MCD®
master city developer

Lessons on Strategy in the Realisation
of the Metro in Conjunction with
Area Development in Copenhagen,
more specifically in Ydre Nordhavn

Triple Planning Power

Raymond Bijen

Student number: 489912 31th of August 2025

Master Thesis in the context of
the Master City Developer (MCD)
Erasmus University Rotterdam,
Delft University of Technology

Thesis supervisor:
Dr. Ir. E.W.T.M. (Erwin) Heurkens,
Associate Professor Urban Development Management
TU Delft | Delft University of Technology
Faculty of Architecture and the Built Environment
Department of Management in the Built Environment

Foreword

“You cannot fully comprehend your own practice unless you have studied an alternative practice somewhere else” (Nadin, 2023). And especially if you can do that study abroad, I might add. For me, that meant stepping out of my *comfort zone*, approaching the new and different with an open mind, curiosity and wonder. And then being able to look at your own place in the world with wonder. That, in a nutshell, is what I have been doing over the past year.

I am very grateful to everyone who has helped me on this journey through time and space. I would like to thank my employer, the Province of Utrecht, for giving me the opportunity to conduct part of my research abroad and to devote part of my time to it. I received a great deal of cooperation from Erasmus University and TU Delft. I am grateful for their help in figuring out how to complete my study after having to put it aside for a few years. I would like to thank my study supervisor Erwin Heurkens for the very pleasant collaboration, the challenging conversations and the always quick feedback.

Many doors opened for me in Copenhagen. I am very grateful to my 'landlords' Erik Jacobsen and Marianne Høgh, with whom I enjoyed living in an apartment in their house and who, by an unlikely coincidence, gave me the unique opportunity to experience the case from the inside. The area development organisation By og Havn and the metro company Metroselskabet generously provided me with relevant documents and spoke to me on several occasions. I would also like to thank the friends I made in Copenhagen, who always responded with great interest to my questions about life in this city. It was a wild plan to live and work in Copenhagen part-time for a year. This would not have been possible without the support of my children, family, friends and colleagues. I am grateful for their flexibility, input and patience.

It was a wonderful, challenging journey. I invite the reader to take note of this travelogue. Now that the journey is over, I look back on a time in which expected but also many unexpected events came my way. It was like a tremendous storm that carried me away time and again. In the words of my favourite author, Haruki Murakami: "When you come out of the storm, you won't be the same person who walked in. That's what this storm is all about" (Murakami, 2005, p. 5).

Table of contents

Summary and reading guide

The research project **Triple Planning Power: Lessons on Strategy in the Realisation of the Metro in Conjunction with Area Development in Copenhagen, more specifically in Ydre Nordhavn,** was conducted by Raymond Bijen as a master's thesis in the context of the Master City Developer (MCD) programme at Erasmus University/Delft University in 2024/2025. The thesis examines how strategy was used in Copenhagen, and more specifically in Ydre Nordhavn, to implement metro development and area development in conjunction with each other and with the aid of *value capturing*.

The reason for the research described in Chapter 1 is that research is being conducted in the Utrecht Region into the first possible construction of a metro connection. Literature and empirical evidence show that this issue in the Netherlands requires, among other things, more knowledge and policy adjustments in the areas of strategy, (alternative) funding and governance. The literature shows that the Copenhagen case can be considered *a best case*. What can we learn from this case with regard to the case in Utrecht?

This master's thesis focuses on the strategy adopted at the start of the metro construction project in conjunction with the area development in 1991-1992 and the recent case of Ydre Nordhavn. This allows us to examine the development of the strategy and decision-making in the Copenhagen case over a longer period of time. This gives rise to the following main question: **What can we learn from the strategy for the realisation of the metro in conjunction with area development in Copenhagen, more specifically in Ydre Nordhavn?**

In order to arrive at scientific results, the research combines the *single case study* method, international comparative research (IVO) and the lesson-learning method. Chapter 2 pays special attention to the issue of proximity to the Copenhagen and Utrecht cases. Chapter 2 also describes the method used to compare institutional spatial development contexts.

The literature study in Chapter 3 establishes a theoretical framework for analysing the outcomes of the case study. After identifying dilemmas in area development and gaining insight into the *value capturing* instrument*,* the *strategy wheel* developed by Daamen (2010) and theory relating to systems thinking were used. A coherent theoretical model was developed to analyse the Copenhagen case.

The core idea here is that, in the *best-case scenario* for Copenhagen, there is a triple planning force, spanning the spatial, financial and governmental axes. Linked to this is the idea that there must be strong connections between these three axes in order to achieve a well-functioning system. Using the dilemmas described in area development, which emphasise that analysing only the individual components of an area development is not sufficient to gain insight, the *strategy wheel* hypothesises that these connections are expressed through the relationships that have been consciously established or have emerged between the authoritative and allocative characteristics of an area development. This thesis examines these relationships by investigating the connections between the opposing fields in the *strategy wheel*. This is done without ruling out the possibility that relevant connections may also exist between other fields.

Chapter 4 describes and analyses the national/regional institutional spatial development contexts, using literature and empirical evidence. The descriptions also serve as an introduction to Chapter 5, Case Study Copenhagen, and Chapter 6, Lessons from Copenhagen for Utrecht. Although relevant

differences emerge in some areas, particularly in the distribution of planning powers and finances, the conclusion here is that the institutional spatial development contexts are sufficiently similar that, once lessons have been distilled, they can be placed in the category: *transfer between countries with similar systems*.

In Chapter 5, we have chosen to describe the Copenhagen case study in three parts, largely in chronological order: (1) the beginning in 1991-1992, (2) further spatial development and metro construction in conjunction with organisational development, and (3) a closer look at the Ydre Nordhavn case study. In the latter section, we take a closer look at the strategy applied, whereby changes in spatial requirements and financial pressure led to adjustments in the metro line and area development, and additional financial resources had to be found.

The Copenhagen case study was then analysed as a whole in the *strategy wheel*. What is striking is that, under pressure from limited financial resources in the early 1990s and a very strong shared need to pull Copenhagen, and with it Denmark, out of the economic malaise, a few powerful administrators and civil servants realised that the authoritative parties essentially needed to have both the authoritative resources (legislation and spatial planning) and the allocative resources (land and financial instruments) in their hands, and that this could give rise to a triple planning power system that could function to a large extent on a long-term basis and essentially independently in spatial, financial and governmental terms.

However, it is clear that adjustments are necessary to keep the system functional, with the (financial) solution partly being postponed to the future. The thesis also describes a regional debate about an emergent effect of the system, whereby new building land is constantly needed, reclaimed from the sea. The question can be asked whether this will lead to the right spatial choices in the long term. Nevertheless, it can be concluded overall that, even in 2025, the system initiated in 1991-1992 will continue to transform the city of Copenhagen and contribute to its spatial qualities and appeal. Based on the analysis, 11 elements have been distilled that can serve as lessons for other cases.

Chapter 6 begins with a *strategy wheel* completed for the Utrecht case, based on the description of the institutional spatial development context in the Netherlands/Utrecht in Chapter 4. This offers the opportunity to compare the *strategy wheels* of the Copenhagen and Utrecht cases. Using this material, the 11 elements from Copenhagen were then related to the Utrecht case in the form of lessons, which were assessed in terms of their transferability. The picture that emerges is that the lessons are not directly transferable in terms of instruments or policy, but can offer inspiration (ideas, experiences) and/or *learning* (concepts, mechanisms and principles). The fact that lessons are not directly transferable is mainly due to differences in land acquisition, the distribution of allocative resources and the distribution of planning powers.

In Chapter 7, we answer the main question and include reflections and recommendations. **What can we learn from the strategy behind the construction of the metro in conjunction with area development in Copenhagen, more specifically in Ydre Nordhavn?** The Copenhagen case study shows that there is a triple planning power system in which spatial, financial and governmental strategies have been developed in conjunction with each other, which together form a (to a considerable extent) self-functioning system in which metro development can take place prior to area development and in which *value capturing* functions well as an instrument. The Copenhagen case also shows that the triple planning power system has emergent effects that put pressure on regional

spatial choices. The model for regional cooperation that emerges from the Utrecht case can serve as inspiration for addressing these emergent effects.

What we can learn from the strategy in the Copenhagen case study is that it is advisable to view potential (complex) area development from the perspective of the triple planning power system as developed in Copenhagen, taking a close look at the local aspects and examining which elements in the case need to be or can be mitigated in order to make the triple planning power system work for the specific case. The other 10 lessons can serve as building blocks for inspiration or *learning.*

It is recommended to compare the scientific application of the *strategy wheel* in combination with the method internationally and to apply the lessons learned method more often to analyse complex area developments and compare them with other cases. This is because it can provide in-depth insights into how strategy has been applied in area developments and provides a means of clarifying whether and, if so, to what extent the lessons learned are transferable.

In addition to the *strategy wheel*, the theoretical research framework assumes that strongly developed relationships (both through conscious and emergent strategies) between the opposing fields in the *strategy wheel* contribute to the success of area development. Although this thesis presents this as a valid assumption for the Copenhagen case, further research is needed to substantiate this on the basis of other cases.

1 Introduction

1.1 Introduction, preface and motivation

During my work as an advisor on urban development issues at the Province of Utrecht, but also before that in various positions in cultural heritage, I have always been fascinated by the long term. Working on the city consists of many short-term actions, but without a long-term vision, good cooperation and the necessary (financial) instruments, large-scale changes cannot be achieved. As part of completing my Master's degree in City Development at Erasmus University, my focus on the long term deepened, partly through the Governance module and the visit to New York in the International module.

The subject of the realisation of urban public transport in combination with urban development is becoming increasingly relevant. Within cities, the emphasis on public transport is growing, while the emphasis on cars is declining. Cities are investing in other forms of travel, such as walking, cycling and public transport. This serves various purposes, primarily to improve the quality of life in cities. Organising and investing in urban public transport in combination with urban development requires a high degree of organisation, which various cities are struggling with.

Daamen (2010) argues that although there is no shortage of plans in the Netherlands, it is becoming increasingly difficult to realise them. Daamen, referring to Healey (2007), argues that this is not only true for the Netherlands, but that there is a specific Dutch context, which can be described as a pragmatic planning culture, characterised by increasing tension between high ambitions and scarce resources, linked to a strong need for consensus (Faludi & Van Der Valk, 1994; Needham, 2007).

Now that natural gas revenues have dried up and it has become clear that the national government will have to devote an increasing proportion of its annual infrastructure funds to maintaining existing infrastructure (Rijksoverheid, 2023), the image of the central government stepping back from subsidising large-scale infrastructure in area developments is becoming increasingly prevalent. Among other things, this is leading to an increasingly heated debate about where limited government resources should be spent. Attention to other ways of collaborating and financing is also increasing (Daamen & Van Zoest, 2020).

The national government is committed to working with regions (Rijksoverheid, 2022) to address large-scale urbanisation issues. In the Utrecht region, the need for cooperation has already been recognised (Rijksoverheid, 2019). This has led to forms of cooperation, including in U Ned. Under the banner of U Ned, a joint vision has been drawn up, the NOVEX development perspective for Utrecht-Amersfoort (U Ned, 2023). Work is also underway on a joint Adaptive Development Path and a Regional Investment Agenda (RIA) (Province of Utrecht, 2025). However, experience has shown, for example in the MIRT exploration of public transport and housing, which includes research into a partially underground tram or metro, that when it comes down to it, the focus is mainly on more traditional investment opportunities, i.e. subsidies from higher authorities. And that is where the problem really lies. Is this the right time to come up with a different way of working together and investing? Or are there factors that prevent this? And if so, what are they?

One of the means being considered is alternative funding. One way of doing this is to skim off the profits of those who benefit: *value capturing*. Offermans (2004) gives the following definition: 'a collective term for instruments that make it possible to skim off the increase in value of land and real

estate – created by public action – either directly or indirectly and use it for the activities that cause this increase in value'. We will zoom in on the relationship between the financing of high-quality public transport construction, related to an area development that contributes to the financing of that public transport connection through *value capturing*.

In 2019, the Knowledge Foundation for Area Development and the Mobility and Areas programme management of the Ministry of Infrastructure and Water Management commissioned a comparative study into funding strategies for public transport. The results of this study by Van Zoest and Daamen are recorded in *Daadkracht en Drang. Six insights from an in-depth study into the financing of public transport in New York, London and Copenhagen* (2021). The six insights are:

- Convince each other that things need to change
- Make use of local value development
- Prioritise the common good
- Reform, but do so in moderation
- Create powerful investment plans
- Ensure balanced implementation

Van Zoest and Daamen propose working decisively and urgently to secure sustainable funding for the Dutch urbanisation challenge. To ensure multi-layered implementation capacity. And to add funding from the skimming of beneficiaries to the Dutch funding palette (Daamen & Van Zoest, 2020). The question then is how this could be achieved.

One way to get an idea of this is to conduct case studies on cases that are often described as positive examples (Flyvbjerg, 2021). In Copenhagen, a metro system has been built over the past 35 years, with *value capturing* being used to find contributions for investment in that metro system. The city of Copenhagen is making progress in this area. With regard to the development of a metro system in combination with urban development, the city has developed a way in which a high-quality metro system can be built before urban development takes place. This is an interesting topic to investigate and can offer insights to other cities.

Katz and Noring (2017) have researched this and documented it in *The Copenhagen City and Port Development Corporation: A model for regenerating cities*. In their conclusion, they state that the opportunities for implementing the 'Copenhagen model' in other cities, although difficult, could not be better. They point to developments in the possibilities and pressure from demographic developments and the market. They link this to the retreating (national) governments, which will force many cities to look for new ways of designing, financing and delivering large-scale redevelopment and transformative infrastructure projects. They point to the possibility of capitalising on the (increasing) value of public property through an institutional vehicle that is focused on the long term. The lessons Katz and Noring draw from the case study:

- Make public ownership transparent
- Bundle social assets by bringing together public bodies
- Encourage the state and local government to collaborate
- Decouple development from political influence
- Enable long-term thinking and stewardship

How has the Copenhagen model case developed since 2017? This requires further exploration and clarification. Due to special circumstances, I had the opportunity to closely study both the situation in Utrecht and a *case study* in Copenhagen. This offers the opportunity to answer the following question as fully as possible: What can we learn from the strategy behind the realisation of the metro in conjunction with area development in Copenhagen, more specifically in Ydre Nordhavn? In order to answer this question, this thesis aims to outline the specific characteristics of the Copenhagen model and how it came about. What strategies underlie it? And how has the Copenhagen model evolved over the past 35 years or so? How does it work in specific area developments, more specifically in Ydre Nordhavn, where planning and decision-making has taken place over the past few years? What *lessons* can be learned when comparing this to a region such as Utrecht? And what can Copenhagen possibly learn from Utrecht?

In this thesis, we look at developments in Copenhagen over a longer period, focusing on three interconnected moments:

- The reason for and creation of the plan in 1991-1992, which defined the *outline* of the Copenhagen model and was reflected in the connection between the construction of the first metros, linked to the area development of Ørestad, and in which the financing structure via *value* capturing and the roles of the various actors were also determined;
- The further development of the necessary (implementation) organisations and the adjustments that were needed to proceed with the development of other parts of the city, in particular Nordhavn;
- The further development of Nordhavn itself, then zooming in on the considerations and decision-making regarding the development of the metro and area development in Ydre Nordhavn.

By examining this over a longer period of time, we assume that we can better understand how decisions with a long-term factor play out over time and how they are subject to change under pressure from internal or external factors. By allowing the actors from the first phase in 1991-1992 and the actors from the current phase to reflect on each other, the picture is further enriched. This is an important question, because the long-term commitment of parties to a particular strategy can also be perceived as a risk. In order to assess the effectiveness of a long-term strategy and learn from it, the long-term strategy must actually be viewed over that long term.

By approaching the Copenhagen case as a best case, it offers the opportunity to investigate the dominant elements that have brought about and continue to shape the metro system and spatial development. And by comparing it with the situation in the Utrecht region, it is possible to ascertain whether, and if so, which and to what extent the lessons learned are transferable.

1.2 Main question and sub-questions

This thesis focuses on the strategy for constructing the metro in conjunction with area development in Copenhagen. Within the Copenhagen case study, the focus is on the decision-making process at the start in 1991-1992 and on a recent case study in Ydre Nordhavn. The research into the Copenhagen case study aims to distil *lessons learned* and then examine whether and to what extent these lessons are transferable to the Utrecht case study.

To this end, the following main question has been formulated:

- What can we learn from the strategy for the realisation of the metro in conjunction with area development in Copenhagen, more specifically in Ydre Nordhavn?

In order to answer the main question, the following sub-questions have been formulated:

The literature study aims to develop a conceptual framework with which the empirical case can be analysed. To this end, the following sub-questions will be answered:

- What theoretical framework can be established to investigate and analyse strategy in area developments with *value* capturing for the purpose of investments in public transport?
- How can the institutional spatial development context be examined and compared?

The empirical section describes the Copenhagen case study and analyses it using the theoretical framework. To this end, the following sub-question will be answered:

- How was strategy used in the Copenhagen case to realise the metro in conjunction with area development, and how has this developed into a system over time?

The lessons learned section describes a number of lessons that can be drawn from the analysis of the Copenhagen case study. Once the extent to which the planning systems are comparable has been determined, an analysis will be conducted to assess the extent to which the lessons are transferable to the task in the Utrecht region.

- What lessons can be learned from the analysis of the Copenhagen case study and to what extent are these transferable to the Utrecht case study?

1.3 Concepts and delimitation

The thesis focuses on the relationship between the spatial, financial and governance aspects of complex area development, rather than on the individual fields themselves. This does, however, require knowledge and insight into the specific fields.

This thesis does not focus specifically on the design, construction and use of the metro itself. In this study, metro is understood to mean a high-quality public transport system that can quickly transport users to -1 (i.e. underground) or +1 (above ground). The metro has no direct intersections with other transport flows and can therefore function independently of these other transport flows. The form of the metro is not specified further here. However, the form of the metro in Copenhagen will be described insofar as it is relevant to the strategy.

This thesis does not focus specifically on the design, realisation and use of urban development, but it does include those elements that are relevant to decision-making. In the thesis, we refer to spatial development, (complex) area development, or area transformation. These terms are, of course, different from each other, but in the context of this thesis, they are to a certain extent interchangeable. The main term used in this thesis is (complex) area development.

With regard to the concept of complexity, we follow Teisman, Van Buuren & Gerrits (2009), who argue that traditional linear (policy) processes fall short in providing explanations for the outcomes of complexity in (policy) processes. They indicate that in order to achieve success in complex processes, there must be room for adaptability, learning and cooperation. Complex policy processes involve multiple actors, interactive decision-making, dynamics, unpredictability, self-organisation and co-evolution.

Governance is understood here as ensuring coherence and transparency in the management and supervision of an organisation, with a view to the efficient and effective realisation of policy objectives. Keping (2010) emphasises that this also applies to non-public actors and institutions.

Given the nature and scope of a master's thesis, no extensive research has been conducted into comparisons between various other cases. This may mean that there are other interesting cases available in the literature and/or in practice that could also offer additional lessons. This master's thesis does not in any way wish to give the impression that the lessons distilled from the Copenhagen case are the only possible lessons.

Whereas the description of the Copenhagen case, with the addition of the start in 1991-1992, can be considered extensive, the case description of the Utrecht region is compact. This choice was made due to the scope of the master's thesis. The compact description of the Utrecht region case study is not intended to be exhaustive. The aim is to sketch a picture of the institutional spatial development context, the task at hand and the way in which a possible decision for a first metro is being worked towards. It would be interesting to examine the Utrecht region case study in more detail, not least because it may contain lessons for other regions.

1.4 Practical and social relevance

The social relevance lies in the fact that the debate in the Netherlands on the use of *value capturing* in the realisation of high-quality public transport in relation to area development needs more detailed observations. The thesis has an important practical purpose: how and what can one region, with essentially similar issues, learn from another region? By comparing the two cases, it is possible to look at them with a fresh perspective and possibly deploy certain strategies for the (further) realisation and financing of high-quality public transport in relation to and through area development. This may relate to national, regional or local policy, cooperation between parties, land policy, spatial design, forms of financing and forms of organisation.

To what extent can analysing an area development with the *strategy wheel* (at or even before the start) help to clarify the actions needed to organise the area development properly? And can it help to think in terms of three potential systems, namely spatial, financial and governmental, which interact with each other? This thesis aims to provide guidance for this by applying the *strategy wheel* and identifying the interaction in the three systems in the Copenhagen case study.

This thesis can also contribute to the mutual exchange of knowledge between Danish and Dutch practitioners with regard to spatial development and the development of public transport, whereby they can learn from each other. An external view of the Copenhagen case study can provide new insights for the Utrecht case study. This external view may also be of interest to the parties involved in the Copenhagen case study itself.

1.5 Scientific relevance

In this thesis, we use theoretical models available in the literature to examine the decision-making process and the use of control instruments in a single case. The questions we can ask are:

- Is the theoretical model of the *strategy wheel* suitable for investigating the case? In other words, does the theoretical model offer sufficient tools to unravel and clarify the complexity of the decision-making process and the control mechanisms used?
- This thesis utilises both theory that distinguishes between management tools (*strategy wheel*) and theory that examines the relationship between management tools (systems thinking). Can the combination of these two theories provide a deeper insight into the decision-making process and the possible underlying system?
- To what extent does this *best (single) case study* provide relevant scientific information? And if so, in what way?

In this thesis, we add an assumption to the theoretical model of the *strategy wheel*. The assumption is that steering towards a strong connection between control mechanisms in opposing fields in the *strategy wheel* results in a stronger system that is better able (in this case) to make an important financial contribution to the realisation of high-quality public transport (in this case, the metro) through *value capturing*. We explore this question both through the *strategy wheel ' '* and through the description of the possible system. In the scientific context, the question can be asked: does the above assumption make a potential addition to the *strategy wheel* model?

In summary, in this thesis we choose a research position at the intersection of multiple fields of knowledge. In this thesis, we conceptualise a model with three systems, namely a spatial, financial and governmental system, in which these can achieve a higher sum of their parts through conscious and/or emergent interaction with each other. This theoretical model could be potentially interesting for further scientific study of area developments, more specifically those involving alternative funding.

2 METHODOLOGY

2.1 Introduction

This chapter provides insight into the methodology used to answer the main research question:

- What can we learn from the strategy used in the realisation of the metro in conjunction with area development in Copenhagen, more specifically in Ydre Nordhavn?

In order to answer the main question, the following sub-questions have been formulated:

- What theoretical framework can be established to investigate and analyse strategy in area developments with *value capturing* for the purpose of investments in public transport?
- How can the institutional spatial development context be examined and compared?
- How was strategy used in the Copenhagen case to realise the metro in conjunction with area development, and how has this developed into a system over time?
- What lessons can be learned from the analysis of the Copenhagen case study and to what extent are these transferable to the Utrecht case study?

We will first consider the literature study, then explain the research design, partly on the basis of a diagram (Figure 2.1). We will then explain how the *single case study* is structured, focusing on document research, interviews and the strengths and limitations of a *single case study*. Because this takes place in another country, special attention is paid to the degree of *closeness* to the case. We conclude the chapter with an explanation of the methodologies used for international comparison and *lessons learned,* including an analysis of the extent to which there are similarities in the institutional spatial development context between the two countries.

2.2 Literature study

Literature research has been used to identify what complex area transformations are and what the key issues and dilemmas are in area transformations. Snowballing and narrative search strategies were used in particular for this purpose. Search terms were entered into Google Scholar, often in multiple languages. Examples include: *value capturing,* complex area development, metro development, strategy, governance, planning, *single case study.* International comparison, learning lessons. From there, relevant scientific articles were found, and other relevant scientific articles were accessed via reference lists and citations (snowballing). The aim is to gain a deeper understanding of the context, nuances and complexity of the research topic through a comprehensive narrative review.

During the review, knowledge gaps were identified and further research was conducted through additional search steps. The scientific material provided was examined for scientific value through cross-referencing. The material was used to distil a conceptual model from the literature . In addition, literature on strategy in the Copenhagen and Utrecht cases provided valuable insights that refined the conceptual model.

The literature shows that area transformations are highly complex, which is why we use seven dilemmas described in the literature that frequently arise in area transformations as a framework for further analysis. We do so in the knowledge that this overview is not necessarily complete.

We then zoom in on the instrument *of value capturing*. How is it defined in the literature? And in what ways has it been applied? Various examples are available in the literature. In view of the scope of this thesis, we provide a limited overview of these, including what has been described about the Copenhagen case. A number of recommendations emerge from the literature, including with regard to the Copenhagen case. These are described in order to be tested and compared later with the results of the *single case study,* the international comparison and the lessons learned.

