021; Duffett; 2021), but with additional rules (Bitker, 2021). By 2019, 76 temporary parklets had been established (cf. Penalosa, 2019). During the pandemic, the number increased dramatically. According to the local news site San Francisco Gate, by 2021, "about 1,700 shared spaces, or parklets," were installed throughout the city, citing San Francisco Public Works (Robertson, 2021). However, due to new permanency regulations, most restaurants had to disassemble them (Bitker, 2021). As of June 2022, there are 43 approved parklets installed in the city, according to the official DataSF (2022) page.

Application and implementation: The initiators of 'Park(ing) Day' did not ask for permission, but used a legal gray area (Lydon & Garcia, 2015). Today, interested groups can apply for parklets throughout the year. Applicants are responsible for design, costs, and maintenance. After submitting a proposal, which must include various criteria such as a site plan, property owner and neighborhood approval, and a maintenance strategy, it is reviewed by appropriate city staff within usually 30 days. For 'Shared Spaces' no further deadlines are specified (City & County of San Francisco, 2021). For the original parklets, design and permission could take up to six months and 'sponsors' were required to cooperate with officials in the adoption of standards. Once a permit was obtained, construction must begin within three months and be completed within 30 days once it has begun. City officials regularly inspected the construction site and the implemented parklet (Groundplay, n.d.-a).

Budget and funding: Compared to permanent changes to roads, the cost of parklets is relatively low. However, because it includes occupancy fees, the total cost can reach $20,000 depending on the type, size, and design (Lydon & Garcia, 2015). San Francisco's 'Shared Spaces Manual' lists permit fees and annual costs. Permit fees start at $1,000 for an occupied parking space used as a public parklet. Commercial parklets, whether movable or stationary, are more expensive and additional parking spaces cost more. Annual fees range from $100 to $2,000, depending on usage. Initiators are responsible for fees, design and maintenance costs. They must submit a budget and funding strategy with their proposal. While commercial parklets in front of cafes or restaurants are typically paid for by business owners, fundraising or advertising sponsorships may be an option for community groups and nonprofit organizations (City & County of San Francisco, 2021).

Stakeholders: The 'Shared Spaces Program', which started as a small bottom-up initiative, is now led by official institutions responsible for planning, public works, and transportation, to name a few. The open application process invites all types of interested parties (City & County of San Francisco, 2021). Most of them seem to be cafes and restaurants (DataSF, 2022) that want to promote their business by providing more public space in front of their door (author's assumption).
Community and neighborhood approval must be obtained prior to submission. Therefore, collaboration with and involvement of the community is crucial. Once the proposal is made, the public is notified and can potentially be heard, if necessary. The city recommends that professionals such as architects and designers are also involved in the design process to ensure a high-quality product and expedite coordination with agencies (City & County of San Francisco, 2021).

Positive impacts: Aside from the additional public space created and the reduction in parking, parklets have several other impacts on their surroundings. Pratts' (2010; 2011) studies on the their effects show that the greatest benefit of parklets is that they provide space for people to sit and socialize. This can also enhance a sense of community (Pratt, 2010). Pangniban & Ocubillo's (2014) citywide evaluation of parklets confirms the benefit of a safe space to interact with neighbors. Pratt (2011) mentions that a greater number of bicycles are parked in the locations considered. Pedestrian traffic has increased on only one of three streets, but local businesses have found that most of their customers walk (Pratt, 2011). Panganiban & Ocubillo (2014) also did not see a strong relationship between pedestrian traffic and parklets. However, they observed that parklets are primarily used by people who come by bicycle, foot, or public transportation. They conclude that parklets can therefore encourage active modes by making nearby neighborhoods more attractive (Panganiban & Ocubillo, 2014). Of seven companies, only one reported more customers. None observed a loss (Pratt, 2011). Panganiban & Ocubillo (2014) and Pratt (2010) surveyed that most visitors spent their money at local shops.

Challenges: Parklets occupy only a fraction of the space originally used by cars. They do not change the purpose or distribution of streets (Bertolini, 2020). Furthermore, because commercial parklets are also available (cf. City & County of San Francisco, 2021), the benefits of additional public space appear to be less (author's observation). Critical voices generally question the formalization. Although a city-led initiative may reduce obstacles for some groups, it creates barriers for others. Leaving applicants in charge of designing, building, and financing excludes interested parties without financial resources or surplus time. In this way, most parklets are implemented primarily by one clientele (Li in Sparks, 2019). In terms of equity issues, Stroman (2014) argues that most of parklets in San Francisco are concentrated in certain popular neighborhoods that may already be affected by gentrification. Although they were originally created as a protest against existing land distribution, the City of San Francisco has transformed parklets into a tool to increase economic returns by promoting specific areas and demonstrating exemplary civic engagement (Stehlin & Tarr, 2017; Till & McArdle, 2015). This shift from a more radical, politically motivated project to an institutional program with clear rules and requirements is also seen as critical (Littke, 2016). Another problem is that planning and implementing a parklet takes time due to the official application process and is therefore a less spontaneous action. The San Francisco Parklet Manual estimates a minimum of five weeks for the review process and a maximum of three, respectively six months, for subsequent collaborative work on design, fabrication, and installation (Groundplay, 2020).

Lessons learned:

ACTORS
Facilitate formal acceptance of ideas by dedicated volunteer groups.
Leave the application process open to all interested parties.

FORMATS
Require public outreach to be done by 'sponsor'.
Work collaboratively on the design of the project.

TIMEFRAME
Open year-round for applications and set deadlines for construction.
Calculate additional time for a public notice and hearing.

FUNDING
Allow fundraising, advertising or sponsorship by local businesses.
Differentiate fees for public and commercial applications.

TOOLS
Narrow the main topic, but be open to using different tools.
Provide clear general guidelines and requirements.

LONGEVITY
Enable initiators to extend renew their permit annually.
Adjust regulations to make experiments permanent.

(Icons: Author, 2022)

Context: Like most developed countries, New Zealand is suffering from climate change. To reduce greenhouse gas emissions and make the urban environment more livable and safer, the New Zealand government aims to transform transportation in cities. Among other measures such as promoting public transport, active mobility and shared options, Waka Kotahi, the National Transport Agency, has determined in various roadmaps such as the Sustainability Action Plan or the Emission Reduction Plan to redesign the urban environment to reduce dependence on cars and create more space for active and shared modes of transport (Waka Kotahi, 2020a). With this goal in mind, the Transport Agency established the 'Innovating Streets for People Program' (ISFP) in 2018 and included it in the national modal shift action plan 'Keeping Cities Moving' in 2019 (Waka Kotahi, 2019; 2020a).

Purpose: The 'Innovating Streets for People Program' is a nationwide approach to testing temporary, low-cost, tactical interventions in the urban environment of New Zealand's cities. Successful approaches from pioneering cities around the world have been taken up by Waka Kotahi and tested in 'live case studies' to gain experience and adapt interventions to local conditions. In addition, the program provides guidance, support, and funding for communities to conduct their own experiments. The government has also removed barriers such as high costs and administrative processes. In this way, the program enables cities to meet demand for sustainable transportation and a safe, healthy, and livable environment faster than with regular road planning processes. Emission reduction targets can also be met sooner (Waka Kotahi, 2019; 2022a).

Program evolution: The ISFP ran between 2019 and 2021, with pilot case studies conducted and analyzed in an initial learning phase in 2019 to identify barriers and pathways (Waka Kotahi, 2021; 2022b). In 2020, the ISFP Fund was established to facilitate tactical projects in communities across the country. Out of 160 applicants, 78 projects were approved in 32 communities, temporarily transforming approximately 89 kilometers of roads (Mackie Research, 2022). When the evalutation was made, 49 were still in place (ibid., 2022).

After implementation, the new approaches were monitored and evaluated by city governments according to individual goals (Waka Kotahi, 2019; 2022a). The great success and lessons learned helped to establish the subsequent 'Streets for People Program 2021-2024', which was integrated into the National Land Transport Program (NLTP) (Waka Kotahi, n.d.; 2022c). With minor changes in the application process and allocation of funds, this elaborate program facilitates projects that will be implemented in the summer of 2022 (Waka Kotahi, 2022c).

Application and implementation: The ISFP opened for applications twice in early summer 2020 (Waka Kotahi, 2020b). City councils with approved road control authorities or territorial agencies were eligible to apply for funding for a preselected location. Other requirements included commitment to the project, allocation of own funding, demonstration of a tactical approach, and selection of a low-risk site (Waka Kotahi, 2020b). Within a month, the National Transportation Department evaluated all proposals based on parameters such as capability and capacity, value for money, and suitability. Approval included the signing of a partnership agreement and a promise that the projects are implemented within about a year, before the end of June 2021. Within this period, city officials worked with citizens to design the projects (Waka Kotahi, 2020b; Mackie Research, 2022).

Budget and funding: The 'Innovating Streets for People' fund defrayed 90 percent of the expenses, while councils were required to contribute ten percent. A maximum of one million New Zealand dollars was allocated to each project (Waka Kotahi, 2020b). A total of $29 million was available, but only 62 of 78 approved projects implemented their plans. Therefore, approximately $22.5 million was spent; an average of $288,532 for each project. The value of projects ranged from $40,000 to $1 million (Mackie Research, 2022).

The 'Streets for People Program 2021-2024' provides $30 million in funding available through the National Land Transport Program (NLTP). Projects will still be funded at a 90 percent funding rate with a maximum of $1 million. However, funding will be divided into two phases. To receive financial assistance for the implementation phase, projects must have completed detailed planning, analysis, and preparation prior to implementation (Waka Kotahi, 2022a). The councils that could not access the capital due to lack of capability or capacity will be assisted with a support fund to elaborate their skills (Waka Kotahi, 2022c).

Key elements: The ISFP program was open to a variety of measures and durations. However, the approach must be tactical, quickly implementable, cost-effective, time-limited, and translatable into lasting change (Waka Kotahi, 2022c). The projects included 11 temporary bike lanes, 11 traffic-calmed neighborhoods, three play streets, 18 Safe Routes to School programs, and 35 downtown programs (Waka Kotahi, 2022d). The measures applied range from local treatments such as street markings, colorful intersections, and parklets to applications for entire neighborhoods. The main goals were to create safe intersections, more space for active transportation, traffic calming, and downtown activation (Mackie Research, 2022). While most projects were planned as interim solutions with a material lifespan of six months to three years before they need to be made permanent, shorter, time-limited projects of, say, one month were also tested (ibid., 2022).

To assist the 'partners' in implementing their project, the Transport Agency provided Tactical Urbanism handbooks (cf. Waka Kotahi, 2020c; 2020d) and a list of useful links for monitoring, evaluation, and project management (cf. Waka Kotahi, 2022e). In addition, applicants were asked to participate in (online) webinars and workshops to increase their knowledge of design, engagement formats, and evaluation, as well as to share experiences with each other (Waka Kotahi, 2020b). The handbooks and webinars, were rated as 'useful' or 'very useful' by most participants, while only a small proportion rated them as 'not useful' or 'not useful at all' (cf. Mackie Research, 2022). Monitoring, measuring, and evaluating projects is also important to analyze their suitability and acceptability, compare results, and ensure successful permanent treatment afterwards, which is envisioned (Waka Kotahi, 2020d).

Stakeholders: The ISFP and the subsequent 'Streets for People Program 2021-2024' are national programs for which Waka Kotahi has overall responsibility. It assists communities in the development and implementation of the projects by providing the previously mentioned materials and workshops, and by being a constant point of contact (Waka Kotahi, n.d.).

As with other Tactical Urbanism projects, community engagement plays a key role in planning and realization. The participation formats used by each council are up to them. For example, the manual highlights surveys, focus group workshops, and especially 'co-design' (Waka Kotahi, 2020d). In addition, the evaluation indicates that engagement formats with a small scale and clearly structured approach were more successful than complex, large projects, and that authentic, community-connecting methods as well as funding are required (Mackie Research, 2022).

Positive impact: ISFP projects were analy by the councils using individually defined indicators. The final program evaluation by Mackie Research (2022) summarized the overall impact of 44 submitted reports, some of which included two or more projects. Key findings were: 29 projects were able to reduce vehicle speeds through measures such as narrow lanes, speed bumps, traffic circles, or curb widening. 17 projects were

also able to reduce vehicle volumes by decreasing capacity for cars, limiting access, or converting streets to one-way. 28 projects also reported increased pedestrian and bicycle volumes by restricting access for motorized vehicles, crosswalk markings, and new protected bike lanes. While 25 projects additionally noted increased safety and accessibility for pedestrians, only ten projects did the same for bicyclists. Seven reports indicated that people were spending more time in the area. In addtion, an increased awareness of cultural narratives was also reported in some projects (Mackie Research, 2022).

Challenges: According to participants who responded to the interviews and surveys, successfully implementing an ISFP project was difficult. Sources of challenges included overall complexity, lack of capacity or capability, tight timelines, and the need for resources to prepare detailed strategies. Obviously, unexpected events can also bring additional unforeseen challenges (Mackie Research, 2022). Additional barriers emerged in stakeholder engagement due to the additional time required, differing expectations, lack of knowledge and experience, and reduced effectiveness of engagement plans. In addition, strong opposition, negative media, or misuse of social media can slow the implementation process even more (ibid., 2022). Other barriers such as outdated, obstructive road laws and system barriers are considered and adjusted to facilitate implementation of subsequent temporary street projects (ibid., 2022).

Lessons learned:

ACTORS
Create a partnership between federal and local governments.
Involve the local community and let them co-design the intervention.

FORMATS
Offer webinars, workshops, links, and guidelines for applicants.
Use formats such as surveys or workshops to engage locals.

TIMEFRAME
Set deadlines for application and implementation.
Conduct an initial learning phase before implementing the program.

FUNDING
Provide partial funding to initiators; link the retrieval to conditions.
Also support applicants who do not have the capacity or skills.

TOOLS
Be open to a wide range of applications and tools.
Use instruments that facilitate subsequent conversion to permanence.

LONGEVITY
Ensure a permanent treatment through monitoring and evaluation.
Integrate the program into an overall strategy with long-term goals.

(Icons: Author, 2022)

4.6 Comparison of case studies   *(For resources see respective chapters)*

This chapter analyzed four different case studies: the 'Leefstraten' in Ghent, the 'Plaza Program' in New York, the 'Parklet Program' in San Francisco, and the 'Innovating Streets for People' in New Zealand. Each of them focused on different applications and provided findings, some of which overlapped or diverged. Their key features are summarized in **TABLE 1** on the right, divided into the categories of program actors, engagement formats, timeframe, budget and funding, tools and interventions, as well as knowledge transfer and longevity.

All four programs emphasize the involvement of committed officials and local initiators. However, the main actors differ slightly. While residents are responsible in Ghent, BIDs or community groups take the lead in New York. In San Francisco, mainly businesses initate parklets. Reasons for these differences in interest groups may include requirements that limit eligible applicants and differences in funding opportunities. All three programs are supervised by municipal authorities. In New Zealand, local councils are the ones that can submit an application to the national government and are responsible for design and implementation of the plans.

To involve residents, the three municipal projects require the applicant to engage with the public before submitting the proposal. While in the case of Ghent, all participation formats are organized by residents, New Yorkers are required to submit letters of acknowledgement, as the NYC DOT conducts own workshops and sends official notifications. The City of San Francisco publishes notices after a public outreach by the initiators and holds public hearings in case of reactions. In New Zealand, workshops and webinars are offered to city officials. After funds are granted, officials start the co-design process, using a variety of participation formats.

All cases have different time approaches, from one day in New York to a year with the possibility of an extension in San Francisco. The interventions in New Zealand and New York may even be interim solutions until they become permanent. In Ghent, Living Streets are implemented between one and six months. In general, the vision to foster permanent change is underscored by the Plaza Program and the ISFP in New Zealand. New York has 74 permanent plazas enabled by the phased approach. San Francisco has passed an ordinance to make parklets permanent, and New Zealand has taken action to keep the interventions. More than half of the initial ones still exist. Although pursued at the beginning, in Ghent the permanent approach was not followed further. Only one Living Street was made permanent because of current regulations, although more residents would have liked to keep the change.

Funding options also vary. While in New Zealand 90 percent of it is provided by the national government, in all other cases the initiators must pay for the time-limited intervention themselves. In New York City and Ghent, however, they are provided with materials by the city. In all cases, finding sponsors or external funding is recommended. The tools and materials used are varied, but always temporary and inexpensive, so they can be easily set up and taken down and adapted to the conditions. Detailed guidelines are available in New York City, San Francisco, and New Zealand.

	1: GHENT	2: NEW YORK CITY	3: SAN FRANCISCO	4: NEW ZEALAND
MAIN ACTORS	• Stad Gent • Lab van Troje • resident group	• NYC DOT • BIDs • community groups • NGOs	• San Francisco City • planning departments • 'sponsors'	• national government • city councils
APPLIED FORMATS	• talks • surveys • meetings • consultations • postcards	• confirming letters • workshop or notifications by NYC DOT	• public outreach by initiators • potential public hearing	• partnership, webinars • co-design, surveys, workshops
TIMEFRAME PREP. + SITE	• 12 weeks approval • one to six months on site	• > ten months process • day, interim, permanent	• 30 days review • 10 days notice • optional time for reachout • permit: one year	• two months • one year time for installation • short term or interim
BUDGET FUNDING	• small fund • material pool • fundraising • sponsorships	• materials • funds available • other sources of funding or sponsorships	• initiator pays • fundraising • sponsorships	• 90 percent funding rate • max. one million dollar
TOOLS MEASURES	• locals decide • city provides signals • optional material pool	• NYC DOT provides signs • standard materials and furniture	• parklets • design up to initiators • various types and qualities	• diverse tactical measures • various tools • co-design
TRANSFER LONGEVITY	• evaluations • necessity to adapt regulations	• evaluations • incremental • plan for permanence • overall strategy	• permits extendable • adaption of regulations for permanence	• evaluations • permanence possible • overall strategy

TABLE 1: Case studies summary *(Author, 2022)*

THE CASE OF HAMBURG
INSIGHTS INTO PREVIOUS TACTICAL PROJECTS

5.1 Interview approach

After gaining valuable insights from best-case studies, projects already implemented and underway in Hamburg are analyzed to identify conditions for the successful implementation of a new program. These projects are not evaluated in detail. Instead, only a brief overview is provided in **CHAPTER 5.2**. Further analysis results on timeframes and phases, costs and funding opportunities, stakeholders, engagement possibilities, regulations, the role of authorities, applied measures and evaluation approaches were obtained through personal interviews with stakeholders (for interview methodologies see **CHAPTER 1.6**). Interviewees involved in different local projects and operating at different levels were selected to gain the most diverse insights possible (see **TABLE 2**). In one case, valuable insights were gained from the non-local project 'Beweg Dein Quartier', which was implemented in Essen and Offenbach. These were also included in the analysis. However, this project and the locations are not shown in the overview in the following.

- 1. Olaf Böhm, Department for Traffic and Mobility Transition (BVM) | Pop-up bike lanes
- 2. Carsten Behnke & Christoph Kirk, Street Traffic Authority (at BIS) | General insights
- 3. Bastian Hagmaier, District Office Altona | 'Ottensen macht Platz', 'freiRaum Ottensen'
- 4. Anonymous administration representative (AR) | Pedestrian boulevard Volksdorf

- 5. Roland Hansen & Dr. Leonie Lange, LSBG (municipal agency) | Pop-up bike lanes, participation
- 6. Tobias Hoss, urbanista | 'Ottensen macht Platz', 'Beweg dein Quartier' (Essen/Offenbach)
- 7. Anette Quast, TOLLERORT entwickeln & beteiligen | Grelckstraße, Volksdorf
- 8. Sebastian Clausen, ARGUS studio | 'Ottensen macht Platz', car-free Jungfernstieg
- 9. Fabian Zimmer, Hamburg University | Climate-friendly Lokstedt, Grelckstraße
- 10. Lars Zimmermann, CITIES FOR FUTURE | 'Superbüttel'

- 11. Michael Dettmer, Kurs Fahrradstadt | 'Superbüttel'
- 12. Wibke Kähler-Siemssen, Patriotische Gesellschaft | City hall district, 'Altstadt für Alle!'
- 13. Frank Engelbrecht, St. Katharinen church | Traffic laboratory 'Altstadtküste', 'Altstadt für Alle!'
- 14. David Huber & Lars Michael, VCD | 'Parking Day', general approach
- 15. Sabine Sommer, BUND | 'Parking Day', project 'Fair Parking'

● Authority/Administration   ● Company   ● Initiative/Non-profit association

TABLE 2:
Interview partners
(Author, 2022)

5.2 Overview of considered projects in Hamburg
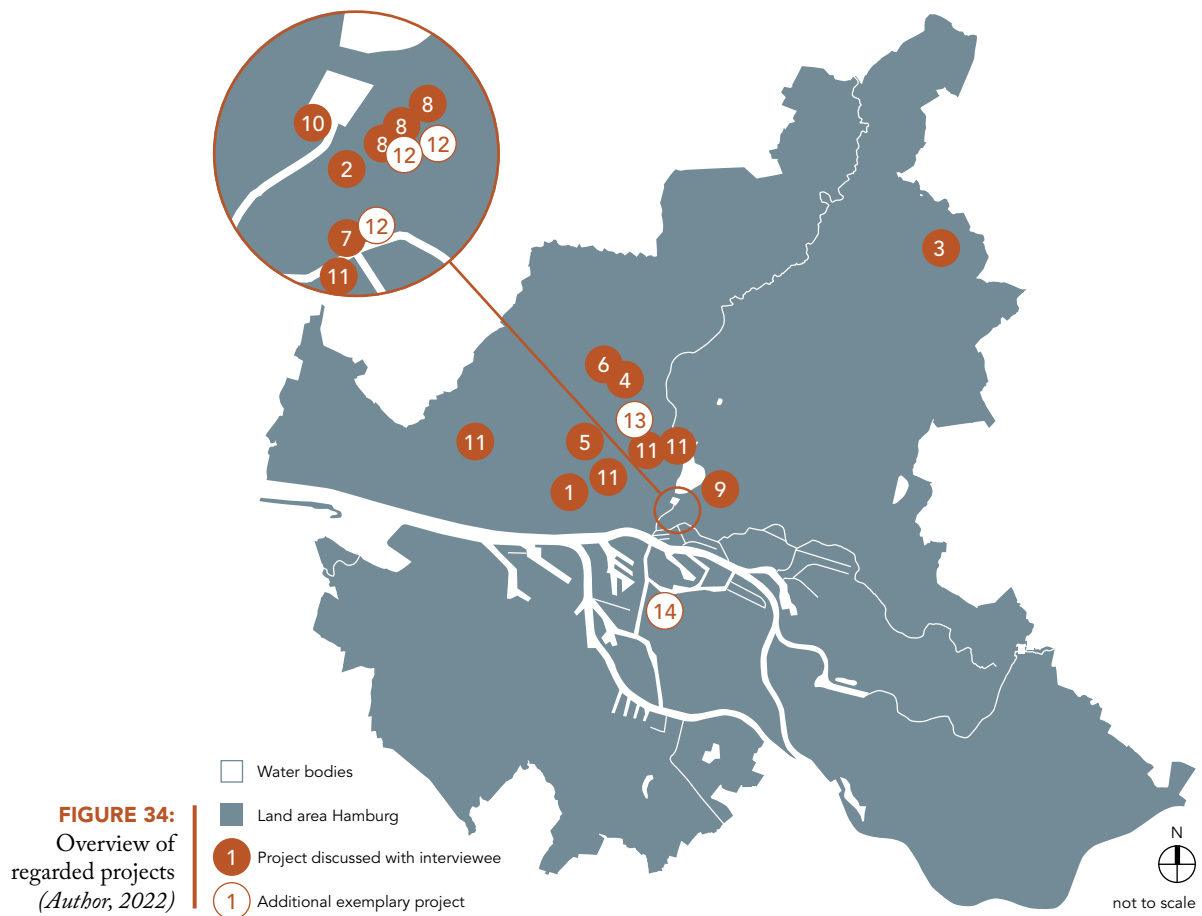
1   *'Ottensen macht Platz' (09/2019 – 02/2020) & 'freiRaum Ottensen' (2020–)*   `A`

Originated from an EU project, district office Altona tested a pedestrian boulevard together with various other stakeholders. After completion, the district assembly voted to make it permanent (cf. Hagmaier, 2022; District office Altona, n.d.)

2   *Pedestrian-friendly city hall district (08/2019 – 10/2019)*   `A`

In 2019, the 'Altstadt für Alle!' initiative conducted a three-month pilot testing the link between car reduction and quality of life in an area near city hall (cf. Kähler-Siemssen, 2022; Altstadt für Alle!, 2022).

3   *'Flaniermeile Volksdorf' (05/2022-07/2022)*   `B`

Within the framework of a temporary pedestrian boulevard, car-reducing measures are introduced in the center of Volksdorf to increase the quality of stay and make visions tangible (cf. AR, 2022 & Quast, 2022; District office Wandsbek, n.d.).

4   *'Klimafreundliches Lokstedt' (09/2020-08/2022)*   `A` `B` `C`

The district office Eimsbüttel, Hamburg University, and the community center Lokstedt accompany and support existing citizen-led projects to achieve the long-term vision of a climate-friendly district (cf. Zimmer, 2022 ; BUKEA, n.d.).

5 *'Superbüttel' (pilot day in August 2021, implementation date not yet determined)* `A`
Kurs Fahrradstadt, together with CITIES FOR FUTURE developed the idea to bring the Barcelona Superblocks to a neighborhood in Hamburg Eimsbüttel (cf. Dettmer, 2022; Zimmermann, 2022; Kurs Fahrradstadt, 2022).

6 *Grelckstraße traffic laboratory (2021-2022, two phases)* `A`
To improve the quality of stay in Grelckstraße, the Eimsbüttel district assembly decided to temporarily test two variants for a redesign: a one-way street and a pedestrian zone (cf. Quast, 2022; Zimmer, 2022; District Eimsbüttel, n.d.).

7 *Real-world laboratory 'Altstadtküste' (annually on a weekend in September)* `A`
Together with other adjacent stakeholders, the church St. Katharinen and 'Altstadt für Alle' coordinate the annual closure and activation of a street section along the Zollkanal in Hamburg (cf. Engelbrecht, 2022; Die Altstadtküste, 2021).

8 *'Mach Platz!' (three locations, multiple dates, 09/2021 - 10/2021)* `B`
Organized by the Patriotic Society, the Körber Foundation, and the ZEIT Foundation, stakeholders such as experts and local residents developed designs and temporary uses for three unused squares (cf. Kähler-Siemssen, 2022; Patriotic Society, 2020).

9 *'Parking Day' in Lange Reihe (annually one day in September)* `C`
Every year, BUND participates in the 'Parking Day' (cf. **CHAPTER 4.4**), together with actors like the VCD or the ADFC and at different locations, such as the Lange Reihe in 2021 (cf. Huber& Michael, 2022; Sommer, 2022; BUND, n.d.).

10 *Car-free Jungfernstieg (2020-2022, two phases)* `B` `D`
To make the city center more attractive and traffic-calmed, Hamburg decided to close the access to Jungfernstieg to individual traffic. Tactical measures were applied and evaluated before final implementation (cf. Clausen, 2022; BVM, 2020).

11 *Pop-up bike lanes (four locations, one year each, 2020-2022)* `D`
In response to calls from policymakers and initiatives, a series of streets for pop-up bike lanes were included in the negotiation agreement in 2020 and implementation began that same year (cf. Böhm, 2022; Hansen & Lange, 2022; BVM, n.d.).

12 *'Auf die Plätze!' (three locations, 08/2020 - 09/2020)* `B`

13 *Parklet program Eimsbüttel (six to twelve months, started in 2021)* `C`

14 *Bicycle trailer 'Rundesamt für lebenswerte Fahrradstädte' (2020 - ongoing)* `C`

`A` `B` `C` `D` Tactical applications, for details see **CHAPTER 3.10** on page 36

5.3 Project time frame and phases

The overview in **CHAPTER 5.2** on page 62 shows that diverse projects with different time frames were studied. While some measures only take place on one day or one weekend, others are planned for longer periods, such as 'Flaniermeile Volksdorf' (eight months) or 'Ottensen macht Platz' (five months). Pop-up bike lanes were limited to one year before being converted into interim and later permanent lanes.

While small, local projects like 'Parking Day' are easy to plan and implement (cf. Sommer, 2022), more complex setups require longer preparation, about six to twelve months (cf. Clausen, 2022). Certain changes, such as traffic signals, are often more time-consuming and costly than expected (cf. Behnke & Kirk, 2022). Hansen & Lange (2022) estimate that pop-up bike lanes require three to six months of planning to implement, while regular planning can take up to three years. A shorter lead time can be challenging (cf. Hagmaier, 2022; Clausen, 2022) and is only possible with dedicated efforts and commitment from stakeholders (cf. Kähler-Siemssen, 2022). Volunteer initiators and administrators often do not have the resources to commit to the extent they would like (cf. Kähler-Siemssen, 2022; Dettmer, 2022; Zimmer, 2022; Zimmermann, 2022).

Short-term projects seem to be better accepted (cf. Hoss, 2022; Sommer, 2022), but tend to be rather communicative in nature and may not promote a long-term mobility transition (cf. Hoss, 2022). To ensure that they contribute to a higher goal and comply with regulations, temporary projects should be integrated into a comprehensive strategy (cf. AR, 2022; Behnke & Kirk, 2022) or a larger campaign (cf. Huber & Michael, 2022). Furthermore, they should always be implemented as pilot projects with permanent intentions (cf. AR, 2022; Dettmer, 2022; Engelbrecht, 2022). An incremental approach that focuses on adjusting the project according to evaluation results is crucial (AR; 2022; Dettmer, 2022; Hoss, 2022; Hansen & Lange, 2022). Since permanent planning takes time due to administrative processes and lack of resources (Dettmer, 2022; Hoss, 2022; Quast, 2022; Zimmer, 2022), this approach can also help to implement deferred projects faster (cf. Böhm, 2022). However, due to a limited testing time, options are restricted in terms of resources (AR, 2022; Quast, 2022). A division into different phases is also important for the time-limited project itself. Hoss (2022), Quast (2022), Hansen & Lange (2022), and the administration representative (2022) mention that structuring the process into transparent steps, as in **FIGURE 35**, can help narrow down proposals.

FIGURE 35:
Project process
*(Author, 2022;
adapted fr. CURE
& urbanista, 2022)*

5.4 Costs and funding options

Project costs

The planning and execution of a project incurs different costs depending on its size and duration. The author was not able to retrieve reliable data for all locations studied. Especially for citizen-initiated interventions, an exact determination is difficult, since many actions were carried out by volunteers without payment (cf. Dettmer, 2022; Engelbrecht, 2022; Kähler-Siemssen, 2022). Therefore, the costs reported are often 'pure' costs, without volunteer labor.

Pure costs for small projects such as 'Parking Day' or the 'Superbüttel' pilot day mainly include expenses for presentation, furniture, permits and signs and can be estimated at a few hundred euros (cf. Dettmer, 2022). Setting up a ready-made parklet, for example as part of the Eimsbüttel parklet program, can cost up to 20,000 euros. This amount exceeds the funds provided by the district (cf. Sommer, 2022). Engelbrecht (2022) estimates the permit costs for a weekend of 'Altstadtküste' at around 6,000 euros. Preparatory workshops with professional volunteers were not paid for, but he estimates that paying participants on a regular basis would have cost up to 300,000 euros. In addition, Engelbrecht (2022) adds that closing a space like the church's courtyard to cars can add costs by losing parking revenue. Kähler-Siemssen (2022) emphasizes that revenues from parking and events are important for the City of Hamburg, too. For example, they ensure that regular events such as the marathon or the Christmas markets can take place. In addition, the Patriotic Society had to rent parking spaces from the city for the pedestrian-friendly city hall district and lease them back to local businesses. According to Kähler-Siemssen (2022), this generated a high chash-out for the initiative. She puts the total cost of the projects at around 180,000 euros, which was covered in equal parts by the district, fundraising, and volunteer labor (Kähler-Siemssen, 2022). 'Ottensen macht Platz' cost about 350,000 euros, as reported by the local newspaper Hamburger Abendblatt (2021), referring to a preliminary cost calculation. In contrast, the cost of the upcoming permanent project 'freiRaum Ottensen' is estimated at 6.7 million euros (Bezirksamt Altona & ARGUS, 2022).

In general, planners must consider the overall scope of the project when evaluating costs. Although a temporary project may be resource-effective at first glance, the measures to transition the intervention into an interim or even permanent solution also incur expenses. Hansen & Lange (2022) therefore point out that spending on experiments is often assessed as a 'stranded cost'.

Funding opportunities

Financing options were identified through the interviews conducted and summarized in **TABLE 3** on page 66. As mentioned earlier, initiatives such as the Patriotic Society, Altstadt für Alle!, BUND or Kurs Fahrradstadt contribute to projects without payment. This volunteer work must also be counted as part of the funding (cf. Dettmer, 2022; Engelbrecht, 2022; Kähler-Siemssen, 2022; Sommer, 2022).

CHAPTER 5

EU FUNDS	• 'Ottensen macht Platz' - Cities4People Project (cf. Hagmaier, 2022) • Funding available for individual, small actions (cf. Hagmaier, 2022)
FEDERAL FUNDS	• Climate-friendly Lokstedt - 'Future Cities' funding program of the Federal Ministry of Education and Research (BAMF) (cf. Zimmer, 2022) • 'Beweg dein Quartier' Essen & Offenbach - National Climate Protection Initiative of the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety, and Consumer Protection (BMUV) (cf. Hoss, 2022) • Recommended funding program for the integration of socio-economically disadvantaged areas and actors: urban development funding 'Social City' of the Federal Ministry for Housing, Urban Development and Building (BMWSB) (cf. Quast, 2022)
MUNICIPAL FUNDS	• 'Mach Platz!' - funded by the Department for Urban Development and Housing (BSW) (cf. Kähler-Siemssen, 2022) • 'Livable Quarters' fund by BSW, for future events (cf. Engelbrecht, 2022) • RISE program for integrated district development (cf. Quast, 2022) • Contigent funds as option at neighborhood level (cf. Hoss, 2022)
MUNICIPAL OR DISTRICT BUDGET	• Pop-up bike lanes (cf. Böhm, 2022) • City hall district - one third funded by district (cf. Kähler-Siemssen, 2022) • 'Flaniermeile Volksdorf' (cf. AR, 2022)
PUBLIC OR PRIVATE FUNDS	• City hall district - one third funded by fundraising (foundations, landlords, donations) (cf. Kähler-Siemssen, 2022) • 'Altstadtküste' - 'Innovation Fund' by IFB (cf. Engelbrecht, 2022) • Fair Parking - Third-party funds, not specified (cf. Sommer, 2022)

Since projects should only rely on volunteer labor to a certain extent (cf. Zimmermann, 2022) and to cover other expenses and personnel costs, external funding is necessary. On the one hand, raising funds with the help of foundations, donations, or by surveying property owners or residents is a possibility, according to Kähler-Siemssen (2022). Involving Business Improvement Districts (BIDs) may also be an option (cf. Clausen, 2022; Hansen & Lange, 2022). However, their main focus is not on mobility, but on increasing revenue (cf. Dettmer; 2022; Kähler-Siemssen, 2022). In addition, municipal, federal or EU funds are available. Districts often do not have enough resources to provide financial support (cf. Böhm, 2022; Hagmaier, 2022). They apply for third-party funding themselves (cf. Hagmaier, 2022) or negotiate budgets with city authorities (cf. Böhm, 2022). In some cities or neighborhoods, contigent funds can cover the costs of small, citizen-initiated projects without immense paperwork (cf. Hoss, 2022). This is helpful because finding, applying for, and receiving appropriate funds can be time-consuming for initiatives and requires a lot of of commitment, notes Engelbrecht (2022). To obtain funding for open-ended projects is especially difficult, says Hagmaier (2022). Measures related to regular planning, such as the Volksdorf pedestrian boulevard, the car-free Jungfernstieg, or pop-up bike lanes, are covered by general city budgets (cf. AR, 2022; Böhm, 2022; Clausen, 2022; Hansen & Lange, 2022). However, Böhm (2022) and Hansen & Lange (2022) note that federal funds are also sometimes used for municipal measures. Overall, the availability of a sufficient budget is one of the main prerequisites for a successful project or program (cf. Behnke & Kirk, 2022).

5.5 Stakeholders in Hamburg

One of the main reasons for conducting interviews with initiatives, companies and involved officials was to gain valuable insights into the stakeholder structure of past and ongoing tactical projects in Hamburg. Interviewees were asked about their role in the intervention, the actors they work(ed) with, ways to engage with them, and obstacles to overcome (cf. interview questions in **APPENDIX D**).

The stakeholders, along with their interests, capacities, and ways to manage, were summarized in a table in **APPENDIX T**. Although the list was compiled with care, it does not claim to be exhaustive. The assignment of stakeholders may also vary depending on the project and the characteristics considered (e.g., age groups, mobility types, background). Interviewees such as AR (2022) recommend a more detailed analysis depending on different features. However, this is beyond the scope of this report.

The different interest groups were assigned four different colors for clarity. Power and interest were rated with numbers from 1-low to 10-high based on the interviews and at the author's discretion. The stakeholders with their respective ratings and the colors for their interest groups are shown in the stakeholder matrix in **FIGURE 36** below and are explained on the following pages.
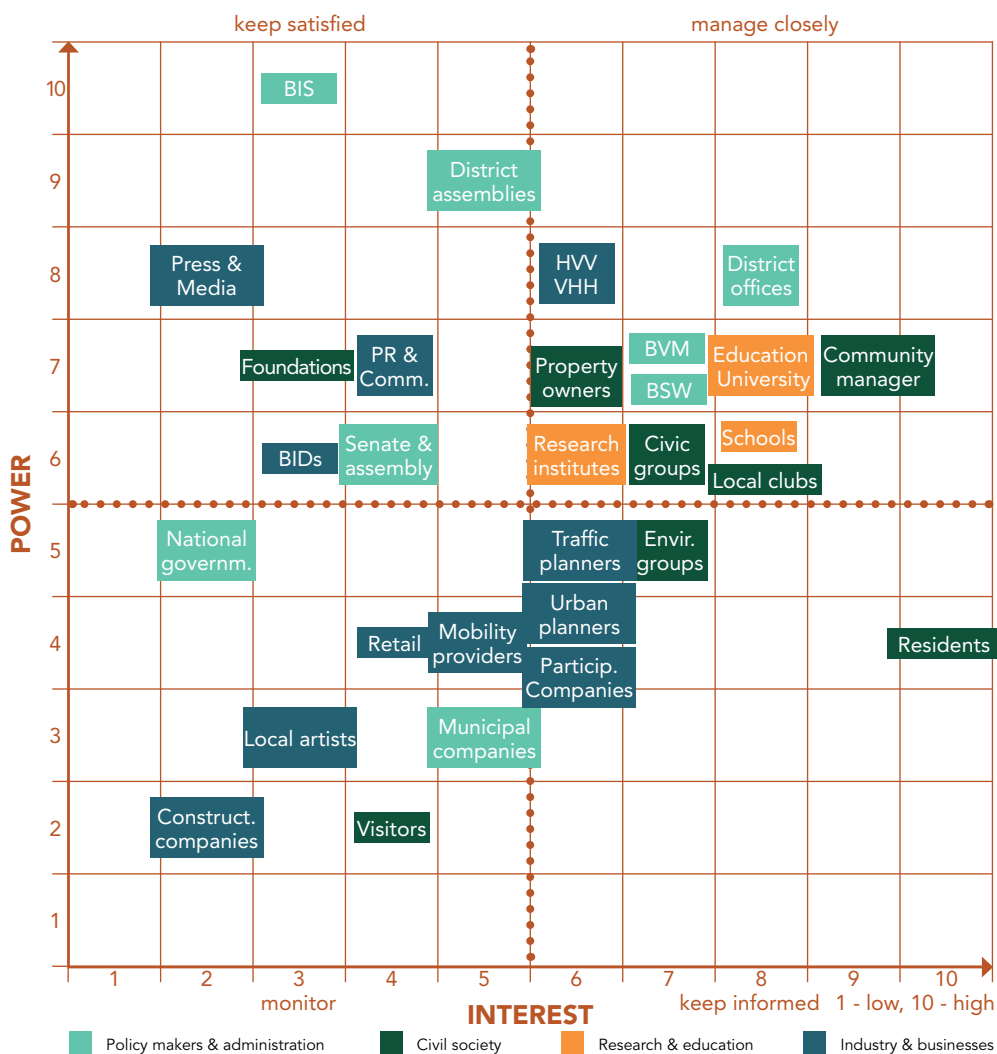

FIGURE 36:
Stakeholder matrix
(Author, 2022)

Summary of findings

A variety of actors are involved in a project. In the cases examined, civil society actors tend to be those with more interest but less power. While residents' engagement may vary by age, class, background, or mobility type (cf. AR, 2022; Quast, 2022; Sommer, 2022; Zimmer, 2022), they are generally more interested than other groups because they are directly affected. However, their power is not sufficient to implement projects on their own. Barriers such as regulations, lack of resources, and lengthy coordination processes can prevent interesting parties from initiating projects (Dettmer, 2022; Huber & Michael, 2022; Kähler-Siemssen, 2022; Sommer, 2022). Furthermore, civil society groups may only reach a certain clientele (cf. Sommer, 2022). However, engaging diverse stakeholders is important for lasting results (cf. Quast, 2022; Zimmer, 2022). Joining forces with others who have a loud voice or good standing and show committment is therefore essential to increase power (cf. AR, 2022; Huber & Michael, 2022; Sommer, 2022; Zimmermann, 2022). In addition, the role of a community manager, who has the power to connect citizens and officials, has been highlighted (cf. Clausen, 2022; Hoss, 2022; Zimmer, 2022).

Partnerships with institutional actors are also important (cf. Zimmer, 2022). District offices have a different reputation and multiple channels (cf. Sommer, 2022). If they are committed to a project, they can be an engine for change. However, lack of financial and human resources and lengthy administrative processes limit their influence (cf. Böhm; Zimmer, 2022). Political representatives in the local district assembly are decision makers with higher power (c.f., i.a., AR, 2022; Dettmer; 2022; Hagmaier, 2022). However, some initiative members interviewed felt that the parties are more interested in political games than in moving a project forward (cf. Dettmer, 2022; Zimmermann, 2022). The municipal assembly, senate, and authorities have the power to launch municipal programs, enact ordinances and allocate funding. Yet, decisions about small roads are made at the district level (ibid., 2022). BVM in particular seems interested in transforming mobility and supports projects such as 'Superbüttel', but has to wait for the district to involve them (ibid., 2022). The Street Traffic Authority, included in BIS, seems to have the most power, but to inhibit experimentation. It is responsible for final approval under the StVO, which is sometimes outdated and inflexible (cf. ibid., 2022; Behnke & Kirk, 2022; Böhm, 2022). However, Behnke & Kirk (2022) stress that they do not block innovative projects in general, but only assess whether an intervention is safe for traffic and within the given framework and regulations, which planners should already consider. Sound justification is also often lacking. Moreover, officials seem to leave them in charge of the decisions (Behnke & Kirk, 2022).

Businesses are involved in several ways. When contracted, they have the interest and power to influence change, but only within the scope of their mandate and in consultation with clients (cf. AR, 2022; Clausen, 2022; Quast, 2022). In any case, their expertise and professional standing are critical to the implementation of a project (cf. Quast, 2022; Zimmermann, 2022). Local retailers and businesses might

also be directly affected by street closures or outdoor expansions. Their interest and power are rated as low to medium. According to Quast (2022), local businesses often have a better appreciation of the current situation than other stakeholders and are therefore less interested in change. In addition, they usually do not have much time to get involved (cf., i.a., AR, 2022; Hansen & Lange, 2022; Quast, 2022) and deploy their connections to local politicians to influence decisions (cf. Quast, 2022). Joining Business Improvement Districts or local business associations can increase their power, as they usually have a good reputation in the city (cf. Kähler-Siemssen, 2022). Another group attributed to businesses is the press and media. VCD members estimate their power to be high, but their interest needs to be aroused. Keeping external press and media informed and attracting them with unique, critical interventions is key to achieving public interest and political action. Once a general discussion starts, politicians also have to position themselves (cf. Huber & Michael, 2022).

A fourth group of actors is research and education. Independent institutes and universities can be involved in the monitoring and evaluation of projects. They are interested in gaining new knowledge and practical insights (cf. Zimmer, 2022). Their results help to communicate the success or failure of a project and to convince other stakeholders (cf. Clausen, 2022; Hoss, 2022). Therefore, their power should not be underestimated and their involvement is recommended. On the other hand, local schools and parents need to be involved. They are eager to increase the safety of their children and therefore also pursue the goal of reducing the dominance of private transport. Their influence and standing can help the initiators to achieve public approval (cf. Zimmermann, 2022). However, some parents may be less interested and insist on driving their child to school when they encounter unsafe roads.

5.6 Engaging local stakeholders

For a successful project, the various stakeholders involved must be activated and included. Arnstein's (1969) 'Ladder of Participation' divides the different possibilities of citizen participation into eight categories. FIGURE 37 shows their spectrum in an adapted form. While the lowest levels 'manipulation' and 'therapy' are officially absent from participation concepts, information, consulting, and placation are quite common, but offer little influence to affected citizens and are therefore more token than real participation (Arnstein, 1969). Interviewees such as Quast (2022)
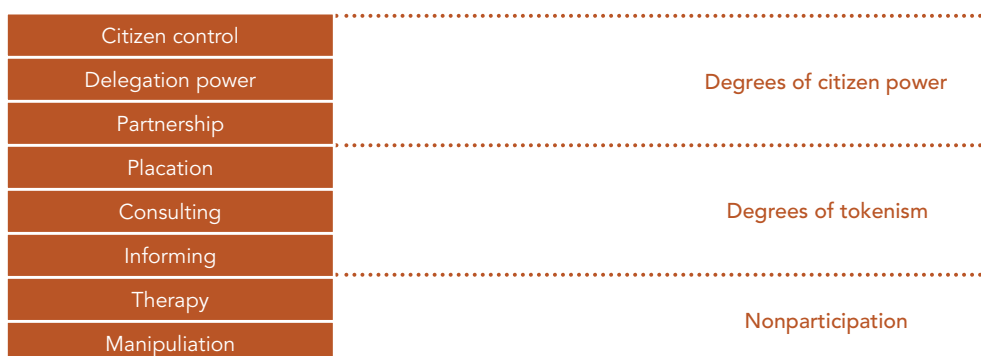

FIGURE 37:
Citizen Participation
(Author, 2022; adapted from Arnstein, 1969)

and Clausen (2022) emphasize this aspect. The latter also mentions that involving citizens in a variety of ways is rather important than just informing them. Quast (2022) believes that not to offer many opportunities for active participation is not necessarily unfavorable. However, the formats should then not be called 'participation' or 'engagement', but rather 'information' or 'consultation'. Communication and transparency about decision-making and the influence of citizen input are crucial to avoid misunderstandings and wrong impressions (cf. Quast, 2022). Hoss (2022) agrees and mentions in this context that making a so-called 'participation promise' can be beneficial. Hansen & Lange (2022) emphasize the importance of transparency about participation opportunities and communication about prerequisites and requirements to prevent discontent and false expectations. They also emphasize the difference between participation and information (cf. Hansen & Lange, 2022).