Next, a theoretical framework on strategy in area transformations has been developed based on the literature. The theoretical model *'strategy* wheel' is introduced. The theoretical model has been deepened with the help of literature. The empirical part examines which strategies were used in the Copenhagen and Utrecht cases and whether the theoretical model is applicable to the analysis of these cases.

The theoretical model has been further developed on the basis of literature research, and this theoretical development is used in the analysis of the case. We analyse the strategies used in the Copenhagen case in terms of their interrelationships, in the diametrically opposed fields of the *strategy wheel.* In the empirical section, we examine the relationship between the control measures used in these fields and ask whether an observed correlation contributes to the success or failure of the area transformation. Is a certain combination of control measures in the opposing fields recommended? On a theoretical level, we then analyse whether the analysis of the coherence between the diametrically opposed fields offers added value for further theory formation.

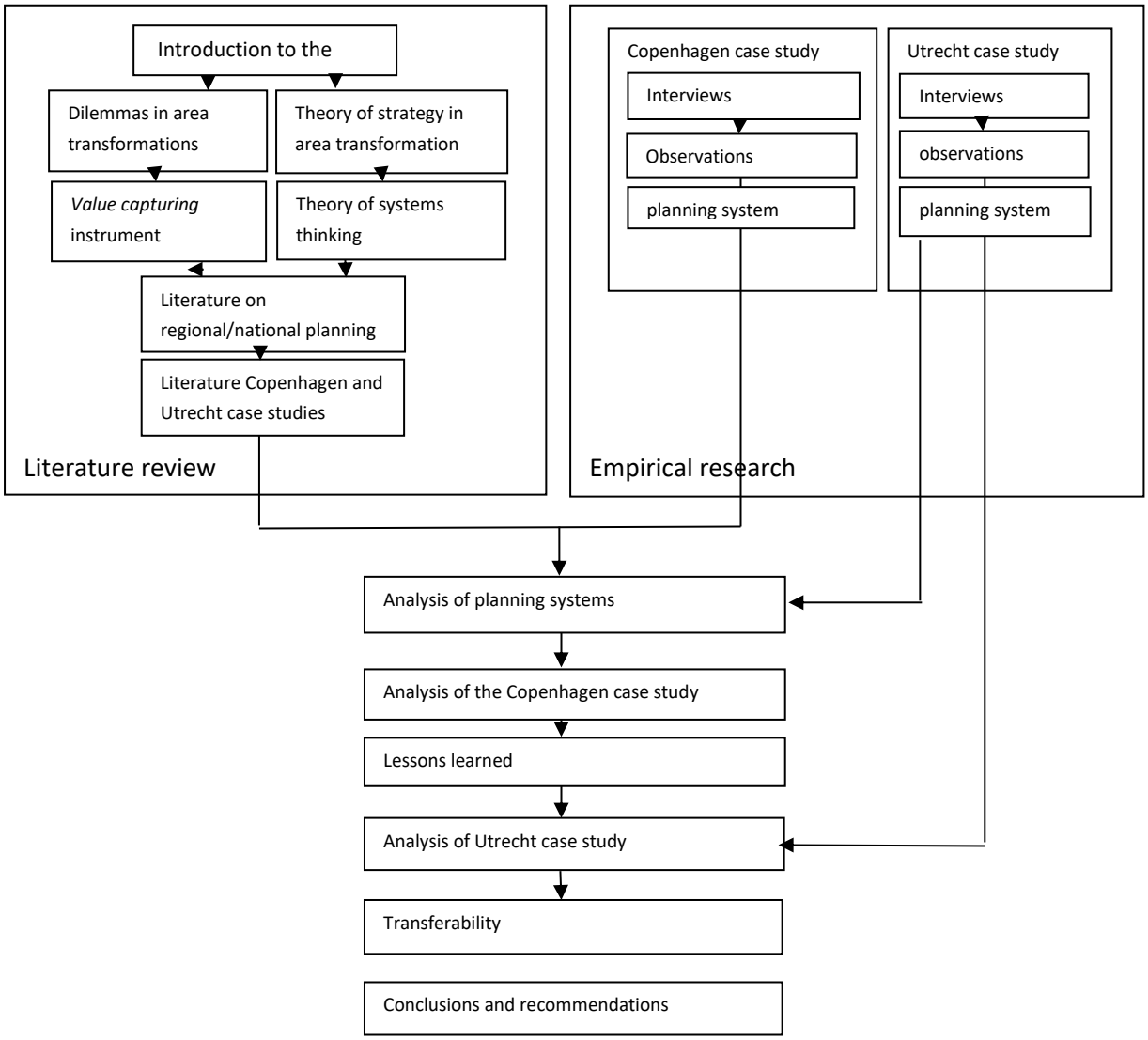
Whereas in the analysis of the *strategy wheel* we deduce, i.e. unravel and organise the various control mechanisms, we also want to look at the coherence between these control mechanisms. To this end, we turn to the literature on systems thinking. We use the literature to describe what a system is in a general sense. In addition, we define what a system is in the context of complex area transformations. In doing so, we distinguish between the national/regional institutional spatial development context and the specific system applied in the case study. We use the literature to obtain a substantiated picture of the institutional spatial development context in both Copenhagen and Utrecht. From the literature on *value capturing* and the description of the Copenhagen case study, we can obtain an initial picture of the system as applied in the Copenhagen case study. We can then test and compare this with the empirical observations. The core idea here is that, in the *best case* scenario in Copenhagen, there is a triple planning force, across the spatial, financial and organisational axes. Linked to this is the idea that there must be strong connections between these three axes in order to achieve a well-functioning system.

We draw on the literature for the concept of *'lessons* learned' and describe how this is applied. We then distil these lessons from the Copenhagen case study, which can play a role at the level of individual elements, in the coherence between elements, at the system level of the specific case study or at the level of the regional/national institutional spatial development context.

Together, this forms the basis for the international comparison. Based on the literature, we describe a model for the international comparison of complex area transformations, working towards a comparison between two regions, namely Copenhagen and Utrecht, given the limitations of this

thesis. We use the analysis of the Utrecht case in the *strategy wheel* only as a means of investigating whether, and if so to what extent, the lesson is transferable. Ultimately, recommendations are made as to which and to what extent certain strategies can be applied in the Utrecht situation.

Figure 2.1. Diagram showing the research design.



2.3 Single case study

2.3.1 Introduction

The *case study* method is a way of providing an in-depth report on specific phenomena using a geographically bound example (Squires & Heurkens, 2016, p. 5). An example of this is the *single case study* presented here on strategy in the development of the metro in relation to area development in Copenhagen. This case study has a geographical approach because it examines developments within a specific geographical area, namely the city of Copenhagen, on the one hand in its environment (context) and, on the other hand, zooming in on the construction of the metro in the city and, more specifically, the area development in Nordhavn, and within that, the decision-making process regarding the metro in relation to spatial development in Ydre Nordhavn.

For the sake of completeness, it is worth mentioning here that it is also possible to conduct a *case study* on non-geographical phenomena (Squires & Heurkens, 2016). In addition, Yin (2009) argues that it is possible to combine the *case study* method with other research methods. In this thesis, these are the complementary methods of international comparison and *lessons learned*.

It is important to have a sharp focus in the *case study*. It is therefore not about the urban development of the northern part of Nordhavn itself. Nor is it about the development of the metro in that part of Nordhavn. The financial issue *itself* is not the subject either. The subject of the research is the strategy in these three areas and how they interact with each other in the Copenhagen case, and more specifically in Ydre Nordhavn. In order to arrive at answers, relevant documents were obtained and studied, and interviews were conducted. Observations were also made.

2.3.2 Document review

A document review was conducted for the empirical part of the study to determine the nature of the institutional spatial context in both Denmark and the Netherlands, as well as the Copenhagen case study. Information and knowledge about the metro system and urban development in Copenhagen is required. More specifically, how the urban development and expansion of the M4 from Ydre Nordhavn was determined. To this end, a wide range of documents was collected and studied. These include policy documents, laws, council documents, project documents, journalistic documents and websites. I obtained the documents via Google search (search terms included: Nordhavn, Ørestad, Byudvikling, byplanlaegning, Metroselskabet, By og havn) and through the contacts I had developed, in particular Erik Jacobsen and employees of By og Havn (City and Harbour) and Metroselskabet (the metro company).

2.3.3 Interviews

Combining theoretical research, literature study and document review with interviews provides a more complete picture of the case. This greatly contributes to answering the research questions. The interviews were conducted in both the Copenhagen and Utrecht areas. The interviewees have (or had) roles in which they are or were directly or indirectly involved in the relevant developments in the Copenhagen case or the Utrecht case. The interviewees have or had backgrounds in urban

management, policy advisors, project leaders, architects and entrepreneurs. The interviewees are presented anonymously, with two exceptions.

In Denmark:

- Interviews with consultants in the field of urban public transport implementation in combination with urban development. The aim was to speak with (former) consultants from the state, region, city, By og Havn, Metroselskabet, architects and urban planners. For the interviews in Copenhagen, the focus was logically on the sub-question: How was strategy used in the Copenhagen case to realise the metro in conjunction with area development, and how has this developed into a system over time? The focus was on actors in the initial phase in 1991-1992 and actors working on the (current) developments in Ydre Nordhavn. This also provided an opportunity for the actors to reflect on the development of decision-making on the metro in conjunction with urban development between 1991 and 2025.

In the Netherlands:

- Interviews with key advisors in the field of urban public transport implementation in combination with urban development. The aim was to speak with advisors from the national government, the province, cities, architects and urban planners, both in the field of housing and urban public transport. The interviews were conducted with the analysis of the Copenhagen case in mind, so that the question of whether the lessons learned could be transferred to the case of the Utrecht region could be explored in greater depth.

The interviews were semi-structured. The interviewees were given the opportunity to share their thoughts freely, which sometimes led to unexpected contributions to the case. To guarantee the anonymity of the participants, all names and recognisable characteristics have been anonymised. Respondents are referred to by letters (e.g. Respondent A, B, C) and contextual details have been modified where necessary. The interviews with Erik Jacobsen and Anne Grethe Foss are a special case. In the thesis, it was decided to refer to these interviewees by name, given their position in the formation of the strategy and the readability of the thesis. All interviews were conducted between June 2024 and July 2025.

2.3.4 Observations

Observations were made before the thesis was started. These observations were one of the reasons for the thesis. Regular visits to Copenhagen, using the metro and visiting various area developments, including Ørestad and Nordhavn, gave rise to wonder. During an inspiring visit to Rita Justesen, *Head of Planning & Architecture* at By og Havn, attention was drawn to the development of Nordhavn. The amazement essentially also stemmed from my (comparative) observations with other cities, more specifically with Utrecht.

It is important to have a good understanding of the location where the (geographical) research takes place. Not only the location of the case study, but also the fabric in which the location of the case study is situated. That is why broader observations have been made about the city of Copenhagen and its regional location. For me, as an architectural historian, understanding the history of a city is a good way to gain insight, also with regard to its current development. My own observations are

linked to sources such as documents, museum visits and listening to podcasts. This also applies to the case of Utrecht. I am well acquainted with this city, having lived there for several years and then worked there for 15 years, including as Head of Heritage at the Municipality of Utrecht and as a strategic advisor on the long-term spatial development of the Utrecht region.

My stay in Copenhagen for a year (1 to 2 weeks per month) can certainly also be classified as observation. Interacting with Danes and other nationalities in the city and its surroundings provided insight into how residents experience the city, including the development of the metro and area developments. In various conversations, I also explored what characterises and unites Danish society, or where differences lie.

Finally, it should be mentioned here that more detailed observations were made in the case study area of Ydre Nordhavn, by visiting the location several times, taking photographs and describing it.

2.3.5 Limitations of *case study research*

Knowledge is required of Danish culture, the institutional spatial development context, the city itself and the way(s) in which the city of Copenhagen is being developed. As Flyvbjerg (2006, p. 221) states: "The *case study* produces the type of context-dependent knowledge that research on learning shows to be necessary to allow people to develop from rule-based beginners to virtuoso experts."

Flyvbjerg (2006) also argues that knowledge cannot be found in the humanities without context. Knowledge is developed from beginner to expert by experiencing a large number of cases. "Forget conventional wisdom, go ahead and do a case study" (Flyvbjerg, 2006, p. 222). Foucault (1990) argued that there is nothing external to power, not even (and especially not) analysing power. Every normative position, such as the statement 'the Copenhagen model is successful', has the potential to reproduce itself. Rule-based knowledge is important, but not the only thing. Combining the two is essential.

Flyvbjerg (2006) argues that proximity is relevant in case studies: it helps to develop a nuanced view of reality. It also helps to develop the researcher's research skills. Too much distance from the subject can lead to ritualistic dead ends, theoretical pieces without much new insight. *Case studies* can be a remedy for this.

How do you ensure that the *case study* does not become a method for producing anecdotes (Eysenck & Wilson, 1976)? It is also liberating to know that social science has not produced context-independent knowledge: attempting to produce context-free theory is not the aim of this research. The goal may be to develop concrete contextual knowledge. And the case study offers the opportunity to acquire this concrete knowledge.

Can one generalise on the basis of a single case? According to Flyvbjerg (2006, p. 226), that depends on the case itself and the way in which it was chosen. "In the social sciences, too, the strategic choice of case can contribute significantly to the generalisability of a *case study*."

What makes the case in Copenhagen special is that the city and the state drew up a plan in 1991-1992 and are (it seems) still working on it, with results. The development of Nordhavn is part of this plan. Within this plan, Ydre Nordhavn is currently being developed. How does the 1991-1992 plan

adapt to new developments and requirements (e.g. nature, water, energy, sustainability, inclusivity, etc.)?

This case study was also chosen because it is argued that it is a positive example for practice in the Netherlands/Utrecht. So in this case, the research is of course to determine whether the proposition is correct: is this a positive example for practice in the Netherlands? And if so, which factors are important to learn from? And if not, why not? By looking at the most recent case in the development of Copenhagen, we can obtain the most recent information. Does the image of a positive example remain intact?

Part of the proposition is that long-term planning, in which parties continue to work together, is part of the success. This is in line with the idea currently being developed in the Netherlands: the NOVEX development perspectives. The idea is that all parties, including national and regional parties, draw up a plan for the development of the region and also work together to realise it. An important product for this must be the Adaptive Development Path, which sets out the steps to be taken to achieve the plan and also identifies the necessary investments. And, of course, ideally, what the various parties will invest and how they will organise this.

Are these NOVEX development perspectives and adaptive development paths comparable to the plans drawn up by the city of Copenhagen and the state in the early 1990s? Are the city of Copenhagen and the state still adhering to that plan and how adaptive is it? What can we learn from this (supposedly) positive example? How do the parties work together? Who decides? Where are decisions made? What is the influence of the market on decision-making?

2.3.6 On proximity in the Copenhagen and Utrecht cases

By an incredible coincidence, I met one of the key figures in the creation of the 1991 plan, Erik Jacobsen. When I was looking for a flat in Copenhagen, I found a place near Nordhavn and Østerbro, which happened to be the house where Erik Jacobsen and his wife Marianne live. Jacobsen was the driving force behind the secretariat of the committee that drew up the plan for the development of the metro system (M1 and M2) together with the long-term planning for the area development. Jacobsen worked at the Ministry of Finance. Jacobsen has also been Secretary-General at the Ministry of Culture and Secretary-General at the City of Copenhagen. Jacobsen's proximity gave me the opportunity to examine the 1991-1992 plan closely, which made the *case study* more complete.

My familiarity also stems from having gotten to know the city of Copenhagen quite well over the past four years. I have visited many older and newer parts of the city. I have read about its history. Through my former Danish girlfriend, I was introduced to Danish culture in Copenhagen, and I have come to understand specific elements of its culture (and I am also increasingly aware of what I do not know). Although I am still an outsider (which is not a problem, because it offers a fresh perspective), I have used this experience in researching the documents, projects and interviews. I have also studied the Danish language. Although I conduct my research in Dutch and English, including the interviews, understanding the Danish language can help me get closer to the case.

I have more than 25 years of experience working within Dutch government organisations at the provincial and municipal levels. In recent years, I have been working specifically in the field of long-term development in the Utrecht region. Over the past 15 years, I have worked from different

perspectives: the Municipality of Utrecht, the Utrecht U10 region and the Province of Utrecht. My work is closely linked to the process of jointly designing and deciding on the long-term development of the Utrecht Metropolitan Region, which includes the cities of Utrecht and Amersfoort and most of the province of Utrecht.

This proximity has given me a great deal of insight into how the region works with the national government. I also know more about the difficulties of drawing up a plan that is supported by all parties and in which all parties are willing to invest. This knowledge can help me in the way I view the case in Denmark.

Looking at a different but comparable situation in another country can also improve the way I view the situation in the Netherlands. I can see with my own eyes the quality of the metro lines that are being built and the urban development that is being realised in line with this. I can see that Copenhagen is still working on a plan from 1991-1992. I see that within my work, there is not only a need for a plan for the region (which has essentially been recently created in the NOVEX development perspective), but also the commitment of all parties to that plan and the will and financial instruments to implement it. So, in my opinion, the Copenhagen case, more specifically the strategy needed to realise the metro lines in combination with urban development, is a very interesting case to learn from, especially from and for the practice in the Utrecht region.

Part of my thesis is the idea that you need to have a long-term plan in order to make a real effort. And to do that, you first need to get the various parties on the same page. This process has taken place in the Utrecht region, but it is not yet complete. It is my experience and assumption that this coordination is essential for success. Boeve, Daamen, & Verdaas, (2025) argue that trust is a prerequisite for results in area development. Building a relationship of trust between people and organisations can encourage them to work together and bridge differences in policy and responsibility. Does this also apply to the Copenhagen case? In that respect, I think it is insufficient to study only the recent Ydre Nordhavn case. To understand the picture, a broader analysis of the 1991-1992 plan and how it has developed over time is also needed. Based on this, and more specifically on the recent case of Ydre Nordhavn, a more complete picture will hopefully be obtained.

According to Flyvbjerg (2006), the type of case study is B1: here, the choice was made to provide as much useful information as possible from a small sample, with the expectation that the case study would be a positive example and reveal success factors. In case studies, there is a high risk of bias in the researcher's opinions. There is a tendency to view the proposition in the case as valid. This is seen as a reason why case studies are less scientifically . However, as Flyvbjerg (2006, p. 225) states: "The advantage of the *case study* is that it can 'close in' on real-life situations and test views directly in relation to phenomena as they unfold in practice". I am aware of the risks of bias. The choice of case essentially contains the bias: the thesis in the case is that it is a positive example for Dutch practice, more specifically the Utrecht region.

2.4 International comparison method and *lessons learned* method

The question is how to conduct an international comparative study on the subject of area development. Heurkens (2012) provides a number of basic methodological principles: "Comparative analysis requires the things being compared to be commensurable, but not necessarily identical" (Pickvance, 2001, p.17). The areas to be compared must be conceptually similar, which means that they must be studied through the same conceptual lens, construction and models (Heurkens (2012). Not all international comparative research can meet this requirement, for example if data has been collected and organised differently in each country (Feick & Price, 1987). If this is not the case, the characteristics of the countries and the conclusion for each country can be presented without comparison.

As explained, we aim to make a comparison between the case in Copenhagen, in the context of Danish practice, and the Utrecht region, in the context of Dutch practice. A working definition for this is 'Research in multiple countries, with data collection in each country taking place within the framework of the problem definition' (Korsten, 2008, p. 17).

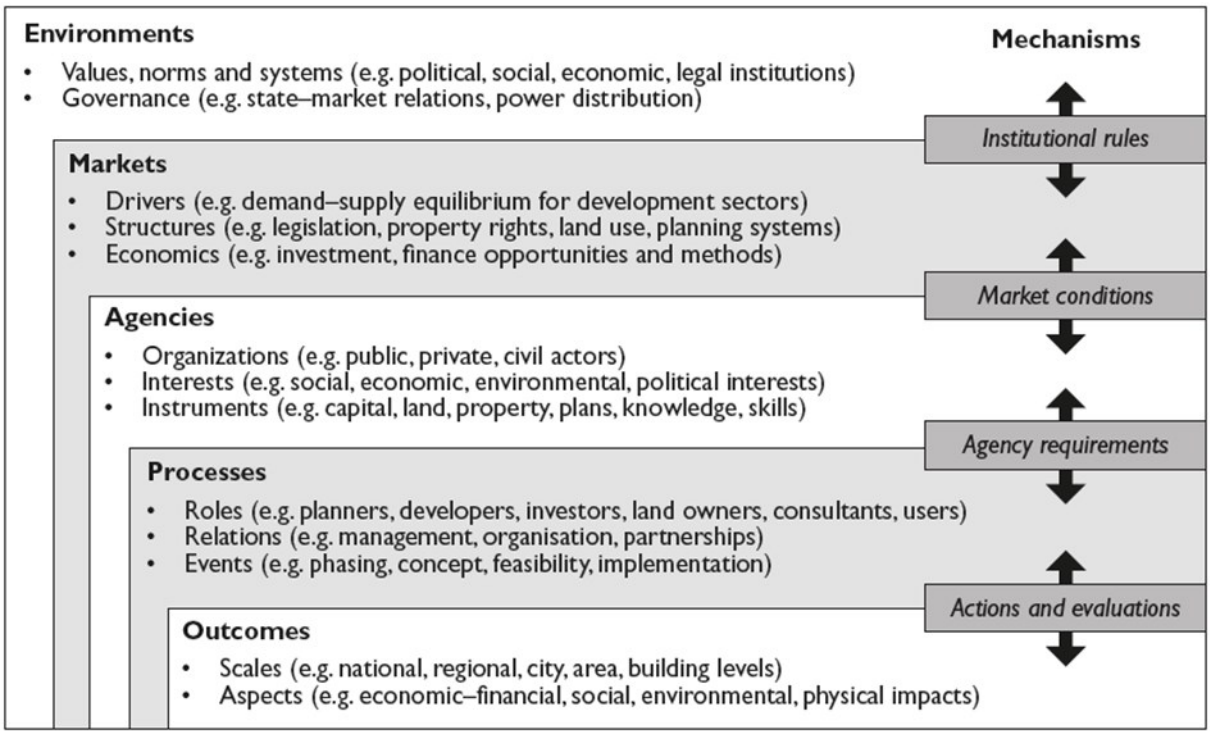


Figure 2.2. A schematic representation of an environment in which area development takes place (Squires & Heurkens, 2016, p. 13, adapted from Keogh & D'Arcy, 1999)

Layer/mechanism	Definition:
Environment	The fundamental values, norms and systems that determine the institutional rules applicable to spatial development.
Market	The various market drivers, structures and economic aspects that determine the conditions under which spatial development can take place.
Organisations	The various organisations, stakeholders and instruments that determine the requirements that must be met in spatial development.
Processes	The various roles, relationships and events that determine the actions that take place in spatial development.
Outcomes	The interrelated scales and aspects that determine the evaluation of the results of spatial development.
Mechanisms	The connections between the various levels that determine the way in which spatial development takes place.

Figure 2.3. Squires and Heurkens (2015) provide definitions for the elements that together form the context in which area development takes place.

A useful model for such a comparison has been developed by Jansen and Jansen et al. (2008) and adapted by Squires and Heurkens (2016). The model shows in stages how the (international) context in turn provides the setting for the market, and that within this setting, organisational forms are created, which then organise processes with each other and from which certain outcomes result. The model also shows that these components can influence each other through mechanisms such as institutional rules, market conditions, requirements for organisations, and actions and evaluations between the process and outcome levels.

Based on the international comparative study, we aim to draw lessons for practice in the Utrecht context, but it cannot be ruled out that lessons can also be drawn for the context in Copenhagen. Korsten, Van der Steen, & Van Twist (2008) argue that social, cultural and economic developments are increasingly crossing national borders and that social issues are increasingly global in nature.

Wolman (2009) defined learning from international comparative research as follows: ‘the explicit effort of a government to learn from the experience of others’. This is a reasonably accurate description of the present international comparative research, given that it examines practices in another country, namely Denmark and specifically the Copenhagen region, from the perspective of practices in the Dutch context, and more specifically in the Utrecht region. As Rose (1993) states, it is based on the impulse of a government faced with a task to 'do something', and it wants to increase the chances of success by:

1. Relying on what has worked before (a backward-looking strategy) and on lessons learned from the past, and/or
2. Obtaining proxy evidence by studying similar strategies that have been implemented elsewhere but in a similar context (a forward-looking strategy).

If the second method of obtaining knowledge about the success of certain strategies involves an international comparison, this must be viewed in the context of the contrasts in time and space between the two countries (Rose, 1993). That is why the study also focuses on describing these differences and/or similarities in time and space between the Dutch and Danish institutional spatial

development contexts , and more specifically the institutional spatial development context of the Utrecht region and that of Copenhagen.