All interviewees highlighted the involvement of different stakeholders. Quast (2022) points out that inviting a variety of actors is important and can lead to more fruitful discussions than trying to activate as many people as possible. Engelbrecht (2022) notes that appropriate communication channels must be found to achieve quantity and quality in this aspect. However, different target groups often require different ways to address them (cf. AR, 2022; Hagmaier, 2022; Quast, 2022). Sommer (2022) suggests that existing structures such as local clubs for seniors or subcultures for young adults can be deployed. Partnerships with other advocacy groups and thus more diverse communication channels can also help to reach a larger group, especially for environmental groups that usually only target a specific clientele (cf. Sommer, 2022). In general, involving newspapers (cf. Huber & Michael, 2022; Zimmermann, 2022) and actively deploying own communication channels is recommended (cf. Clausen, 2022). Not only invitational formats such as workshops, but also 'visiting' formats can be beneficial, especially to integrate stakeholder groups with little interest and time, such as business owners (c.f., i.a., AR, 2022; Hagmaier, 2022; Hansen & Lange, 2022; Quast, 2022; Zimmer, 2022). Hoss (2022) also mentions that applying a randomized selection process to engage a more diverse group of actors can be helpful. In addition, low-threshold options such as online mapping can reach stakeholders who would otherwise not participate (cf. Hagmaier; 2022; Hoss, 2022). On the other hand, information booths or offices, as well as direct contacts or community management, can further lower the threshold for interested parties to approach initiators, ask questions, and submit proposals (c.f., i.a., Hoss, 2022; Quast, 2022; Zimmer, 2022; Zimmermann, 2022). In particular, Quast (2022), Zimmer (2022), and Zimmermann (2022) believe that citizens from lower or other socioeconomic classes, who would be more likely not to actively engage, need special attention because they are usually concerned with issues other than the environment. Zimmermann (2022) notes that citizens who are not interested in climate change or the mobility transition can still be activated by asking them about possible improvements in their immediate environment and letting them participate. In addition, he and Engelbrecht (2022) suggest creating visual images and highlighting the benefits of change, as well as

talking about quality of life rather than abandonment. Nevertheless, people need to be made aware of the urgency of change and their potential role in it (cf. Engelbrecht, 2022; Zimmermann, 2022).

In general, formats may depend on their particular goal, which may vary according to project phase. As discussed in CHAPTER 5.3 and illustrated in FIGURE 35, an incremental approach is recommended (cf. AR, 2022; Hansen & Lange, 2022; Hoss, 2022). According to Hagmaier (2022), Hansen & Lange (2022), and Hoss (2022), a low-threshold collection of ideas via an online map can be promising after the initial meetings. In this way, key issues can be identified and sorted in advance to satisfy users - such as the 'Meldemichel', which citizens can use to report damages (cf. AR, 2022; Hoss, 2022). Interviews can support the preselection process (cf. Hansen & Lange, 2022). After the first workshop, Hoss (2022) recommends an (online) vote to narrow down the proposals. In the case of 'Beweg dein Quartier' in Offenbach, 36 ideas were reduced to 16 project proposals (CURE & urbanista, 2022, also FIGURE 35). When citizens decide, control instances such as an additional expert jury are necessary to prevent manipulation and the selection of unsuitable projects (cf. Hoss, 2022). After the voting, the selected interventions can be elaborated in a second workshop. Subsequently, professionals such as urban or landscape planning agencies can use the results to develop concrete projects (cf. Hoss, 2022; Quast, 2022), which is often not possible in workshops (cf. Hoss, 2022).

Ideally, residents are not only consulted but cooperatively involved in projects by collecting data (cf. Sommer, 2022), building parklets (cf. Quast, 2022; Zimmer, 2022), coloring streets (cf. Hoss, 2022), and programming (cf. Clausen, 2022; Hoss, 2022). In general, events by local actors and non-consumption seating are recommended to enliven the space (cf. Dettmer, 2022; Kähler-Siemssen, 2022; Sommer, 2022). To experience the change can also increase the group of engaged stakeholders (cf. Dettmer, 2022; Hagmaier, 2022; Hoss, 2022; Sommer, 2022) and take away people's fear (cf. Clausen, 2022). Once officials involve civil society in processes, they should regularly inform them and provide feedback (cf. Dettmer, 2022; Huber & Michael, 2022). Initiatives, on the other hand, should try to convince institutional actors and find committed contacts to drive change (cf. Dettmer, 2022).

Overall, interviewees such as Clausen (2022) and Huber & Michael (2022) point out that citizens should not only participate in predefined formats, but also be able to propose projects themselves. Providing an uncomplicated framework, budgets, and structural support not only for ready-made proposals but also for entire processes is therefore essential (cf. AR, 2022; Engelbrecht, 2022; Huber & Michael, 2022; Quast, 2022). A low-threshold, clearly defined program could activate people who are interested in redesigning but would not engage themselves because of the expected coordination effort (cf. Dettmer, 2022) or because they do not have the mindset that they can transform a space (cf. Kähler-Siemssen, 2022). In addition, districts should take the lead and conduct more pilot projects to show people how space can be used differently and motivate them to get involved themselves (cf. Sommer, 2022).

5.7 Regulations and the role of official actors

Public space in Germany is highly regulated (cf. Kähler-Siemssen, 2022). When planning interventions there and especially in streets, rules have to be followed and regulatory bodies have to be incorporated from the beginning (Huber & Michael, 2022). According to Behnke & Kirk (2022), the Street Traffic Authority is involved as soon as the responsible department, i.e., the BVM or the district, starts the development. They are primarily in contact with the respective planning companies. BVM or district offices are often reluctant to implement a project without police approval, even though this could be done. However, if traffic signs are required, their involvement is mandatory (cf. Benke & Kirk, 2022).

Different regulations and permits were applied to the projects studied due to the diversity of interventions. In general, applicable tools are conditioned by the StVO (cf. Hagmaier, 2022). The pop-up bike lanes were street experiments according to the 'experimentation article' (cf. Böhm, 2022; see also **CHAPTER 3.9**). However, 'Ottensen macht Platz' applied this article before it was adapted. Due to formal challenges, the experiment had to be terminated earlier (cf. Clausen, 2022; Hagmaier, 2022; Hoss, 2022). The following project 'freiRaum Ottensen' has an official mandate (cf. Hagmaier, 2022). The pedestrian boulevard in Volksdorf and the transformation of Jungfernstieg are also regular urban development measures without the use of the 'experimentation article' (cf. AR, 2022; Clausen, 2022). For shorter happenings, special permits, usually used for a neighborhood festival or (spontaneous) demonstrations, were requested, in consultation with Street Traffic Authority (cf. Dettmer, 2022; Huber & Michael; Sommer, 2022; Zimmer, 2022).

The general set of rules brings dependencies and constraints, such as stretched planning periods. Dettmer (2022) points out that decision-making at the political level generally takes time. One reason for this may be district assemblies or other political actors that are unable to reach an agreement due to different backgrounds or objectives and the fear of losing votes (cf. Dettmer, 2022; Zimmermann, 2022). Behnke & Kirk (2022) agree, adding that differing overall goals may also account for sometimes inconsistent, selective planning.

Once mandated, protracted planning is influenced by intensive coordination processes among the authorities involved, which are interconnected but also dependent on each other's decisions (cf. Böhm, 2022; Engelbrecht, 2022; Quast, 2022). Sommer (2022) and Zimmer (2022) remark that the reasons for slow planning progress are more likely not to be found in the lack of interest of the district office staff, but in the general administrative processes and the lack of time. Engelbrecht (2022) agrees, adding that authorities and districts seem to be interested in transformation but do not have the capacity to implement proposals. Böhm (2022) points out that authorities and districts often do not have the required and desired financial and human resources to pursue projects.

Tactical measures such as pop-up bike lanes can speed up implementation of projects that are already in the planning stages, as few construction activities are required and

coordination efforts are reduced. However, after a pilot phase, additional legal orders are needed for the transition phase and later for permanent implementation, which requires additional meetings (cf. Böhm, 2022). Therefore, the Department for Traffic and Mobility Transition (BVM) will prefer accelerated procedures instead of pop-up bike lanes in the future (cf. ibid., 2022). For the pedestrian-friendly city hall district Kähler-Siemssen (2022) could not find any difference between the approval process for a temporary and a permanent intervention. The main reason for the similarity is the restriction by inflexible rules (cf. Dettmer, 2022), which are outdated and not open to experimentation and mainly support the car-oriented city (cf. Behnke & Kirk, 2022; Dettmer, 2022; Engelbrecht, 2022; Zimmermann, 2022). Applicable rules like the 'experimentation article' (cf. **CHAPTER 3.9**) do not seem to be mature yet (cf. AR, 2022). Therefore, the road traffic regulations need to be adapted (cf. Dettmer, 2022; Engelbrecht, 2022; Zimmermann, 2022).

Since changing regulations is generally a lengthy process and a federal challenge (cf. Böhm, 2022), officials should show more courage in approving and applying temporary experiments (cf. Clausen, 2022; Huber & Michael, 2022; Sommer, 2022). However, this is not always easy. The Street Traffic Authority emphasizes avoiding lawsuits and providing watertight solutions (cf. Behnke & Kirk, 2022; Böhm, 2022) and therefore examines with a high degree of caution and orderliness (cf. Engelbrecht, 2022). Like other officials, the police appear to be skeptical of nonstandard procedures (cf. Kähler-Siemssen, 2022) and slow down permitting processes or prevent projects because they focus mainly on traffic flow (cf. Dettmer, 2022; Engelbrecht, 2022; Huber & Michael, 2022). However, Behnke & Kirk (2022) emphasize that the processes can be accelerated if they are involved early enough. Moreover, if planners and clients followed the rules, there would be fewer problems. Spatial constraints or competition for space can additionally limit options. Still, decisions must be appropriately justified (Behnke & Kirk, 2022).

To overcome the mentioned challenges, initiators need dedicated contacts in the relevant district offices (cf. Dettmer, 2022; Hoss, 2022). A direct link to officials would also be beneficial for initiatives to support them in the approval process (cf. Hoss, 2022; Quast, 2022; Zimmer, 2022; Zimmermann, 2022). First and foremost, decision makers should communicate project progress transparently, provide feedback, and integrate initiatives on their own accord (cf. Dettmer, 2022; Hoss, 2022; Huber & Michael, 2022; Quast, 2022). Also, when launching a program, the conditions for applicants and institutional actors must be transparent (cf. AR; 2022). The approval process must be low-threshold, simple and with little paperwork for both sides (cf. Clausen, 2022; Dettmer, 2022; Huber & Michael, 2022; Kähler-Siemssen, 2022).

In participation processes, the legal requirements and conditions must be communicated in advance (cf. Hansen & Lange, 2022). Looking at a potential program, Hoss (2022) suggests that a clear framework with precise rules or instructions and professional support would be beneficial. For open tenders, he emphasizes, control instances must be put in place (cf. Hoss, 2022).

5.8 Tactical measures and tools applied

The instruments used in the Hamburg projects are similar to those utilized in the best case studies (cf. **CHAPTER 4.2 ET SEQQ.**). Due to the time-limited nature of the projects, they need to be easy to (dis)assemble and cost-effective (Lydon & Garcia, 2015). Engelbrecht (2022) points out that small-scale, context-sensitive planning is important. In addition, measures should facilitate the functioning of the new space by, for example, revealing new street distributions, preventing access for private cars, or improving and enlivening the space. The whole project should either limit the use of private cars or promote sustainable transportation (cf. Hagmaier, 2022) and create awareness for new uses (cf. Sommer. 2022). Tools can be signs, traffic cones, and markings in yellow according to Road Traffic Regulations (cf. AR, 2022; Böhm, 2022; Hagmaier, 2022), or elements such as stones, planters, artificial turf, and furniture (cf. AR, 2022; Hagmaier, 2022; Quast, 2022). Kähler-Siemssen (2022) emphasizes the importance of consumption-free seating and playgrounds, while Hoss (2022) recommends multifunctional seating and waste bins to facilitate the functioning of the space. According to AR (2022), some citizens have suggested elements such as a stage or foosball table for the pedestrian boulevard in Volksdorf. However, due to the temporary nature, not all proposals are feasible (cf. AR, 2022; Quast, 2022). Sometimes spatial conditions or safety issues limit the possibilities (cf. Behnke & Kirk, 2022). Surveys in Volksdorf showed that the main character should be maintained, so the district office decided to put up more seating and create space for special uses (cf. AR, 2022). A landscape design firm handled the planning and bidding of tactical elements such as furniture and planters, taking into account the results of the workshop (cf. Quast, 2022). A landscape planning firm was also involved in Ottensen (cf. Clausen, 2022) for elements like those in **FIGURE 39**.

In the best case, tools are planned, prepared, and implemented in collaboration with residents (cf. Hoss, 2022). The joint construction of parklets in Lokstedt (cf. Quast, 2022; Zimmer, 2022) or the collective painting of streets in Offenbach, as shown in **FIGURE 38**, facilitates the revitalization of the area, the community character and can lead to a higher acceptance of new spaces (cf. Hoss, 2022). In addition, programming the space with events by local actors is crucial (cf. Clausen, 2022; Dettmer, 2022; Hagmaier, 2022; Hoss, 2022; Sommer, 2022).

Kähler-Siemssen (2022) brings into consideration that not every measure can be implemented in every location. Testing and adjustments may be required. According to Hoss (2022) and Zimmermann (2022), no general recipe can be followed, but modules or guidelines could help to adapt to different spaces. In this context, Zimmer (2022) emphasizes flexible projects that allow learning and reacting during implementation. The use of a pilot phase, where experience with prototypes can be gained, allows conclusions (cf. AR, 2022; Hagmaier, 2022; Zimmermann, 2022). A transformation into permanence must be intended from the beginning (cf. AR, 2022; Dettmer, 2022; Engelbrecht, 2022) and temporary interventions should trigger long-term change (cf. Kähler-Siemssen, 2022).

FIGURE 38:
Temporary play street *(Stadt Offenbach / Malz, 2021)*

FIGURE 39:
Seating in Ottensen *(Bezirksamt Altona / Tast, 2019a)*

Although opportunities for participation were available within the given frameworks of the projects, some interviewees suggested that citizens should be allowed to propose own ideas (cf. Clausen, 2022; Huber & Michael, 2022). Zimmer (2022) recommends supporting existing citizen structures to facilitate long-term projects.

Low-threshold offers for small interventions are necessary (cf. Kähler-Siemssen, 2022), which means that citizens can also get funding and support more easily (cf. Zimmermann, 2022) and that the whole planning and implementation process is simplified (cf. Huber & Michael, 2022). Furthermore, Quast (2022) points out that a project should support the initiators throughout the project process. A project database or network could also facilitate the transfer of knowledge (cf. Zimmer, 2022) and the finding of committed supporters (cf. Huber & Michael, 2022).

The previously mentioned guidelines and a holistic framework could be helpful to define requirements and locations (cf. AR, 2022). Böhm (2022) and Hansen & Lange (2022) point out that e.g. road closures should be done on district roads rather than main roads. Zimmermann also recommends focusing on 'low-hanging fruit' such as district roads and staying away from federal streets. Hagmaier (2022) notes that a framework must ensure that projects benefit the public.

In general, feasibility, suitability, and alignment with an overall goal (cf. Zimmermann, 2022) should be ensured as part of an overall strategy (cf. AR, 2022; Behnke & Kirk, 2022). Clausen (2022) brings into consideration that developing a manual would take a lot of time. Districts and authorities should rather invest in actual interventions, as general guidelines already exist. Behnke & Kirk (2022) also state that, in their opinion, existing expert guidelines such as 'ReStra' are sufficient. In any case, whether a project can be implemented or not needs to be communicated transparently (cf. Hansen & Lange, 2022; Quast, 2022).

5.9 Knowledge transfer through surveys, evaluations, and results

Allowing people to experience temporary interventions can lead to a change in behavior or opinion (Rieger & Rußmann, 2021). In order to foster a transformation towards a mobility transition and make the project a success, the wishes and concerns of those affected must be heard. In addition, the potential change in mindset must be tangible and documented for effective communication (cf. Hoss, 2022). Scientific monitoring and evaluation in the form of surveys, interviews, and observations are therefore critical to the success of a project (cf. Hoss, 2022; Kähler-Siemssen, 2022; Zimmermann, 2022). These evaluations can furthermore help identify transferable results that can be used for future projects (cf. Zimmer, 2022) or for comparison with similar projects (cf. Hoss, 2022). Most importantly, they can also be used to justify the continuation of a project, as in the case of a research project in Stuttgart, Germany, where, according to Clausen (2022), a favorable evaluation led to the introduction of a administrative procedure for a future implementation of parklets.

A university or independent institute can supervise the scientific monitoring. While in 'climate-friendly Lokstedt' Hamburg University supervises (cf. Zimmer, 2022),

in 'Ottensen macht Platz' the Technical University of Hamburg was responsible for surveys, evaluations, interviews, traffic counts and spatial observations (Berestetska et al., 2021; cf. Clausen, 2022). According to the formats applied in Ottensen, spaces were increasingly used for lingering, socializing, and interacting. Overall, most survey participants rated the impact of the interventions on the space as positive or very positive, and 83 percent of participants voted to continue, although a proportion of 56 percent wanted adjustments (Berestetska et al., 2021).

For the city hall neighborhood, evaluation results are based on an online survey and traffic count (Patriotic Society, 2019). Most respondents (85 percent) confirmed higher overall satisfaction and 93 percent rated quality of life trends as positive. Likewise, 93 percent would like to see it continue. Restaurateurs achieved higher sales, while retail trends were not significant. The overall situation improved especially in delivery services and logistics (Patriotic Society, 2019).

In Volksdorf, the district office commissioned Ms. Quast's company TOLLERORT to prepare the evaluation and a traffic planning office to conduct the spatial observation and traffic count (cf. AR, 2022; Quast, 2022). AR (2022) highlights that the baseline analysis with qualitative and quantitative formats helped to focus on reducing traffic, as it showed that in some cases more than 50 percent of vehicles stay less than five minutes and most cars are looking for parking (cf. AR, 2022; TOLLERORT & Masuch + Olbrisch, 2021). The assessment will continue during and after the pilot phase to provide comparable before-and-after results (cf. AR, 2022; Quast, 2022). These are then used to identify effective and failing measures and adjust plans for permanent transformation (AR, 2022).

Dettmer (2022) and Zimmermann (2022) emphasize the importance of surveys for the 'Superbüttel' projects because they showed resident support. Zimmermann (2022) adds that in general, most residents are in favor of a redesign when asked to improve their neighborhood by reducing car dominance. However, there are always extreme supporters and opponents (cf. Zimmermann, 2022).

In the case of pop-up bike lanes, survey participants supported permanent implementation (cf. Böhm, 2022; Hansen & Lange, 2022). Böhm (2022) cautions that results can sometimes differ from actual use. The pop-up bike lane in HafenCity was not very well used, as participants still preferred the double lane on the other side of the street. However, in surveys, users rated the additional lane as positive (cf. Böhm, 2022).

Böhm (2022) also adds that questionnaires and observations can help to identify disadvantages. In the four Hamburg cases, no major difficulties were identified. However, additional bike lanes may limit busses from getting through traffic, which needs to be considered in further planning. Overall, the approving evaluations together with the given technical rules were the basis for converting the pilot projects into real bike lanes (cf. Böhm, 2022). Hansen & Lange (2022) note that the initiators must always be prepared for negative results and have the courage to restore the situation. Kähler-Siemssen (2022) also emphasizes this willingness to make mistakes.

5.10 11 golden rules for a future program

For resources see previous chapters.

(1) *Transparency is the key*
- Make the approval, decision-making and implementation transparent.
- Communicate the legal conditions, requirements, and timeline.
- Provide a rough framework and/or install control instances.
- Inform citizens of their opportunities to participate.
- Ensure that participants know what will happen with their proposals.

(2) *Quality and diversity instead of quantity*
- Engage diverse stakeholders and different participation formats.
- Offer low-threshold options to reach a greater diversity of input.
- Reach people through existing networks.
- Encourage diverse uses and high-quality rather than similar spaces.

(3) *Strive for simplicity and clarity*
- Make the approval process simple and low-threshold.
- Articulate project deliverables and requirements clearly but flexibly.

(4) *Generate and collect data*
- Monitor and evaluate results by using a variety of formats.
- Instruct independent scientific institutes to obtain high-quality data.
- Ensure knowledge transfer and official consideration of results.
- Publish and collect projects so that you can learn from each other.

(5) *Funding, funding, funding*
- A sufficient budget is critical to a successful project and to volunteers.
- Identify funding and plan the program according to desired outcomes.
- Routinely assist groups in finding and raising funds.
- Establish a pool of materials for projects in lieu of financial support.
- Prevent large payouts by providing quick compensation for expenses.
- Use resources available at the municipal level; apply them in districts.

(6) *Step by step*
- Apply an incremental approach to select and refine proposals.
- Use testing or pilots to develop a permanent solution.
- Big transformation cannot be achieved in one fell swoop, but gradually.

7 *Do good and talk about it*
- Convince the press and media to publicize projects and programs.
- Use PR, advertising campaigns and actively deploy different channels.
- Activate the use of spaces by inviting residents to events.
- Create a positive image and visualize ideas; raise awareness.
- Talk about the benefits and people's role in making it happen.
- Install formats to educate and persuade politicians and officials.

8 *Join forces and pull together*
- Involve all interest groups and police upfront.
- Delegate dedicated contacts in authorities and district offices.
- Set up an advisory board as a link between initiators and officials.
- Involve local businesses and partners such as schools or sports clubs.
- Activate advocates and let people network with each other.
- Employ experts and professionals to leverage their knowledge.
- Include a local coordinator or community manager, set up an office.
- Unleash local expertise and let residents (co-)design and decide.

9 *Start doing something*
- Instead of investing time in a detailed manual, test the measures.
- Lead by example and motivate people by starting with prototypes.
- Start on small roads and with small interventions.
- Be prepared for failure and resistance; be willing to make mistakes.
- Allow flexible projects that can be adapted.

10 *Think big (and holistically)*
- Support the entire development process, not just a completed proposal.
- Establish an overall strategy with long-term goals; prevent planlessness.
- Factor in additional transition costs or take precautionary measures.
- Initiate adjustments to outdated federal regulations to create more room for experimentation and more leeway for officials.

11 *Develop pilots for permanence*
- Promote a long-term transition with longer periods.
- Ensure transformation to permanent solutions by complying with regulations and engaging key stakeholders in the development.
- Consider measures and tools allowed or required by regulations.

FIGURE 45

Sandbox and planters
in Volksdorf
(*Author, 2022*)

A HAMBURG VISION
CONDITIONS FOR THE NEW INSTITUTIONAL PROGRAM

6.1 Program overview

The previous chapters identified the characteristics and conditions for an institutional process that promotes neighborhood-level mobility transition by facilitating citizen-led, tactical projects. **CHAPTERS 1** and **2** provided an overview of the impacts of motorized transportation and the need for a holistic mobility transition. Tactical Urbanism in the form of road experiments, pilots, or demonstration projects was identified as a possible measure to this end. **CHAPTER 3** therefore summarizes the main features of Tactical Urbanism as a tool to promote mobility transition and defines suitable applications. **CHAPTER 4** evaluates four different case studies in places that have already implemented their own institutional programs. **CHAPTER 5** provided valuable insights into the conditions, barriers, and stakeholder structures of tactical projects by conducting interviews with 15 different actors or groups involved.

The requirements identified in these chapters are now utilized to develop a blueprint for the targeted program in Hamburg. The following subchapters summarize the content by defining the overall goal and providing a general framework, outlining a possible path to funding, naming relevant actors, and identifying information and awareness goals. The communication strategy includes details on the potential program name 'Straßen(t)räume' and the design of an exemplary postcard that can be distributed among citizens to raise awareness about the program. The sections also explain the timeline, steps of the application and implementation process as well as suggest appropriate engagement formats and procedures to ensure knowledge transfer through project monitoring and evaluation.

The final subchapter summarizes the findings obtained in this report. This section not only presents the results of the work. The outcomes are additionally discussed critically and possible missed topics are mentioned. Furthermore, the chapter looks at upcoming steps for the implementation of the program in Hamburg and further research needs in this or related areas.

6.2 Overall goal and framework

To outline the general objectives and structure of the program, a logical framework matrix was created and attached as **APPENDIX U**. This table defines 'actions' that lead to 'outcomes' and 'results' which then serve 'purposes' and achieve the 'overall goal' of promoting mobility transitions with the aim of improving neighborhood livability and addressing climate change.