Table 2.1. Further clarification of levels in lesson learning and the likelihood of transferability (Heurkens 2012, based on Jansen-Jansen et al. 2008; Spaans and Louw, 2010)

		Likelihood of Transfer		
Levels of lesson-drawing	Definitions	Transfer within one country	Transfer between countries with similar system	Transfer between countries with different system
Inspiration	Collecting & evaluating data & information on innovative experiences & practices	LESS LIKELY	LIKELY	VERY LIKELY
Learning	Adopting the information collected & evaluated in the inspiration phase, including retrieving underlying ideas & recognizing obstacles & differences	LIKELY	VERY LIKELY	LIKELY
Transplanting	Looking at specific conditions under which the transfer of policy, instruments or other elements to another context is possible	VERY LIKELY	LIKELY	LESS LIKELY

One way to arrive at lessons is to organise them according to their degree of transferability. The model (see Table 2.1.) shows three steps, from *Transplanting* (instruments and policy), via *Learning* (e.g. concepts, mechanisms and principles), to *Inspiration* (e.g. ideas and experiences) (Heurkens 2012). The model also shows three categories of transfer scale: transfer within a country, transfer between countries with a similar system, and transfer between countries with a different system. It is obvious that as the differences between locations increase, it will become more difficult to transfer certain elements from one location to another.

2.5 Method for determining the degree of similarity between institutional spatial development contexts

In order to complete the table above, we need to answer the question of the extent to which the institutional systems relating to spatial development in Denmark and the Netherlands correspond. This is a very broad question, and in order to remain within the scope of this study, we narrow it down to: to what extent do the institutional spatial development contexts in the Copenhagen region and the Utrecht region correspond? The degree of correspondence influences the degree of transferability of a *lesson learned* in one system to the other system.

Heurkens (2012) makes a sharp distinction between the institutional spatial development context and the direct project context. The direct project context provides insight into the location, motives, history and key actors. This will be described in the Copenhagen case study and then analysed using the *strategy wheel.* The insights from the about the institutional spatial development context, in this case that of Copenhagen, Denmark, and Utrecht, the Netherlands, will be used for this purpose. This description also helps us to determine whether the Copenhagen and Utrecht case studies can be placed in comparable institutional spatial development systems or in different ones.

Heurkens (2012, p. 88) argues that in order to gain insight into the institutional context of spatial developments, three contextual aspects can be examined:

- Economy and politics: this provides insight into how economic and political institutional structures influence decision-making in spatial development;
- Urban governance: by gaining insight into how institutional urban governance influences decision-making on spatial developments;
- Planning system and policy: providing insight into how spatial planning systems and policy influence decision-making in spatial developments.

This allows us to answer the sub-question: How can the institutional spatial development context be examined and compared? In this thesis, the three elements above are distilled from a comparative analysis of economic and political aspects from the literature. In addition, descriptions are included of developments in national/regional planning systems, urban governance and policy that are relevant to this question. Together, this serves to indicate the extent to which the institutional spatial development context in the regions corresponds.

2.6 *Lessons learned* applied to the Utrecht case study

The focus of this master's thesis is on the *single case study* of Copenhagen. However, the thesis also includes a concise description of the Utrecht case study (in the description of the institutional spatial development context). Based on this description and additional information from documents, interviews and observations, the thesis includes a completed *strategy wheel* for the Utrecht case study. This makes it possible to compare information at a glance by placing the completed *strategy wheels* side by side. We *do not* analyse the completed *strategy wheel* for the Utrecht case in this thesis*,* but we do use it in the chapter Lessons from Copenhagen for Utrecht to analyse the extent to which a *lesson learned* from the Copenhagen case is transferable to the Utrecht case. Although it is beyond the scope of this thesis, a more in-depth analysis of the Utrecht case study using the *strategy wheel* could be interesting.

3 Literature review

3.1 Introduction

In the previous chapters, we outlined the task, formulated the main and sub-questions, and described the research methodology used in this thesis. We will now move on to formulating a theoretical research framework. We will establish this framework on the basis of four elements: a description of dilemmas in area transformations; a description of what *value capturing* is and what role it can play in area transformations; the identification of a theoretical model for investigating strategic management in area transformations; and an in-depth examination of the question of what system thinking can contribute. Based on this, we formulate the theoretical research framework with which we will analyse and investigate the Copenhagen case and, to a lesser extent, the Utrecht case.

3.2 Dilemmas in area transformations

3.2.1 Introduction

Urban area transformations are complex. There are organisational, financial and legal barriers. There are also economic cycles, changing politics and the constantly evolving and changing demand in terms of size and type of housing and businesses. In the essay *Learning from urban transformations. Essay on management dilemmas and resilience in inner-city area development* (2019) by Verheul, et. al. , management perspectives are presented, using Dutch examples from Den Bosch, Delft and The Hague.

The authors argue that many management tasks in area transformations are characterised by a dilemma. In other words, the management task cannot be described unambiguously from a single point of view. Every choice has a different side, which can also have an effect (often an opposite one) on the area transformation process. For example, flexibility is required, but it is also important to offer certainty and to know where you stand with each other: a clearly defined end goal. The market must do its job, but this is not possible without government guidance. Developing parties ask for frameworks and a reliable government, but do not want too much interference. The market aims to generate the highest return, while the government wants to carry out its public tasks.

According to the authors, it is valuable to think in terms of dilemmas when bringing about area transformations. They argue that there is no single ideal solution. This makes it easier to think in *terms of trade-offs* between extremes. They warn that if this is not recognised and acknowledged, there is an increased risk of constant adjustments and, with that, disinvestment (Verheul et al., 2019) . The authors highlight seven dilemmas which, we assume, can help to unravel and analyse the Copenhagen case (and in comparison with the Utrecht case). We will discuss them briefly here with a view to using them later in the theoretical framework.

3.2.2 Seven dilemmas

Far-reaching government intervention or laissez faire?

Verheul, et. al. (2019) describe the role of land and who owns it as a key control mechanism at the start of an area transformation. There is a wide range of possibilities, from complete government ownership, through partly public and partly private ownership, to complete private ownership. Depending on this basic position, various control strategies are possible, ranging from strong government control to laissez faire. On the one hand, the authors see risks in fragmented ownership and a government that takes a back seat. The risk of *hit-and-run development* is then considerable. In such a situation, it is also very difficult to realise investments in (high-quality) public transport through, for example, *value capturing*.

On the other hand, the authors also see examples in which all land is brought under one umbrella and managed jointly. This increases the chances of more coherent development, in which solutions that transcend individual plots can be found. However, this also means that risks are shared. This requires careful agreements at the outset. If the government owns the land, it can manage it itself, but it will also have to bear the financial risks and pre-investments. The authors do not express a preference, but state that "depending on the objectives, the degree of fragmentation, the willingness to cooperate and the available public and private capital, a suitable form can be found" (Verheul et al., 2019).

Steering by a few players or by a dynamic open network?

The main parties involved in an area transformation often prefer to keep the number of discussion partners small in order to avoid a 'consultation circus'. This can certainly benefit progress, especially in the beginning. However, the article points out that this can also mean that only the narratives of the main parties are heard. This may result in opportunities being missed. Other, often local parties can enrich the area transformation functionally and culturally with their initiatives, narratives and public or private resources.

The authors do not express a preference, but they do indicate that it is not wise to exclude people who want to have a say in their future. In addition, the number of parties involved in discussions and steering the area transformation can vary over time. If only the investing parties are steering the process, it is important to adopt an open, listening attitude. A well-functioning network can be a great added value in this regard.

A limited role or connecting tasks?

Area development is a long-term process that requires process management rather than project management. Process management recognises the principles of uncertainty and complexity more readily and can be applied more frequently (Teisman, 2012). During the long process, there will be dynamics within and outside the area development that will need to be addressed. The question that arises here is to what extent parties can make agreements at the outset that offer stability but also provide flexibility. Is such a system possible? The authors refer to the possibility of connecting interdependent parties, tasks and resources to each other in the long term. During the process, these parties will continually seek *package deals* to realise new opportunities and breakthroughs . (Verheul et. al., 2019).

Although this may be perceived as complex, as it will require adjustments to existing plans, the authors argue that opportunities can arise if new tasks can be linked to area development. This can also offer financial *'windows of opportunity'* (Verheul et al., 2019, p. 30). The authors also see risks: linking tasks can lead to delays. Certain tasks can also have very different risk profiles and lead times. Stacking ambitions can also drive up costs.

In conclusion, the authors argue that an open attitude towards new tasks is necessary, but that risk management is essential. This requires a specific type of area developer: *'planning* entrepreneurs' or 'area marines'. It is important that they strike while the iron is hot (Verheul et al., 2019, p. 33)..

Public space and private returns?

Traditionally, the starting point is that the public authorities pay for public space. However, high-quality public space does contribute to the value of the real estate that is developed in or near that space. How is it possible to ensure that part of the added value in real estate benefits investments in public space?

The distinction between public and private space is not always clear. The authors argue that public-private financial partnerships are increasingly being set up by parties to share the costs and benefits of public space. There are several possible forms for this. What is required is that private parties are prepared to make public facilities, such as parks and parking facilities, part of the overall business case, based on a well-understood self-interest. This requires a plan that is jointly supported by the parties, in which the parties know what they can expect from each other (Verheul et al., 2019).

Soft instruments and hard returns?

How do you get from 'argument to action' (Verheul 2012)? Vision and narrative formation are essential components of area transformation, which means that parties share a strong, supported vision, course of action and approach. This may sometimes involve an area that was previously considered to be of very low value. A vision with an appealing perspective can reverse this and significantly increase the value of the land and, later, the real estate to be developed. This can also create a problem: if the value of the land increases before the development plan becomes effective, part of the profit to be made may be lost, i.e. it will no longer benefit investments in public space or real estate, thereby negatively affecting the ultimate quality of the area transformation.

Narratives are important during the preparation, decision-making and implementation of the area transformation. However, there is usually not just one story. There may be several stories, and they may change over time. It is not necessary for all parties to embrace all elements of the joint vision equally strongly. What is necessary, however, is that parties see their interests and goals sufficiently recognised in the joint vision. What can help is to show the progress of the area transformation. This can reinforce the power of the narrative and further bind parties to the task, and new parties may also come forward who also want to participate in the discussions and invest (Verheul et al., 2019). A narrative can therefore be inclusive. But it can also be exclusive. Some parties and interests may be excluded.

Identity is an important element in the power of the narrative. What do the parties want to convey with the area transformation? It may be important to have a good understanding of an area's existing qualities and what an area or city would like to add.

The organisation close to or far from politics?

For the purpose of a large-scale area transformation, parties often set up an implementing organisation. These organisations are tasked with realising the area assignment and are given the opportunity to deploy resources to this end. These organisations must be versatile. It requires knowledge of the market and market parties, as well as knowledge of government parties and national, regional and municipal decision-making processes. However, Verheul, et. al. (2019) also argue that private parties are reluctant to join such an implementing organisation because financiers prefer to avoid long-term risks. A more or purely municipal implementing organisation is therefore more common. The question that arises here is to what extent this organisation should be placed outside or within the municipal organisation. On the one hand, a remote organisation with a clear mission and mandate may be less sensitive to all kinds of developments in other areas or subjects within the municipality. On the other hand, such an organisation may be accused of being insensitive to interests other than those of the area transformation itself. It is this area of tension that must be carefully considered at the outset and managed by the implementing organisation throughout the area transformation. A high degree of transparency in implementation and accountability is a prerequisite.

Who leads: specific individuals or the institutional context?

Leadership is a decisive factor in decision-making during area transformations. The right person (or persons) in the right place at the right time. Leadership manifests itself in decisiveness, because this person or these persons are able to link the right configuration of players and resources to prevailing narratives and visions. However, this can never be done without taking into account the situation in which the area or city finds itself at that moment, the institutional context and the connections that are available (Verheul et al., 2019). What can be reinforcing is when individuals are involved in the area transformation for a longer period of time. They can exert a major influence on the (implementing) organisation. Ultimately, the quality of the institutional context is just as important as (personal) leadership. It is an interesting litmus test whether the (implementing) organisation is able to continue on the path it has chosen when the leader leaves.

3.2.3 Conclusion

The seven dilemmas above provide insight into the issues that arise in a (complex) area transformation. They paint a picture that there can be no general optimal form for area transformations, but rather an optimal form for the specific area transformation, and that this form can and possibly even must change over time. A careful analysis of the situation beforehand, but also during the area transformation, can be very helpful in determining the appropriate form for the area transformation. It is good to keep this in mind when studying the *single case* of Copenhagen, as well as when making international comparisons with the Utrecht case. The proposition is that control is possible and necessary in all fields. And that choices in one field can also have an impact on the control options and choices in another field.

3.3 What is *value capturing*?

3.3.1 Introduction and definition

In this section, we will take a closer look at the instrument *of value capturing*. What is *value capturing,* and how can it be used in area transformations? Offermans (2004) provides the following definition of *value capturing:* " A collective term for instruments that make it possible to skim off the value increase of land and real estate – created by public action – directly or indirectly and use it for those activities that cause this increase in value." Harkes (2008, as cited in Rakers, Van Blokland & Topper, 2010) summarises it succinctly as: "Retaining the value development in an area." "Capturing these planning gains has been discussed by planners and politicians for decades" (Hengstermann & Hartmann, 2018, p. 28). The (im)possibilities for *value capturing* are strongly linked to the institutions that define land ownership. To gain more insight into this, it is therefore necessary to examine how land ownership is defined in the law, political philosophy, and constitution of a country (Rakers, Van Blokland & Topper, 2010).

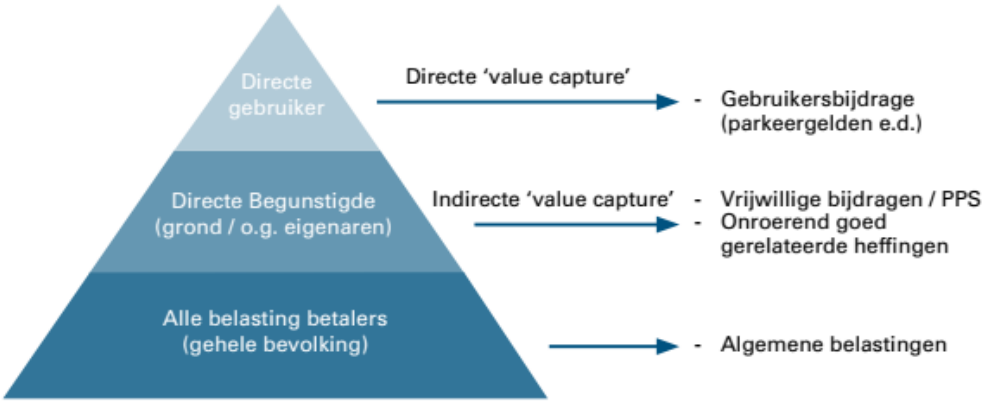


Figure 3.1. A representation of forms of value capturing (based on Offermans 2004)

In this study, we use the following definition: *value capturing* is the term used to describe a set of methods whereby the (expected) increase in land value and/or the increase in property value, caused by the realisation of a quality addition to urban development, such as public transport or the addition of a park, is (partly) used to invest in that quality-enhancing element (according to Van Zoest & Daamen, 2021).

The underlying mechanism is that land can have value and that this value can change. Hong & Brubaker (2010) argue that land value is determined by factors including: 1) public investment in infrastructure and social facilities; 2) changes in regulations regarding land use; 3) population growth and economic development; 4) private investment that can increase the value of the land; 5) the original productivity of the land.

The use of *value capturing* dates back to the use of 'betterment' in the United Kingdom, whereby a contribution towards the construction and improvement of infrastructure was requested from property owners who could benefit from it (Rakers, Van Blokland & Topper, 2010). The Copenhagen

case study will show that the initiators were inspired by this English example (Respondent A, dated 2 July 2025).

3.3.2 *Value capturing* in practice

The publication *Daadkracht en Drang, Zes inzichten uit een verdiepende studie naar de bekostiging van openbaar vervoer in New York, Londen en Kopenhagen* (Decisiveness and Drive, Six insights from *an in-depth study into the funding of public transport in New York, London and Copenhagen*) by Van Zoest and Daamen (2023) examines three different locations where different instruments for *value capturing* are applied.

The publication aims to gain knowledge about how public transport funding is regulated internationally in urban development. And, based on this, to be able to make recommendations on how funding can be organised in the Netherlands by comparing three cases. The Copenhagen case will, of course, be discussed further in the case study, but here we will focus on the theoretical framework.

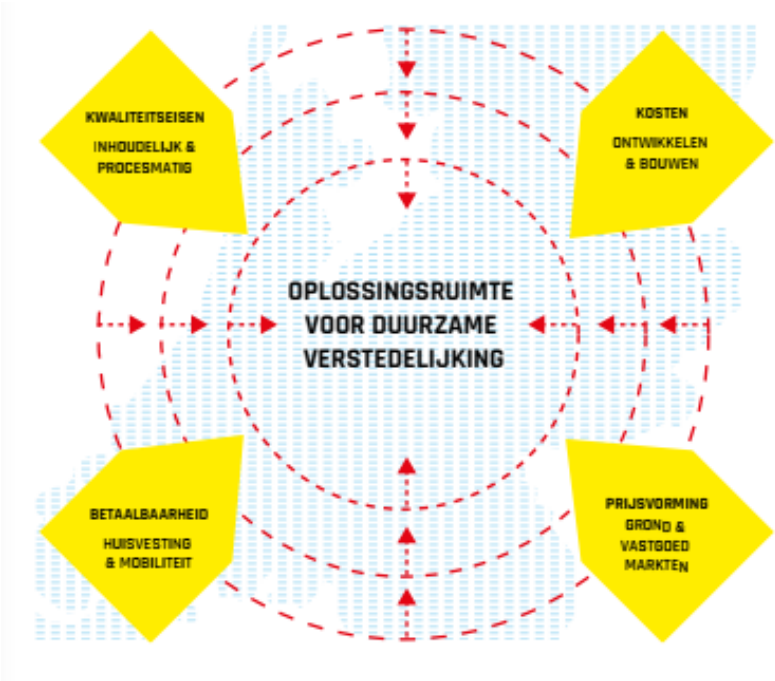


Figure 3.2. A theoretical model for the solution space for affordable, market-based, cost-covering, qualitatively adequate spatial projects. (Van Zoest & Daamen 2023, p. 15).

Van Zoest and Daamen (2023) note that the solution space for affordable, cost-covering, qualitatively adequate spatial projects is becoming increasingly smaller. There are increasing quality requirements, rising costs due to scarcity of materials and labour, scarcity of land (and speculation) pushing up prices, and a growing need for affordability and good mobility. This raises the question of how and whether other cities are able to withstand this pressure and succeed in finding solutions.

One problem is that each party has a logical incentive to minimise its own contribution while maximising the benefits it can derive from the area transformation. And because no one can be excluded from using a public good (public transport, park), this can lead to *free-rider* behaviour among private parties wishing to develop the property. When one or more developers choose to behave in this way, it can threaten the (quality of) the entire area transformation. In such cases, there is market failure.

One of the possible ways to gain more control is for municipalities and other authorities to purchase (or create) land, whereby the public authority prepares the land for construction (including the public elements) and sells it as plots ready for construction. (Shahab, Hartmann, & Jonkman, 2021). We will see that the Copenhagen case is an example of this.

Certainly in the Dutch context, municipalities have increasingly fewer land holdings. This means that in the Dutch context, municipalities have a complex steering role in which skills such as negotiation and networking are important. Adams and Tiesdell (2010) argue that municipalities can influence market environments and market parties through their facilitating role. Tiesdell and Allmendinger (2005) previously introduced four types of planning instruments for this purpose: 1) Tools that shape markets (*shaping)*; 2) Tools that regulate markets (*regulating)*; 3) Tools that stimulate markets (*stimulating)*; 4) Tools that build capacity (*capacity building)*.

Type of Planning Tool	Effect	Examples
Market shaping	Shaping the decision environment or context	Transport infrastructure investment plans National planning policy and development plans Spatial visions
Market regulating	Defining the parameters of the decision environment	Planning/development controls Restrictive covenants attached to land transfers
Market stimulating	Restructuring the contours of the decision environment	Subsidies (tax breaks) to encourage desired activities (e.g., derelict land reclamation grants) Taxes to discourage unwanted activities (e.g., greenfield development tax)
Market capacity-building	Developing actor's ability to identify and/or develop more effective/desirable strategies	Arenas for interaction/networking Partnerships/partnering arrangements

Figure 3.3. Categorisation of planning instruments (Tiesdell & Allmendinger, 2005)

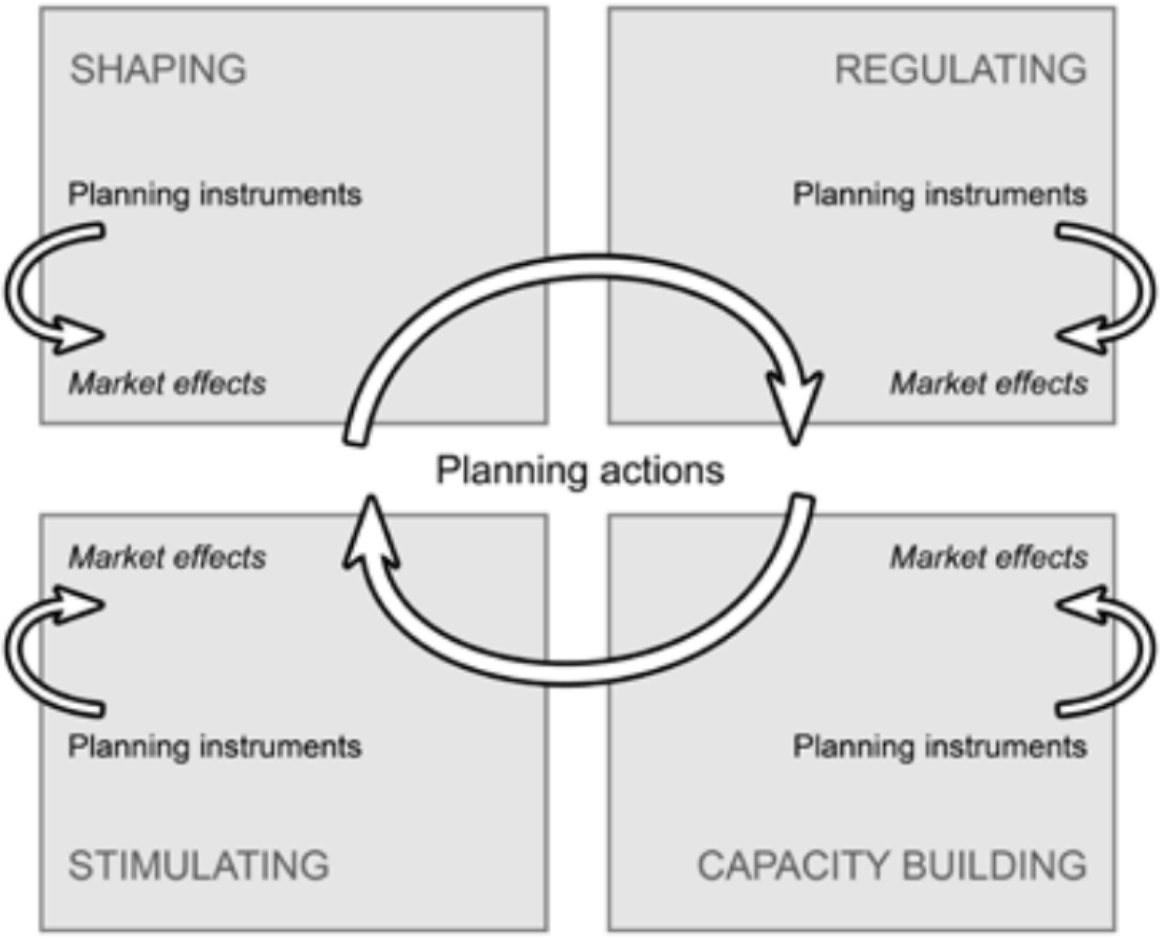


Figure 3.4. Roles of planners. Connecting the roles of shaping, regulating, capacity building and stimulating. (Heurkens, Adams, Hobma, 2015, p. 633)

When complexity is high in the fields of shaping, regulating and capacity building, parties tend to focus primarily on the field of stimulating. This is especially true when one or more parties have (potential) financial resources. Adams and Tiesdell (2010) argue that stimulation instruments can facilitate market actions and transactions. However, Woestenberg, Van der Krabben & Spit (2019) also argue that although direct government intervention (e.g. through subsidies) can be effective, it can also be controversial in terms of legitimacy. The challenge lies in organising instruments in the fields of shaping, regulating and capacity building that counteract these market distortions. *Value capturing* is one such instrument.

There are various ways to use *value capturing* as a tool. Van Zoest and Daamen (2023) examine three different ways in London, New York and Copenhagen. They focus on funding strategies in which the increase in land value is skimmed off for investment in public transport and spatial quality.

Referring to Sorensen (2018), Van Zoest and Daamen (2023) establish a triangle that shows the tension between the institutional landscape, market conditions and project characteristics. The institutional landscape includes resources, governance structures, legislation and culture. Market conditions include the political context and economic developments. Van Zoest and Daamen (2023) classify the following as project characteristics: location and size, development potential and

strategic significance. The triangle represents an area of tension in which the actors create and implement the funding strategy. This requires preparation, compilation, application and adjustment of the funding strategy.

Figure 3.5. A theoretical representation of the project characteristics within which a funding strategy must be developed, applied and adjusted (Van Zoest & Daamen, 2023)

Funding can consist of various components. The following questions are useful to ask in this regard: what are the characteristics of the projects to be carried out in terms of location, scale and development potential? Who benefits from the development and the associated public investments? What is the potential return on the funding instruments? Are the instruments designed in such a way that there will be a sustainable effort on the part of public and private parties and can this lead to coherent implementation?

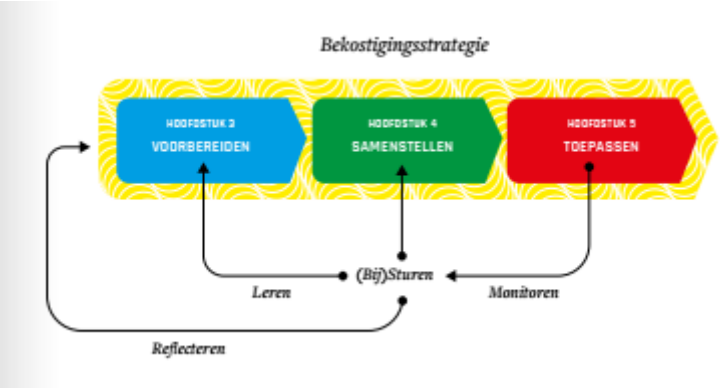


Figure 3.6. Van Zoest and Daamen (2023) schematically place the funding strategy in time. Adjustment skills are then linked to this. These skills are learning, monitoring and reflecting.

Heurkens, Adams and Hobma (2015, p.627) argue that "Where power, resources and expertise are located in close proximity to the strategist or planner, perhaps even within their immediate domain, the prospects of successful implementation are greatly enhanced." The authors provide a sequence of steps that planners can take to achieve results in a complex market: "First, plan-shaped markets require planners to have a very strong focus on defining and pursuing specified outcomes, and not , giving way to an obsession with process that bedevils too much planning activity. Secondly, the planning instruments used to pursue these outcomes are defined by, and should be deployed according to, their expected impact on other market actors, such as landowners, developers and

investors. Thirdly, planners are equally comfortable using market language (e.g. de-risking development) or planning language (e.g. efficient spatial arrangements) to describe what they have achieved, since improved outcomes in planning terms do not necessarily imply worst outcomes in market terms" (Heurkens, Adams, & Hobma, 2015, p. 629).

Murakami (2010) examined examples in Tokyo and Hong Kong, where railway companies have combined investments in railways and spatial development. This was based on the assumption that investments in railways would increase the value of nearby land. Murakami argues that three factors determine success: timing, patience and flexibility. Timing is important because external factors can vary and the *value capturing* instrument must be used when the external factors are favourable. Patience is necessary because the results may be much further in the future than the initial investments, and various negative developments, such as a credit crisis, must also be weathered. Flexibility is required because the project in which *value capturing* is applied will have to be able to adapt to market conditions, for example.

The more an area development is fixed in advance, the greater the risk that the final development will no longer match demand (Amram & Kulatilaka, 1999). How does Copenhagen deal with this uncertainty? Is this fact taken into account in planning and decision-making? Are there opportunities to adjust the plan to demand without putting pressure on previous agreements regarding *value capturing*?

Van Zoest and Daamen (2023) hypothesise that if a group of stakeholders repeatedly agrees to a certain type of funding instrument (i.e. *value capturing*), it is possible that it will become the norm. The assumption is that parties will increasingly trust each other in the belief (and experience) that ultimately they will all experience added value. By 2025, Copenhagen will have almost 35 years of experience with the *value capturing* instrument. Is a norm indeed emerging? Are parties becoming more willing to accept the use of the instrument? Over the years, have new parties or interests emerged that either benefit from the instrument or are affected by it and make this known, possibly to the point where the *value capturing* instrument is called into question? Is there an underlying mechanism on which the *value capturing* system in Copenhagen depends, and is it repeatable?

3.4 Strategy in area transformations

3.4.1 Introduction

Now that we have an idea of the dilemmas that need to be taken into account in area transformations, and have also gained insight into the instrument *of value capturing*, we turn our attention to the question of how we can analyse how strategies are used in area transformations. Research into this topic is partly motivated by the need to bring about changes in Dutch practice, according to Daamen (2010), with reference to Teisman (2005) and Hajer & Zonneveld (2000). This requires insight into the relationship between institutional structures and the actual decisions and actions of the actors at the level of area development projects. The approach of this thesis follows Daamen when he states that the research addresses the *dynamic in-between,* i.e. the ongoing dialectic between the structures and projects that causes the projects to change constantly. By studying the strategies employed and the interaction in decision-making about them, it may be

possible to increase the 'reflexive' capacity of the actors in the Dutch context and contribute to the emergence of more effective governance practices (according to Daamen 2010).

3.4.2 Authoritative and allocative resources

The question is how to view these decision-making processes. Giddens (1984) argues that in area development, forces depend on the mobilisation of a defined amount of reserves. These reserves are contributed by various actors because these actors see opportunities in the development of a particular area. These actors often have different orientations, and they will want to influence each other through certain actions. Giddens (1984) distinguishes between two types of resources: authoritative and allocative. Authoritative resources refer to the power that certain actors can exert over other actors. Daamen (2010) gives a law as an example of this. Allocative means refer to means of persuading others to take certain actions that they might not otherwise have taken, such as incentives such as subsidies. Power through authority or allocation can be interpreted as both negative and positive (Flyvbjerg, 2001a) or both oppressive and generative (Healey 2007).

Flyvbjerg (1998b) places the dynamics of conflict and struggle at the heart of his analysis of the relationship between 'rationality and power' in area development. He derives this from his analysis of an area development project in Aalborg, Denmark. Flyvbjerg argues that true rationality can be found in these power struggles. According to Flyvbjerg, these power struggles are both positive and negative. They are part of our current democratic society, including political, administrative and spatial planning practices. It is therefore rather negative when these conflicts are suppressed, because they contribute to the functioning of democratic deliberation.

In this thesis, we examine the (conscious) actions of individuals and the structuring forces that influence their behaviour in decision-making and the realisation of area developments. Like Daamen (2010), the thesis follows the theoretical work of Scharpf (1997), Flyvbjerg (1998a) and Healey (2007). The latter argues that it is important to be able to study these (conscious) actions and structuring forces in reality.

3.4.3 Deliberate and emergent strategies

The insight offered by Mintzberg (1978) (as illustrated in Figure 3.7) is that, on the one hand, intended, deliberate strategies can actually be realised, but that, on the other hand, they are also partly unrealised. However, as a result of or alongside the conscious strategy that has been implemented, unpredictable forces can also develop into so-called emergent strategies, which contribute to the strategy that is ultimately realised. It is interesting to see whether these emergent strategies occurred in the Copenhagen case. In this context, the question can also be asked whether the use of the conscious strategies and decision-making from the Copenhagen model in can have similar emergent effects in the Dutch and, more specifically, the Utrecht context, although this can only be determined in retrospect.

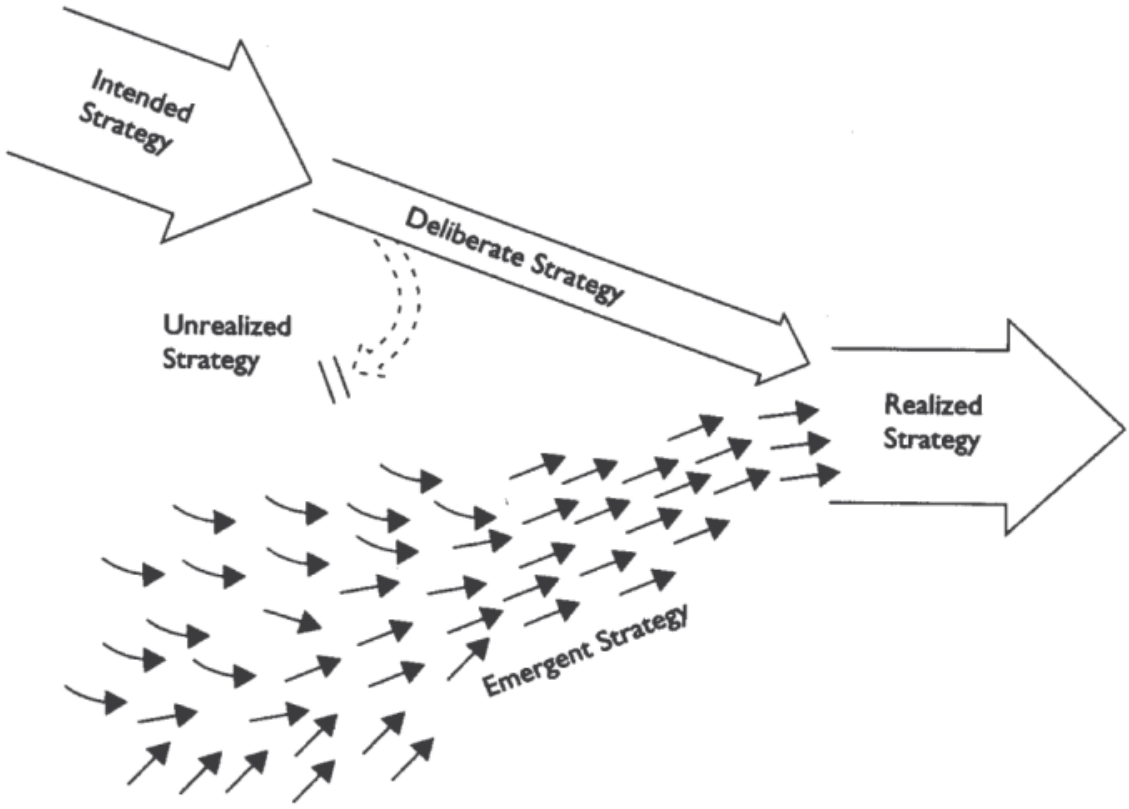


Figure 3.7. Deliberate and emergent strategies (Mintzberg, 1978)

3.4.4 Strategy wheel

Daamen (2010) combines the dimensions of authoritative and allocative, as defined by Giddens (1984), with Mintzberg's diliberate and emergent strategies in what Daamen describes as the *strategy wheel* (Daamen, 2010, p.36). Daamen argues that bringing these elements together makes it possible to operationalise the 'power mechanisms' (Flyvbjerg, 2001a) or 'rationalities' (Albrechts, 2003; 2004) in the case study. This makes it possible to distinguish between actors who are irreplaceable because they contribute irreplaceable resources and actors who contribute resources that are replaceable and are therefore also replaceable as actors (Daamen, 2010).

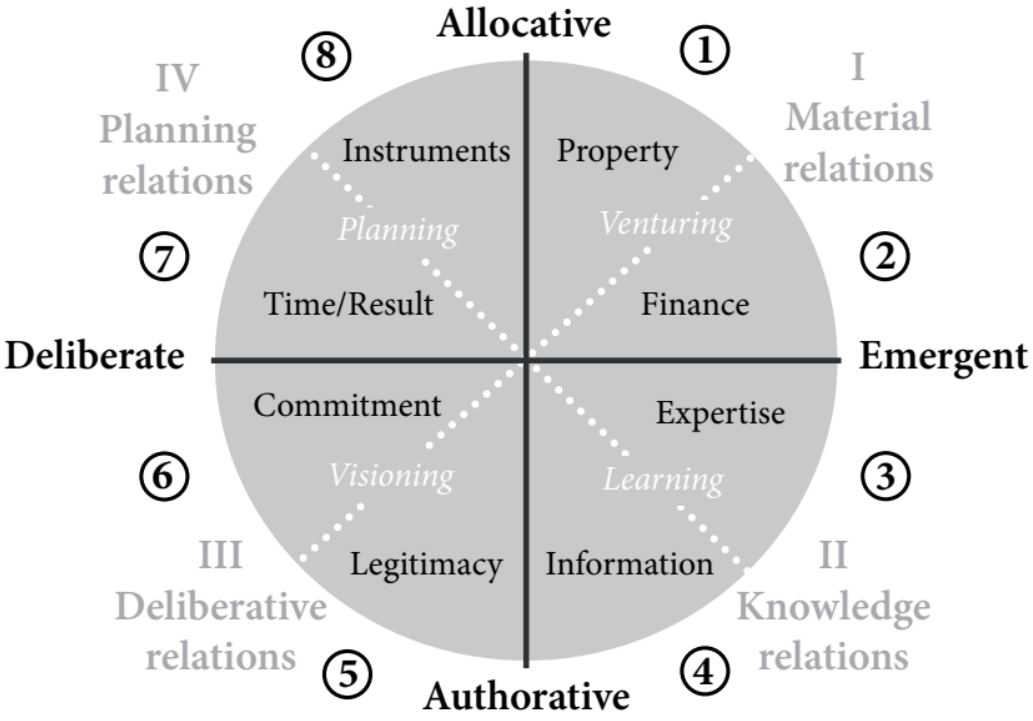


Figure 3.8. Strategy wheel (Daamen, 2010, p. 36)

Daamen (2010) positions the two dimensions of authoritative and allocative on a vertical line and the dimensions of delibate strategy and emergent strategy on the horizontal line. This creates four quadrants of actions: *Venturing*, *Learning*, *Visioning* and *Planning*. The quadrants themselves are further subdivided into area development resources: *Venturing* has *Property* and *Finance, Learning* has *Expertise* and *Information, Visioning* has *Legitimacy* and *Commitment*, and *Planning* has *Time/Results* and *Instruments.* Outside the circle, the following relationships are identified: 1. Material relationships, 2. Knowledge relationships, 3. Conscious relationships, and 4. Planning relationships.

Daamen (2010) argues that this model can be used to analyse a case study in area development. However, he warns against viewing the categories as simple 'building blocks'. The point is to distinguish the interdependence of these actions, resources and relationships. We use this idea to take the theoretical model of the *strategy wheel* a step further and test it in the Copenhagen case study.

3.4.5 Application of *the strategy wheel* in the Copenhagen case

Why do we want to analyse the Copenhagen case with the *strategy wheel*? We are looking for insights into strategies that can effectively contribute to urban development. More specifically, we want to gain useful insights into strategies that can contribute to the realisation of high-quality public transport in conjunction with urban development in which *value capturing* plays a role. And within that, we look at the factors that influence the (quality of) the decision-making processes. Daamen (2010) describes 'useful' as 'being able to provide a coherent and more complete picture of the

decisions and actions that make up the strategy, and that this picture forms a basis for actors to reflect on and make them more effective' (Daamen, 2010, p. 10).

Giddens (1984) argues that in (Western) discourse, the importance of allocative resources is often emphasised because of the availability of tangible elements such as land and finance. However, he also emphasises that authoritative resources have a parallel value in terms of potential coordination. Daamen (2010) recognises the need for a balance between Mintzberg's (1994) emphasis on the intuitive and experimental, and the emphasis on the political and intellectual work of actually creating a spatial strategy, as put forward by Healey (2007).

In his thesis *Strategy as Force,* Daamen (2010) seeks to prove that the above-mentioned elements are of equal importance in the realisation of spatial development. According to Daamen, the theoretical model of the *strategy wheel* offers the possibility to investigate the dynamic *'strategy-as-force'* relationships between actors who have irreplaceable resources (authoritative) and actors who have resources that can be replaced by others (allocative).

The *strategy wheel* described by Daamen will be used in the analysis of the Copenhagen case. The Copenhagen case has been presented in the literature as a best case (see, among others, Katz & Noring, 2017, and Van Zoest & Daamen, 2023). Does it also emerge as a best case in this study based on the *strategy wheel?* And if so, where in the analysis in the *strategy wheel* does this become apparent?

In this thesis, we add a theoretical element. This means that we analyse the case in a specific way. We assume that if the Copenhagen case is a *best case*, it is because there is a strong correlation between the opposing quadrants. The assumption is not only that these fields are 'equivalent', but that they are very strongly connected in successful area developments. The fields are positioned opposite each other on the Authoritative/Allocative and Deliberate/Emergent axes. What is the connection and relationship between them? Does establishing good connections between these fields offer success factors for successful area development? What is the connection here and how do the *'strategy-as-force'* relationships between these fields work?

Looking at the *strategy wheel*, it appears that the Legitimacy/Commitment quadrant and the Property/Finance quadrant together form the basis of every area development. The Instruments and Time/Results fields, in turn, are strongly linked to Expertise and Information. The assumption here is that results are strongly related to the quality of the instruments used, which in turn must be set up and implemented through the use of expertise and information. Here too, the assumption is that this could emerge in the possible *best case scenario* for Copenhagen. In the analysis, we take this a step further by relating not the opposite quarters to each other, but the eight fields. We visualise this by placing four dotted lines through the centre of the *strategy wheel*. These connect the eight fields positioned opposite each other. This yields the following relationships to be investigated: the connection between Property (1) and Legitimacy (5), the connection between Finance (2) and Commitment (6) , Expertise (3) and Time/Results (7) and, finally, the connection between Information (4) and Instruments (8). We examine this on the basis of the Copenhagen case study and also use it for the *lessons learned* in the comparison with the Utrecht case study.

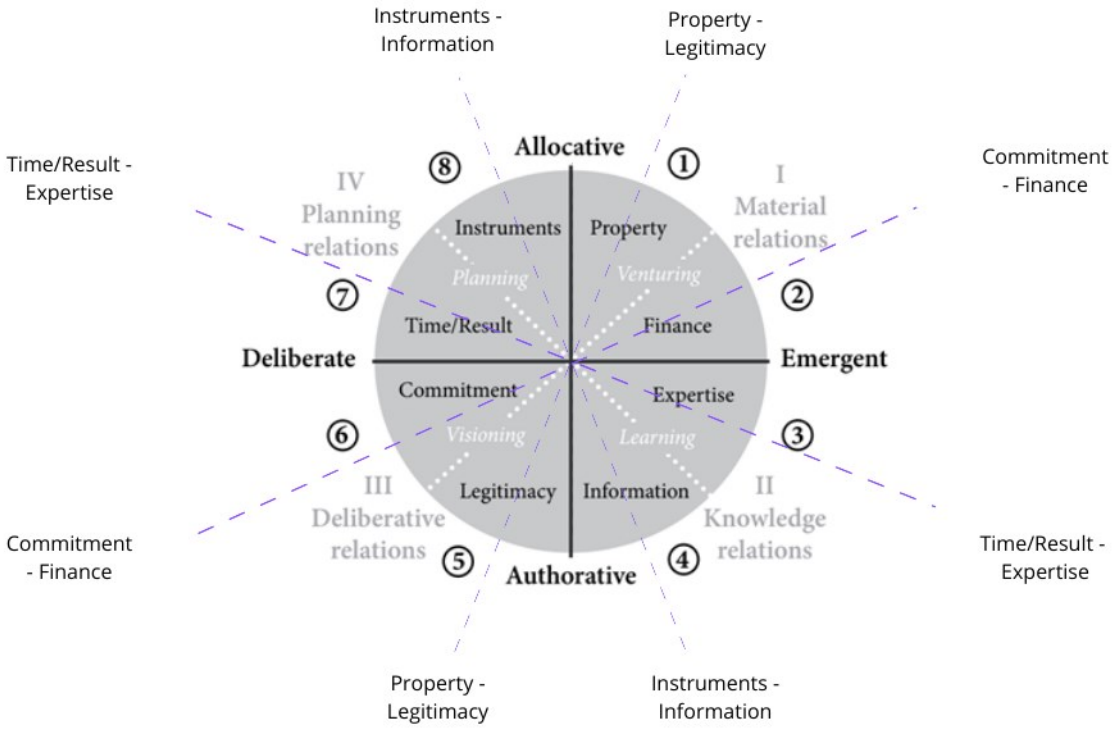


Figure 3.9. The strategy wheel as drawn up by Daamen (2010), with the addition of four dotted lines connecting the opposing fields. This produces relationships that can be examined in the case study.

3.5 Systemic thinking

In this thesis, we want to use the *strategy wheel* to analyse the various elements that influence the nature of decision-making and implementation of the metro and spatial development in the Copenhagen case study, thereby gaining a better understanding of this. However, based in part on the literature, we assume that there may be a system in place (Katz & Noring, 2017). Therefore, in our analysis using the *strategy wheel,* we will investigate whether a system exists and, if so, what it looks like and how it functions. Below, we explain what a system is and what systems thinking is. Whereas in the *strategy wheel* we first distinguish the various elements (deduction) and then examine their interrelationships, with the system we add a third part, in which we describe the coherence. And if there is a (successful) system, what lessons can be learned from it?

Rodin (2014, p. 45) describes a system as follows: "A system is a defined set of interrelated elements that interact with each other within a certain defined boundary and are organised to perform a specific function or pursue a specific goal". Examples of this are the human body, a company or a city. Systems thinking has been developed over the past 85 years. Systems thinking gained considerable influence through the book *Limits to Growth* in 1972, of which Meadows was the main author. This book was published in 1972 and sounded the alarm about the state of the earth, arguing that the earth is a system in which everything is interconnected (Meadows et al., 1972). Meadows (2009) states that a system consists of 'quantities' (*stocks, resources* or *assets)* that can increase or decrease

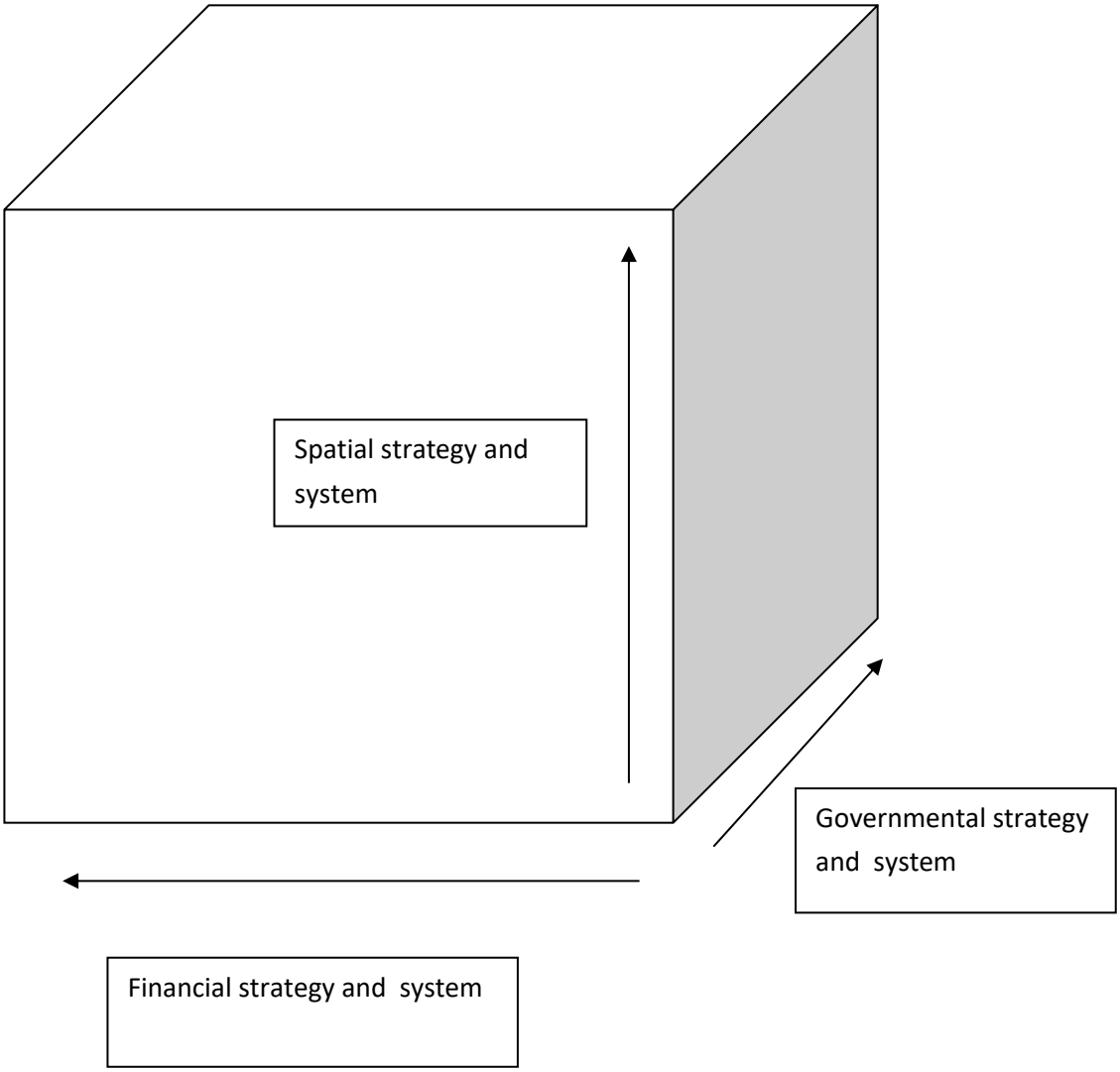
over time (*flows)*. According to Meadows, understanding these 'stocks', i.e. how they decrease and increase under the influence of each other or other internal and external factors, is important in order to understand a system and possibly influence or even create it. The aim is to obtain systems that are self-balancing and do not need to be maintained by external input.