Getting a project off the ground that facilitates tactical, citizen-initiated projects requires several actions. One of the main tasks is to integrate the program into an overarching, long-term strategy, as evidenced by findings from the literature, case studies, and interviews (see respective chapters). An appropriate plan can either be created or an existing one must be identified within which the program can be implemented. Fortunately, as mentioned by Böhm (2022), BVM, along with stakeholders such as other authorities, district offices, and municipal companies, initiated the Alliance for Bicycle Traffic in 2016 and developed it into the Alliance for Bicycle and Pedestrian Traffic in 2022 (BVM, 2022). This agreement focuses on providing sustainable mobility options to increase the quality of life and flexibility of Hamburg's citizens. Similar to the program targeted in this thesis, the alliance encompasses livability and climate protection. It is embedded in strategic plans and interlinked with other relevant strategies. Annually, the partners agree on measures, depending on available financial and human resources (ibid., 2022).

The outlined measures in the area of pedestrian traffic already include pilot projects according to the 'experimentation article' of the StVO (cf. BVM, 2022, section 4.7). Districts can propose experiments such as parklets, temporary pedestrian zones or seasonal street closures, while focusing on neighborhood centers. The particular proposal must be reviewed to ensure that it complies with the rules and that conditions, such as location and participation, are met. The projects are overseen by the authorities (BVM, 2022). In this way, districts can already start implementing actions and lead by example (cf. Sommer, 2022; see 'rules' in **CHAPTER 5.10**).

In the next annual negotiations, the alliance partners could agree on a program by contributing their experiences. This program can still include proposals from the district offices. However, the contract should specify that project ideas should be solicited from residents through an application process. Ideally, a phased process (cf. Hoss, 2022; more in **CHAPTER 6.7**) allows for the identification of feasible projects for various pilot terms. Nonetheless, potential permanent tranformation must be possible and vetted prior to realization.

Thus, at least three projects will be selected in the first round to be allowed to launch a one-day project under the program. Of these three projects, at least one should be pursued for a transitional period of at least three to six months, with the possibility of extension and conversion to a permanent facility. However, actual implementation of the selected program cannot be guaranteed due to the stakeholders involved and the open results of participation processes. This uncertainty must be communicated transparently before involving residents, as emphasized by Hansen & Lange (2022).

6.3 Funding of program and projects

As Böhm (2022) mentioned, the Department for Traffic and Mobilty Transition does not usually create funding programs. However, the Alliance for Bicycle and Pedestrian Traffic also defines funding for related measures (BVM, 2022). Including the new program would allow district offices to receive a portion of the alliance funding for program-related measures. The amount would be negotiated by the alliance partners and its availability would depend on the general budget (ibid., 2022). In the 2022 agreement, BVM (2022) states that districts may receive 20 percent of gross construction costs for external planning expenses. Thirty percent of these can be staff appropriations. In this way, partners can guarantee personnel costs of up to three million euros per year, allowing district offices to hire qualified staff (BVM, 2022). The upcoming 2023 agreement could structure the funding so that some is available for program-related measures, the required staff in the advisory board and for coordination in the individual district offices.

District offices need to obtain additional capital from national grants or EU programs. According to the alliance agreement, the districts are responsible for applying, but BVM assists them in the selection (BVM, 2022). The additional funding could also be used to install contigent funds (cf. Hoss, 2022). Potential opportunities were mentioned by interviewees and summarized in **CHAPTER 5.4**. Due to the specific timeframe and limited availability of some capital, no funding will be selected at this stage of program development. Moreover, BVM and district offices themselves are likely to have a better overview of all suitable national and European financing opportunities and a detailed analysis of these options would require additional time.

Partnership with local businesses and suppliers will keep the material costs low. Districts are responsible for contacting suppliers in their area and making their own arrangements. As a substitute for providing materials, delivering them to locations, and picking them up after use, businesses could place advertising, either on the materials and furniture themselves or in the form of posters and banners in the neighborhood. Their name would also be on the program's website and in flyers. If a supplier cannot be found, public or private sponsors could be recruited to pay for a bench or planter. A plaque could mention the sponsor's name.

FIGURE 41:
Program and project funding
*(Author, 2022;
Alliance icon:
Alp, n.d.)*

In their application, citizens can order materials and request a contigent fund of 100 euros for items such as sand or decoration - similar to the options available in Ghent (cf. Stad Gent, 2022a). If additional capital is needed for materials, events, or personnel, citizens are responsible for raising own funds from private parties such as residents, neighborhood organizations, or nearby retailers and businesses.

6.4 Measures and tools

Appropriate tactical applications that promote neighborhood-level mobility transition were identified through the literature review in **CHAPTER 3**, and application-specific programs were further explored in the case studies in **CHAPTER 4**. The evaluation showed that street markings and parklets affect actual traffic flow only slightly. While they can provide space for social interaction and encourage active transportation, they have little impact on the mobility behavior of residents (cf. **CHAPTERS 3.10**). The author believes that more radical applications are needed to repurpose public space and showcase future uses. Therefore, the new program will encourage the transformation of entire streetscapes or underutilized areas in districts that were originally used by motorized traffic, as in the case studies in Ghent and New York City. In addition, projects such as 'Ottensen macht Platz' or the car-free city hall district, which were discussed in interviews, offer the opportunity to gain experience that can be applied for future measures.

A phased approach is envisioned, including one-day closures, interim closures, and transition to permanent changes, modeled on New York's plazas (cf. **CHAPTER 4.3**). One-day measures will be used initially to raise awareness in the neighborhood, establish contacts, and find interested parties. By applying for special permits normally used for demonstrations or neighborhood festivals (cf. **CHAPTER 3.9** and interviews) this type of action can be done fairly easily and without much preparation. The medium-term closures are used to test and evaluate the redesign. The minimum duration should be three to six months during the summer, as recommended by the interviewees and also involves testing other mobility modes such as sharing or mobility as a service. If the change is successful, it can be turned into an interim and finally a permanent measure. This seamless transition will prevent people from falling back into old patterns and losing support for the project. It also supports the durable vision highlighted in the case studies and interviews.

To implement one-day and medium-term closures, residents can request materials and supplies from district offices. To keep preparations to a minimum, photos of the supplies can simply be attached to a website or request form, similar to the **BOX WITH SAMPLE ITEMS** on page 85. Residents specify the materials and quantity in their application (cf. Stad Gent, 2022a). To make sustainable use of materials and keep the total number low, events in different streets should not fall in the same time period. Ideally, the pool of materials should be as diverse as possible. However, at the outset, businesses may not see the point of participating. Therefore, the goal is to start with at least five different materials from the categories defined in **CHAPTER 3.10**. If possible, products from previous projects, as shown in **FIGURE 42 ET SEQQ.** on the right, can also be reused and added to the pool. Later, both the quantity and variety of tools and materials can be increased. Other materials needed by the residents, such as paint, sand, nails, project-related posters or wooden boards for the construction of furniture or parklets, can be paid from the provided contigent fund, as in Ghent (cf. Stad Gent, 2022a).

SAMPLE ITEMS IN THE MATERIAL POOL

Standard street barriers and signs

Road barriers and signals that comply with traffic regulations are required to inform about temporary use and limit misunderstandings. For example, they prevent cars from entering the zone and show visitors where they can park their bicycles, as in FIGURE 42.

FIGURE 42: Barrier element in Ottensen *(FritzWild, 2019)*

Artificial turf

To increase the quality of stay and change the feel of the street, artificial turf, shown in FIGURE 43, should be included. However, it could be easily damaged during intensive use, which would require replacement. Therefore, turf must be used judiciously.

FIGURE 43: Artifical turf in Ottensen *(Bezirksamt Altona / Tast, 2019b)*

Seating

Areas for sitting and lingering can be created by placing standard beer bench sets, folding chairs, or more creatively by using beer crates and wooden boards, as in the city hall district (see FIGURE 44). In Volksdorf, standard stone blocks are used.

FIGURE 44: Benches in the city hall quarter *(Lauterbach, 2019)*

Large-size planters

Boxes with trees and flowers, like the ones in Volksdorf in FIGURE 45, can be used as additional barrier elements on the one hand and improve the appearance and quality of the square on the other. With additional boards, they can also be used as seating.

**FIGURE 45:** Planters in Volksdorf *(Author, 2022)*

Mobile bicycle trailers

The use of mobile bike trailers such as the 'RalF' in FIGURE 46 could promote active, sustainable mobility options in the closed area. These would need to be fabricated in advance, or the City could work with Rundesamt to use their pieces.

FIGURE 46: Bicycle trailer 'RalF' in Wilhelmsburg *(rundesamt, 2022)*

6.5 Relevant stakeholders
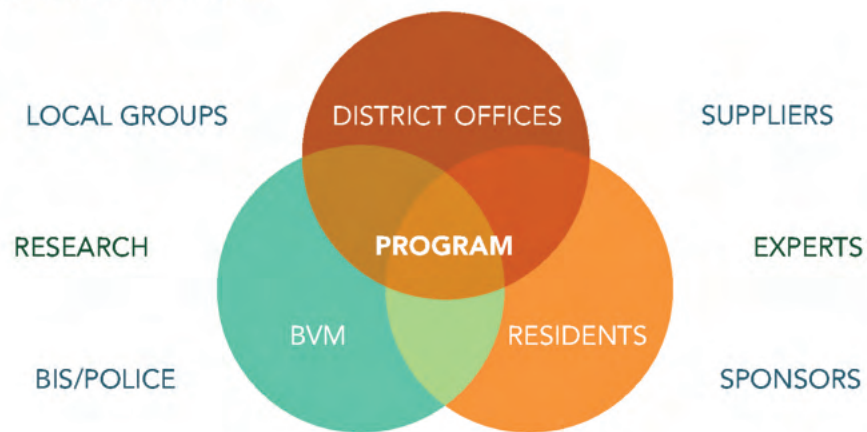
Several stakeholders will be involved in initiating and implementing the program and projects. The most important are the Department for Traffic and Mobility Transition (BVM), the offices of the seven Hamburg districts, and local residents.

As with the Alliance for Bicycle and Pedestrian Traffic, BVM will set up the structure, oversee the program and lead coordination with other authorities and official bodies such as BIS or the district assemblies. The advisory board, recommended by interviewees such as Huber & Michael (2022) in **CHAPTER 5.7** as a link between authorities and residents will also be based at BVM. Proposals will be reviewed jointly with other stakeholders such as the police. Their participation at an early stage of program development and later in project design and implementation was highlighted in interviews as critical to their success and, more importantly, to the path to permanence (cf. Behnke & Kirk, 2022).

The relevant district office will also participate and be responsible for monitoring the further development and implementation process. At least one responsible person there will be assigned to coordinate projects, suppliers, sponsors, experts and applicants, depending on workload and available resources.

Residents will be involved in two ways. First, a group of managers must be identified to take the lead in the project proposal. This includes tasks such as initial public outreach, advertising, material logistics, maintenance and monitoring of results. On the other hand, all residents of the area in question should be involved through the use of participation and co-design formats (more in **CHAPTER 6.8**).

Professionals from different fields such as participation, urban planning and traffic will support the residents in these tasks. District offices can engage them fee-based. They can advise the groups, for example through workshops, expert input or the moderation of participation formats (cf. Quast, 2022; Zimmermann, 2022).

Research teams from universities will be responsible for independent monitoring and evaluation of the projects. However, the goal is also to involve residents in the process by introducing so-called citizen science formats, in which laypersons count vehicles and pedestrians, conduct interviews and surveys, or make spatial observations, to name a few tasks. Researchers will supervise the process.

Local material suppliers would be contacted by district offices after agreeing on a substitute. Ideally, the partner delivers them and picks them up again. This way, district offices would not have to rent storage space.

The final group is civil society and other local community groups. In particular, Zimmermann (2022) stressed the importance of joining forces in the neighborhood and Sommer (2022) recommended reaching out to people in their existing structures. These can include sports clubs, schools, or senior citizen groups, among others. Members can help with organization, contacts, programming the space and providing furniture or decorations that they have or finance.

6.6 Information and awareness about program

To raise awareness of the newly launched program, BVM and districts should deploy various communication channels. They should deploy their social media regularly, actively, and on their own initiative (cf. Clausen, 2022). In addition, a simple and clear website should inform interested residents and provide other materials such as application forms, regulations, links to case studies, a short guide, and training materials on engagement formats, citizen science, and project management, such as in New Zealand's ISFP program (cf. **CHAPTER 4.5**). Citizens should also be able to post questions or suggestions online (more about participation in **CHAPTER 6.8**).

In addition to their own channels, project managers need to actively engage the press and media by getting them interested in the program and stimulating them to report on its development and implementation. Their role is seen as crucial in initiating public discussion and informing a wide range of people (cf. Huber & Michael, 2022), not just those who are interested in the first place.

Low-threshold information sessions in all districts will allow interested residents to learn about the program, ask questions, and interact with other advocates. Therefore, the events should be designed to include not only frontal presentations (cf. Clausen, 2022), but also space for gatherings. Ideally, the meetings should be held while the program is being planned, and before it has been finalized, allowing citizens to co-create and shape it.

In addition, a professional communication campaign will be launched. Posters in the general corporate design and in the colors of the City of Hamburg will be put up in every district and postcards will be distributed. They should not only provide information about the program and possible events, but also encourage people to participate. Therefore, the printed materials should be appealing and create a vision, as positive images were emphasized by Engelbrecht (2022) and Zimmermann (2022). See **FIGURE 48** and **FIGURE 49** on the following page for an example of a design. In addition, a catchy name must be developed for the campaign. The title should be motivational and highlight the benefits of the program rather than discussing limitations (cf. Zimmermann, 2022). For this paper, the author chose the visionary name 'Straßen(t)räume', a play on words meaning 'street spaces' on the one hand and 'street dreams' on the other.

WHAT IF...

FRONT

HOOK

question

phrase

inspiring

provoking

motivating

VISIONARY IMAGE

different versions

real photo

drawing

rendering

STRASSEN(T)RÄUME 2023

PROGRAM NAME

catchy

stimulating

SPACE FOR LOGOS

stakeholders

...THE STREETS WERE FOR PLAYING?

BACK

HOOK

completion

different versions

This year you can take the chance and imagine your dream street - as part of the **Hamburger Straßen(t)räume** program. BVM will support neighborhood streets transition into more livable places with spaces to meet, stay and play. Anyone can apply! After an initial one-day test this year and a mid-term phase next year, successful projects will have the change to be turned into permanent solutions. So what are you waiting for?

SHORT TEXT

informing

engaging

motivating

INFORMATION UND CONTACT
Free and Hanseatic City of Hamburg
Department for Traffic and Mobility Transition
Ms. Jane Doe
strassentraume@bvm.hamburg.de

**www.hamburg.de/
strassentraeume**

QR CODE

CONTACT DETAILS

WEBSITE LINK

6.7 Implementation and application process

As mentioned earlier, the new program will have different stages. While districts are developing it with the goal of being included in the 2023 Alliance contract, they already have the opportunity to experiment with temporary measures. In some districts, such as Altona, Mitte, Eimsbüttel and Wandsbek, projects have already been implemented. Just as the New Zealand government conducted a learning phase before implementing the ISFP (cf. case study 4, **CHAPTER 4.5**), Hamburg can incorporate lessons learned from previous projects into the new program.

ONE-DAY EVENT	MEDIUM-TERM EVENT	INTERIM TRANSFORMATION	PERMANENT CHANGE

WAY TO PERMANENCE

FIGURE 50: Incremental approach *(Author, 2022)*

Once the program is launched, interested parties will first hold a one-day event, as outlined in **FIGURE 50**. This initial step will raise awareness among neighbors, create a space to connect with each other or meet advocates, and can be used to gather ideas. If the initial event is a success, a medium-term intervention of three to six months can be implemented to actually test the change. Evaluations need to be conducted during the period so that at the end, an interim actions can be installed before permanent changes are realized. Although Böhm (2022) mentioned that different phases mean separate orders each time, no way could be found for a smoother transition according to StVO. The interim phase is important to keep the project on track and to enable the permanent transformation.

Although the phased approach involves many steps, the application process must be simple and low-threshold, as interviewed stakeholders such Dettmer (2022) or Kähler-Siemssen (2022) emphasized. In this way, the program is accessible to a diverse group of people and unnecessary paperwork on both sides is avoided. Therefore, a clear framework of conditions, requirements, deadlines, and regulations must be established before opening the process for proposals (cf., i.a., AR, 2022; Hoss, 2022). A program guide, such as those produced by New York, San Francisco, and the New Zealand government, could be helpful (cf. AR, 2022; Hoss, 2022; Zimmermann, 2022), but requires additional preparation time. Moreover, general expert guidelines such as ReStra already seem to exist (cf. Behnke & Kirk, 2022). Clausen (2022) therefore suggested not to spend years developing a manual specific to Hamburg, but to start implementing projects and learning from them. To limit the amount of explanation and conditionalities, the program should initially focus on one type of intervention, as mentioned in **CHAPTER 6.4**.

All individuals or groups interested can apply online or fill out the application form at their local district office, considering a deadline in spring. Along with their site proposal, they must name the project managers who will be responsible for the implementation and serve as contacts for the authorities. In Ghent, for example, one main contact person and four others must be specified (cf. Stad Gent, 2022a).

PREPARATION (MIN. 2 MONTHS)	APPLICATION (DEADLINE)	REVIEW (3 MONTHS)	EVENT (ONE DAY)	EVALUATION (MIN. 3 MONTHS)	SUCCESS
MANAGERS SIGNATURES	SITE PLAN, PHOTOS TRAFFIC PLAN PROPOSAL BUDGET	SELECTION COORDINATION APPROVAL PERMANENCE	AWARENESS SUPPORT CONTACT IDEAS	SURVEYS INTERVIEWS PREPARATION	

INTERIM PROJECT	EVALUATION (MIN. 3 MONTHS)	EVENT (MEDIUM-TERM)	PARTICIPATON (3 MONTHS)	REVIEW (3 MONTHS)	APPLICATION (DEADLINE)
IN PLACE UNTIL PERMANENT SOLUTION	BEFORE-AFTER SURVEYS OBSERVATIONS	TEST CHANGE PROGRAMMING ACTIVE MOBILITY	WORKSHOPS CO-DESIGN INTERVIEWS	SELECTION COORDINATION APPROVAL	(ADD. TO ABOVE) MAINTENANCE OUTREACH

FIGURE 51:
Application and implementation process
(Author, 2022)

In addition to the application form provided, they must submit a proposal with a letter of motivation and a list of supporter signatures to show general endorsement of the program. The number of signatures required depends on the area size. The City of Ghent suggests about ten weeks for the preparatory work (Stad Gent, n.d.-b). With the proposal, applicants must also submit a rough site plan, photos, and a traffic plan, as summarized in the **BOX ON THE RIGHT**. With the site plan they have to make sure that the chosen location is suitable, e.g. on a small district road, by reviewing a map on the program's website that highlights excluded parts. Generally, the first application step is similar to applying for a special permit for a demonstration or neighborhood festival (cf. hamburg.de, 2022). These permits have been mentioned by Dettmer (2022) and others and are generally not too complicated to obtain. To keep the bureaucratic effort low, the process of applying for a special permit must already be integrated into the application procedure. The costs for the special permit, which usually amount to a few hundred euros (cf. Dettmer, 2022), must be paid by the residents with their own funds.

The date of the operation can be suggested by the responsible group, but it must be coordinated in advance with the district offices and the police. In addition, the event must be carried out in the same year, preferably in the summer. The time in between, around two to three months based on the case studies, is needed for the review and approval process in the authorities, district offices and assembly as well as a possible public voting, supplemented by jury votes, for selection (cf. Hoss, 2022).

After a successful one-day event, managers can apply for the three- to six-month closure in the following year. Preferably, the application period is again in spring. The time in between can be used for participation, coordination with local stakeholders and refinement of the proposal. Managers must submit a maintenance plan and participation concept in addition to the documents mentioned before (see **BOX ON THE RIGHT**). After review and coordination with all actors involved, the development and co-design process is guided by experts and contacts in the district office. Final approval will be granted only if the process has been successful and the developed project meets the requirements.

The intervention according to StVO's 'experimentation article' will be accompanied by evaluations, which should be completed before the end of the phase. In this way, the medium-term change, if supported, can be transformed rightaway into an interim form that will remain until a permanent solution is developed.

APPLICATION REQUIREMENTS

Official application form with

- main project manager (name, address, email, cell number)
- four additional managers (name, address, email, cell number)
- street name(s), district, zip code
- preferred date for one-day event and alternative date
- signature of managers as binding declaration of interest

Attachments

- proposal
- motivation letter
- list of supporter signatures
- budget and funding plan
- site plan
- photos of site

- material request (pool)
- contigent fund request
- maintenance plan*
- public participation concept*
- programming ideas

*only for mid-term and interim stage

Available guidance

- instructions
- online map
- material pool list

- exemplary site plan (see below)
- list of useful links
- program regulations

FIGURE 52:
Exemplary site plan *(Author, 2022; adapted from Stad Gent, 2022a)*

6.8 Applied participation formats and engagement opportunities

Involving a diverse group of stakeholders already in the development of the program would be ideal. Being completely open to all types of proposals, however, might be difficult, especially since not all input is feasible or appropriate, mentions AR (2022). The representative and Hoss (2022) recommend therefore starting with a clear framework, transparent terms, and precise rules. The three municipal programs in Ghent, New York, and San Francisco also focus on one type of action that is clearly outlined. Therefore, this approach is maintained.

The participation process in Hamburg will begin with the idea of a program that facilitates tactical interventions proposed by residents. In the development phase, officials can inform and consult stakeholders through events, a survey, or selected interviews with relevant interest groups and civil society. In this way, authorities can clarify issues such as the prevailing sentiment, areas where residents believe they need help, and procedures that require to be specified in the instructions. Authorities need to be transparent that the general program idea has already been established and that consultations and suggestions are only being used to refine implementation.

After the program is installed and open for applications, there are many ways to participate. A step-by-step approach is taken, as recommended by Hoss (2022) and applied in case studies. In the project preparation phase, managers will independently collect supporter signatures, as **FIGURE 53** shows. In doing so, they are advised to already gather ideas and wishes for the new space and to establish connections with existing structures such as neighborhood groups, schools or sports clubs.

FIGURE 53:
Preparation and
selection
(Author, 2022)

BASIS — SIGNATURES — WISHES — CONNECTIONS

SELECTION — REVIEW — VOTING (50%) — JURY (50%)

FIGURE 53 illustrates also, that after BVM coordinators receive the applications, they will review them for suitability, feasibility, concept, location and managerial skills. If, after this initial review, more proposals remain than projects planned, a public voting will select the most supported projects. In this way, an additional low-threshold option to participate is created. However, when introducing (online) voting, control instances need to be installed to prevent manipulation (cf. Hoss, 2022). The votes of citizens can be supplemented by an expert jury voting. In any case, the process of proposal selection and voting must be transparent to avoid misunderstanding and dissatisfaction.

The one-day event, once approved and selected, will be used to connect people and gather initial ideas. In addition, a participation tool such as DIPAS in **FIGURE 54**, mentioned by Böhm (2022), or a website similar to 'Meldemichel' (cf. AR, 2022; Hoss, 2022) will be used so that people who prefer to enter their suggestions on an online map and anonymously can also participate (cf. Hoss, 2022).
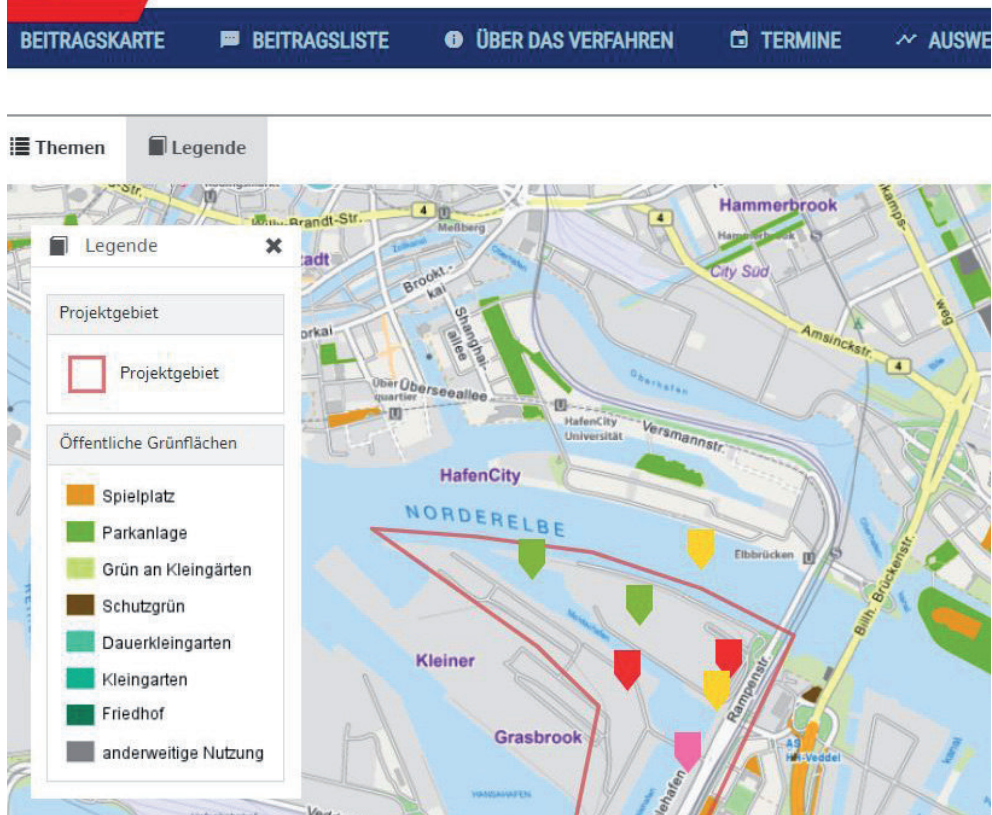
FIGURE 56:
One-day test
and evaluation
(Author, 2022)

ONE-DAY
TEST CLOSURE · IDEAS · ADVOCATES

EVALUATION
ONLINE MAP · SURVEY · REFINEMENT

The collected comments help formulate the survey conducted by managers and monitored by experts. The suggestions and results will help refine the proposal for the next application (cf. **FIGURE 56**). Once submitted, the project will first be reviewed again by participating authorities, district offices and other key stakeholders, and selected through a similar voting process as the first round. However, if the project is chosen, the agencies only commit to pursuing it, but cannot give final approval until participation has occurred. Again, this precondition has to be communicated.

FIGURE 57:
First and second
workshop
(Author, 2022)

FIRST WS
SUPERVISED · DIVERSE · PRESENTATION

SECOND WS
EXPERTS · REFINEMENT · AGREEMENT

As shown in **FIGURE 57**, the workshops will be supervised by engagement professionals who have evaluated the survey results and collected ideas. To allow for a diverse group of stakeholders, people from different sectors will be invited to participate, such as in the workshop in **FIGURE 55**. This enables more fruitful discussions, according to Quast (2022) and includes other social classes as well. In addition, random selection can be used to invite people who would otherwise not participate (cf. Hoss, 2022). However, setting up a database and random selection will take time and resources. After the first workshop, the ideas will be compiled and presented to the district office. In addition, a second workshop with managers, experts from fields such as urban design and traffic planning, and officials will focus on reaching a joint agreement. After issues such as design, maintenance, programming, budget, and materials are resolved, final approval is granted by the district assembly.

FIGURE 58:
Citizen science
and evaluation
(Author, 2022)

CITIZEN SCIENCE
COUNTING · OBSERVATION · SUPERVISED

EVALUATION
BEFORE-AFTER · SURVEY · TRANSITION

Through citizen science, which should already begin during preparation, managers and other interested residents can count, for example, motorized traffic, pedestrians, cyclists or parked vehicles, and make spatial observations (cf. **FIGURE 58**). These tasks will continue in the mid-term phase. A second survey will be conducted to allow for comparison. If the results of all formats are positive before the project ends, the temporary state can be transformed into an interim project.

6.9 Monitoring, evaluation and knowledge transfer

Establishing a monitoring and evaluation approach that provides a reliable basis for decision making and knowledge transfer is crucial (cf. Hoss, 2022; Kähler-Siemssen, 2022). Zimmermann (2022) notes that when people are asked, the majority of them are generally in favor of making their neighborhood a more livable, less car-dominated place. There will always be extreme supporters and opponents, but the goal should not be to convince everyone (cf. Clausen, 2022). In Hamburg, in cases such as the pop-up bike lanes or 'Ottensen macht Platz', positive evaluation results were one of the reasons for continuing the project (cf. Böhm, 2022; Hagmaier, 2022). The NYC plaza program also emphasizes monitoring and evaluation (cf. case study 2 in **CHAPTER 4.3**).

The main formats selected for the future program have already been mentioned in **CHAPTER 6.8**. They are stakeholder interviews, before-and-after surveys, traffic counts, and spatial observations that have been applied to the regarded projects in Hamburg and in case studies. In most of the Hamburg projects considered, university research institutes or external companies took over the evaluation (see **CHAPTER 5.9**). Therefore, they should also be partners in the new program. In any case, the selected responsible party should not be affiliated with the neighborhood or officials to prevent manipulation or falsified results.

In addition, the selected formats should be diverse, simple, easy to implement, complementary and allow conclusions. To enable a comparison across projects and to simplify their application, a general instruction and central survey or interview questions that apply to all citizen-led projects will be developed at the outset.

Inspired by the citizen science project 'Fair Parking' discussed with Sommer (2022), and to reduce the need for external resources, monitoring and evaluation will be conducted in part by interested residents and managers. Experts and scientific researchers will provide an overview of the process, help with templates and guiding questions or by participating in workshop meetings and being a constant contact for project managers.

To facilitate knowledge transfer, arrangements must be made to communicate results across authorities, engage policymakers (cf. Zimmer, 2022), and educate them about appropriate actions and formats (cf. Quast, 2022). Furthermore, the focus should be on making the results accessible to a broad group of people to enable inspiration, learning, and comparison. In this regard, Zimmer (2022) suggests establishing a database or network of all projects. Therefore, program details, evaluations, and achievements will be made available through a database on Hamburg's website or integrated into the city's existing geoportal once the realization has started.

In evaluating projects and developing lessons and suggestions, researchers should also place great emphasis on developing recommendations that can be easily put into practice by residents and officials, who often do not have the required scientific background (cf. Zimmer, 2022). Thus, when developing the evaluation design, a close connection between researchers, agencies and residents is important for all parties.

6.10 Summary of results

The goal of this Master's thesis was to outline the potential of Tactical Urbanism as a tool to foster mobility transition at the neighborhood level. More specifically, this paper focused on identifying characteristics and conditions for and the development of an institutional program in Hamburg that promotes citizen-led, local, temporary actions. Sub-areas included examining appropriate tactical measures, crucial stakeholders, key requirements, and local challenges from previous projects. Theoretical and empirical research methods were used to achieve the stated objectives, resulting in the following findings:

The literature review at the beginning of the work revealed the impact of motorized traffic on the environment. Through emissions, noise, infrastructure, and land occupation, it is not only a driver of climate change, but also responsible for other negative effects such as health problems, accidents, environmental and resource damages as well as the reduction in the quantity and quality of public space and thus livability. Although these impacts are well known, the prevalence of car culture and the difficulty of changing people's mobility behavior make them challenging to address.

Tactical Urbanism in the form of street experiments, pilot projects, and temporary demonstrations, was identified as a tool to overcome these barriers. The subsequent literature analysis focusing on TU identified general conditions. According to this review, tactical interventions are a tool for a wide range of actors, but must be distinguished from other forms of DIY Urbanism. Although a tactical approach contrasts with standard strategic urban planning, the two paths should be combined. As part of a long-term strategy and supported by monitoring and evaluation, measures can potentially promote long-term mobility transition. In this context, interventions should be radical, challenging, feasible, strategic and communicative, and legal conditions such as the application of the 'experimentation article' under the StVO must be taken into account. Both time-limited or 'phase 0' actions have the capacity to influence citizens' mobility behavior. Appropriate applications include repurposing entire roads or segments through open streets or plazas, converting parking lots to public space using parklets, or changing markings to create more space for active mobility or limit motorized traffic. The tools for these applications must be inexpensive, easy to assemble and disassemble, and flexible to allow for quick installation and adaptation.

While the literature review provided a knowledge base, it did not provide sufficient detail to develop an institutional program. Therefore, pioneering cities with their own programs were subsequently analyzed as case studies. Although the programs in Ghent, New York, San Francisco, and New Zealand involved different actors and focused on different measures, valuable conclusions could be drawn from all of them. While they emphasized the long-term plan and integration into an overall strategy, in New York a phased approach is key to success. All programs are clearly outlined

and include instructions, guidelines, or additional links. In all cases, however, these materials were developed only after initial testing of the interventions, sometimes over a period of years, as in New York. The Ghent case highlights the possibility of opening a program not only to leaders, organizations, or businesses with financial resources, but also to engaged neighborhood groups. Funding was discussed in all cases, but approached differently. While in New York and New Zealand funding is provided as part of the overall strategy, in Ghent there is only a small contigent fund and in San Francisco the initiators have to pay for their own parklet. In New York and Ghent, an additional pool of materials proved supportive. All city programs emphasized the need for more funds and sponsorships. Overall, the programs demonstrated that citizens can take responsibility to propose, (co-)design, implement, and maintain public space interventions that improve its quality while promoting active mobility, safety, and a sense of community. However, dedicated official stakeholders are still needed.

In view of the case study findings, stakeholder structures, conditions and challenges of previous projects in Hamburg were investigated. This was mainly done through qualitative research, namely by conducting interviews with 15 project stakeholders from different backgrounds. The results were summarized on the topics of timeframe and phases, costs and funding opportunities, stakeholders and their engagement, regulations and authorities, measures and tools, as well as knowledge transfer. As a result of the analysis, 11 golden rules for a future program were identified, namely transparency, quality and diversity, simplicity and clarity, data collection, funding, communication, collaboration, experimentation, long-term goals, and development for permanence.

All methods have shown that a successful institutional program is characterized by being integrated into a long-term strategy and engaging a variety of stakeholders in different ways. Prerequisites, therefore, are the provision of a simple and clear framework with enduring goals, the identification of funding, the dedicated commitment of official parties, and the creation of low-threshold opportunities for participation. In each case, the existing federal Road Traffic Regulations provide the framework for what can be done. Therefore, the hypothesis made at the beginning of this paper can be partially confirmed, but needs to be supplemented with the conditions mentioned above.

With the conditions and characteristics identified, this thesis outlines a possible institutional program called 'Straßen(t)räume'. Incorporated into the Alliance for Bicycle and Pedestrian Traffic and developed with a incremental approach that allows for one-day and medium-term events with the goal of being transformed into interim solutions as a transition to permanence, the program is open to all residents in all seven districts, engages local organizations, businesses, and experts, and highlights the benefits of a livable, less car-dominated neighborhood. In this way, the program's temporary, citizen-led, local projects can contribute to lasting behavior change and promote mobility transition.

6.11 Discussion and reflection

Although the thesis research led to the development of a framework for a future program in Hamburg, the derived outcomes must be viewed with a nuanced eye. As mentioned in the research limitations in **CHAPTER 1.7**, the results are restricted by factors such as the chosen scope, time, selection, and number of respondents or case studies. Therefore, they are not universal and generally applicable to other cities.

Although the literature review highlighted the combination of multiple measures, and the case studies and interviews also emphasized the importance of an overall strategy that includes more than one type of measure, this research focused exclusively on Tactical Urbanism as a tool to promote mobility transition. Other topics such as financial incentives, the introduction of resident parking, the establishment of speed 30 zones, or a focus on mixed-use, walkable neighborhoods are also promising tools, but were outside the scope. In addition, due to limited time, some topics could only be addressed superficially, such as behavior patterns, livability, factors influencing mobility mode choice, or TU-like movements. Their detailed evaluation, the inclusion of other measures and their interaction with each other could have refined the results, provided a holistic overview, and led to a more meaningful proposal.

Due to time constraints, examining in detail all the numerous books, papers, guidelines, manuals, and existing programs and projects available was not possible. Therefore, the results given are based on the selective knowledge of the author and may not be exhaustive. With additional time, more and different literature could have been studied in detail that could have brought a more differentiated view of certain topics and fields. However, an examination of all available data and literature would not have been possible.

The final recommendations are based in part on the case studies selected by the author. Although successful pioneer programs have been selected, their good reputation is no guarantee of their applicability to the case of Hamburg. In the USA, New Zealand and Belgium, structures and regulations are different from those in Germany. Since most of the programs have been in existence for several years and have generated data and literature, a four-page summary of each program was not satisfactory and left out some factors that could not be considered in the results. Therefore, an alternative worth considering would have been to select only one case study for detailed evaluation and focus on one of the few German programs.

The interviews also provided valuable insights. However, the results based on the statements of the interviewees are very limited and not universally valid. More interviews, e.g., with non-local projects or with specific backgrounds or constraints, would have provided different insights that could have supported or refuted some of the arguments made. Selecting other stakeholders would also likely have yielded different findings due to differences in individual opinions and experiences. In particular, conversations with residents who were not considered as interviewees could have provided valuable insight into the potential success of a future program and whether they would actually apply and take action.

In addition, interviews were framed by a questionnaire prepared by the author, and interview time was limited. In this way, direct answers to specific topics could be found. However, the questions were based on the author's current knowledge and experience at the time of the interviews, which also restricted the possible outcomes. To address the limited applicability of the interviewees' subjective statements, the use of an additional quantitative method such as a survey or anonymous questionnaires could have been helpful. In this way, residents could be asked and a certain number of responses could have increased the validity of the results.

The analysis of the interviews took longer than expected and could not be conducted in the desired depth. The topics discussed were summarized, but little additional research remained to clarify details and follow up on approaches mentioned. For instance in the stakeholder analysis, a more nuanced evaluation considering different age groups, socioeconomic or cultural backgrounds, or mobility types would have been necessary to more accurately capture stakeholders with their power and interests. Collecting insights of a 45-minute interview on two pages was also challenging.

Evaluation of mentioned funding options would have sharpened the proposed program lines. A review of potential business partners and suppliers would also have provided a stable foundation for more rapid implementation of a program.

6.12 Outlook and further research needs

This paper has identified characteristics and conditions for implementing a municipal program in Hamburg that enables tactical action, and has outlined a framework. However, further steps are needed to actually implement the program, and some issues raised in the paper require further investigation. In particular, the sometimes outdated and biased national Road Traffic Regulations were mentioned as a major barrier to experimentation with public space interventions. Therefore, more efforts should be made to provide reliable justifications for adapting the StVO. This is a national challenge, but Hamburg can lead by example.

In the context of changing regulations and supporting experiments as a tool to promote the mobility transition, transforming the attitude of politicians towards new programs is a crucial topic. Since most projects are based on political decisions, their support is critical, and speeding up processes in ministries, authorities, district assemblies, and district offices should be a priority. Citizens need to deploy their influence as electors to induce political action.

A third issue that requires more research and especially public attention is mobility behavior. Understanding why people choose certain modes of transportation is important to take appropriate action. In this context, common misinterpretations need to be publicly refuted in order to break routine decisions. Developing an appropriate campaign highlighting the benefits of transferring should be the focus.

In addition, more research could be done to find and study projects and programs with the goal of identifying comparative indicators, enabling knowledge transfer, and building a database so that results are not lost.

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APPENDIX H.

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APPENDIX P.

FIGURE 60:
Panamá Camina,
Panamá City
(Banfield, 2018)

APPENDICES

APPENDIX A: PROBLEM TREE ANALYSIS

EFFECTS

| lacking livability | lack of community feeling | | physical & mental illnesses | | climate change |

| too many cars parked in public | cars occupy public space | lack of spaces for public activities | car dominance in streets | safety issues & accidents | noise pollution | air pollution | greenhouse effect |
| too many cars driving around | use of fossil fuels | CO$_2$ emissions in mobility |

PROBLEMS

too many private cars | mobility transition is stagnant | lacking sustainable mobility behavior

CAUSES

own car is convenient | lack of willingness to change mode | other modes are not convenient enough

going by car is flexible | going by car is comfortable | going by car is fast | going by car is cheap | own car as status symbol | lack of incentives to give up car | public transport is not convenient | using bike or walking is not convenient

flexible parking | front-door parking | many nodes and streets | fuel not expensive enough | altruistic values | public transport is too expensive | cycling or walking takes longer

flexible start/end | protection against cold & rain | higher speed | insurance not expensive enough | public transport takes too long | lacking infra-structure

everything in reach (flexible distance) | reduced walking distance | traffic lights + roads favor cars | lack of tolls and punishment | public transport is not comfortable | lacking safety

flexible timing | transport & storage possibility | only supposely faster | only supposely cheaper | lack of awareness, education, information | lack of stops nearby | lack of subsidies

clean, safe, quiet | lack of regular departures | depencency on weather conditions

private space | undesired effects on style

laziness

ROOT CAUSES

FIGURE 61:
Problem tree
(Author, 2022)

infrastruc-ture still favors cars | no change of infrastruc-ture & policy | politicians are afraid of losing support | long planning & construction duration | expensive implemen-tation | a lot of coordination & paper work | NO TACTICAL URBANISM PROGRAM

RESULTS

OBJECTIVES

MEASURES

ROOT MEASURES

out of scope

FIGURE 62:
Objective tree
(Author, 2022)

SUBJECT: Interview Inquiry Master Thesis 'Tactical Urbanism'

Dear Mr./Ms. [Name],

I am a Master's student in the English program 'Resource Efficiency in Architecture and Planning' (REAP) at HafenCity University (HCU). At the moment, I am working on my thesis, which is about Tactical Urbanism to foster mobility transition and the potential of an institutional program in Hamburg. The thesis is supervised by Prof. Dr. Udo Dietrich, HCU, and Maximilian Wiesner, M. Sc. Urban Studies, and a research assistant at Hamburg University of Technology.

To gain insights into ongoing and previous projects such as real-world laboratories, pop-up bike lanes, and street experiments, I conduct qualitative interviews with stakeholders as part of the thesis. For this purpose, I was recommended to contact you in connection with the project '[project name]'. Would you be willing to answer a few questions about the planning and implementation process, stakeholders, and experiences with this project and similar ones?

Procedure and use of the interview
The interview will be conducted online, preferably via ZOOM. I will send you the link after arranging the appointment. The duration of the conversation should be about 30 to 45 minutes. Furthermore, I would like to record the interview for personal use, if there are no objections from your side.

The video as well as the transcript (if required) will be treated confidentially. The list of interview questions as well as a short summary of the findings will be attached to the thesis. Also, a mention of names and the use of citations in the body text of the thesis are possible, unless otherwise agreed with you.

Do you have any further questions? Then please feel free to contact me. I look forward to hearing from you.

Kind regards

Jasmin Hiller
REAP Student
HafenCity University Hamburg

Guideline for an interview (translated from German)
with Mr./Ms. [name], [position], [company/initiative/department]

The following questions were formulated based on my research and experience. If you can think of any other topics that would be helpful for my further work, I am happy to hear them.

(Selection of questions depending on interviewiee and project(s) discussed)

Project background and objectives

1. Can you tell me something about yourself, your activities, and the role of your company/initiative/office/department in the project(s)? 🟧🟩🟦

2. Who initiated the project(s) and why? 🟧🟩🟦

3. Who commissioned you? 🟦

4. Which goal(s) do(es) the project(s) plan to achieve? 🟧🟩🟦
   Do the interventions thereby only aim at short-term effects during implementation or are long-term changes also to be initiated?

5. Which tactical measures were applied to foster mobility transition, and to calm down or revitalize the area? 🟧🟩🟦

6. Which applied measures were successful? 🟧🟩🟦

7. Which conditions must be fulfilled to transform a temporary experiment into a permanent one? 🟧🟦

Legal and financial framework, planning, and technical implementation

8. Which legal specifications enable(d) the implementation of the project? 🟧🟩🟦
   How is the current project legally protected against lawsuits?

9. What is the permitting process for a road experiment? 🟧🟦
   What are the differences compared with the 'regular' process?

10. Which regulations do you perceive as a barrier to the implementation? 🟧🟩🟦
    Which challenges have to be overcome?

🟧 Authorities/adminstration   🟩 Initiatives/associations   🟦 Companies/planners

11. Have existing regulations been adapted to make the projects possible? ■

12. How long did/do planning and implementation take for the project? ■ ■ ■
    What is the current phase of the program?

13. How are projects like the ones mentioned financed? ■ ■ ■

14. In general, what are the preferred options for private or public funding? ■ ■

Stakeholders, engagement, and participation

15. Which actors with their respective responsibility are ■ ■ ■
    involved in the implementation of the project(s)?

16. With which groups of actors does cooperation tend to be easier, ■ ■ ■
    and with whom more complex?
    What kind of obstacles must be overcome in the communication process?

17. Do you rate the support of municipal authorities as sufficient? ■ ■
    What works particularly well in this 'relationship' and
    where do you see room for improvement?

18. Were engagement or participation formats applied? ■ ■ ■
    If yes, which ones would you recommend?

19. What kind of experienced could be made through evaluations, ■ ■ ■
    surveys, and workshops?
    What role does evaluation play in analyzing and communicating the results?

20. How can you reach a large and diverse group of stakeholders? ■ ■ ■
    How can their long-term acceptance and support be ensured?

Tactical urbanism and the potential of a municipal support program

21. Are opportunities, funding options, and information available for ■ ■
    citizens intending to implement a tactical project in public space?

22. In your opinion, what are the conditions, barriers, and opportunities ■ ■ ■
    for a city- or district-managed funding program for tactical projects?
    Which changes are required to enable a successful program?

■ Authorities/adminstration ■ Initiatives/associations ■ Companies/planners

23. If the City of Hamburg was to call out a funding program for tactical, temporary measures, under which conditions would your office/ company/department support or accompany the implementation?

24. As an initiative, under which conditions would you apply for such a program that facilitates projects in public space?

25. What are the advantages and disadvantages of official programs compared to citizen-initiated projects?
How can both approaches be brought together?

26. What do you think about a guideline or manual?
Would they be helpful or restrictive?
Which requirements must be determined, which ones need to be open?

27. Which conditions would projects need to meet to be classified as 'eligible' by you?

28. What kind of measures would you desire and support?

■ Authorities/adminstration   ■ Initiatives/associations   ■ Companies/planners

Interview with Bastian Hagmaier, project manager of 'freiRaum Ottensen' ('free space Ottensen') at the district office of Altona, conducted online via ZOOM, on Monday, April, 4, 2022, at 3:30 p.m.

Between fall 2019 and spring 2020, the six-month traffic experiment 'Ottensen macht Platz' took place in Hamburg. Due to its great success, the district office of Altona is now working on a permanent solution, the 'freiRaum Ottensen'. Bastian Hagmaier, the manager, and his team are responsible for the successful implementation of the project and the involvement of citizens and other institutional stakeholders. The most important insights from the interview with him were:

General information about 'Ottensen macht Platz'
- 'Ottensen macht Platz' emerged from the EU-funded research project 'Cities4People', where the idea to experiment with car-free spaces was born. In a political coordination process, a six-month pilot phase was decided.
- Challenges were the short time, the involvement of a wide range of stakeholders and the development of exemptions.
- The pilot phase is the main reason that 'freiRaum Ottensen' is being planned now. The trial led to engagement and support from residents and politicians.
- In February 2020, district politicians issued a mandate for a holistic approach to a permanent car-reduced neighborhood, including considering adjacent areas.
- The project promotes the mobility transition on the one hand, by aiming to reduce private car ownership, mainly by limiting parking, and on the other hand, by promoting active mobility and favoring pedestrian and bicycle traffic.
- The main differences between the planning processes for 'Ottensen macht Platz' and 'freiRaum Ottensen' are the time frame and the participation opportunities. What happened during the pilot phase was clear from the beginning. Now, stakeholders are involved more intensively and have more creative leeway to get engaged in the long-term transition.
- Parking, i.e, can only be reduced gradually by incorporating the spaces into larger street design processes that provide more space for pedestrians and bicyclists.
- In general, a pilot phase to test measures and gain experience can be beneficial.
- According to Mr. Hagmaier, who was not involved in the pilot project, the main measures used were pylons, planters, seating, artificial turf and yellow markings. Events helped to enliven the space in certain periods. However, since 'Ottensen macht Platz' took place in winter, the spaces were not always fully alive.
- Due to a formal challenge in the use of the 'test article', the pilot project was terminated prematurely. Now the basis for 'freiRaum Ottensen' is quite different, as the district assembly has given the formal mandate to plan the project.
- In general, the conditions and instruments mentioned in the road traffic regulations (StVO) can be applied to achieve a reduction of car traffic, such as the introduction of bicycle lanes, pedestrian zones or 'shared zones'.