According to Rodin (2014), understanding these feedback loops in a system is essential. These can be physical *flows,* but also *information flows*. Forrester (1969, p.25) states that "systems of information-feedback control are fundamental to all life and human endeavour, from the slow pace of biological evolution to the launching of the latest space satellite.... Everything we do as individuals, as an industry, or as a society is done in the context of an information-feedback system'. An increase in one 'stock' can result in an increase or decrease in another 'stock'. If all positive and negative feedback loops together keep the 'stock' at the same level, the system is in equilibrium. A system is out of equilibrium when one or more 'stocks' rise or fall via the feedback loops and do not return to their original quantity. At that point, replenishment or removal is needed to maintain the system, or the system must adapt or expand.

In this thesis, we want to investigate whether there is a (deliberately devised or emergent) system with regard to the financing and construction of the Copenhagen metro in conjunction with spatial development, as defined above. Because we consider the Copenhagen case study over a period of almost 35 years in this thesis, we may be able to determine whether this system is in balance, whether there is an increase or decrease in 'stocks', or whether the system has been adapted as a result (deliberately or emergently). What can we learn from this, and what might be applicable in the Utrecht case study?

If we bring this together in a theoretical model for the purpose of empirical analysis, we can imagine that strategies and systems in the spatial, financial and governmental fields must each be strongly developed individually, but that they must also interact strongly and positively with each other if the planner is to succeed in maximising the total return on the area development and thereby allow this added value to benefit, to a large extent, investments in measures such as a metro, and that these investments in turn contribute to maximising the total return. To illustrate this, we imagine a cube, the contents of which represent the total return on the area development. On the axes of the cube, we place the spatial strategy and system, the financial strategy and system, and the governmental strategy and system, respectively. We assume that as one or more of these strategies and systems are developed more strongly, this increases the total volume of the cube. In addition, the cube can be seen as the total coherent strategy and system of the (specific) area development. In this thesis, we refer to this as the triple planning power system.

Figure 3.10. The triple planning power system: theoretical representation of how spatial, financial and governmental strategies and systems contribute to the total (yield of) area development.



3.6 Coherent theoretical model for empirical analysis

Now we can answer the sub-question: What theoretical framework can be established to examine and analyse strategy in area developments with *value* capturing for the purpose of investments in public transport? In the analysis, we bring together the seven dilemmas in area transformations, insights into *value capturing,* the *strategy wheel* with an extension to the analysis of the opposing fields, and the triple planning power system. The *strategy wheel* offers the possibility to unravel the case into various elements. We use the dilemmas in area transformations to examine the relationships between the opposing fields. We then consider whether, and if so how, these relationships are established in the triple planning power system and whether there are positive, negative or balanced feedback loops.

As explained, we distinguish four quarters in the *strategy wheel*, each with two parts. Although everything is interrelated and it is therefore difficult to know where to start, we have chosen to begin with the Commitment box. We also involve the opposing box, Finance. We then look at Legitimacy and the opposing box, Property. Next, we look at Instruments and the opposite section, Information. We conclude with the Time/Results section and the opposite section, Expertise. We therefore choose to first view the analysis from Deliberate. In doing so, we examine the relationship in the opposite Emergent field each time. Is there a relationship? How do the fields interact? Is one (inseparably) connected to the other? Have conscious strategies been employed or emergent strategies utilised to connect these fields more strongly? Are these connections between the three systems: spatial, financial and governmental? Do these connections contribute to the presumed success of the case? Can elements be distilled from this that can then be related to the Utrecht case as lessons learned?

4 Institutional spatial development context compared

4.1 Introduction

The above outlines the research task, the research methodology and the theoretical framework required to answer the research question. In order to gain further insight into the context of the Copenhagen case and for the purpose of comparison with the Utrecht case, it is relevant to describe the underlying institutional spatial development context.

Heurkens (2012, p. 88) argues that in order to gain insight into the institutional context of spatial developments, three contextual aspects can be considered:

- Economy and politics: this provides insight into how economic and political institutional structures influence decision-making in spatial development;
- Urban governance: gaining insight into how institutional urban governance influences decision-making in spatial developments;
- Planning system and policy: providing insight into how spatial planning systems and policy influence decision-making in spatial developments.

In the following sections, we outline the institutional spatial development context. To this end, we draw on elements from the literature and empirical evidence. In the next section, we will consider economics and politics and make an initial comparison. The following two sections describe urban governance, spatial planning systems and policy, first for the Copenhagen region and then for the Utrecht region. We conclude with an assessment of the extent to which the institutional spatial development contexts correspond or differ.

4.2 Economy and Politics

It is interesting to compare the Copenhagen region economically with the Utrecht region. There are a number of arguments for doing so. The Utrecht region is an extremely attractive region and regularly ranks first in the European Union's Regional Competitiveness Index. This makes it, like Copenhagen (Hovedstaden, position 7), one of the regions in Europe that attracts residents and businesses (Dijkstra et al., 2023). In absolute terms, the growth of the Utrecht region is also fairly comparable to that of Copenhagen. This means that around 10,000 residents are added each year and that several thousand homes are also built each year.

The total population of the province of Utrecht is approximately 1.35 million, while the Copenhagen Capital Region has approximately 1.36 million inhabitants. Incidentally, there are various geographical boundaries that can be considered, with different numbers of inhabitants. Both regions also have large cities in their vicinity; for Copenhagen, this is Malmö. If Malmö and all of Copenhagens suburbs are included, the figure is closer to 3.5 million. The province of Utrecht lies at the heart of an extensive urban fabric, including Amsterdam, Rotterdam and The Hague. Utrecht Central Station is the most visited railway station in the Netherlands.

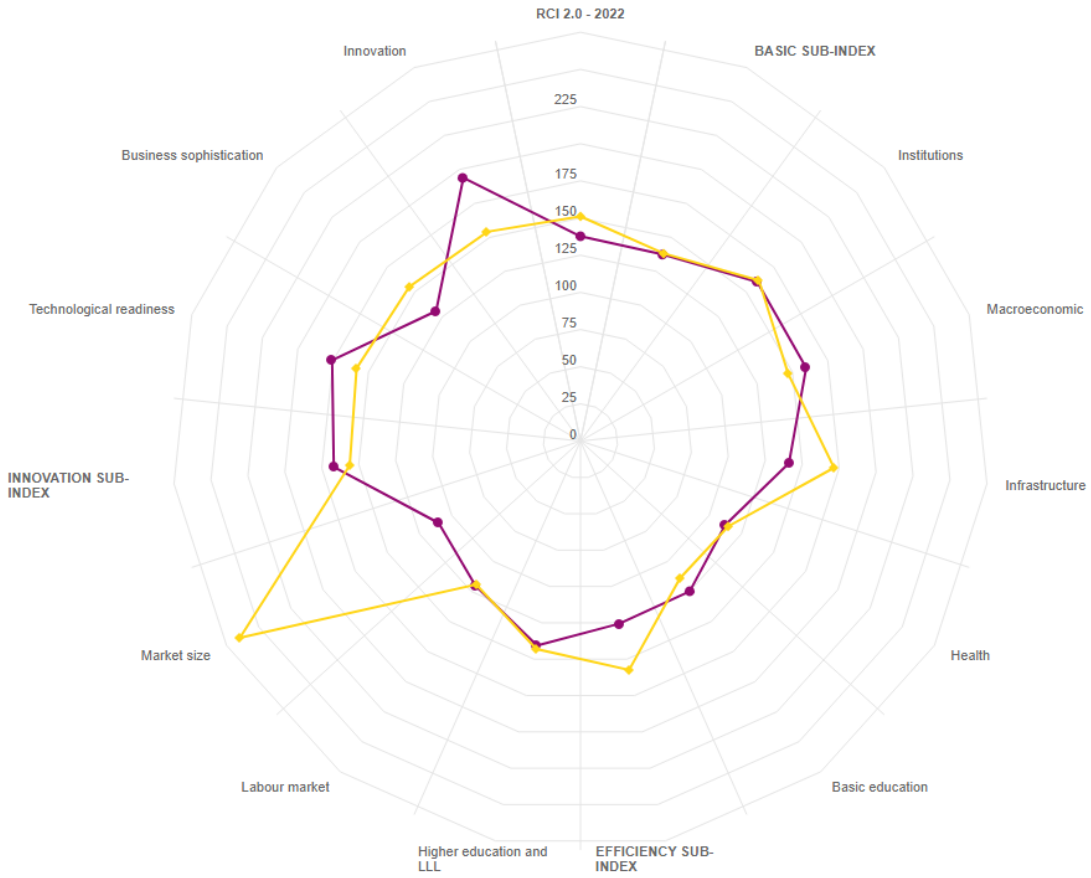


Figure 4.1. Representation of the economic regional competitiveness of the Copenhagen metropolitan region (Hovedstaden) (red) and the Utrecht region (yellow) (European Commission, 2022).

Figure 4.1 shows that the Hovedstaden region and the Utrecht region are close to each other on many indicators. One striking difference is the size of the market, with the Utrecht region being considerably larger than the Hovedstaden region. The Hovedstaden region scores slightly better on innovation and *technological readiness*. The Utrecht region scores slightly better on infrastructure. However, the matrix also shows that both regions have room for improvement in the area of infrastructure.

Looking at the political system, similarities are apparent at first glance. Over the past 80 years, both countries have built up a welfare state, with increasingly liberal elements being introduced over the last 30 years. This has also manifested itself in changes to spatial planning legislation. Roodbol-Mekkes & Van de Brink (2015) argue that the reforms in legislation relating to spatial development in the Netherlands, England and Denmark were motivated by similar catchphrases such as 'closer to the citizen' and *'development-oriented spatial planning'.* They also argue that in the three countries, integrated spatial planning at the national and regional levels has largely been lost as a result of the legal reforms. They argue that the absence of *'this something* more' seems to have an effect on the core of spatial planning (Roodbol & Menkes, 2015).

Nadin (2007) distinguishes between five welfare systems in Europe: the Anglo-Saxon system in the British Isles, the conservative continental systems in Western Europe, the social democratic systems in Scandinavia (including Denmark), the southern Mediterranean system and new member states in transition. It is striking that the Netherlands is placed in a mix of liberal, conservative and social democratic.

Nadin (2011) describes five legal-administrative systems in the European Union: British, *Nordic*, *Germanic* and Napoleonic. Eastern European members of the EU are placed under the label 'in transition'. What is striking is that Denmark is placed under the Germanic legislative system here, and not *Nordic*. The Netherlands is placed at the overlap between Germanic and Napoleonic.

Nadin (2008) distinguishes four models for *spatial planning*: *land use management, comprehensive integrated, regional economic* and *urbanism*. Nadin places both the Netherlands and Denmark under *comprehensive integrated* and describes this as *'coordination of spatial impacts of public policy through a framework of plans*'. Duhr et al. (2010) argue that the *comprehensive integrated model* is about coordination.

It should be noted that the Copenhagen case study reveals a long tradition of *Transit Oriented Development* (TOD), with a strong focus in the past on British examples of *value capturing* (Knowles, 2012). This provides an additional reason to also highlight the *Land Use Management* model for Denmark. According to Nadin (2008), this model, which is characteristic of the UK, among other countries, is characterised by *regulation of land use change through strategic and local plans*.

Heurkens (2012) argues that the Dutch model for *spatial planning* has adopted elements from the British *land use management* model. This includes the transfer of planning authority from national and regional to local authorities. This has also been the case in Denmark since 2007. Incidentally, this shift has been considerably more radical, with the spatial role of regions being minimised and local authorities gaining considerable planning authority. This is also linked to a significant difference in tax powers, where local government in the Netherlands can levy approximately 10 per cent of the total tax burden (Central Bureau of Statistics, n.d.), while a municipality in Denmark can (directly) levy 30 to 40 per cent of this (Danmarks Statistik, 2025) and indirectly considerably more.

4.3 Copenhagen Region: From Finger Plan 1.0 to 2.0?

Before discussing the Copenhagen case, we will provide a brief overview of the context in which the case occurred and continues to occur. We will also use this to determine the extent to which the institutional spatial development context in the Copenhagen region and the Utrecht region correspond with each other.

In the capital region, the focus is on the so-called Finger Plan. The first Finger Plan (Egnsplan) was drawn up by the Danish Urban Planning Institute in 1947 in response to Copenhagen's growth after the Second World War. The plan is an early example of Transit-Oriented Development (TOD). The plan is based on five fingers, containing a system of suburban rail connections (S-train), along which spatial development is planned. Green wedges were drawn between the fingers, in which no construction was envisaged. The system was successful, and many residents moved away from the dilapidated city centre to the *suburbs* (Knowles, 2012).

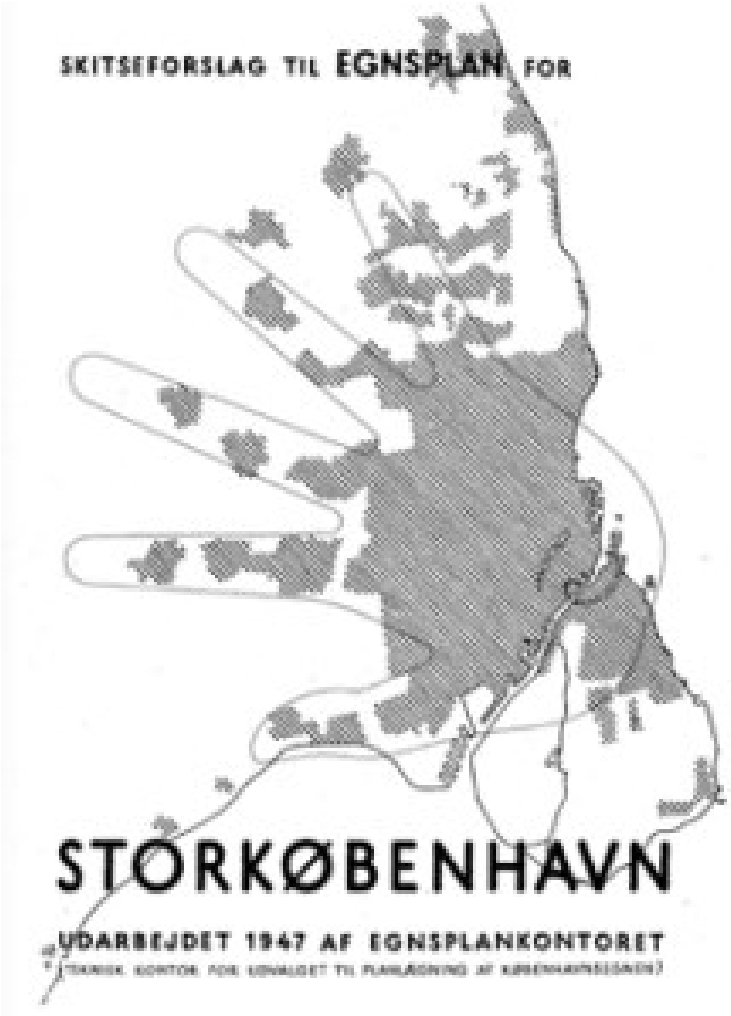


Image 4.1. The Finger Plan (1947) In the Finger Plan, all attention was focused on the fingers extending to the west and north. The island of Amager, located south of the centre of Copenhagen, is not relevant to the plan. (Copenhagen City Planning Commission, 1947).

With the addition of a sixth northern finger and a seventh southern finger, the Finger Plan remains the guiding spatial plan for the capital region. The "youngest" spatial plan for the capital region: *Fingerplan 2007 Landplandirektiv for hovestadsomradets planlaegning* dates from 2007, was drawn up by the state and is now almost 20 years old (Miljøministeriet, Skov- og Naturstyrelsen, 2007).

The plan states that further area development of the 'kommune' (municipality) is subject to the development of the capital region as a whole. This means that the municipality must take into account the organising principle of the finger structure. This consists of four parts: the inner g root city (the palm of the hand), the outer large city (the fingers), the green wedges, and fourthly, the remaining area of the metropolitan region. The plan states that no further new urban zones may be created in the metropolitan area (the palm of the hand). However, this area is very suitable for urban transformation. In the city fingers, the rural municipalities will be given the opportunity to create new urban districts in a few places. No new urban development is permitted in the green wedges. In the remaining area, the planning law applies and only local urban development is possible. Furthermore, the plan points out that the municipalities themselves have a great deal of freedom in terms of further urban development. In addition, the plan offers sufficient scope for development until 2017 (!), with reference to the 2005 Regional Plan of the Hovedstadens Udviklingsrad (HUR) (Ministry of the Environment, Forestry and Nature Agency, 2007).

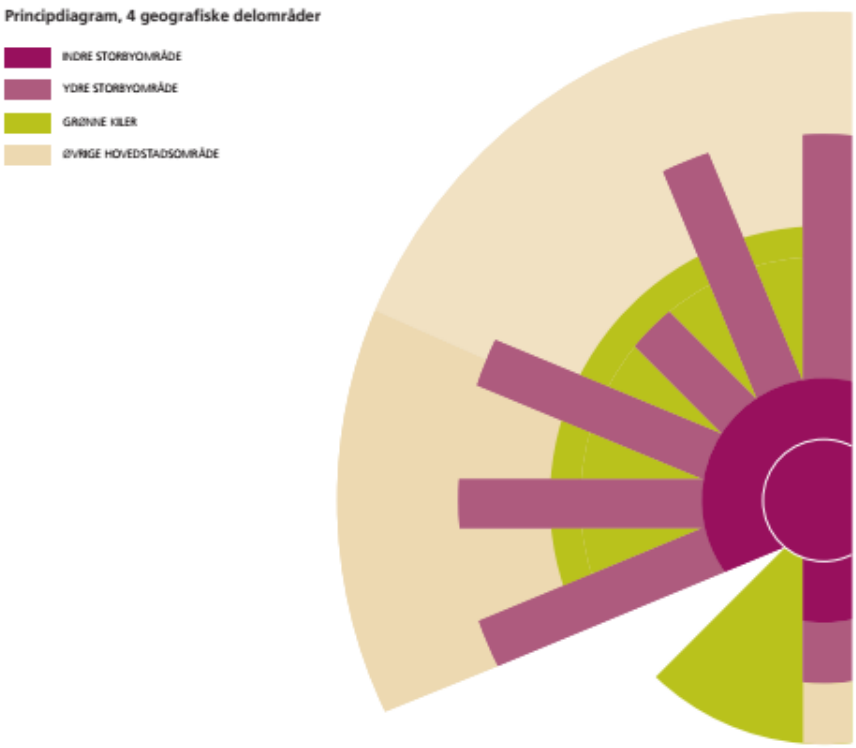


Figure 4.2. The organising principle of the Finger Plan, which identifies four sub-areas: , the inner city (the palm of the hand), the outer city (the fingers), the green wedges, and, fourthly, the remaining area of the metropolitan region. (Ministry of the Environment, Forest and Nature Agency, 2007, p. 15).

We will see in the case study that the depopulation and decline of the city centre was one of the reasons for drawing up a new plan in 1991-1992. The plan for Ørestad essentially continued along the lines of the Finger Plan, adding an extra finger, now served by high-quality public transport via the metro (Respondent A, dated 2 July 2024).

The HUR was established in 2000 to guide the regional development of the capital region, but was abolished with the 2007 legislative amendment, which gave municipalities much more control over their own spatial development. The few remaining tasks in the field of spatial planning were transferred to the Region Hovedstaden.

The *Structural Reform* or *Kommunalreform* of 2007 was very radical. Of the 271 municipalities, 98 remained. The 13 regions were scaled up to 5 regions. In addition, 14 state ministries and the Copenhagen Overpresidium were replaced by five state administrations (Indenrigs- og Sundhedsministeriet, 2005). Galland (2012) argues that approximately one-third of the regions' tasks were transferred to the state and two-thirds to the municipalities, as was also evident in the shift in the number of civil servants (Østergard, 2010). Essentially, the five regions retained only tasks in the field of health. The only spatial task that the regions retained was the creation of regional visions for spatial planning (Galland, 2012).

The *Kommunal reform* appears to have been functioning for a long time. Katz and Noring (2017) argue that the transfer of tasks to decentralised authorities, i.e. municipalities, has enabled these authorities to operate with a relatively high degree of independence. According to the OECD (2009), local authorities can allocate more than 60 per cent of total public funds, the highest of all OECD members.

Nevertheless, according to a representative of the Metro company, the lack of regional coordination is beginning to be felt. She indicates that in 2025, the Metro company experiences a lack of cooperation at the municipal and regional levels. In discussions with the cities and suburbs, the Metro company has found that there is no coherent regional vision to which decisions about possible expansions of the metro network can be related. The Metro company has therefore very recently started its own strategic planning. Respondent F expresses the view that the Metro Company needs to arrive at the right spatial insights at that regional scale and also to coordinate with the various cities and communities. She sees that municipalities are developing plans themselves, also in view of the increasing threat of flooding, but that the question of mutual coherence remains unanswered. The municipalities are asking questions of the metro company, and the metro company would prefer the municipalities/region to work with it to develop a vision that will enable it to make the right expansion decisions. (Respondent F, interview dated 16 January 2025).

The Arkitektforeningens Lokalledelse in Copenhagen recently organised a competition asking for a long-term vision for the greater Copenhagen region. According to the chairman of the jury, Lars Autrup (director of the Arkitektforeningens Lokalledelse), the fact that the most recent spatial plan for the capital region is almost 20 years old raises the question: is it still suitable, or do current developments and challenges call for a major revision of the master plan? According to Autrup, this new master plan is really necessary, given the changing climate and in order to steer the further growth of Copenhagen in the right direction, as the Finger Plan (1.0) has done before (Arkitektforeningens Lokalledelse i København, 2025).

The winner, Vandkunsten, with its design 'A decentralised organism grows', challenges the capital region to rethink its regional approach. The jury report states about Vandkunsten's winning design: 'The emphasis on decentralisation is logical. For years, the central urban area has been of decisive importance'. And the assessment committee notes that the suburbs present both the challenges and the greatest opportunities in the capital region (Arkitektforeningens Lokalledelse i København, 2025).

Image 4.3. The front page of the jury report for the Fingerplan 2.0 competition. Visioner for fremtidens hovestadsomrade (Arkitektforeningens Lokalledelse i København, 2025)

The assessment committee's report further states that the discussion on how the capital region should deal with the expected rise in sea level is relevant and demanding. Among other things, the winning design proposes a new kilometre-long sea dyke to protect several municipalities from rising water levels (Arkitektforeningens Lokalledelse i København, 2025). The assessment committee sees the proposal in Vandkunst's design to establish a new political organisation to address the (regional) challenges as a welcome element for further debate, but also recognises that this will cause quite a stir (Arkitektforeningens Lokalledelse i København, 2025).

In an interview with a representative of a large municipality in Denmark, it is stated that: "The Danish Association of Architects' competition for the new Finger Plan is a take on a vision for the capital's future, which, to some extent, builds on the ambitions of the current Finger Plan. For example, we share many of the ambitions regarding densification near stations. However, it is primarily a plan that prioritises development in the surrounding municipalities rather than in the City of Copenhagen and Frederiksberg. Therefore, the proposed changes to the inner parts of Copenhagen are relatively limited. The winning proposal includes several desired legislative changes that are not directly related to physical planning, making them difficult to assess from a narrow planning perspective" (Respondent I, written interview, 3 April 2025). In an article in Politiken on 14 January 2025, city architect Lars Jensen states that intermunicipal consultation is simply necessary for the further development of the capital region, given the challenges in terms of traffic, housing and water (Benner & Bjerre, 2025).

4.4 Utrecht region: from cooperation to planning power?

In order to arrive at *lessons learned*, it is important to also provide a description of the Dutch institutional spatial development context, using the Utrecht region more specifically as a basis for comparison. Information from various literature sources and interviews with specialists in the field of spatial development and metro construction has been used for this purpose. I spoke with architects, public transport specialists, real estate specialists and spatial advisors. This section also outlines the way in which cooperation takes place in the context of the Utrecht region. All this is done in order to compare the Copenhagen case with this context and to distil *lessons learned* from it. The Utrecht context is outlined in somewhat broader terms, so that readers in Copenhagen can also make a certain comparison.

When we look at the infrastructure in the Utrecht region, it is particularly striking that the main road network and the railway network are of a relatively high quality. The Utrecht region can be described as the hub of the Netherlands for the main road and rail networks. The main road network is used intensively. It is also clear that there are bottlenecks that require attention, such as the A12 and A27 motorways near Utrecht and the Hoevelaken junction near Amersfoort. Looking at the railway network, it is striking that substantial investments have been made in Utrecht Central Station and various other stations in the region and that the Utrecht region is easily accessible from surrounding regions and cities. On the other hand, it is recognised that Amersfoort Central and Amersfoort Schothorst stations require investment to accommodate the growing number of users, partly because of the substantial construction activity in the vicinity of these stations.

Figure 4.4. The positioning of the province of Utrecht, as presented in the Provincial Environmental Vision (Province of Utrecht, 2025, 4 June).

The national government is ultimately responsible for the construction and maintenance of the main road network and the railway network. For a long period of time, the national government has been able to benefit from the income generated by the sale of natural gas. A significant portion of this income has been invested in the construction and expansion of the main road network. A great deal of money has also been invested in the construction and maintenance of the railway network and the construction or modification of stations. It is important to note that these natural gas revenues are no longer available now that the national government has decided to stop pumping natural gas.

At the more regional level and at the level of the cities, the picture is different. Although there is a relatively extensive urban and regional bus network, more specific consideration is being given to other modes of public transport on certain routes. This is mainly due to the volume of traffic and the location of the sites. An important location in this respect is the Utrecht Science Park (USP). The USP is located on the eastern side of the city of Utrecht and has no direct connection to the railway network. However, a tram line (tram 22) has recently been constructed, connecting Utrecht Central Station with the USP. From Amersfoort Central Station, there is a Bus Rapid Transit (BRT) service that connects Amersfoort with the USP relatively quickly. Both products are used intensively and, given the growth of the region and the USP, further development is needed.

The province of Utrecht has been responsible for the construction, implementation and maintenance of the regional tram and bus network since 1 January 2015. Prior to that, various municipalities were responsible through the Utrecht Regional Authority (BRU). The aim of placing responsibility with a single level of government is to better coordinate the region's overall public transport and work towards a coherent network. This is a considerable challenge. The province is therefore responsible for substantial investments in improving the network. This requires intensive cooperation with the various stakeholders. The latter is one of the reasons why U Ned was established in 2019 with the various stakeholders.

U Ned was established by the province of Utrecht, the municipality of Utrecht, the Utrecht region (U10), the Ministry of Infrastructure and Water Management, the Dutch Railways and ProRail. The aim is to improve accessibility and quality of life in the Utrecht region through an integrated approach to mobility and spatial development. U Ned has developed into an increasingly integrated research body. The Ministry of Housing and Spatial Planning (VRO) and the Ministry of Climate and Green Growth (KKG) have also become part of U Ned. In 2021, the municipality of Amersfoort and the Amersfoort region also became part of U Ned. This means that 23 of the 26 municipalities in the province of Utrecht and the municipalities of Nijkerk and Barneveld in the province of Gelderland are now part of U Ned.

The governance of U Ned is organised through a so-called Programme Council, which includes representatives from the various parties. The Programme Council has no democratically legitimised power. Individual decisions must therefore be coordinated and prepared in the various public bodies via a mandate. Decisions made in the Programme Council can in turn influence decisions made at the annual MIRT consultation (see below). These decisions can also influence the spatial policy of the various public bodies and their investment decisions. The authority for this usually lies with the elected representatives, such as the House of Commons at national level, the Provincial Council at provincial level and the municipal council at municipal level.

The *approach* is that all parties can contribute and that jointly supported decisions are reached. One of the first steps was to set joint objectives. For example, the parties are jointly committed to *Healthy* Urban Living (*promoting a healthy and sustainable region*). And given the expected growth of the region, the aim is to add 165,000 homes by 2040. In addition, space must be found for 110,000 jobs, all in a way that ensures the region is and remains healthy and accessible in a smart and future-proof manner. These objectives have been further elaborated into five main objectives, with underlying sub-objectives and indicators. These are facilitating urbanisation, strengthening the economy, promoting healthy urban living, creating a sustainably accessible region, and creating a climate-proof region. This goal tree has gradually become more integrated, with the addition of goals in the areas of water management, energy management, and biodiversity. The goal of feasibility has also been added. The approach is to use this goal tree when assessing visions and investment decisions.

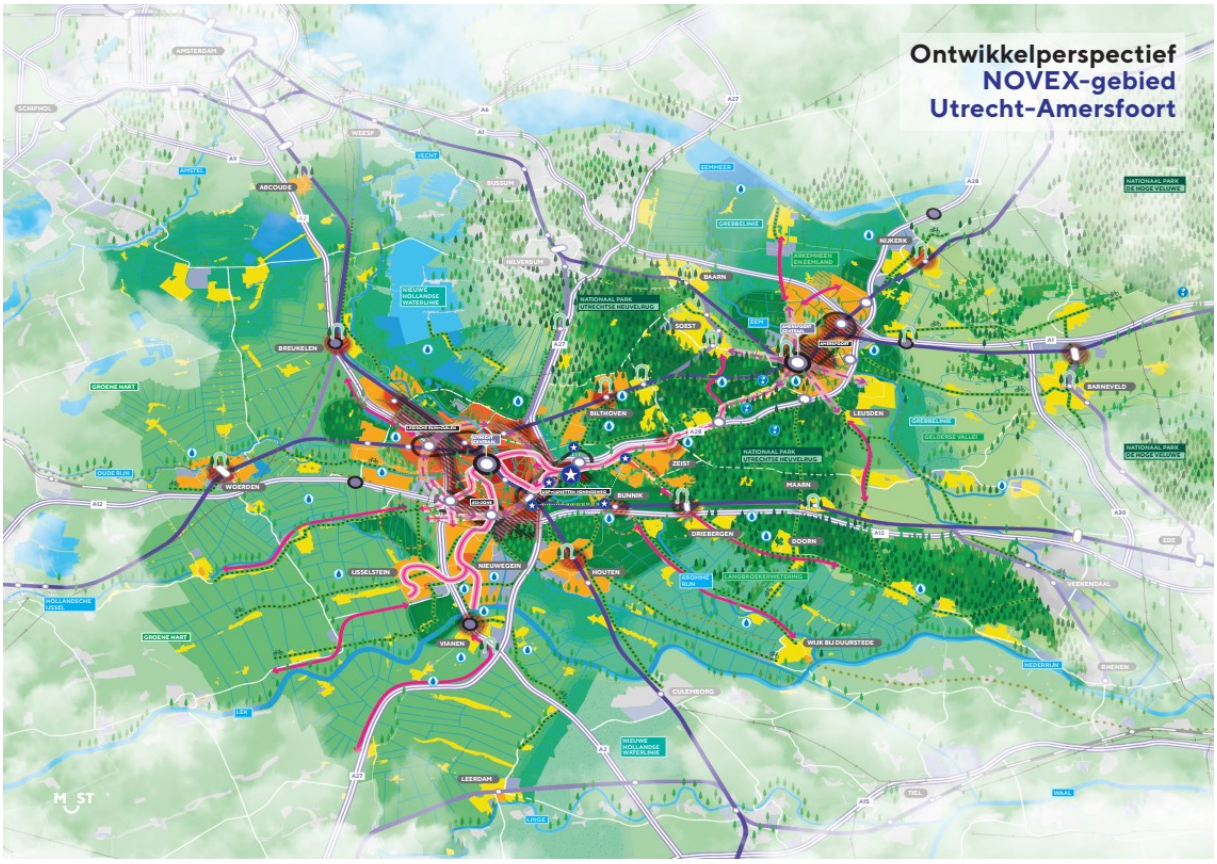


Figure 4.5. The Utrecht-Amersfoort Development Perspective (MUST, 2023)

A vision has been drawn up, initially for part of the area. This development perspective for Utrecht Nabij from 2020 has also been endorsed by the national government (MUST, TwynstraGudde, MOVE Mobility, Decisio & Sweco, 2022). In addition, a vision has also been drawn up for the Amersfoort region (at that time outside the context of U Ned). This vision is called Ontwikkelbeeld regio Amersfoort centraal! (Development vision for the Amersfoort region!), from 2021 (MUST & Move Mobility, 2021). Both visions have strong similarities and form the basis for the joint vision called NOVEX Development Perspective Utrecht-Amersfoort: Healthy Growth in Proximity (MUST, 2023) . This development perspective has three principles. It focuses on a robust green-blue framework and a diverse landscape that grows along with spatial developments and is easily accessible. In addition, it focuses on urbanisation in three types of environments: metropolitan gateways, regional gateways and vital centres. Thirdly, it focuses on a system leap for a coherent multimodal mobility system.

At the same time, work is being done on various programme lines. These programme lines focus on the short, medium and longer-term development of the region. Efforts are being made to achieve concrete improvements in the physical mobility system and mobility behaviour. Research has been conducted into the appropriate mobility strategy and the long-term spatial development of the region. This has led, among other things, to the adoption of the mobility strategy (Goudappel, APPM, Rebel & MUST, 2022) and the aforementioned long-term spatial vision. As a next step, work has been done on an adaptive development path and a regional investment agenda. To further elaborate on this, work is being done on so-called area studies and a MIRT exploration.

The Mobility Strategy (Goudappel et al. 2022) focuses on a radical change in mobility behaviour. It focuses on tackling mobility at source by preventing it as much as possible and on changing the so-called model shift, which aims to shift towards more walking, cycling and public transport instead of cars. It recognises that this requires action in many different ways. For example, it is important where future urbanisation takes place, more specifically at existing or new locations that are accessible by good public transport. It is necessary to work on influencing demand, making the choice to walk, cycle or use public transport more attractive than using a car. This can be achieved, among other things, by adjusting and (significantly) reducing parking options in city centres, both for homes and businesses, and by improving walking and cycling options. It is also necessary to improve the networks, both in terms of public transport and the car network. Part of this involves providing locations where motorists can quickly switch to public transport or another mode of transport. All this makes cooperation essential, both within the various organisations and between them.

In order to move from vision to implementation, area studies are being carried out. Within a given area, research is being conducted into how the various spatial challenges can be realised and what the effects, possible costs and feasibility are. Spatial design is used to make this tangible. In many cases, the 'corners of the playing field' are first explored on the basis of several conceivable development models. These models are then assessed on the basis of the assessment framework. Based on the results, a convergence is sought, with the aim of identifying a development direction on which consensus can be reached. Examples of this are the A12 zone area study in conjunction with Rijnenburg and the Amersfoort railway zone and Heuvelrug zone area study. Both studies look at the period from 2030 to beyond 2040.

The aim is to provide decision-making information for the longer-term development of these areas. Follow-up steps may include a municipality starting a specific area development and/or the province cooperating to make this spatially possible. However, there is also a chance that a particular spatial development will be deemed desirable, but that further research is needed first to determine the necessary construction or modification of public transport and/or adjustments to the road network. In that case, the decision to proceed with a MIRT exploration is the next step.

Figure 4.6. A schematic representation of the process steps in the MIRT system (Ministry of Infrastructure and Water Management, n.d.).

The Multi-Year Programme for Infrastructure, Spatial Planning and Transport (MIRT) is a national programme aimed at developing and improving Dutch infrastructure. It is also a way of distributing the national government's resources in a carefully considered manner. It focuses on cooperation with various other levels of government. To this end, it applies the MIRT system. This is a step-by-step system in which an (infrastructural) issue is first put on the agenda, then (possibly) analysed via a MIRT study, after which a MIRT exploration may follow. For this phase, it is necessary for the parties to have already reserved 70 per cent of the expected costs. The MIRT exploration can then lead to a preferred decision, whereby the parties have also arranged the financing. The project can then be planned, followed by the construction phase. The process outlined above can take several years. Decisions regarding the MIRT are laid down in the annual MIRT consultation, subject to approval by the individual representative bodies (Ministry of Infrastructure and Water Management, n.d.).

The MIRT exploration of public transport and housing started in 2022 and focuses on making new and existing residential areas in the south-western part of the city of Utrecht and the northern part of Nieuwegein accessible. In addition, research is being conducted into how the accessibility of the USP can be improved. Another objective is to reduce congestion at Utrecht Central Station. The parties involved (Province of Utrecht, 2024) have reserved 1.2 billion euro for the total project, which is currently estimated to cost between 1.5 and 1.8 billion euro.

The MIRT study is investigating various possible solutions, including a new (partly underground) tram or metro connection between Utrecht Central Station and the residential and working areas in the south-western part of the city of Utrecht / northern part of Nieuwegein. It should be noted that no funds have yet been reserved for a possible extension of this connection to the potentially new Rijnenburg district. This part is also not included in the MIRT study.

On 10 December 2024, the collaborating parties, including corporations (which provide social housing) and private landowners, signed the Rijnenburg Agreement. The parties thereby declare that they will commit to the realisation of between 63,000 and 75,000 homes in the area, along with the associated mobility measures and other facilities. This could make it the largest housing development location in the Netherlands in the coming decades.

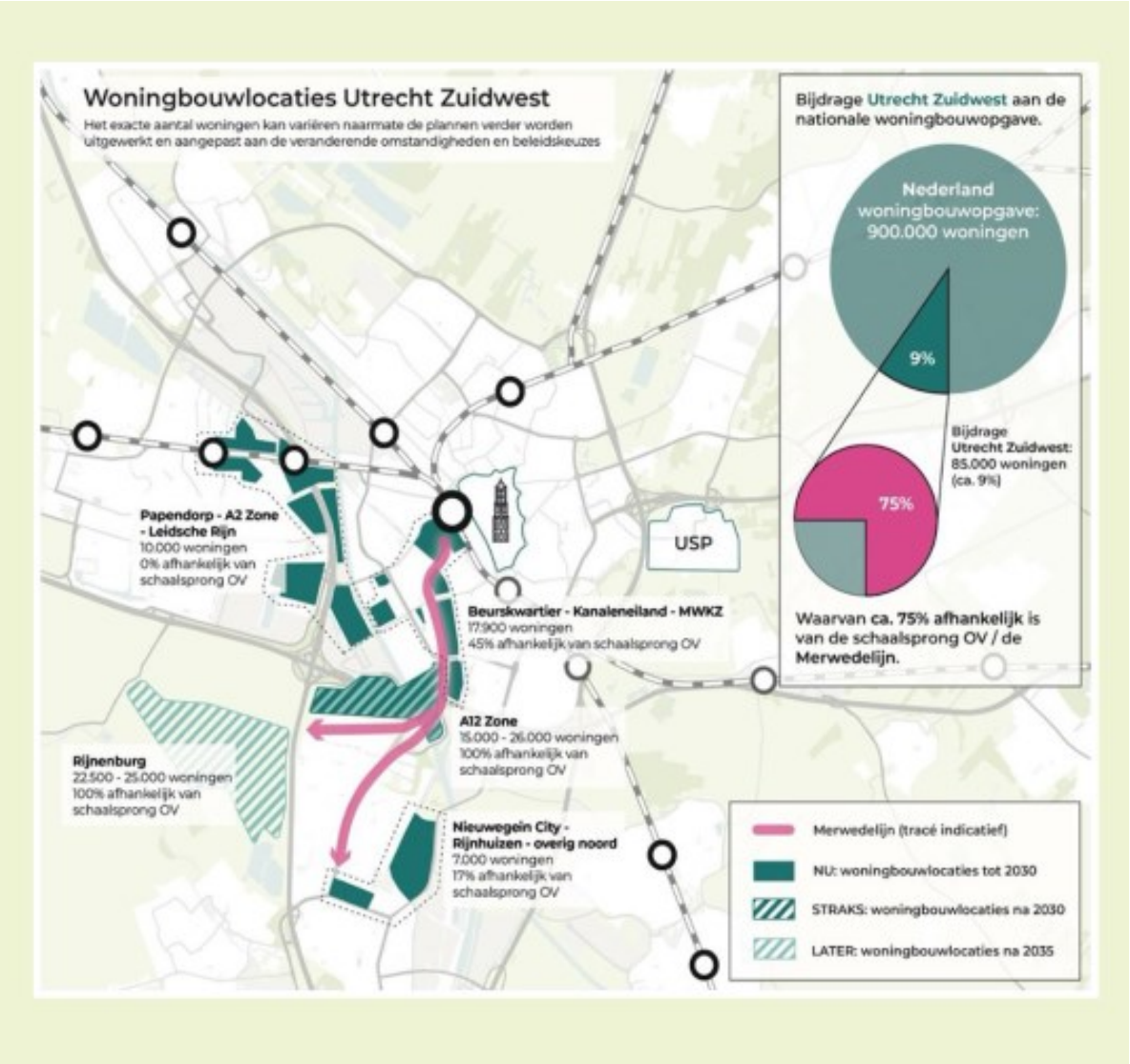


Image 4.7. A representation of housing development sites in Utrecht Southwest in relation to (parts of) possible routes for a metro line (U Ned, 2025)

However, it is also clear that it is a complex task to develop a strategy for the right mobility solutions and their financing, operation and maintenance. Questions that need to be addressed include the nature of the system, including the number of stops, number of trips, length of the tram set and speed. There is also the question of whether to connect to the existing tram system or introduce a new system, for example, a self-driving one. There are also spatial choices: how to fit the metro into the existing urban structure. How much of the system should be underground and/or above ground? This obviously also has financial consequences.

The parties that have signed the Rijnenburg Agreement recognise that it is also necessary to look at new forms of financing. This assumes that the current forms of financing are not sufficient. Why is that the case? Over the past several decades, the national government has received substantial revenues from natural gas. A significant portion of these revenues has been invested in infrastructure. A recent decision has been taken to stop pumping natural gas. This means that an important source of funding has literally and figuratively dried up. The current system is largely geared towards distributing natural gas revenues. The central government has noted that the funding opportunities

are declining, while the maintenance costs of the existing infrastructure are increasing. A significant part of the infrastructure is now several decades old and requires maintenance and modification. This means that a larger proportion of a shrinking annual funding budget is being spent on maintaining the infrastructure. And that the proportion that can be invested in new infrastructure has become smaller.

In addition, municipalities and provinces are unable or not allowed to levy sufficient taxes to independently bear the full costs of investing in and maintaining public transport (Respondents E and H, dated 7 January 2025 and 6 March 2025). In the Dutch context, the central government is the main tax collector. Each year, the central government makes an amount available to each municipality and province for the tasks that the municipality and province have to perform. The province has its own tax in the form of surcharges. Surcharges are a tax on car ownership. However, the amount of this tax cannot cover the full costs of investing in the maintenance and construction of provincial roads and public transport. The municipality has the option of levying tax via the property tax (OZB). This is a tax based on the estimated value of the property owned. However, this tax is also relatively small and cannot fully cover the costs of constructing new public transport. Looking at the situation in the Netherlands, we see that it is mainly the national government that has the resources. As a result, cities and regions are mainly focused on this source of funding.

Another approach could be to use *value capturing* as a tool. The essence of this is that part of the increase in value of land located near the public transport infrastructure to be constructed is skimmed off to finance the infrastructure. This tool is explained above. In the Dutch/Utrecht context, it is relevant to note that much of the land where construction is planned or possible is privately owned. This may involve farms or other businesses that operate on this land. It may also involve investors or development companies that have purchased land in anticipation of possible area development. The hypothesis is that, particularly in the case of the latter parties, part of the expected return was taken into account when purchasing the land and that this puts pressure on the possibilities of contributing to the financing of public transport.

On 17 June 2012, the consortium of landowners in Rijnenburg and the Municipality of Utrecht announced that the private parties are prepared to invest 200 million euros in the extension of the metro line to Rijnenburg itself (Municipality of Utrecht, 2025). This would require a total additional investment of €600 million, of which the private parties are willing to contribute one third. The private parties are thus taking a step forward and demonstrating that they recognise the significant added value of extending the metro line to the new Rijnenburg district. It has also been stated that private and public parties will make every effort to counteract the price-driving effect of land speculation as much as possible.

4.5 Conclusion: institutional spatial development context

Zooming out, we see institutional spatial development contexts in the Copenhagen and Utrecht regions with considerable similarities. Both the Copenhagen and Utrecht regions are characterised by strong economic power, relatively high levels of trust in the government and in each other (i.e. the other party), and a culture of cooperation where, at its core, there is a willingness to work together on higher goals and tasks. Both regions have demonstrated their ability to achieve results through previous decision-making and multi-level (national, regional, municipal) investments. Both regions have highly qualified knowledge institutions and labour potential. In both planning systems, planning authority is essentially vested in the municipality. However, in both planning systems, spatial responsibilities and financing options are vested at higher planning levels, creating a need for cooperation in (complex) area development. However, there are some relevant differences that also have an impact in the project context. These relate to the role of the region/province, the nature of taxation, land ownership and the degree of trust between parties (authoritative parties among themselves and authoritative and allocative parties).

5 Empirical study: the Copenhagen case

5.1 Introduction

In this empirical part of the thesis, we look at developments in Copenhagen over a longer period of time, distinguishing between three components:

- The reason for and creation of the plan in 1991-1992, which linked the construction of the first metros to the area development of Ørestad and also determined the financing structure via *value capturing* and the roles of the various actors.
- The further development of the necessary organisations and the adjustments that were needed to proceed with the development of other parts of the city, in particular Nordhavn.
- The further development of Nordhavn itself, focusing on the considerations and decision-making process regarding the development of the metro in Ydre Nordhavn.

It would be going too far to describe the entire development in this thesis. However, we have chosen to describe the initial phase in order to provide insight into the circumstances under which it came about. In addition to this initial phase, the thesis zooms in on a recent deliberation process, namely the further extension of the M4 to Ydre Nordhavn. By examining this over a longer period of time, we can better understand how decisions with a long-term factor play out over time and how they are subject to change under pressure from internal or external factors. By allowing the actors from the first phase in 1991-1992 and the actors from the current phase to reflect on each other, the picture is further enriched. This is an important question because the long-term commitment of parties to a particular strategy can also be perceived as a risk. In order to assess the effectiveness of a long-term strategy and learn from it, the long-term strategy must actually be viewed over the long term.

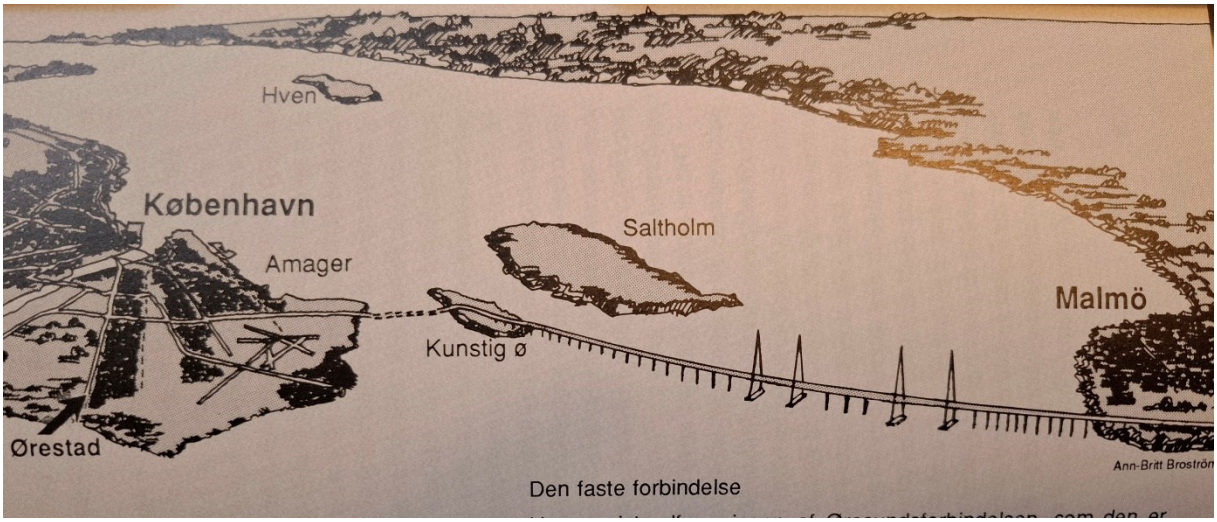


Image 5.1., A bird's-eye view of the Øresund, with Denmark on the left and Sweden on the right. It shows how the car and train bridge between Denmark and Sweden would land on the island of Amager and connect to the airport. The image also shows the location of Ørestad, the then newly built neighbourhood. It also shows the two new metro lines M1 and M2 to be developed in dotted lines (Gaardmand, 1991).