- Although the tools for temporary and permanent projects are slightly different, the approval process for both is comparable.
- The municipal or federal regulations were not been adjusted to facilitate the project. However, the pilot project may trigger citywide or even federal discussions.
- One challenge now is the project's holistic approach and to agree on concrete construction measures with other agencies while still at a conceptual level.

Stakeholders
- A wide range of stakeholders are involved, partly due to the activation through 'Ottensen macht Platz'.
- In general, once a project has been proposed, a body with majority support must decide. The administration then has the task of allocating responsibilities and involving authorities and public interest entities. Finally, the Directorate of Transportation must approve the plans.
- For 'freiRaum Ottensen' an expert committee and the district assembly make political decisions that are then implemented by the administration.
- A project advisory board consisting of sixteen stakeholders with different backgrounds, ages and focuses is involved.

Formats for participation and engagement
- 'freiRaum Ottensen' began with information sessions to update citizens.
- In addition, a map-based online dialog was very successful and generated around 2,100 responses. Reaching 20 to 50 contributions is the norm.
- Target group-oriented formats were important. For example, the team visited about 20 business owners to offer a low-threshold option.
- In addition, a format for children and young people raised general questions about public space ownership and claims.

Funding & conditions of a program
- First and foremost, create room for maneuver and a framework is important.
- A source of funding must be determined. Generally, the districts have limited financial resources. The 'freiRaum Ottensen' team and its colleagues also apply for third-party funding.
- For example, the EU provides funding for individual actions.
- In general, a project must provide a benefit to a majority.
- The 'Grünpatenschaften' (Green sponsorships) are a good example of how residents can be responsible for public space.
- Mr. Hagmaier suspects that a program for citizen-led projects would be interesting not just for a district, but at the city level.
- Obtaining funds for tender competitions is difficult because the results are open. Therefore, finding an appropriate structure for a program is challenging. Nevertheless, providing a framework for small-scale action has great potential.

Interview with Wibke Kähler-Siemssen, director, Patriotic Society ('Patriotische Gesellschaft von 1765') conducted online via ZOOM, on April 7, 2022, at 2 p.m.

The Patriotic Society is a citizens' initiative organized as an association. The content-related work is carried out on a voluntary basis by several hundred members. Apart from the volunteers, a small team, directed by Ms. Wibke Kähler-Siemssen, takes care of administrative work.

The Patriotic Society has been involved in projects in public space, such as the experimental car-free city hall district ('Autofreies Rathausquartier') in 2019 or the temporary interventions on squares called 'Mach Platz!' and 'Auf die Plätze!' in 2021. In addition, some members are also active in the group 'Old Town for All!' ('Altstadt für Alle!'). Hence, an interview with Ms. Kähler-Siemssen promised interesting insights from the perspective of an initiative. The main findings were:

Permit, contact with authorities and district office
- Public space is sensitive and highly regulated. Therefore, official authorities often show skepticism about non-standardized procedures such as temporary, tactical measures, due to concerns about liability & risks. However, the willingness to improve the quality of public space in downtown Hamburg seems to be greater than five years ago.
- The overlapping of city and state responsibilities leads to coordination challenges, especially with the police (Interior Department).
- The Patriotic Society did not experience any differences from the regular permitting process when applying for temporary measures.
- The approval process should be simplified and accelerated for non-profit organizations and temporary projects.
- The threshold to apply for such projects is still too high. Low-threshold offers for small projects are necessary.

Stakeholders, engagement, and participation
- For the implementation of complex projects, project managers are required. An initiative without an implementation team does not have enough infrastructure and needs a high level of determination and will for execution.
- The Patriotic has a great network of committed, interested citizens who participate in workshops, conferences, etc.
- For the project in the city hall district, restaurateurs, landlords, and residents were interviewed; for 'Mach Platz!', online workshops were held.
- Not every idea by a citizen is good or tactical. In the Patriotic Society, mutual control is provided due to the large network of participants. Deciding for/against should not be with only one person, such as a 'city curator'.
- Property owners, some of them long-established citizens, have great power.
- Business Improvement Districts have a different goal than the Patriotic Society.

They intend to promote revenue and increase the price per square meter, no participation process is planned. On the contrary, the Patriotic Society's goals in urban development are diverse uses, and high-quality, usable environments, accomplished by, e.g., installing consumption-free seating and playgrounds.

• Joining forces with other civil society groups can be helpful.

Feedback and evaluation

• Feedback and evaluation and willingness to make mistakes are important.
• Initially, in the city hall district, property owners were against the project. Business owners were happy to rent more outdoor space.
• The Situation for service providers and deliveries improved due to the absence of private cars. Traffic, however, was not counted.

Financing and costs

• City hall district: one-third of costs were funded by the district, one-third by fundraising (foundations, owners, donations), and one-third provided on a voluntary basis, approx. 60,000 euros each. For 'Mach Platz!', the Patriotic Society applied for and received funding from the Department for Urban Development and Housing.
• Revenue from public spaces (events, parking, etc.) is very important for the City of Hamburg. Parking spaces must be rented from the city, and a redesign of public spaces is only possible to an extent that no annual events such as the Christmas market or triathlon are hindered.
• Renting the land and leasing it back to business owners generated high 'cash-out' and administrative effort for the Patriotic Society.
• A possible future program should bear expenses to ensure rapid implementation and to avoid fading of ideas.
• There is no separate downtown budget. Equality between all districts needs to be maintained.

Further learnings

• Temporary projects should trigger long-term change. Authorities are responsible for implementing long-term transformations.
• Not every measure can take place in any location. Testing is required.
• Many citizens don't have the mindset that public space belongs to them. The city needs to approach them and ask what they need to feel welcome.
• The Start of the pilot phase should be in spring to allow for familiarization in good weather. Bad weather will affect usage and acceptance.
• No one can claim to park in front of the destination.
• Implementation in a short time is only possible with will and dedicated action.
• 'Mach Platz!' was implemented within six weeks after the conception, made possible by the pressure of the initiators and the far-reaching network.

Interview with Michael Dettmer, initiative 'Kurs Fahrradstadt' / Superbüttel, conducted online via ZOOM, on April 12, 2022, at 7 p.m.

Michael Dettmer is part of the initiative 'Kurs Fahrradstadt' ('course bicycle city'), which campaigns for a livable, safe, and climate-friendly Hamburg. In 2020, the group launched the idea of a 'Superbüttel' in a densely populated neighborhood of Hamburg-Eimsbüttel, based on the model of so-called 'Superblocks' in Barcelona. In early 2021, the group published initial plans and conducted an online survey. In addition, on August 13, 2021, 'Rellinger Straße' was closed to traffic to showcase the vision of a car-free neighborhood for residents and officials. The conversation with Mr. Dettmer delivered the following main findings:

General information
- Case studies showed that gradual but continuous development with the help of small, low-cost, tactical steps is necessary to engage the community in the transition and essential for the success of a project.
- The first pilot project was successful. People started using the space, met in front of their doors, chatted and children played outside. Almost nothing had to be done apart from clearing the street from cars. Installing seating and holding events makes the space more inviting and livelier.
- Other cities showed that improving the livability of streets can also help to revive businesses. Shops and BIDs should not be afraid of car-free zones.
- Overall, many people are interested in applying the Superblock concept, too. However, 'Kurs Fahrradstadt' does not have capacities to pursue all requests.
- The members of 'Kurs Fahrradstadt' prepared the plans free of charge. They had expenses for presentation material, the permit, and signs for the pilot day. Fortunately, the initiators could announce the event as a demonstration, so they didn't have to pay rent for the street or parking spaces.

Contact with official stakeholders
- An initiative like 'Kurs Fahrradstadt' can only be a generator for new ideas. Then, local politicians and authorities must take care of the implementation. Therefore, convincing and involving officials and finding contact persons who are eager to engage themselves in the realization are essential for success.
- Although the Department for Traffic and Mobility Transition (BVM) supports the idea of a 'Superbüttel', duties and competencies are in the district office.
- Police (traffic directorate) aim to retain applicable law and are often skeptical about changes or experiments. However, especially in urban planning, laws should be more flexible, and outdated regulations should be renewed and adjusted.
- Lower traffic authority being part of the police is unique in Germany. This coincidence creates organizational and communication barriers, slows down the approval process, or prevents projects from being realized.

- Decision-making in (local) authorities needs time. Although the initiative provided detailed plans and residents support the 'Superbüttel' idea, no further development or implementation process is visible.
- 'Kurs Fahrradstadt' is making an effort to get in touch with officials and politicians as no official staff approached them: They invited political representatives to their pilot day on August 13, 2021, and presented their idea in front of the district office and the BVM. Although everyone seemed affirmative, no progress is visible. Political parties do not seem to be able to reach an agreement. Bringing all of them together to talk about opportunities, challenges and worries is necessary.
- Authorities' room for maneuver is restricted by regulations. They do not seem to be willing to be creative. Tactical measures still seem to be new to them.
- The whole process of what's happening with the plans in the district office is nontransparent. Whoever is interested can search for requests and enactments online, but they are not easy to find. Initiatives should be integrated into the process and informed regularly about progress.

Inspiration from other German cities
- In comparison to other cities, Hamburg seems to have only a few people advocating for livable streets, often blamed for living in a 'traffic bubble'.
- In other cities, such as Berlin or Leipzig, more citizens seem to engage in the topic and prevent that the administration decides without their consent.
- Stuttgart seems to be more open to implementing 'Superblock' concepts, as the 'Westblock' project showed. Within a year, instigators founded the initiative, developed rough plans, and convinced the district which is now realizing the plan. Why does Hamburg have such challenges?
- The City of Hannover removed 500 parking spaces for a bicycle street. Hamburg seems to be lacking this progressive will of providing not only pull but also push measures. However, both are necessary.

Support for a city-wide program
- To apply for a parklet in Eimsbüttel's Parklet Program seems to be arduous. Restricted locations and time limitations are a barrier for people.
- Feedback showed that many people would like a transformation but are afraid of the challenges. Few want to take the lead and argue with officials as long as approval is unclear. A committed initiator is essential for the success of a project. A program with a given framework would encourage more people.
- Application requirements, design guidelines, as well as the approval and implementation process must be transparent and accessible for everyone.
- To reach a diverse group of people, the program must be advertised.
- First pilot projects such as 'Superbüttel' can be used to test options and to develop role models with criteria and learnings for subsequent measures.
- In a city program, interventions must be pilots with the chance for permanence.

Interview with Fabian Zimmer, subproject 2 'car-free mobility, research project 'climate-friendly Lokstedt' ('Klimafreundliches Lokstedt'), University of Hamburg, conducted online via ZOOM, on April 13, 2022, at 4 p.m.

Together with its partners (the district office Hamburg-Eimsbüttel and the community center in Lokstedt), Hamburg University supervises the project 'climate-friendly Lokstedt', which runs for two years, between September 2020 and August 2022. At university, two different faculties with their respective professors, Prof. Dr. Katharina Manderscheid and Prof. Dr. Anita Engels, take care of both subprojects 'district climate work in public space' and 'car-free mobility'. Fabian Zimmer, who is a research assistant in Prof. Dr. Manderscheid's faculty, is responsible for the second subproject and agreed to an interview. The main insights were:

General
- Hamburg university has the project lead and takes care of overall planning and organization as well as the scientific evaluation, in cooperation with partners.
- Project content was developed together with partners. Some topics were determined already in the application. A flexible project, that allows learning while implementing and reacting, is important but relatively new to the university.
- 'Climate-friendly Lokstedt' is a follow-up project. Mr. Zimmer was not involved in the first phase between 2016 and 2019.
- The project is financed by the Federal Ministry of Education and Research (BAMF) within the program 'future cities'. A fixed total sum, which is provided for two years of project work, is linked to agreed-on work packages and can not be given freely to initiatives. However, projects can be started and costs paid.
- The main goal of the project is to develop processes and solutions for implementing climate protection on a local level and to detect possible actors for and obstacles to the realization of long-lasting projects.
- Lokstedt was chosen as a typical mixed district, located on the edge of the city. Results can be transferred to similar districts easily.
- The aim is not to generate own interventions but to foster and accompany already existing initiatives in the development and implementation of short-term experiments. To allow long-term networks and ongoing projects independent from a bigger program, locals are included in the establishment and design.
- One included project is the traffic laboratory Grelckstraße, enacted by the district assembly and supervised by the district office. Subproject one accompanies the experiment scientifically. In two phases (the temporary one-way street and the temporary pedestrian zone) the perception and livability of the public space are evaluated. Parking space is being transformed by implementing citizen-built parklets and yearly 'parking day' was celebrated. A mobility day was organized.
- 'Climate-friendly Lokstedt' includes projects which are not attached to Tactical Urbanism. University also evaluates construction work on streets and how these

influence the mobility behavior and perception of residents. In addition, they initiated a 'car-free month'. Participants received a mobility budget and the university monitored, how mobility usage and behavior changed.

Stakeholder involvement, engagement, and participation
- Transdisciplinarity and input from practice partners are keys to success. For 'Climate-friendly Lokstedt', University works with previously-mentioned real-life partners as well as mobility providers, public companies, and civil society.
- A direct link to users and low-threshold offers are important. In this project, the community center serves as a link to the neighborhood. A local coordinator from Lokstedt helps to establish connections and keeps contact with locals. For Grelckstraße, a project office was established, to which neighbors can come to get information and ask questions directly. In addition, citizens are involved in the whole research and implementation process (co-research).
- Reaching a diverse group of actors is not always easy. Some might contact project partners directly. Certain groups such as local business owners or people from different/lower social classes, who may not be interested or have doubts, need to be contacted. Diverse information and engagement options such as workshops, events, flyers, posters, social media, and local newspapers are recommended.

Cooperation with authorities and district office
- The cooperation with the local district office and climate protection management works well. University is in constant, intensive exchange with the contact persons. The aim is to learn from each other and to transfer knowledge.
- Contact persons seem to be highly motivated, interested and committed to engaging, learning, and designing. They can profit from networking with civil society and from scientific insights. Delays and stretched planning seem to be not because of lacking interest but due to lacking time as well as general, time-intensive administrative regulations and approval processes.

Potential of a city-wide program
- A fund would be helpful to facilitate more street experiments.
- Ideally, an authority starts a program for which initiatives and citizens can apply.
- Important is the involvement of diverse actors as partners, especially in the respective neighborhood, and a direct contact person in the authorities.
- Knowledge transfer is important, too. Precautions must ensure that results are being presented to and discussed by authorities, the senate, or district offices.
- University can be included in the evaluation but should work on preparing recommendations that can be put into practice easily.
- A database with projects and their respective results would help to learn from others and to established networks amongst the initiators and project partners. Often, project results are forgotten after the project reports are finalized.

Interview with Olaf Böhm, coordinator for 'mobility transition – pedestrian and bicycle traffic' at the Department for Traffic and Mobility Transition (BVM), conducted online via ZOOM, on April 20, 2022, at 9:30 a.m.

Olaf Böhm, together with his team, coordinates various strategies and concepts related to active mobility in Hamburg. His department supervises the alliance for bicycle and pedestrian traffic and works on technical topics such as bicycle highways. In addition, the team is responsible for services related to cycling such as bike+ride facilities, and public campaigns, among others. Hence, an interview with Mr. Böhm promised valuable insights into Hamburg's strategy regarding active mobility and especially about the implementation of pop-up bike lanes. The findings were:

General overview
- While BVM is responsible for the overall strategy, the LSBG is taking care of the (re)planning and execution of measures.
- The city departments and company take care of the main roads, where pop-up bike lanes are normally placed. The coordination of street experiments in district streets and residential neighborhoods is with district offices.
- The main aim of road traffic regulations (StVO) is to reduce risks and not to facilitate mobility transition, which is a federal and not only a municipal challenge.
- Due to the special case of Hamburg that Street Traffic Authority and BVM do not have a common management, intensive coordination between the two is required. Street Traffic Authority is known for interpreting rules relatively strictly and formally.
- Street Traffic Authority pays attention to providing legally watertight solutions. This is important to prevent lawsuits and high costs for removal.

Pop-up bike lanes
- The implementation of pop-up bike lanes is financed by city budgets, mainly by the street investment program, which includes several infrastructure funds. Federal funds are sometimes available and applied, too.
- Inspired by cities like Berlin and to respond to the call of politicians and initiatives, a number of streets for pop-up bike lanes were included in the coalition agreement.
- Streets that require cycling lanes according to technical rules but had insufficient cycling infrastructure yet were agreed on.
- BVM was instructed with the operationalization and engaged LSBG formally with planning and implementation. Their plans were reviewed in meetings.
- The order of the chosen streets was discussed with the head of the department and reviewed by the Interior Department (BIS). As the top Street Traffic Authority, BIS is responsible for legal orders. The traffic directorate, which is the middle Street Traffic Authority, instructed the pop-up bike lanes formally.
- Schlump was the first one to be implemented. Installation was relatively easy as

the bicycle lane was not too long and cars did not require all available lanes.

- As street experiments according to road traffic regulations (StVO), pop-up bike lanes were originally limited to one year and were marked in yellow.
- During the pilot phase, LSBG appointed a company to prepare an evaluation with information about car and bicycle volume, accidents, conflicts, and bus traffic, among others. In all four locations, the evaluation indicated the success of the experiment. This evaluated success, in addition to the technical rules given, was the main basis for making the bicycle lanes permanent. For an interim phase and the permanent phase again, the traffic directorate had to confer new legal orders.
- Evaluations showed that the transformation of lanes for bicycles can restrict buses from getting through traffic smoothly. This coincidence must be considered, too, especially with regard to mobility transition. Further negative effects on traffic flow or increased accidents could not be identified.
- Evaluation results and actual uses can differ from each other as the lane in HafenCity showed. There, a northern lane was added to the permanent southern one. Still, most people used the southern lane. In surveys online, however, cyclists rated the pop-up addition as positive.
- Berlin applied the tool of pop-up bike lanes to implement cycling lanes faster, which were already in the process of planning.
- As the implementation of pop-up bike lanes is not always easy, due to the different steps and necessary legal orders, BVM will not apply them in the future again. Instead, they focus on an accelerated planning procedure.
- The accelerated planning procedure aims to be faster than the regular procedure as no big construction work is needed, and the main changes are realized with street marking. In addition, instead of having several reconciliation meetings, only one is necessary after which the final plans are produced.
- New 'street candidates' are more complicated due to higher traffic volume, the reduction of parking spaces, delivery zones, rescue areas, and bus stops. Hence, BVM conducts a more detailed examination in advance.

Potential of a program
- In general, BVM does not supply districts with funding programs. However, in the case of the alliance for bicycle and pedestrian traffic, BVM and districts meet yearly to negotiate agreements. In the framework of this contract, districts can also introduce their own topics, such as car reduction or experiments. Measures depend on budget and human resources. If agreed on, BMV provides financial funds as districts normally don't have big budgets and not the human resources required and desired. The coordination of this contract is quite time-consuming.
- A program must be agreed on with district offices. They could then implement measures independently by executing an application and selection process.
- The online participation tool DIPAS, which is already applied in Hamburg, can also be utilized to propose and select projects.

Interview with Anette Quast, managing partner, 'TOLLERORT entwickeln & beteiligen', conducted online via ZOOM, on April 21, 2022, at 9 a.m.

Anette Quast is one of two managing partners of her company. Together with eight employees, Ms. Quast and her colleague Mone Böcker work in the field of neighborhood management. Accessibility and public relations are just a part of their tasks, as managing citizen engagement processes. For the temporary projects 'Verkehrslabor Grelckstraße' (Traffic Laboratory Grelckstraße) in Lokstedt and 'Flaniermeile Volksdorf' (Pedestrian Boulevard Volksdorf), the respective district offices engaged TOLLERORT for the realization of citizen engagement formats and public relations. The interview with Ms. Quast generated the following insights about their work:

General insights

- The tenders for both projects were detailed. The district office had decided on applicable engagement processes in advance. In other cases, the company recommends suitable formats and timings or is involved in designing them.

Stakeholders

- Usually, TOLLERORT is not in contact with the political level. The decision has already been taken, or the district office is on duty for the coordination. Though, additional exchange with and education for politicians about suitable participation and engagement processes would be helpful sometimes.
- In both projects, the district office engaged a traffic planning office for the technical work. In Volksdorf, traffic planning and TOLLERORT were engaged separately. In Lokstedt, Ms. Quast's office and a partner traffic planning company applied together, which usually simplifies cooperation and work distribution.
- For the production and choice of tactical elements, plants, and street furniture, TOLLERORT subcontracted a landscape planning office. The subcontractor took ideas from the workshop and prepared tenders and plans. The district office approved the plans and instructed a firm to put the planning into practice.
- Getting in touch with business owners in advance was not easy. Due to the pandemic lockdown, many shops were closed. In addition, business owners are generally busy and sometimes not interested in engagement format. On the one hand, most estimate the actual state as better than other actors (customers or residents); on the other hand, they sometimes deploy their contacts with local politicians to ensure their influence. The latter leads to nontransparent decisions.
- Some business owners, though, see the chance of a temporary transformation.
- The University of Hamburg is involved in engagement formats in Grelckstraße, too. Together with a commissioned company, they initiated the cooperative construction of parklets. In addition, TOLLERORT and university representatives supervised the information booths.

- In addition to district offices, authorities such as the BSW (Department for Urban Development and Housing) or the Interior Department are involved. However, since they usually take care of specific plans, traffic planning companies or district offices are in exchange with them. The involvement of many official actors may lead to delays and increased coordination complexity.

Engagement and participation formats
- In Volksdorf, the engagement formats were aimed at developing and designing measures for the eight-week pilot period. The aim was not to decide whether to realize the boulevard or not. This coincidence led to criticism among stakeholders.
- The focus was on evaluations to compare the attitude of stakeholders before and after the pilot project. Many people responded to the surveys.
- In addition to events and booths, which people could visit to retain information and provide suggestions, TOLLERORT conducted workshops with different target groups. TOLLERORT suggested inviting representatives of various fields directly to facilitate a more intensive discussion. Generally, including a variety of stakeholders is more important than involving as many people as possible.
- Ms. Quast cannot generally assess whether district offices offer an adequate number and suitable formats due to the variety of projects. However, in her opinion, providing not many options to participate or engage in a project is not necessarily unfavorable.
- Communication and transparency about decisions and engagement possibilities are essential. Often, external stakeholders cannot comprehend where and how decisions are made. This condition leads to misunderstanding and false impressions.
- The choice of ideas must be a transparent process, too. Of course, not all citizens' ideas can be realized. Reasons for this are financial, spatial, and security aspects, among others. Citizens must be able to retrace the choice to accept it.

Potential of a program
- In general, citizens should be able to demand their engagement, for example by collecting signatures. Hence, a program for bottom-up ideas is a good idea.
- This program should not only provide financial aid for a finalized proposal, but also support the whole process of initiating, engaging, and cooperative planning. As most transformational projects in the urban environment are highly controversial, initiators may need assistance with mediation. Therefore, a pool of professionals could be installed as a link between citizens and officials. Initiators with an idea could book an expert free of charge for previously defined tasks and periods. Experts can work on an honorary basis, or the municipality can contract them.
- The program should involve not only people with the respective social and cultural capital, but also those living in socioeconomically disadvantaged areas. Examples of exemplary integration processes are the federal urban development fund 'social city' or the municipal 'RISE' program.

Interview with Tobias Hoss, coordinator of 'Beweg dein Quartier' ('move your neighborhood'), urbanista, online via ZOOM, on April 22, 2022, at 9 a.m.