By approaching the Copenhagen case as a *best case*, it offers the opportunity to investigate the dominant strategies used to establish and implement the metro system and spatial development. After describing the developments, we will analyse the whole on the basis of the coherent theoretical model that has been drawn up.

5.2 The first phase 1991-1992.

5.2.1 Introduction and background

In order to gain a good understanding of the Ydre Nordhavn case, it is important to go back to the beginning of the construction of the first metros and the connection with the development of Ørestad. The decisions taken at that time still have an impact on current developments. We describe the developments in the early 1990s based on two key players in the decision-making process at the time: Erik Jacobsen and Anne Grethe Foss. By linking previous studies (e.g. Katz & Noring, 2017) to the experiences of these key players, it is possible to examine the factors that were important in the strategy in more detail.

Figure 5.2., the newly developed Ørestad district, red dot, in the Øresund region (Ørestadsselskabet, 1994)

Eric Jacobsen was a civil servant at the Ministry of Finance in the 1980s. After initially serving as the minister's private secretary, he was later appointed head of a department within the Ministry of Finance that dealt with budgets for education, culture and transport. In this position, Jacobsen was closely involved in drafting and negotiating the budget bill. An important issue was resolving various accessibility issues in and outside Copenhagen. At the national level, it was decided to proceed with the construction of a bridge between Denmark and Sweden. This was part of a larger plan to put Denmark back on the economic map. Copenhagen itself was in a deep slump, with the then *Lord Mayor of Copenhagen,* Jens Kramer Mikkelsen, sometimes saying that there was only one crane in Copenhagen and that you could bungee jump from it. Like many other cities in Europe, Copenhagen was suffering from the relocation of various industries to low-wage countries. The quality of housing was also poor and unsuitable for families. These families left the city centre to live in the suburbs. Jens Kramer Mikkelsen: "We knew the city was in a desperate situation and we needed to come up with something to address this situation. However, to pay for the grand infrastructure project, we needed serious money. We could not raise taxes. Also, we needed agility and flexibility to operate" (Katz & Noring, p. 10). And as Mikkelsen states in retrospect in his biography *Jeg er en Kobenhavner:* "I can walk around and talk about my beach park, my Ørestad and my metro, but I know very well that it would never have happened if we had not been able to gather a majority at the town hall. If we hadn't convinced the business community and the trade union movement that Copenhagen could turn the tide, it would never have happened" (Frid-Nielsen, 2023, p. 187). "It was a joint project that was about the recovery of Copenhagen".

Jacobsen argues that realising the connection between Copenhagen and the landing point of the bridge between Denmark and Sweden and the airport proved to be a complicated issue (Respondent A, personal interview on 2 July 2024). Therefore, the Minister of Finance and the City of Copenhagen agreed that something had to be done to prevent traffic from this bridge ending up as a motorway to Germany. The costs for this could not be borne by the government because, as Jacobsen points out, this would mean that other parts of the country would also demand investments in public transport and, at that time, in the early 1990s, the national government did not have these resources at its disposal.

In addition, the area between Copenhagen and where the bridge landed in the south on the island of Amager was seen by many as a forgotten area without much economic potential. For several decades, Copenhagen had been developed on the basis of the Finger Plan, which, although very progressive in itself, saw development take place mainly in the suburbs to the west and north, along a number of public transport links (known as the S-train). According to Jacobsen, the communities there were accustomed to a great deal of development in their municipalities and wanted to see that continue (Respondent A, personal interview on 2 July 2024).
The following anecdote told by Jacobsen is also telling: he was also a member of the airport's board of directors on behalf of the government. It was a private company and, in that capacity, he could only listen with amazement as the then management failed to see the added value of a train station at the airport. People came by car. It is now quite normal for the airport to be so well connected by train, with good and fast connections to Sweden, the main station and the rest of Europe. Jacobsen further illustrates the perception of Amager in the 1980s with a personal experience: "When I moved to Copenhagen in 1980 and got a job at the Ministry of Finance, I came from the countryside, where I had studied. I was given a small flat in the middle of Amager. When I told an older colleague where I

lived on my first day at work, he said: ‘Amager? You can’t live there.’ (Respondent A, personal interview on 2 July 2024).

5.2.2 Breakthrough

According to Jacobsen, a breakthrough came when the leader of the coalition, the Conservative Minister of Finance Henning Dyremose, and the leader of the Social Democrats, Svend Auken, jointly decided that a commission should be set up to investigate transport investments in the capital. Remarkably, this task was assigned primarily to the Ministry of Finance, rather than, for example, the Ministry of Transport or Planning. As Jacobsen states, it was primarily a financial issue and there was too little confidence in the Ministry of Transport or the Ministry of Planning. This was because the Ministry of Transport was too focused on existing systems and the Ministry of Planning thought too much in terms of existing paradigms, namely the Finger Plan.

The committee was chaired by Hans Würtzen, head of the budget department at the Ministry of Finance. His name was attached to the committee's report on transport investments in the capital, which was published in April 1991 and became known as the Würtzen Report **(**Finansministeriet**,** 1991). 'Kantorchef' Jacobsen was tasked with finding out how the traffic problems could be tackled. And how to finance this without incurring costs for the national government. He did this together with the planning director of the national railways, Anne Grethe Foss, and the former planning director of municipal transport, Dan Christensen. The committee consisted of approximately 15 people from the top echelons of the ministries and municipalities. The secretariat consisted of three people from the Budget Department/Ministry of Finance, three people from DSB/Ministry of Transport and one person from the municipality of Copenhagen. Gaardman (1991) indicates *in Bro till Drømmeland* that this is relevant to the outcome.

5.2.3 The choice for two metro lines

"We had to deviate from the Finger Plan," says Jacobsen. The committee studied the issue without input from, for example, the Ministry of Planning. The task was to connect the centre of Copenhagen with the airport, connect the centre of Copenhagen with Frederickberg, the municipality that is enclosed within the municipality of Copenhagen and also demanded a say, and generate income to pay for this. The monthly magazine Press (Relsted, Rusfort, & Dahlin, 1992, p.65) nicely summarises the interests involved: "Anne Grethe Foss wants public transport to Amager, Dan Christensen wants the municipality to get to work, and Erik Jacobsen wants something concrete to come out of the work of the Wurtzen committee, but it must not cost a penny". The article states that if they find a good way forward, their position within the secretariat will enable them to change the course of the entire committee.

But could this be resolved with a single line? Jacobsen: "The Social Democratic Party had many voters in the centre of Amager. For them, the best option would have been to make it underground , but that lacked vision and funding. It would only lead to new expenditure without any development potential. This middle option was the most expensive, but did not generate any income." (Respondent A, personal interview on 2 July 2024).

For the connection to the airport, it was decided to reuse an old railway line in the eastern part of Amager, placing a large part of it on a dyke embankment or on pillars at plus 1. It was also the fastest line to the airport, only 15 minutes to the city centre. It was very efficient and inexpensive. However, there was little land suitable for development along this line (Respondent A, personal interview on 2 July 2024). The revenue had to be found elsewhere. It was found in a piece of land that was largely owned by the national government as military terrain. This part was not protected as a nature reserve (Frid-Nielsen, 2023, p.138). The plan was devised to open up this area with a metro line and develop it as a highly urbanised area, later known as Ørestad. The proceeds from the sale of this land would pay for the metro to the airport, the section under the historic city centre to Frederickberg and the metro line to the area to be developed. To make this possible, functions such as part of the University of Copenhagen and the national media (DR) would be relocated to the area. A conference centre (Bella) and a large-scale shopping centre (Fields) were also planned. Jacobsen also indicates that the city would ensure that developments elsewhere in the city would not disrupt the demand for land in Ørestad. According to him, this meant that various private owners would have to wait longer before they could develop their land. As a concrete example, Jacobsen mentions Refshaleøen, a large part of which is owned by a pension fund (Respondent A, personal interview on 2 July 2024) .

The city of Copenhagen recognised the importance of the developments: they would attract investment in the historic city centre. The construction of the metro was part of a larger plan, in which the gradual development of the vacant ports would provide the opportunity to add many homes in and around the historic city centre. However, the municipalities in the suburbs, along the S-train lines in the Finger Plan, were not at all happy: developments here would be delayed (Respondent A, personal interview on 2 July 2024).

The economic downturn, the relocation of activities and economies of scale had made the ports less important to Copenhagen. In addition, the construction of the bridge to Sweden led to a sharp decline in transport by ship. As in other port cities, the areas that became available were seen as an important opportunity for urban redevelopment (Daamen 2010). The 1991-1992 plan announced the gradual development of Copenhagen's ports into urban areas. However, Erik Jacobsen also points out that some elements were deliberately not included in the plan because it would otherwise have been perceived as too large-scale. He notes that the current construction of a car tunnel to Nordhavn and the construction of the new island of Lynnetteholm are still in line with the spirit of the 1991-1992 plan. Also noteworthy in this context is the plan to build a car tunnel on the east coast of the city, which will create a ring road and mean that car traffic from the eastern parts of the city will no longer have to drive through the city itself to the west (Respondent A, personal interview dated 2 July 2024).

Figure 5.3. Area development locations in Copenhagen, as mentioned in the Copenhagen Municipal Plan 1993 (Ørestadsselskabet, 1994).

An employee of By og Havn indicates that there is something unusual about the ownership of the land in the ports to be developed. The land on which the ports of Copenhagen are built is almost entirely reclaimed from the sea. This land is owned by the royal family by law. And therefore by the state (Respondent C, personal interview dated 2 October 2024).

According to Jacobsen, the fact that the land is mainly owned by the state created a unique opportunity to finance the metro without direct subsidies from the state. The state contributed the land, which the municipality of Copenhagen would then develop into an urban area, and which could then be sold to developers. However, this could not be done withou ing two additional factors. In anticipation of the income, loans would have to be taken out by the city of Copenhagen. The state

guaranteed the loans taken out by the city, or rather the company that was going to build the metro and Ørestad. (Respondent A, personal interview dated 2 July 2024).

One of the major discussions was how much interest would be paid on the loan that was taken out. Jacobsen: "We had a lower interest rate in our calculations because we assumed a state guarantee. If there is no risk, you don't need interest. If you are a planning authority, you can decide what will happen. If you are the state, you can guarantee it, as we did with the bridges. Critical economists did not understand that we were borrowing with a state guarantee. But the company that built the metro was not a private company; it was owned by the city and the national government. They were allowed to borrow money at the same interest rate as the state. This was an interesting construction" (Respondent A, personal interview on 2 July 2024).

Jacobsen goes on to argue: "Is there a willingness to take risks in your advisory role and in political decisions? We thought that if you worked in the Ministry of Finance, you had done your job. The company was financed by selling land and borrowing money. Critical economists said we had cheated with the interest rates." Erik Jacobsen indicates that the committee examined various perspectives and assumed that the loan would be repaid in 2022. If things went worse, it would take longer (Respondent A, personal interview on 2 July 2024). With regard to the latter, Anne Grethe Foss notes that the construction with the state guarantee was essential to get through the 2008 crisis. In addition, the agreement that the land could only be sold if there were high returns was an excellent way to resist the pressure to sell in times of crisis. This ultimately worked out well when the economy picked up again (Respondent B, personal interview on 26 September 2024).

Not only were the costs and benefits of constructing the metro considered, but the operation of the metro to be built was also important. Jacobsen: "It was part of the calculations we made. The price would have to be such and such, with increases, and so on. One of the most difficult things was how many customers there would be. The higher the price, the fewer customers." Foss states that it was ultimately decided to make each metro ticket 1 Danish krone more expensive than train tickets (Respondent B, personal interview on 26 September 2024). As an architect and the first director of the metro company, Foss was one of the founders of the current metro.

5.2.4 Metro design

The design of the metro was also considered from a cost perspective. Jacobsen: "There were discussions. Some said that the metro trains were too small and that there would not be enough space for all the people who needed to be transported. Others said that no one wanted to go to Amager" (Respondent A, personal interview on 2 July 2024). However, Foss indicates that quality was the primary focus. Ultimately, a highly cost-efficient metro system was rolled out. For example, construction was only carried out underground in the historic city centre. The metros to the airport and to Ørestad were built at plus 1. Where necessary, this was done on pillars in order to maintain spatial cohesion. Foss argues that building on a dam does not have to be a problem, provided that the dam is properly integrated (Respondent B, personal interview on 26 September 2024).

Foss states that the user's experience has been taken into account. The user should not experience any barriers. She means this in a spatial sense, in terms of waiting time and in a social sense, such as safety. In spatial terms, the decision was made to provide quick access to the stations by means of high-quality materials, high-quality stairs and lifts. A conscious decision was also made not to install

access gates. According to Foss, safety is promoted by the spatial quality of the metro stations (including the fact that the tracks are enclosed), the regular presence of staff in the station (not only to supervise, but also to check tickets and carry out maintenance) and, above all, the very high frequency of the metros. This means less waiting time. And the assumption is that longer waiting times increase the risk of insecurity. The metros also run through the night. All this gives the metro a very high degree of accessibility and automation. As a result, the metro has become an integral part of the fabric of the city (Respondent B, personal interview on 26 September 2024).

But how was this high frequency achieved? It was achieved by using short trains running at high frequency. However, Foss argues that this would require a very large number of drivers. Foss, who has a background with DSB, the Danish railways, makes a very pointed statement in the interview: "The committee quickly agreed that a separate company would have to be set up for the metro." The DSB would be too constrained by its existing way of working. Here, too, a paradigm shift was needed. A new company offered the opportunity to reinvent the wheel" (Respondent B, personal interview on 26 September 2024).

Inspired by a few examples from Nice and elsewhere, the idea of a self-driving metro system was studied. This system offered a number of interesting advantages: it could be used throughout the day, at high frequency. In addition, the system became less dependent on staffing, which is a challenge for a transport company in terms of both manpower and costs, although it is not the largest part of the costs. Foss indicates that the trade union initially had reservations. However, it was pointed out that staff would still be needed. These staff would no longer be tied to the driver's seat, but could be deployed much more freely for ticket inspection and as a point of contact for customers. The trade union changed its mind (Respondent B, personal interview on 26 September 2024). The question arises as to whether this was perhaps also because the metro company was completely new and did not yet have any existing staff?

Initially, there was also a lot of resistance to a self-driving metro system among people in the city. Would it be safe? But, according to Foss, this disappeared like snow in the sun once the first experiences were gained. Now the metro is embraced and held up by many as an example for the outdated train system, for example (Respondent B, personal interview on 26 September 2024). Incidentally, the S-train system will also soon be converted to a self-driving system (Urban Transport Magazine, 2024). And as Jacobsen says: "When I talk to my children or anyone else about Copenhagen, no one thinks that the metro shouldn't be there. It's completely normal. I've never heard anyone say that we should have a tram or take a different route. They just want more ." (Respondent A, personal interview on 2 July 2024).

Due to the high occupancy rate, the extra DKK 1 per ticket and the lower operating costs, Foss argues that the metro can not only pay for itself in terms of its operation, but that its operation can even cover up to 50 per cent of the construction costs. This is an element that has not been emphasised as strongly in previous studies. The financing of the first metro was therefore supported on the one hand by the contribution from the operation of the metros and on the other hand by the *value capturing* of the land of the later Ørestad (Respondent B, personal interview on 26 September 2024).

5.2.5 Decision-making and governance

Prior to describing the decision-making process for the first metro, the plan for Ørestad and the financing structure, Jacobsen states the following: 'You have to have planning authority. That's the point. You first have to develop strong planning authority and then you can implement it. These powers were available in Copenhagen and the state at the time." How did that come about? Had it already been built up over the previous 10-20 years, or is it a long history of planning power? "Both," Jacobsen replies, "because the Finger Plan has been a cornerstone of planning. There was already strong structural thinking. If you want to change the city, you have to dive deeper into planning." (Respondent A, personal interview on 2 July 2024).

Jacobsen: "Our Minister (of Finance) stood next to the Prime Minister and said that we had to do something, because nothing was happening." That is why the Minister of Finance, together with the leader of the opposition, set up this committee. I was appointed to lead it in close cooperation with the City of Copenhagen, and was therefore able to make the proposal. "There were many discussions and compromises, partly due to pressure from the Danish Nature Association. Ultimately, it came down to a political decision because no one could fully agree. It became a coup against the suburbs. The state and the centre of Copenhagen were on the same page. The suburbs were involved in the technical matters, but not in the final design." (Respondent A, personal interview on 2 July 2024). Partly on the basis of this fact, Jacobsen, Foss and Christensen (Copenhagen City Council) deliberately chose not to inform the other members of the committee before they had obtained political support from their respective political circles (Relsted, Rusfort, & Dahlin, 1992, p.65). The Minister of Finance, Henning Dyremose, the Minister of Transport, Kaj Ikast, and the Mayor of Copenhagen, Jens Kramer Mikkelsen, quickly agreed. Or, as Gaardmand (1991, p.60) describes it: the 'Dyremose-Kramer Alliance'.

The impression was that there would be a political majority in parliament and in the city of Copenhagen. As soon as the three committee members were given the green light, the committees came up with (technical) arguments for the two metro lines and the development of Ørestad (Relsted, Rusfort, & Dahlin, 1992, p.65). This ultimately led to a decision being made in 1992. Jacobsen states that a bill was drafted and submitted within a single day and night. Parliament decided to adopt *Law No. 477 of 24 June 1992 on Ørestaden m.v.* (Danmark, 1992). Jacobsen states: "A decision can be made if a sound plan is presented and its advantages significantly outweigh the disadvantages. The majority of stakeholders would experience benefits. A few parties (particularly the suburbs on the north and west sides) that would experience disadvantages were overlooked" (Respondent A, personal interview on 2 July 2024).

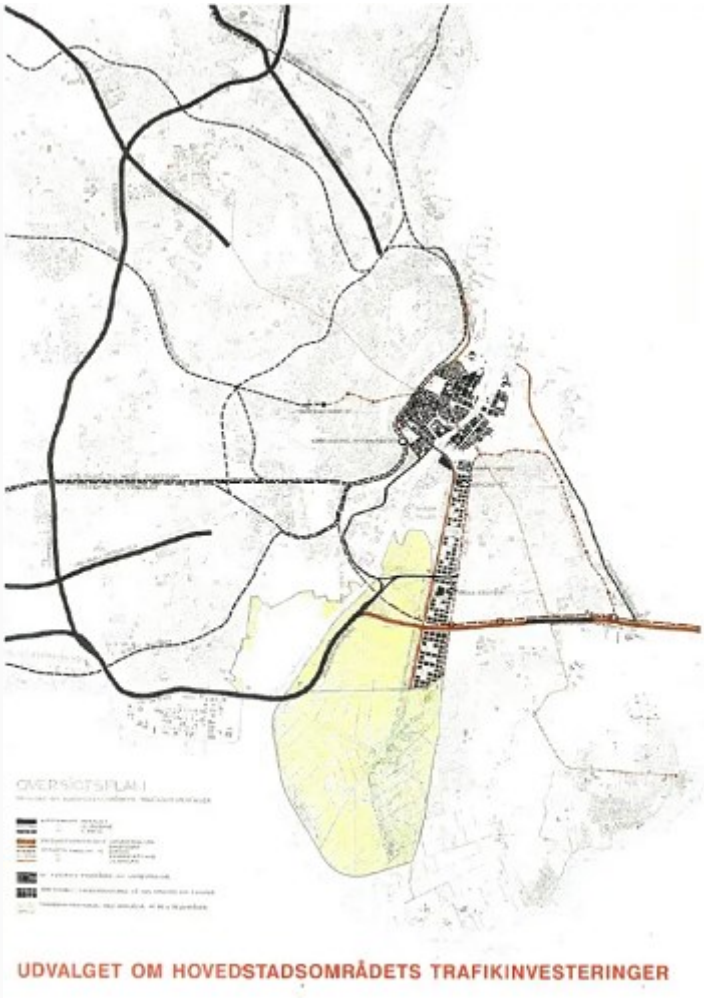


Figure 5.4. The Wurtzen Commission's report on transport investments in the Copenhagen region from 1991. The report served as the basis for the Ørestad Act, which paved the way for both the development of the Ørestad area and the construction of the M1 and M2 metro lines (Ministry of Finance, 1991).

It was decided to establish a new company that would focus on the construction of the metro and the development of Ørestad, called Ørestadsselskabet (1992). The city (55 per cent) and the state (45 per cent) became shareholders and thus had control. Foss was appointed as the first director. Because the company worked on both the income and expenditure sides and decisions were made quickly, it proved to be decisive. The company drew up a plan for the development of Ørestad by issuing a design competition. The company was then able to take out a loan based on the expected income from the land *value capture,* with the state acting as guarantor. The state also insisted that certain functions be established in the new district. The role of the city of Copenhagen was to set requirements for the development and to make the development spatially possible (Respondent A, personal interview on 2 July 2024, Katz & Noring, 2017). The M1 metro line was opened in 2002. The M2 line was opened in 2007. The first office building in Ørestad was completed in 2001. (Katz & Noring, 2017).

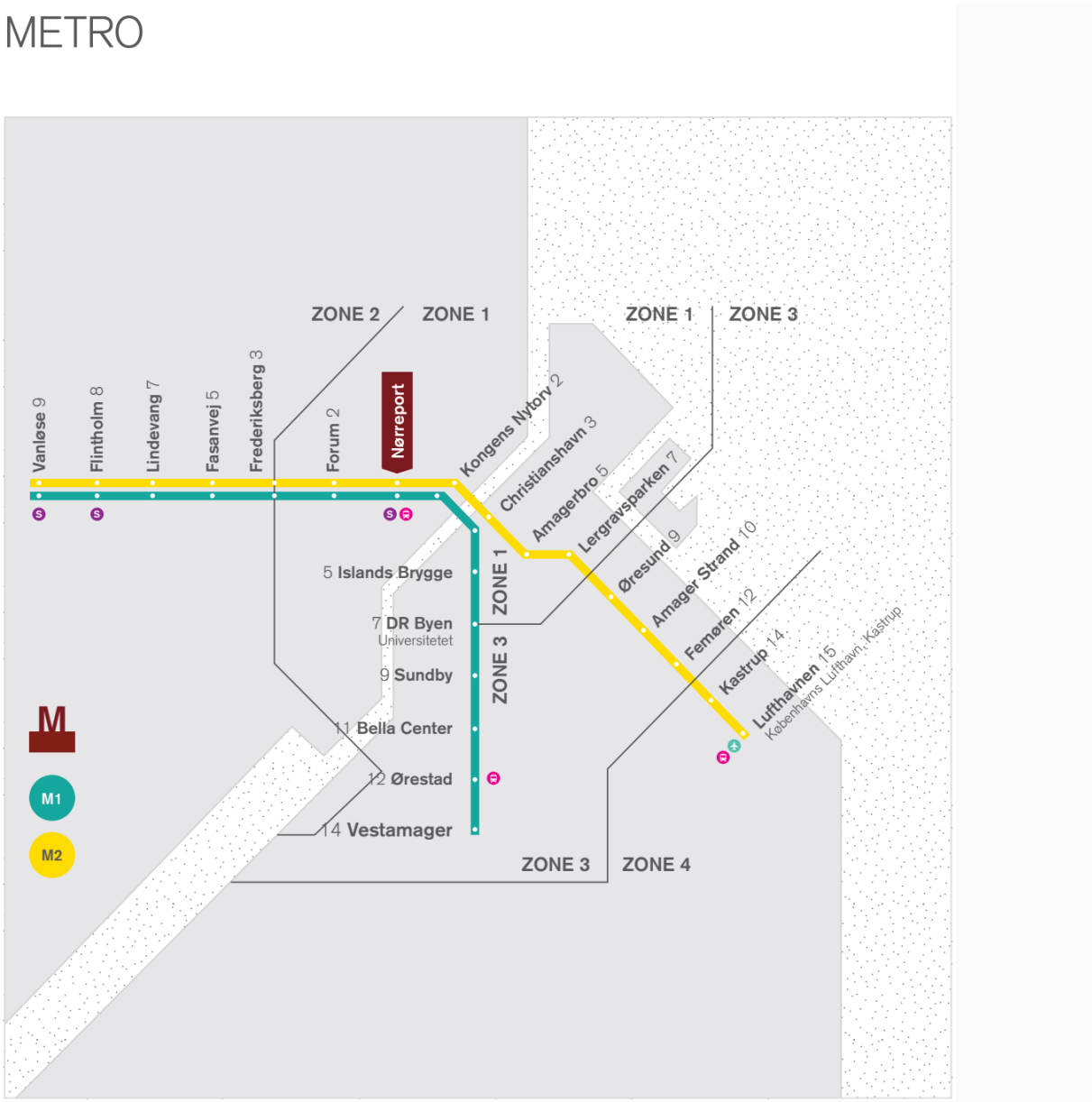


Figure 5.5. Map of the M1 and M2 metro system (Katz & Noring, 2017, p. 12)

When asked how Jacobsen and Foss look back on this now, both are very proud of the result. Despite the property crisis of 2008, the development of Ørestad has not stalled, says Foss. The number of inhabitants was set at 10,651 at the beginning of 2024 (City Population, n.d.). The goal is to continue growing significantly to 25,000 residents. Ørestad is now home to Scandinavia's largest shopping centre, the Bella Centre, Scandinavia's largest exhibition and conference centre, DR Village and the Royal Arena. Jacobsen again points out that if you have planning power, you should use it: relocating part of the university, positioning the Danish Media and the exhibition centre each provided support for the development (Respondent A, personal interview dated 2 July 2024, Respondent B, personal interview dated 26 September 2024).