For insights about suitable engagement and participation formats, an interview with Tobias Hoss was conducted. Mr. Hoss works for urbanista, a company with diverse fields of action, from small-scale neighborhood concepts to regional strategies. All of their projects have a participative approach in common. The projects discussed during the interview were 'Beweg dein Quartier', for which Mr. Hoss is a project coordinator, and 'Ottensen macht Platz'. The main insights were:

Ottensen macht Platz
- The project was highly politically motivated. Due to certain conditions, the execution needed to be planned in a short term and the winter months.
- Legal actions that lead to earlier termination of the projects are no sign of it being unsuccessful. The period was sufficient to experience the transformation.
- Rudi Klöckner, the operator of the street art blog 'Urbanshit', was the community manager. He got in touch with locals, to collect and coordinate programming and events as well as to assist residents with applications and funds.
- Scientific monitoring by Technical University was essential for such a big project.
- Urbanista is not part of the subsequent project 'freiRaum Ottensen'.

Beweg dein Quartier Essen/Offenbach
- The project is part of a research program framed by the national climate initiative and financed by the Federal Environment Ministry. The climate initiative usually supports projects with clear targets, which is not the case here.
- Partner municipalities needed to be found that finance a small part of the total project sum and provide cooperation from their side.
- From the beginning, the project was planned to have two different neighborhoods to compare and transfer results.
- Many engagement formats were held online, due to Corona. The step of going into the neighborhood could not be gone in Essen but in Offenbach (with limitations). Ideally, projects would have been prepared and implemented more cooperatively to create a community experience. However, due to Corona, interventions were planned and executed externally, and people could participate only in some actions such as painting the street.
- The 'future month', during which people could test new mobility types generated insufficient results as mobility behavior changed during Corona anyways.
- Low-threshold online mapping or voting trigger people who otherwise would not engage. However, precautions are needed to prevent manipulations.
- Urbanista used map inputs as a basis to presort topics for the first workshop. After the workshop, refined ideas were transformed into real projects by urbanista.
- Voting can help to preselect projects for intensive elaboration.

- Online workshops with Miro boards were being used to work on precise topics.
- To involve a diverse range of actors, an institute processed a statistically random selection process to select 40 to 50 workshop participants.
- Whether citizens' job is to decide or only to consult has to be communicated transparently. Decision-making by citizen's vote requires controlling instances. Determining an additional professional jury is an option. Besides, an incremental approach can lead to suitable proposals.
- Officials have to point out what will happen with the chosen projects. At best, an official letter of intent needs to be signed.
- Including local actors such as artists, schools, or sports clubs in the design of the facilities as well as programming is helpful to encourage people to use the space.
- One of the projects the City of Offenbach will pursue on their agenda map is a play street. However, finalizing the permanent planning will need time.
- Interventions such as play streets, pop-up parks, etc. were highly accepted, probably mainly due to the short period of execution and highly committed neighborhood management.
- Institutional contact persons were highly engaged and solution-oriented.
- Visual images created by an illustrator help to imagine the new spaces.
- Low-threshold, multifunctional seating and bins are important for a public space. The projects do not foster long-term mobility transition but create a perception of the public space, its untreated areas, and possible uses as well as have a communicative character.

Potential and conditions for a program
- The more street space is in use, the more regulations are necessary. Professional assistance and/or precise rules are needed. Whereas small interventions such as parklets might only require guidelines and final approval, open tenders need controlling instances. Hence, a clear framework and instructions might be helpful. In any way, the program must communicate how citizens can engage.
- Community management as a direct link between residents and officials is crucial.
- Monitoring and evaluation conducted by independent scientific institutes such as universities are helpful to gather and visualize results.
- Using an online engagement platform such as 'Konsul' would facilitate the collection of ideas on a municipal level. Afterward, the respective district offices can choose suitable projects.
- Providing a budget for citizen projects (such as the contingent funds, 'Verfügungsfonds') would be a good option.
- Similarly to the applications which citizens use to report defects ('Meldemichel'), Hamburg could launch a version to propose positive interventions.
- Providing a precise 'how to' recipe is difficult as different projects have individual topics and conditions. However, compiling learnings and applicable modules might be helpful.

Interview with Roland Hansen, Head of the division 'Streets' in the 'Agency for Streets, Bridges and Waters' (Landesbetrieb Straßen, Brücken und Gewässer, LSBG), conducted online via ZOOM, on April 26, 2022, at 4 p.m., and comments by Dr. Leonie Lange, 'participation specialist' at LSBG (Received: June 6, 2022)

As the head of the division 'Streets' at LSBG, Roland Hansen was contacted to find out more about the implementation process of street transformations and the participation formats applied. With his long expertise, Mr. Hansen gave valuable insights, which are summarized in the following:

Stakeholders, participation, and engagement

- A specialist for participation and engagement processes is employed at LSGB. She stresses the difference information and participation and points out the variety of participation modes. Most other employees are engineers.
- Most of the participants come to information events and workshops out of personal interest. Engaging people during the pandemic was demanding as LSBG had no prior experience with online dialogue, only with online consultations.
- Involving local businesses is often challenging due to the little available time. In addition, some owners and other actors seem not to be aware of the changes or take announcements not seriously. Therefore, they engage themselves quite late.
- LSBG usually provides enough information and participation options in advance, such as posters, website entries, flyers, information booths, invitations or events.
- Workshops help to gather basic information as well as to gain local knowledge and ideas by participants that can later be considered in the planning. However, transparency in communicating to what extent people can engage and influence planning, as well as which preconditions exist, is essential to prevent false expectations and resentment. Sometimes captured proposals cannot be realized. In this case, too, transparent communication and feedback is necessary.
- Online formats can identify and sort out central topics beforehand and generate written feedback or consultation to LSBG's ideas.
- In case of a participation process, stakeholders such as associations, organizations, political parties, and local businesses are interviewed in advance. In case of consultation, the LSBG conducts a stakeholder analysis but no interviews.
- An approach is to ask two extreme questions: "What must be changed?" and "What should not be changed?". Sorting responses can determine majorities. Preconditions, regulations, trigger points, and goals must be transparent.
- Satisfying all stakeholders is difficult. The key is dialogue to find compromises.
- Participation formats are so far only applied for permanent construction work, while the evaluation (with questionnaire) was carried out for pop-up bike lanes.
- Before involving actors, LSBG looks at a criteria catalog to assess whether and to what extent the participation of target groups are necessary, reasonable, and possible. The LSBG wants to identify suitable formats for the project.

- *Pop-up bike lanes*
- Local parliament elections and the wish to experiment moved them to the fore.
- Through surveys conducted by organizations and political parties, relevant streets or zones could be identified. In addition, BVM (the Department for Traffic and Mobility Transition) determined areas that need to be changed.
- LSBG was commissioned by BVM to take care of technical planning and coordination with police, placing tenders, and contracting construction companies.
- The implementation of pop-up bike lanes on streets is not too difficult in general. However, at crossroads, adjustments are often necessary, such as adapting traffic light circuits or changing turning lanes.
- Bringing bikeways from sidewalks to the car level is often challenging and cost-intensive. Not always, the widths for cars can be reduced. Sometimes, footpaths have to be lowered, trees are felled, and underground cables must be relocated.
- Building pop-up bike lanes usually takes three to six months of planning, while regular planning needs often up to three years until the ground is laid. Participation processes can slow down planning procedures as they might enhance the complexity and seem time-consuming. In several cases, they are necessary to find a compromise and to prevent conflicts that slow down the process even more.
- In general, the pilot bike lanes were introduced to be made permanent. A detailed evaluation was conducted after a certain time to rate the situation. In the already tested cases, evaluation supported the permanent implementation. However, LSBG must be prepared for a negative result and have the courage to restore the previous situation or add changes due to false estimation of people's behavior or missing rule-consistent behavior. The removal of temporary lanes is, of course, easier than altering permanent constructions.
- To keep the chances for a continuing existence high, areas were chosen where bicycle routes were needed and low opposition was expected. Furthermore, the police were involved in advance to ensure a possible implementation.
- Temporary closure of streets are rather possible on smaller district streets and not on big main roads. Therefore, LSBG would not be involved in such interventions.
- Local shops are usually skeptical about protected bike lanes as they want to retain parking space for customers in front of their location.

Financing
- Usually, the implementation of bike lanes is financed by the city budget, but federal funds are applied, too, sometimes.
- Private funding by BIDs or others would generally be possible. However, they usually have different goals and certain preconditions, as well as regulations.
- Introducing pop-up bike lanes is less expensive than building permanent bikeways. However, the overall costs must be considered. As pilots are only built for a certain time, a permanent solution is needed afterward. Expenses for experiments are therefore often seen as 'stranded costs'.

Interview with an administration representative*, conducted online via ZOOM, on April 28, 2022, at 1 p.m. (*anonymous, the author is aware of full name/position)

An interview with an administration representative involved in the project 'Flaniermeile Volksdorf' (Pedestrian Boulevard Volksdorf) was conducted to retrieve insights about its origin, goals, and actors. The main findings are:

Background and evolvement of project
- 'Flaniermeile Volkdorf' is included in the climate protection concept of Wandsbek.
- The project is a pilot for a permanent solution. Already in 2007, the urban framework listed issues and aimed at improving the center permanently. The temporary 'Flaniermeile' will show a vision and allow for conclusions. However, no resolution determines that pilot measures have to be used in the long run.
- As the pilot is a step to permanence, it is a regular urban planning measure and the 'test article' was not applied. Financing is provided by city budgets.
- The execution of 'Flaniermeile Volksdorf' was a political decision, enacted in the district assembly in the third quarter of 2020.
- The district office contracted a traffic planning office for the traffic census and a second company for public relations and communication. External communication was executed by press releases, interviews, and social media.
- The involvement of internal actors and various authorities requires coordination.
- First information events and baseline surveys started at the end of 2020.
- From the beginning, the goal was to develop three variants: a car-free version, a car-reduced option, and a variant with car reduction and minimal interventions. Relatively soon, the car-free option was neglected due to conditions that prevented a ban, such as one-way streets, private parking in the yards, and delivery traffic.
- Traffic census showed that around 50 percent of road users stay less than five minutes and most users are searching for parking spaces. To reduce this kind of traffic, the public parking spaces are now being removed or transformed into taxi ranks, 'kiss and ride zones', delivery zones, and parking for people with disabilities.
- To introduce temporary change, signs have to be put up according to street traffic regulations, and markings on the ground indicate the reduction of street width. Stones, flowerpots, seating, and other greening elements underline the border between pedestrians and motorized traffic and prevent cars from parking illegally.

Monitoring, engagement, and participation
- Due to the pandemic situation, workshops took place in a hybrid version and one event was hosted only online. Between baseline surveys with qualitative and quantitative formats such as traffic census, interviews as well as workshops, and presentation of results at the beginning of 2021, the district office made a break.
- Citizens proposed interventions such as a stage, a foosball, or a water playground. However, as 'Flaniermeile Volksdorf' is only a temporary pilot project, not all

transformations are possible. In addition, according to workshop results, the main character of the area should not be changed but improved. Therefore, more space is given to seating and special uses such as product displays or food stalls.

- Different groups of actors were engaged, such as neighbors, customers, business owners, users, car drivers, pedestrians, and people with disabilities.
- The district office got in touch with interest representatives such as the association of business owners who informed members and linked officials to contact persons. Identifying contacts was sometimes difficult, due to the pandemic lockdown.
- A digital engagement tool was not applied. However, questions could be asked and voted for on Slido, which were answered during the event and afterward.
- All parties affected were also informed by the district office by personal letter.
- Traffic census, workshops, and interviews will be continued during and after the pilot project to be able to compare before-after data. Results are used to adapt permanent planning and to identify reasons for effective or failed measures.
- In the development of the overarching climate protection concept, citizens, politicians, and administrative staff were engaged.

The potential of a municipal program
- In general, the interviewee would appreciate a municipal program.
- Leaving the program open to proposals might be difficult as not all projects are realistic and feasible. Communicating bad news after a proposal has been submitted is always problematic. Therefore, conditions must be transparent, and a preselection must be possible. For instance, by publishing a map on which possible zones are highlighted and where initiators can place a marker.
- In addition, the responsibilities of institutional actors must be clear in advance to define possible areas and executive instances (district, city, or federal state?).
- The possibility of making an experiment permanent must be a precondition for its execution. This can be ensured with an iterative approach that allows a preselection and a detailed examination of the selected options.
- The interviewee assumes that a program would rather be introduced on a city level, by a municipal department, than only in one district due to required resources and to provide equal conditions. However, the program can be structured at different levels so that districts can take care of the execution independently.
- The approach of 'Meldemichel', which citizens can use to indicate issues, can be utilized to allow suggestions for positive projects, too.
- The adjusted 'test article' is not fully developed yet. Applying it makes sense only when working toward a permanent solution. Still, a lot of effort is required.
- The impetus to start pilot projects can evolve in civil society. However, ideas must be justified, and political actors as well as interest groups must be involved in the overall development. Large citizen groups with good standing and certain robustness might be able to put in the effort to advance projects that will be supported and examined seriously by administrative staff.

Interview with Sabine Sommer, representative for 'stationary traffic' at the 'Bund für Umwelt und Naturschutz Deutschland' (BUND, 'German Federation for the Environment and Nature Conservation'), conducted online via ZOOM, on May 3, 2022, at 9 a.m.

Sabine Sommer is involved in two ways in the Hamburg regional association of the BUND. On the one hand she is one of two spokespersons of the voluntary working group 'mobility' and on the other hand she is employed for a project on 'stationary traffic'. With her working group she planned the 'Parking Day ' on Lange Reihe last year. Through the interview, the following valuable insights could be gained:

Stationary traffic project
- In order to promote the mobility transition and a fair distribution of space, and to make the vision of a people-friendly city tangible, BUND has initiated a citizen science project that involves the residents in the entire area of Hamburg. Citizens are involved in the project not only to collect data, but also to raise awareness and get them excited about how differently space can be used.
- The project is externally funded and will run for one year with a fixed number of hours only. Nevertheless, it is a module in the development of a livable city.
- In the first phase, participants' work will consist of counting parking spaces and the actual cars parked, and monitoring whether parking pressure is low or high. They will also be experts on their neighborhoods. They will be asked to track the uses and challenges and to think about alternative places, such as garages of grocery stores and shopping center facilities, that are not being used on nights. Through this process, BUND hopes to gain acceptance for reducing parking.
- In the second phase, hopefully starting in mid-2022, certain parking spaces will be permanently reallocated. However, the duty lies with the district office.
- BUND has not yet issued a call for participation. The association plans to do so jointly with the district office, as they have more options and channels to reach a more diverse group. BUND has distribution lists for active members. In addition, they publish the call on their website. Already, a surprisingly high number of people are interested. This coincidence underscores the fact that more citizens than one would expect want to transform their city. Car advocates do not seem to be the majority, although they have a louder voice and lobby.

'Parking Day' & Parklet Program Eimsbüttel
- Every year the volunteer group of BUND takes part in the 'Parking Day' together with actors like the ADFC, the BUND-Youth or the VCD and at different locations. The implementation is planned annually, with a new group of participants each year. In order to use a parking space temporarily, a demonstration application must be submitted. Further planning is relatively simple, as 'Parking Day' only takes place on one day. Experiences from previous days are applied.

- Setting up a parklet on 'Parking Day' allows people to get a feel for the space. Depending on whether the parklet is placed on a quiet street or a busy road, it can be used for different types of events. On Lange Reihe, for example, people sitting on the parklet can experience how traffic separates the two sides. Programming of the occupied space is recommended.
- During the pandemic, restaurant owners were also given the opportunity to expand their outdoor space. According to Ms. Sommer, this use of on-street parking has worked well. Due to traffic noise, a public parklet might be rather uncomfortable.
- Although most residents were affirmative, overall interest was lower than expected.
- The Parklet Program Eimsbüttel might not be well received because parking pressure is high, as well as social pressure. Also, people do not have the time to build a parklet and ready-made ones are likely to be way more expensive than the 1,000 euros of support people from the district. However, where parklets have been installed, they are very much appreciated by residents and passerbies.

Future potential
- Committed caretakers with enough time are needed to pursue a project.
- Since there are few people willing to initiate projects, the district office should take the first step by conducting small pilot projects and letting people gain experience. The next step is to make successful projects permanent and establish a program.
- Most people do not know that they have the opportunity to change the space. A program should be advertised and the benefits made clear. Positive visions are also needed and solutions to local problems illustrated.
- Collaboration with other stakeholders such as the district office is important to reach a diverse group of people, because usually only a certain clientele is interested.
- Agile seniors with time or younger people who do not yet have their own families need to be addressed. Both groups need to be approached and involved in different ways, ideally using existing structures.
- In general, district offices and climate protection managers seem to be positive about the projects. Although they have to comply with regulations and administrative procedures, they should have the courage to initiate change.
- Awareness does not solve the problem, but it is the first step towards change.

Additional considerations
- Besides redistributing or eliminating parking, district offices could also manage parking and increase rents. This would also lead to a reduction in private cars.
- More incentives are needed for people to give up their cars, such as in Heidelberg, where anyone who trades in their car for sustainable options receives a Bahncard.
- Introducing 30 km/h speed limits everywhere in the city would not only increase safety, but also make cycling more attractive, since it is not much slower.
- In a city like Hamburg, all important destinations can be reached by bicycle or on foot. When people try a different means, they adjust their radius and distances.

Interview with David Huber & Lars Michael, VCD (Verkehrsclub Deutschland, 'Traffic Club Germany') online via ZOOM on May 3, 2022, at 4 p.m.

VCD members are engaged in various activities related to mobility transition. Among most other strategic actions, BUND asked a group of young members at the VCD to participate in 'Parking Day' 2021 in Lange Reihe. David Huber, a member of the VCD, and Lars Michael, one of seven board members, agreed to answer some questions about 'Parking Day' and VCD's approach to mobility transition. The main findings of the interview were:

General
- VCD is more of a multiplier, not an initiator.
- The national group has a good network and is also involved in politics. Therefore, the focus of actions is on comprehensive strategies, such as the Federal Mobility Act. Small, local projects would be tasks for local groups that can be present in the respective neighborhood.
- The club facilitates active mobility such as cycling by providing and maintaining small, hexagonal bike sheds, for example in Winterhude.

Parking Day
- BUND initiated participation in 'Parking Day', while VCD helped making it bigger and more diverse. Pooling resources for a particular issue is helpful.
- The main goal of 'Parking Day' is not to occupy parking spaces per se, but to raise awareness about the issue and show different uses of the space. Only by incorporating the small, local interventions into a larger publicity campaign that attracts newspaper's attention and by contacting politicians directly change can be initiated. In general, an action can be considered successful when the general public gets the discussion started. This is the case when the press covers it. When the press and the general public respond, politicians are also forced to address the issue. Therefore, the local press must be involved as soon as there is an intervention by making the issue attractive to them, for example, by letting them know why it is unique and critical.
- In addition, local businesses need to be informed or actively involved in advance to avoid complaints or lawsuits that result in negative headlines. Since business owners often believe that fewer parking spaces will result in fewer customers, testing can be used to change their minds.
- The VCD would not bother or have the resources to take on parklets permanently or initiate small projects on its own, as its main focus is on more large, publicity-effective comments or projects such as the Hamburg S-Bahn or the new train station in Altona.
- There are two ways to get a permit for 'Parking Day': either through a spontaneous demonstration, which means occupying those parking spaces that are currently

free, or through prior registration. For 'Parking Day' 2020, the first option was applied. In any case, the police must be notified in advance. Otherwise, radical actions may lead to legal consequences for the club.

- In general, demonstrations are easier and more spontaneous to organize, while special use permits are more formal and require more preparation.

Stakeholders, engagement and participation
- VCD members are involved in projects like 'Ottensen macht Platz' or the redesign of Jungfernstieg. However, their engagement is not based on a strategy, but depends on whether members have been invited to participate respectively are interested or the club has the resources to send people to participation formats.
- The association does not initiate or plan engagement or participation formats.
- Meetings, information sessions, and active member formats are generally open to the public, but primarily intended for members. However, the public is specifically invited to attend expert lectures which the VCD organizes on a regular basis.
- The VCD is happy to provide feedback. However, they sometimes fail to understand whether or not their suggestions are actually taken into account. There is often a lack of direct feedback from officials.
- Braking parties in decision-making are often the police or the Senate. For the police, maintaining a status is often less time-consuming than making changes.
- In the experience of the members interviewed, there are also intensive coordination processes in other regions and on other topics.

Potential of a program
- Time and money are inevitable for initiatives. In general, the city should provide a budget for initiatives, clubs and associations that enables them to participate and engage in relevant issues. Most members are volunteers and do not have the resources to get involved to the extent they would like.
- Providing funding for citizen-initiated projects is essential. However, establishing a program might not be essential. Establishing a pool of materials, that initiators could access, would be helpful instead.
- More important than a program is bringing people together who are interested in getting involved in street redesign.
- An advisory service that brings associations or individuals together with authorities and consult them on topics such as application and approval, financing, or design would build trust and simplify planning and implementation, especially for non-professionals.
- In addition, authorities must show their openness to experimental projects by reducing the complexity of the application and approval process. Citizens must have the opportunity not only to participate in project-based, framed processes, but also simply to propose projects and use the 'city as a workshop' to experiment with new ideas.

Interview with Lars Zimmermann, CITIES FOR FUTURE, conducted online via ZOOM on May 6, 2022, at 10 a.m.

Lars Zimmermann is an architect working mainly in the field of storytelling in space and with space. When he lived in the Netherlands, he experienced the positive effects of quality open spaces and human-centered planning and has wanted to share his knowledge ever since. Together with his brother, he founded CITIES FOR FUTURE, a company that supports cities and municipalities on their way to a climate-neutral future by advising them on mobility, place-making and resilience, and taking care of strategies, concepts, visions, mission statements and communication. CITIES FOR FUTURE has joined the 'Superbüttel' movement to help and advise on different levels. The interview insights were:

Superbüttel
- Lars Zimmermann used his architectural background to create visual images that highlight the USP of the neighborhood and show the potential transformation from a space for cars to a place to meet and gather.
- The project site is a tight neighborhood with predominantly Gruenderzeit buildings and almost no high-quality public space.
- Kai Ammer, founder of 'Kurs Fahrradstadt' and resident of the neighborhood, was inspired by the Barcelona Superblocks concept and came up with the idea to improve the space in front of his doorstep.
- All members of 'Kurs Fahrradstadt' and CITIES FOR FUTURE work on a voluntary basis. However, a city can only rely on volunteers to a certain extent.
- Although the members of 'Kurs Fahrradstadt' already have a tremendous amount of knowledge and professionalism, a specialized partner was important.
- Communication, e.g. by involving newspapers, is important to raise awareness.
- "Cars out, life in" - Quality of life and mobility must be tackled together.

Institutional and political actors
- Political will is the basis for implementing a project. Politicians and administration should communicate whether they want a project or not.
- Institutional and political actors seem to be afraid of losing votes and lack the courage to publicly support a project like 'Superbüttel'. Since politicians are elected representatives, citizens need to increase the pressure on them.
- The Department for Transport and Mobility Transition (BVM) supports the idea of Superbüttel. However, the district is responsible for involving them, which has not been the case so far.
- Political games, resentment about the other party's success and different goals could be reasons for the district office not contacting BVM.
- The police, which are part of the Interior Department, are difficult to deal with. On the one hand, their job is to enforce and pay attention to law and order. On the

other hand, many regulations are outdated and support the car-oriented city, such as the importance of traffic flow. The police seem to reject projects mercilessly and without the will to develop solutions together.

Other advice for a program

- Fundamental issues such as renewing regulations and creating a functioning 15-minute city also need to be addressed.
- According to Jan Gehl, whose master class Mr. Zimmermann attended, prototypical approaches combined with before-and-after evaluation are very promising because they make change experiential.
- When using tactics, institutional actors still need to focus on the overall goal.
- A neighborhood office like the 'Planbude' in St. Pauli, funded by the city and run (in part) by volunteers, can be a focal point for residents to submit proposals and ask questions.
- A link between citizens and authorities and funding needs to be established so that citizens can initiate actions more easily.
- Providing parking in neighborhood garages is an option. However, a reutilization of the space at a later date must be possible.
- Surveys are important. When residents are surveyed about improving their environment by reducing automobile traffic, there are usually always massive supporters and opponents. However, most respondents will support a redesign, especially in districts like Eimsbüttel, where most residents vote Green.
- The fundamental question "How do we want to live in this city in the future?" is more important than a debate about renunciation. However, the urgency of a mobility transition to cope with climate change must be constantly present in everyone's minds to prevent resignation and to exert pressure. The creation of positive visions is crucial.
- Citizens who are not interested in climate change or the mobility transition can still be involved by asking them questions about potential neighborhood improvements and letting them help shape them.
- Communicating and presenting visions in the form of images is important to awaken people's imagination and will to commit to change. People need to understand that change is possible everywhere, they just have to start engaging and be committed to their goal.
- Start with low hanging fruit like a modal filter and measures on district roads. Stay away from federal roads.
- Find local partners like schools and parents who advocate for issues like quality of life and safety for their children. In general, finding fellow advocates and personalities with a good standing and a loud voice, and building networks and partnerships are important and have never been easier.
- A regulated framework, guidelines or principles would be helpful, but only to a certain extent, as each neighborhood brings different requirements.

Interview with Sebastian Clausen, ARGUS studio, conducted online via ZOOM, on May 6, 2022, at 2:30 p.m.

Interested in insights about traffic experiments such as 'Ottensen macht Platz' from the perspective of a traffic planner, Sebastian Clausen, one of the two heads of the ARGUS studio, was approached. Even during his studies, he gave attention to the connection between urban development and mobility. With his agile team at ARGUS studio, he supports the parent company ARGUS in developing concepts and processes for mobility transition. The key findings of the interview were:

Ottensen macht Platz
- In citizen workshops related to an EU project, the desire to improve Ottensen's center for pedestrians and cyclists emerged. Instead of experimenting for a month, politicians decided to start a six-month trial phase.
- The district office put 'Ottensen macht Platz' out to tender and ARGUS applied with a team of actors including urbanista, Treibhaus, Rudi Klöckner and TU Hamburg, among others.
- ARGUS was responsible for traffic management and functioning. In coordination with other stakeholders, the company developed a street sign concept, but was also involved in issues such as space utilization, delivery traffic, safety aspects and fire department access.
- At the time of project implementation, the ability to temporarily test changes already existed in road traffic regulations (StVO). The district office had to justify a risk, which it did. However, after five months, the project was stopped because the court upheld the complaint of some affected parties. A month later, the road traffic regulations were changed so that a risk was no longer required. For the redesign of the 'Jungfernstieg' ARGUS does not apply the 'test article'.
- Although stopped earlier, the traffic experiment is considered a success because citizens were able to experience the new situation for five months, debates were held and the evaluation could already be completed.
- The short preparation time of four months was a challenge. Usually, at least six to twelve months are required because the regulatory system in Germany, with its dependencies and constraints, is not prepared for experimentation.
- The interviewee assumes that 'Ottensen macht Platz' was successful because it had a temporary character that took away people's fear of a permanent change and let them experience the altered space first.
- Traffic experiments are always a sensitive issue. Failure can lead to experiments generally no longer being considered.

Additional stakeholders
- Coordination with the police, who are the regulating and decision-taking body, was a challenge.

- Stakeholder involvement not only for the overarching issues and planning, but also for the preparation and programming of the space is important.
- The Technical University was responsible for the evaluation, which included household surveys, interviews with business owners, traffic counts, and spatial observations.
- Mobility transition is not just about changing transportation modes, but also about changing routines and behaviors. Therefore, it takes more than traditional transportation planning.
- Depending on the political background and objectives, district offices can support or refuse a project.

Participation and engagement processes
- ARGUS did not plan, but actively participated in formats.
- Participation formats with different stakeholders are more important than pure information events.
- In addition, channels such as social media should be included to actively initiate discussions and not just respond to claims.
- The ambition should not be to involve and convince everyone, which is generally not possible.

Considerations for a future program
- Cities need to have the courage to use the tool of temporary measures to experiment with possible solutions, such as New York City.
- Private funding by residents or BIDs is one tool for enhancing public spaces. However, BID-funded improvements address different stakeholders than citizen-led programs. Foundations or investors often have more sustainable, forward-looking goals.
- There is no one measure that promotes the transition to mobility, but rather the interplay of several measures at different levels.
- The application and approval process must be uncomplicated, low-threshold, fast and with little paperwork for both sides, initiators and institutional actors. The project 'Sommerstraßen' project in Munich shows that simple, low-threshold programs that allow citizens to propose and implement their own ideas can be very successful.
- After a successful research project evaluating the implementation of parklets, Stuttgart introduced an administrative procedure and form to make the application process accessible to everyone.
- In general, a design guide or manual would be helpful. However, rather than focusing on developing a manual (that would take years), the city should concentrate on actually doing something and learning from experiments.
- The potential role of ARGUS and the ARGUS studio is to support and guide a program with their technical expertise.

Interview with Frank Engelbrecht, pastor of the main church St. Katharinen and one of the founders of the initiative 'Altstadtküste' ('Old town coast') conducted online via ZOOM, on May 10, 2022, at 9 a.m.

As pastor of the main church St. Katharinen, Mr. Engelbrecht is involved in the initiative 'Altstadtküste' ('old town coast'), an annual closure of a street section at the Zollkanal in Hamburg. The interview focused on the involvement of Mr. Engelbrecht and the church in this project and in interventions in urban space in general. The main findings were:

Background
- St. Catherine's Church has already participated in interventions in public space in the past, for example by organizing a Stations of the Cross together with urban developers and young artists who created installations.
- When parts of the immediate residential neighborhood were redeveloped in the mid-2000s, St. Katharinen called for small-scale, context-sensitive planning and established 'Katharinenweg' ('Catherine's way') to reclaim public space.
- The organization of events on Willy-Brandt-Strasse during the Night of the Churches attracted attention from the public and other initiatives.

Regulations and institutional actors
- Authorities and district offices seem to be interested in permanent transition. However, they do not seem to have the capacity to implement proposals.
- The annual event must be officially approved by the district office.
- The approval process can be challenging for initiatives, as different authorities and institutional actors such as the fire department, police, and district office are involved. They all have different responsibilities. Although they are interconnected, they are also dependent on each other's decisions.
- When streets are involved, the authorities, especially the police, show a high degree of caution and orderliness. The main task of the police is to regulate the flow of traffic. However, flowing traffic mainly means motorized traffic, which still has priority in cities. Other areas of responsibility are secondary. The police seem to decide on issues that exceed their authority. Therefore, discussing temporary experiments with them is difficult and often leads to frustration on both sides. The initiators of 'Old Town Coast' tried to convince them to close the street in question as early as Friday to include kindergartens and schools. However, this was not possible due to the impaired traffic flow.
- For the cooperative 'Gröninger Hof', the conversion of a parking lot into a residential building is complicated due to restrictive land use plans.
- There is a gap between the livability we strive for and the city we build, due to regulations that promote the car-centric city. These prevailing rules need to be adjusted to realize the transition and make co-creation the state of the art.

Budget and funding

- Reducing parking could present financial challenges. The church's budget is dependent on revenue from parking in the church yard. If cars are banned, alternatives will need to be created to generate revenue.

- Closing the 'Old Town Coast' to cars during a weekend is also quite expensive. Mr. Engelbrecht estimated the cost of the permit at about 6,000 euros.

- For the Rathausviertel, funding was provided by the district and foundations.

- In the first year of 'Altstadtküste', the initiators received Corona funds for the cultural program items. In the second year, the initiative received financial support from IFB-Förderbank through its Innovation Fund.

- For upcoming events and ideas, the initiative is trying to get financial help from the BSW's urban development fund 'Lebenswerte Quartiere' ('livable quarters').

- Obtaining funding is not always easy. On the one hand, the initiatives have to search for funds and on the other hand, the applicants have to submit detailed information and reports and contact the providers repetively. Both are very time-consuming and require the dedicated efforts of volunteers.

- To communicate transparently that the work of volunteers is also part of the funding of a project is important. Mr. Engelbrecht estimates that paying everyone who participated in a weekend workshop on 'Altstadtküste' on a regular basis would have cost 200,000 to 300,000 euros.

- The City of Hamburg has already begun to provide more support for urban development. Authorities should promote initiatives more systematically and routinely by providing structures that simplify the retrieval of (not only financial) support and accompany developments in the long term.

General insights

- Creating sustainable, social cities with vibrant public spaces requires diverse actors. Civil society has the skills to advance this development.

- Short-term interventions have always been organized with long-term change in mind. When they are put to the test, the demand for lasting change emerges.

- People need to be made aware of the urgency and relevance of change.

- Personal interests can sometimes clash with a political vision or what is relevant at the citywide level. Changing routines can be painful. Communication should highlight the benefits rather than the drawbacks and raise awareness that people are part of the problem - but also part of the solution.

- Building a network of stakeholders and partnerships with institutions is essential for continuity. The creation of an official association from the rather loose initiative 'Altstadt für Alle' underlines the goal of working on continuous, lasting solutions.

- Involving a wide range of stakeholders in terms of quantity and quality is crucial, but also challenging. Most residential structures are not designed for collaboration, but for privatization. In addition, most people are busy or absent during the day. A way must be found to communicate with and involve them all.

Interview with Carsten Behnke & Christoph Kirk, Traffic Directorate at the Street Traffic Authority, conducted online via Skype for Business, on June 8, 2022, at 9:30 a.m.

Mr. Behnke and Mr. Kirk are working in the central Street Traffic Authority in Hamburg, which is mainly responsible for supervising the lower Street Traffic Authorities, which are located in the local police departments. For traffic experiments, the Authority's main job is to accompany the planning and to examine whether rules are followed and interventions are protected against lawsuits. The Street Traffic Authority also gives legal orders for implementing a project. Therefore, it is often seen as an inhibitor when planning innovative projects. The main insights from the interview with Mr. Behnke and Mr. Kirk were:

General insights about the role of the Street Traffic Authority
- Focusing not only on motorized traffic like in the past but also on other modes of mobility is important, but more complex and complicated.
- In general, certain developments are not integrated into the road traffic regulations (StVO) yet. However, it is still the legal framework. Changes have to be justified substantially to be protected against lawsuits, for example with an urban development plan. Considering also neighboring streets is necessary.
- In addition to legal regulations, spatial conditions might also restrict the possibilities. When reclaiming space for one mode of transport, it has to be taken from a second mode. Decisions are made case-by-case, but must be legally proper.
- In the end, the Street Traffic Authority is in charge of assessing whether an intervention is safe for traffic. Although observing the legal rules is not its main job, the decision is taken based on regulations and guidelines by experts.
- Often, Street Traffic Authority is seen as the inhibitor as they are responsible for the final orders. However, they can only act within the framework of road traffic regulations, which should be followed already by planners and their clients.
- If planners follow the rules, no issues will arise. However, in existing neighborhoods, the facades of houses often limit the possibilities. In new quarters also, space is highly competitive. To build as much housing as possible, traffic area is restricted. This can lead to complications in the future, as the built streets won't have space for sidewalks or bike lanes according to the norm.
- Not regulating a new situation according to StVO, but letting it simply regulate itself, can work. However, as soon as something happens, people will ask why the situation has not been regulated before and blame the police for not taking care.
- The Department for Traffic and Mobility Transition (BVM) or the district offices could implement a project without the police's approval. Nevertheless, they are often afraid due to possible upcoming problems. In addition, most interventions require the ordering of new traffic signs, which is the job of the police. Therefore, involving the Street Traffic Authority in the planning is recommended.

- In general, projects could be planned without using new signs, such as by rededicating streets. However, often, planning is done inconsequently and different special permits are needed that require the installation of signs.
- Interviewees have the feeling that decision-takers would like to do a lot, but most actions are only desultory and selective. Choosing only some measures without integrating them into overall planning is troublesome. Introducing a pop-up bike lane, for example, is easy on a straight road but gets complicated at crossroads. Changing, e.g., light phases is more time-intensive and costly than often expected. Certain measures cannot be ordered when the connected topics are not regarded.
- An overall strategy as legal justification is often lacking. However, without a substantial reason, Street Traffic Authority cannot order.
- Reasons for the inconsequent, selective planning might be the involvement of two different authorities (BVM and BIS), led by members of different political parties with varying goals.

Contact with other stakeholders
- When working on a project, the Street Traffic Authority is mainly in contact with the planners, as the final street traffic orders will finally be set based on their plans. General coordination is also done with the district offices.
- Lower Street Traffic Authority (the respective police departments) is present at round table talks with other stakeholders, such as initiatives, to consult on legal topics. For larger projects, such as the transformation of Jungfernstieg, the central Street Traffic Authority or the State Authority are involved.
- In most cases, the Street Traffic Authority is sufficiently involved in the planning. However, especially when politicians are under pressure, cooperation seems to suffer, as the involvement of the Street Traffic Authority will take time. Though, when involving them early enough, less time is needed for replanning.
- Citizens and initiatives with a project idea first have to convince the body in charge of financing and executing, such as the district or the BVM. The Street Traffic Authority would be involved once the bodies in charge start the planning.
- Some politicians, staff in district offices, and other authorities seem to let the Street Traffic Authority make the decisions. Reasons for that might be that they don't want to be blamed for choices, but also the insecurity of certain young or nonlocal actors without enough experience.

Conditions for a program
- The main precondition is the availability of a sufficient budget. As soon as not all measures can be implemented, due to lacking funding, problems arise. However, districts seem to execute as many projects as possible for little money only.
- In the interviewees' opinion, an additional manual for street experiments is not necessary. The planning guideline 'ReStra', which are the rules of standard for the planning of urban streets in Hamburg, is sufficient.

STAKEHOLDER	INTERESTED WHY?	INTERESTED IN WHAT?	CAPACITY	INTEREST * / POWER *	HOW TO MANAGE?
					* Scale: 1 - low, 10 - high
Residents & neighbors (Diverse group)	Live in the area, possible initators or applicants	Livability & safety, easy-to-apply program	Initiate, apply for program, volunteer	10 / 4	Diverse engagement possibilities
Property owners	Own buildings in the area	Maintain or increase property value	Fund projects, provide space, influence politics	6 / 7	Approach directly, keep informed
Visitors & passers-by	Visit or pass the area	Reachability & livability, no restrictions	Come to visit & use projects, tell more people	4 / 2	General information, monitor
Foundations/ Funding providers (IFB)	Availabe funding to support mobility projects	Supporting eligible projects	Funds & assistance, networking	3 / 7	Monitor funding options, keep informed
Civil society groups	Commitment & capacity to initiate projects	Fostering projects that officials don't	Committed active members, networks	7 / 6	Engage in planning & implementation
NGOs & environmental groups	Environmental benefits of projects	Measures to tackle envir. impacts	Experts, active volunteers, networks	7 / 5	Engage in planning & implementation
Local groups & clubs (sports, leisure etc.)	Located and members in area	Community, reachability for members	Network, vitalization with events	8 / 6	Engage in planning & events
Community management	Social benefits of projects	Improvement, community building	Direct link to residents & local businesses	9 / 7	Integrate in planning & implementation
National government / ministries	National envir. goals, EU standards	Reaching goals, transferable projects	Provide federal incentives & funding	2 / 5	Inform, keep updated
Hamburg senate & city assembly	Want to become elected again, good reputation	Support, reach national goals	Enact municipal program	4 / 6	Inform, educate, convince
Dep. for Traffic & Mobility Trans. (BVM)	Fostering transition on city level	Successful projects in districts	Provide funds & observe program	7 / 7	Inform, convince from eligibility
Police / Interior Department (BIS)	Street Traffic Authority, confers orders	Projects compliant to regulations	Approve / reject projects, programs	3 / 10	Integrate from the start
Department for Urban Dev. & Housing (BSW)	Projects in urban spaces on city level	Successful projects in districts	Provide funds & observe program	7 / 7	Inform, convince from eligibility
District assemblies / politicians	Want to become elected again, enact city law	Reputation, support from district residents	Enact orders, approve projects	5 / 9	Inform, educate, invite, convince
District offices	In charge of implementing projects	Successful projects, little resources	Implement municipal program	8 / 8	Integrate in planning & implementation
Municipal companies (LSBG etc.)	Plan projects in main streets (not district streets)	Approved plans, easy realization	Plan & contract in municipal streets	5 / 3	General information / monitor
Local retail	Located closeby, affected by project	Reachability, quality of stay, outdoor space	Link to residents, funding, influence	4 / 4	Approach directly, involve in planning
BIDs	Businesses affected by project	Attracting more customers, increasing value	Funding, networks, but little leeway	3 / 6	Approach directly, involve in planning
Mobility providers / industry	Residents might switch to other modes	Gaining new users, be accessible	Provide reachability, advertise	5 / 4	Involve in planning & implementation

Legend:
- Policy makers & administration
- Civil society
- Research & education
- Industry & businesses

TABLE 4: Stakeholder table *(Author, 2022)*

STAKEHOLDER	INTERESTED WHY?	INTERESTED IN WHAT?	CAPACITY	INTEREST* / POWER *	HOW TO MANAGE?
					* Scale: 1 - low, 10 - high
HVV / VHH	Affected by changes on streets (buses)	Gaining new users, be accessible	Provide reachability, advertise	6 / 8	Involve in planning & implementation
Urban planners	Contracted for urban space planning	Improving livability & quality of stay	Professional knowledge & input, network	6 / 4	Involve in planning & implementation
Traffic planners	Contracted for traffic management	Improving traffic, fostering mob. transition	Professional knowledge & input, network	7 / 4	Involve in planning & implementation
Street construction companies	Contracted, realize transformations	Clear, easy to implement instructions	Practical knowledge	2 / 2	Involve only in final construction
Public relations Communication	Experts, support initiators with communication	Reach people	Strategies to communicate & raise awareness	4 / 7	Involve in planning & implementation
Participation & engagement Companies	Contracted, inputs through engagement	Engagement of various stakeholders	Experts planning & moderating formats	6 / 4	Involve in planning & implementation
Local artists & illustrators	Directly affected in the neighborhood	Visualizing ideas & improving public space	Creative in conveying visions	3 / 3	Involve in implementation & events
(Local) Press & Media	Informing residents about ongoing projects	Publishing of unique and critical projects	Reach public, increase awareness	2 / 8	Inform, invite, keep updated
Higher education & universities	Scientific monitoring, evaluation	Practical insights, transfer of knowledge	Scientifically verify & publish results	8 / 7	Involve in monitoring & evaluation
Research institutes	Independent monitoring, evaluation	Knowledge & strategy findings	Independently verify & publish results	6 / 6	Involve in monitoring & evaluation
Schools/Parents	Located in the district, affected by car traffic	Safety for the children	Increase network, raise awareness	8 / 6	Approach directly, join forces

No claim to completeness

The stakeholder table is based on interview insights retrieved by the author in April, May, and June 2022. Levels of interest and power were rated by the author, based on personal estimation.

Stakeholder were assigned according to their main role in the regarded projects with no claim to completeness. A more detailed stakeholder analysis depending on age groups (children, teenagers, young adults, adults, seniors), mobility type (car drivers, cyclists, pedestrians, people with disabilities), cultural backgrounds, socioeconomic groups, or other characteristics was recommended by interviewees (cf. AR, 2022). However, generating a table for each feature would exceed this report and is therefore out of the scope of this thesis project.

Policy makers & administration   Civil society   Research & education   Industry & businesses

APPENDIX U: LOGICAL FRAMEWORK MATRIX

OBJECTIVE	TARGET *	INDICATOR	SOURCE OF VERIFICATION	ASSUMPTION
				Targets are exemplary

Overall goal

OBJECTIVE	TARGET *	INDICATOR	SOURCE OF VERIFICATION	ASSUMPTION
Increase livability	Increase by 10 %	Rate of livability, surveyed	Survey, evaluation	Residents want public spaces and community
Tackle climate change	Reduction of GHG emissions and energy by 20 %	GHG in CO_2 eq. energy in kWh	Before-and-after evaluations (count)	Feasibility of these numbers in such a small area
Promote mobility transition	Reduce car ownership by 10 %	Car ownership, modal split	Before-and-after evaluation (census)	People do not park cars in sourrounding neighborhood

Purpose

OBJECTIVE	TARGET *	INDICATOR	SOURCE OF VERIFICATION	ASSUMPTION
Reduce effects of motorized transportation	Individual targets for diverse fields	Various (noise, pollution, space occupancy, ...)	Before-and-after evaluations	Effects can be measured, long-term change
Repurpose public space	Decrease of space occupied by cars by 10 %	Percentage of public space	Before-and-after evaluations, measurement	Long-term transformation
Gain acceptance and content	Increase of acceptance and content by 10 %	Rate of acceptance and content	Surveys, before-and-after-evaluations	Residents are open to changes
Identify location for interim / permanent project	1 for interim, convert into permanent	Number of projects, rate of content and acceptance	Evaluations, surveys, detailed planning	Funding, applicable law, acceptance
Improved sense of community	Increase of community feeling by 10 %	Rate of positive responds	Evaluations, surveys	Citizens are interested in a community

Results

OBJECTIVE	TARGET *	INDICATOR	SOURCE OF VERIFICATION	ASSUMPTION
Implement short-term projects	3 day pilots	Number of projects	Yearly report	Acceptance and support and openness
Select interim project	1 out of 3 interim projects selected	Number of projects	Yearly report	Suitability and support for one
Run monitoring / evaluation	1 evaluation concept per project	Diversity of applied formats; indicators considered	Evaluation report	Reliability of numbers (by experts)
Showcase change and visions	Create 3 visual images per project	Number of visual images created	Published images, yearly reports	Expert to create the images

Outcomes

OBJECTIVE	TARGET *	INDICATOR	SOURCE OF VERIFICATION	ASSUMPTION
Receive proposals from citizens	5 proposals per district	Number of proposals	List of all of proposals, yearly report	Proposals are tangible
Let citizens lead / co-design the realization	Citizens lead public outreach and submit plans	Percentage of work done by citizens	Submitted letters, surveys, plans; time evaluation	Citizens want to and are capable to lead / co-create
Experts provide assistance	1 expert meeting per project	Number of meetings, satisfaction	Evaluation of participants after consultancy	Citizens/officials take experts advise into account
Advisory boards supervises	Direct link (phone/email), obligatory monthly	Number of meetings, satisfaction	Obligatory meeting, citizens survey	Sufficient time, knowledge and reachability
Establish city-wide program	1 program within 1 year	Number of programs	Official program plan published	Support and funding for the program

TABLE 5:
Logframe matrix
(Author, 2022)

OBJECTIVE	TARGET *	INDICATOR	SOURCE OF VERIFICATION	ASSUMPTION

Targets are exemplary

Activities

OBJECTIVE	TARGET *	INDICATOR	SOURCE OF VERIFICATION	ASSUMPTION
Identify overall strategy	1 overall strategy (new or existing)	Number of strategies identified	Official program	Strategy exists or can be enacted easily
Identify funding for program	20 % of planning cost for each projects	Funding retrieved in euro	Official budget plan	Budget and funding obtainable
Determine applicable measures and locations	1 kind of measure, location on district roads	Number of measures and locations	Official program plan, map of possible locations	Measures and locations are feasible
Introduce application process	1 application process for all projects	Number of processes	Official program plan published	People are interested and have access
Create awareness and provide information	1 campaign, 1 website, 3 channels, 7000 poster	Number of campaigns, pages, channels, posters	Yearly evaluation report	Funding, timeframe, and PR experts available
Set up an advisory board at the city level	1 advisory board with 2 employees	Number of advisory boards in authorities	Official program plan, employee contract	Sufficient financial and human resources
Install contact person in each district	1 contact in each district	Number of districts with contact office	Signed agreement by districts, employee contract	Districts have enough financial / human resources
Gain businesses as experts	1 business per relevant topic	Number of businesses per topic	Signed agreements	Businesses want to get involved
Develop evaluation concept	3 concepts (short-term, interim, permanent)	Number of concepts	University or research institute	Interest of universities to get involved, funding
Gain partner suppliers	1 supplier in each district	Number and variety of partner suppliers	Signed agreements	Suppliers are willing to be involved
Create material pool	City-wide pool with 5 different materials	Number and variety of materials	Equipment list	Available funding or sponsorships for materials
Make contigent fund available	1 contigent fund of 100€ for each project	Number of funds	Official budget plan	Funding available, simplified retrieval process
Involve citizens in planning of program	1 online survey, 2 workshops	Number and variety of participants	Participation lists	Citizens are interested to get involved

No claim to completeness