The metro is functioning so well that the number of users is constantly increasing. It also works as a means of paying for part of the metro's construction, says Foss. Jens Kramer Mikkelsen is also *outspoken* about the result: "It created the precedent for cross-partisan collaboration and

collaboration between national and local governments. These became prerequisites for the successful operations of CHP City and Port development on market terms. It is a job well done!" (Katz & Noring, 2017, p. 13).

Image 5.6. The metro station in Ørestad, located at plus 1 (Photo: Thomas de Laine, 26 July 2004.)

Spatially, there are a few things to note, according to Jacobsen and Foss. The large scale and division of functions is not something you would want to apply today, they say. The inward-looking, large-scale Fields shopping centre is the best (or rather worst) example of this, according to Jacobsen and Foss. Both refer to the development of Nordhavn as an example where functions are more mixed (Respondent A, personal interview on 2 July 2024, Respondent B, personal interview on 26 September 2024).

An employee of By og Havn notes that rents in Nordhavn are the highest in the city. And that they are low in Ørestad. There is a risk that Ørestad will become a transit or gathering place for people who want to live in Copenhagen but cannot afford it. The city recognises this and is pushing for adjustments to the programme. According to Marc Jørgensen, this will lead to challenges on the revenue side, while a substantial debt will have to be borne and ultimately, of course, paid off (Respondent C, personal interview on 2 October 2024).

Van Zoest and Daamen note that in Copenhagen, a broadening of social objectives necessitates an adjustment of the funding strategy in Copenhagen. They point to increasing demands with regard to environmental and nature conservation (Daamen & van Zoest, 2021). See also the Ydre Nordhaven case study.

5.3 Further metro construction and organisational development

5.3.1 From Ørestadsselskabet to By og Havn and Metroselskabet.

Before we can discuss the planning of Nordhavn and then Ydre Nordhavn in more detail, it is important to describe the further development of the organisations involved. Kartz and Noring (2017) provide an overview of this in *The Copenhagen City and Port Development Corporation: A model for Regenerating Cities*.

Katz and Noring (2017) describe how the ports in Copenhagen underwent restructuring in the 1990s. The port authority had annual deficits and made up for these by selling land to private individuals. It was anticipated that the decline would be further exacerbated by the opening of the bridge between Denmark and Sweden in 2000. In order to benefit from the development of the land that was becoming available, Port of Copenhagen Ltd was made responsible for the management and development of the port. From 2001 onwards, this was done jointly with Malmö Hamn A/B in the organisation Copenhagen Malmö Port AB (CMP). CMP did not directly own the land but leased it from Port of Copenhagen Ltd.

It was decided to split the activities of Ørestadsselskabet into a part that would be responsible for spatial development and management and a part that would take on the development and management of the metro (Katz & Noring, 2017). Foss indicates that this was partly because other areas (owned by Port of Copenhagen Ltd) were also to be developed, including (parts of) Sudhavn and Nordhavn, and that it was logical to place them in a single organisation with the task for Ørestad. Another important reason was that the metro was expanding further across the city and was also a specific task in its own right. However, as Foss points out, the connection between the two new entities remained very strong. The newly established area development organisation, called By og Havn, would be responsible for the development of land and, in advance, transfer an amount from the expected profits to the newly established metro company, called Metroselskabet, to enable the construction of the metro to the areas to be developed. By og Havn was able to transfer the amount because of a still existing construction of taking out a loan with a state guarantee, which meant that it was considered a very low-risk loan. In fact, the model used for the development of Ørestad was further expanded, particularly to the city's ports (Respondent B, dated 26 September 2024).

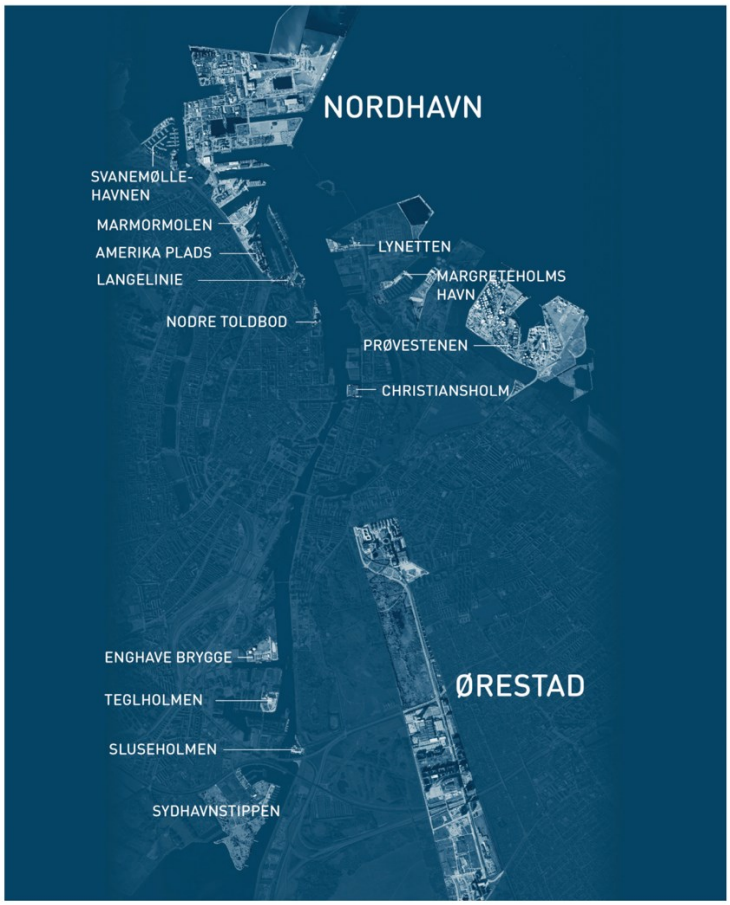


Figure 5.7. The areas being developed by By og Havn. The new island of Lynetteholm is not shown in this image. (By og Havn, n.d.)

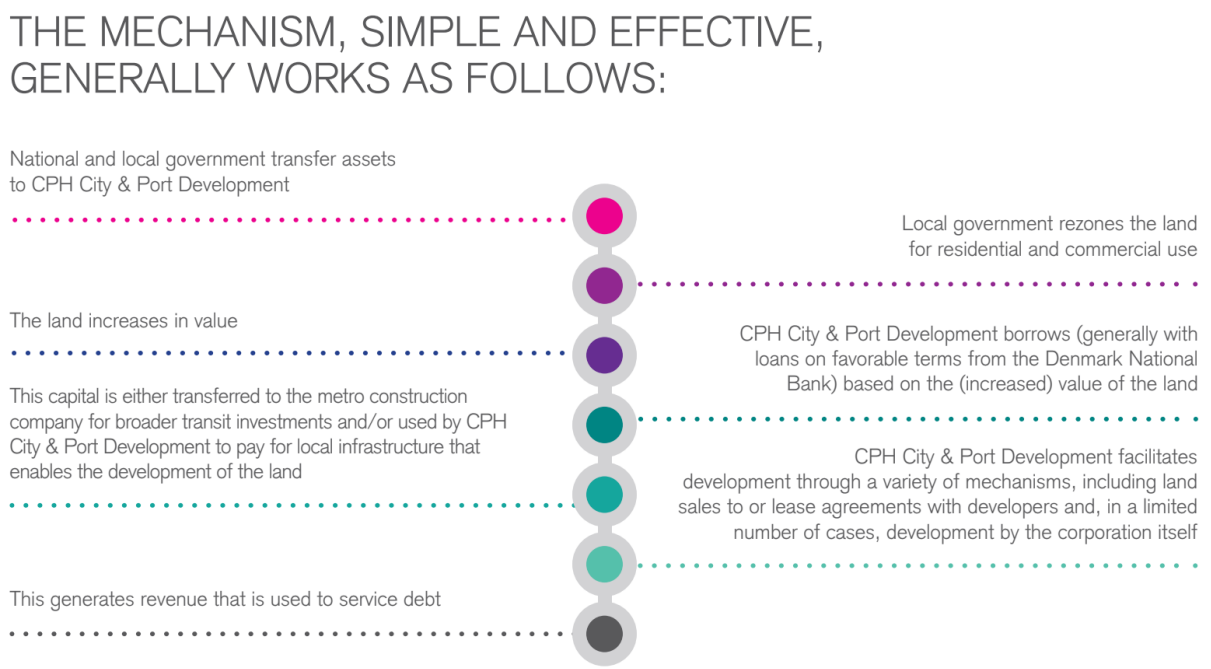


Figure 5.1. The mechanism by which the state, city, By og Havn and Metroselskabet finance the metro construction prior to area development. (Katz & Noring, 2017, p. 17)

According to Katz and Noring (2017), as well as Jacobsen and Foss, this mechanism has many advantages (Respondent A, dated 2 July 2024, Respondent B, dated 26 September 2024). They see that applying this sequence of steps increases the added value of the land each time. In their view, it is important that the metro company makes investments in such a way that the value of the land increases optimally: the location and nature of the stations and metro are important factors. This requires By og Havn (and, behind it, the city of Copenhagen, through its spatial planning) to draw up a plan that allows as many homes as possible to benefit from the proximity of a metro station. This requires careful preparation and good coordination between the two companies and the city of Copenhagen. And also with the state, which is also represented on the boards of the two companies through its shareholding. This came about because the state contributed its port land to the development organisation and obtained a shareholding in return. In 2014, the state reduced its share to 5 per cent. An employee at By og Havn notes that this has naturally increased the city's control, but that 95 per cent of the responsibility for the debt that By og Havn has to bear now also rests on the shoulders of the residents of Copenhagen. This increases the pressure on the city and By og Havn to continue to provide sufficient development opportunities (Respondent C, dated 2 October 2024).

Another relevant factor in this case is that the state revalued its land in Nordhavn in 2014. The land was valued significantly higher. This increased valuation was used to pay for the metro to Nordhavn, including two additional metro stations (Katz & Noring 2017, p. 18, and By & Havn, 2015).

By og Havn has learned that it makes the most sense not to pay off its debts too quickly, but to ensure that it can sell the land when its value is at its highest (Katz & Noring, 2017). This may also mean that By og Havn retains land until spatial development has progressed further, i.e. until the metro has been constructed. According to Foss, this will still be the case in 2024 and political pressure can be effectively resisted (Respondent B, dated 26 September 2024). According to Casten Koch, former head of the By og Havn board, the depoliticisation of By og Havn has been achieved because it falls under national legislation. Foss argues that it was and is essential that the decision on land allocation lies with the board of By og Havn and not with the city itself. She also points to statutes that oblige By og Havn to allocate land only at the correct value. According to her, the legal requirement to operate commercially provides resistance to the issues of the day. This, Foss argues, prevents land from being allocated at low prices. Think long term, says Foss. (Respondent B, dated 26 September 2024).

Katz and Noring (2017, p. 29), as well as Foss and Jacobsen (Respondent A, dated 2 July 2024, Respondent B, dated 26 September 2024), emphasise the importance of good representation on the boards of both By og Havn and Metroselskabet. The boards include representatives of the shareholders. Although the articles of association promote less politicised decision-making, it is very important that contacts at national and local level are very good and that the long-term strategy continues to resonate there. Foss indicates that there is no other body in which coordination takes place. A representative of the Metro company indicates that she misses this now that Metroselskabet is developing further: a place where the interests of the two organisations and the interests of the various municipalities in the region come together (Respondent F, dated 16 January 2025).

Because the (planned) area developments directly generate income for the construction of metros, discussions about funding for these metros are depoliticised (Katz & Noring, 2017, p. 28). This makes lobbying for funds from lower to higher levels of government much less necessary.

In an interview with a representative of a large municipality in Denmark, the following statement was made: "You can always discuss the pros and cons of the organisational model we have chosen in Copenhagen. The most significant advantage is that the implementing organisations are given a clear, well-defined long-term focus on their own priorities, thereby preventing conflicts of interest that would arise if everything were organised by a single public authority. On the other hand, ensuring coordination and prioritisation of conflicting interests across different stakeholders can be challenging and sometimes makes processes difficult (Respondent I, written interview, 3 April 2025).

5.3.2 Choices for the M3 and M4

The M3 and most of the M4 metro lines have now been constructed. The M3 line, also known as the circle line, was built to connect the city centre with the districts to the east, north and west. Jacobsen points out that this line runs largely under existing buildings and that opportunities for land development and thus *value capturing* were limited. Other sources of income were needed. As municipal secretary for the municipality of Copenhagen, Jacobsen was also involved in this decision. The main solution was found in the sale of the municipal energy company. Jacobsen: "We decided on this deal in 2000 and it was signed on my last day in office." (Respondent A, dated 2 July 2024).

Figure 5.8. A representation of the metro lines constructed up to 2025. The M3 in red and the M4 in blue. It should be noted that the southern extension of the M4 was recently opened in 2024 (Van Zoest & Daamen, 2023).

The M4 line connects Nordhavn in the north with Sydhavn (and beyond) in the south. The first section to Nordhavn opened in 2020. An additional section in Ydre Nordhavn is currently in preparation (not yet shown in Figure 5.8 above). It is this section that we will examine in more detail in this study. The section of the M4 to Sydhavn and further to Ny Ellebjerg was recently opened in 2024.

The choice of the M4 as a branch of the M3 to Nordhavn was part of a complex consideration, which also included branches to other parts of the city. Initially, a branch from Nørrebro to the neighbourhoods in the north-west was considered. Representatives of these neighbourhoods lobbied for this. However, these neighbourhoods did not offer many development opportunities. Finally, in December 2005, the state and the municipalities of Copenhagen and Frederickberg reached a political agreement, which was enshrined in law in June 2007 (Transportministeriet, 2007).

The decision was made to build the branch line to Nordhavn, once again opting for the Ørestad system: giving priority to the construction of a metro as a driver of spatial development, to parts of the city that offer opportunities for large-scale spatial development and *value capturing*. An additional consideration was the commitment to encourage new residents from the outset to make greater use of public transport and less use of cars. It is noteworthy in this context that substantial investments are also being made in the accessibility of the new neighbourhood by car (see below) and that the parking standard has not been adjusted downwards, or only slightly (Respondent C, dated 2 October 2024). This means that residents of the once-planned Nordvestmetro are still dependent on the bus (Myldretid, n.d.).

5.3.3 Planning and decision-making for the M5

Recently, on 28 March 2025, a law was passed on the construction and financing of the M5. This concerns an agreement between the government and the city of Copenhagen on urban development and infrastructure in Lynneteholm. (Transportministeriet & Københavns Kommune, 2025). It is striking that the structure of this law has many similarities with the law from 1991-1992. Here too, the state is granting (new) land to the city, and large-scale urban development is to generate funds for the construction of a metro. Here too, the decision has been made to give priority to a metro that will run through part of the existing city and provide access to a new district. This means that no preference has been given to other possible connections.

This new M5 metro line will be constructed in two stages. The first stage will run from the central station, via a second underground connection to the island of Amager, and from there in an arc through the central part of Amager to V. Pagsboulevard. This section is planned for completion by 2036. An employee of the metro company indicates that this includes a line to a new metro depot (Respondent F, dated 16 January 2025). The second section runs via Refshaleøen to the new island of Lynetteholm (completion in 2045). Respondent F emphasises the importance of the M5, which will provide a second connection between the islands of Sealand and Amager. The current single connection is becoming extremely busy and an alternative is needed, she argues. The (peninsula) island of Lynetteholm offers the possibility of providing some protection against the water and opportunities for large-scale residential development for approximately 50,000 inhabitants and 30,000 jobs. (Transportministeriet & Københavns Kommune, 2025). The decision is just as much an

example of what Respondent F describes as thinking in terms of 100 years as the 1991 decision on the M1 and M2 and Ørestad. (Respondent F, dated 16 January 2025).

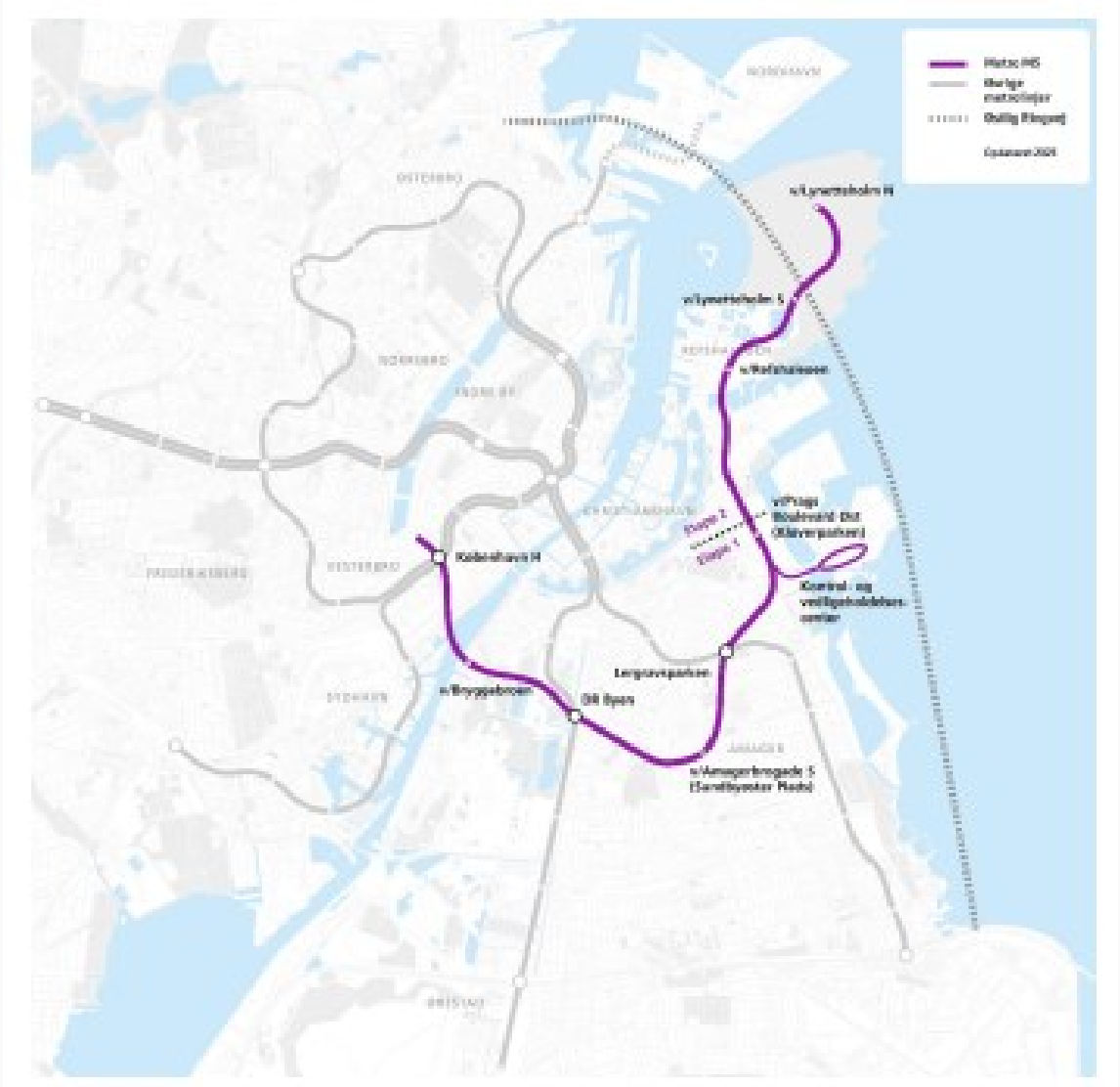


Image 5 9. M5 route shown in purple. The M5 line runs from Copenhagen Central Station, via a second connection under the harbour, to Amager via the Refshaleøen development, to the new island of Lynnetteholm (Transportministeriet & Københavns Kommune, 2025, appendix 1, p.9).

The decision to build Lynetteholm was made in stages following an agreement in principle between the government and the city of Copenhagen in 2018. The development of Lynetteholm into a new district is expected to be completed in 2070. It is important to realise that this is essentially a continuation of the centuries-old practice of reclaiming land from the sea. The city is also doing this in order to be able to dump the soil released from all construction work (including the construction of the metro and the eastern ring road). This contributes to the local storage of these raw materials. Over the centuries, Copenhagen has grown in size by filling in coastal waters with soil and building materials released during the construction of the city. Lynetteholm is essentially a continuation of this system (Københavns Kommune, n.d.).

The decision to construct Lynetteholm was the subject of intense debate in Copenhagen. Objections to this development were raised, particularly by nature organisations (Københavns Kommune, n.d.). The question has also been raised as to whether the city of Copenhagen has made itself too dependent on the mechanism of creating and reclaiming land for metropolitan environments in order to finance projects such as the construction of the metro. Concerns have also been raised that the construction of Lynetteholm would essentially also lead to the construction of the metro and an eastern ring road, the environmental consequences of which are not yet sufficiently known (Ankerstjerne & Horneman, 2020). The decision of May 2025 indeed represents an important step in this direction.

Image 5.10. Impression of Lynetteholm, with Nordhavn on the left. (By og Havn, n.d.)

5.3.4 Attention for cars too

It is relevant to note here that although Copenhagen is strongly committed to cycling and public transport in particular, this does not mean that it pays no attention to the road network. The construction of the Nordhavn Tunnel, designed to facilitate the rapid flow of car traffic to and from Nordhavn, is an important example of this. Katz and Noring (2017, p. 28) note that every time By og Havn is given more responsibility, such as the realisation of the Nordhavn Tunnel, this must be preceded by a decision at the national level, which means that agreement must be reached across the entire political spectrum, both nationally and at the urban level.

Figure 5.11. Nordhavn tunnel route (Vejdirektoratet, n.d.)

And the planned connecting eastern ring road (with a tunnel of more than 10 km) indicates that a great deal of attention is also being paid to facilitating car traffic. Incidentally, this is also with the aim of reducing car traffic in and through the city centre (Sund & Bælt, n.d.).

Figure 5.12. Plan for the eastern ring road, largely underground and under the sea (Sund & Bælt, n.d.)

The plan for the construction of the Nordhavn Tunnel and an EIA study for the eastern ring road are included in the Infrastructure Plan 2035, which was approved by a majority in the Danish Parliament (Folketing) on 28 June 2021 (Sund & Bælt, n.d.). Jacobsen indicates that it may be wise to use the current tunnel factory of the Fehmarn Belt connection between Germany and Denmark to also build the tunnel elements for the Eastern Ring Road, as the plan assumes (Respondent A, dated 2 July 2024).

5.4 The Ydre Nordhavn case

5.4.1 Introduction

In the previous sections, we outlined the planning and decision-making process for the first metro in Copenhagen in the early 1990s. We also outlined how *value capturing* was used for this purpose. And how the design of the metro contributes to the quality of the environment to be developed, and how the operation of the metro can also contribute to the development and construction of metro lines. We have also outlined future developments relating to the M5 metro line and developments relating to the car, also for the benefit of Nordhavn's accessibility. We have also outlined the organisational forms that have been created for this purpose. We are now moving on to the planning stage for the development of Nordhavn. We will then be able to zoom in on the decision-making process for the planning and development of Ydre Nordhavn.

5.4.2 Nordhavn, from vision and strategy to implementation phase 1

This area, originally reclaimed from the sea at the end of the19thcentury, was created by means of *landfill* and was subsequently developed and used as a harbour. It is a very large area, located relatively close to the historic centre (By & Havn, n.d.). It is also interesting to note that Nordhavn continued to grow later on through *landfill* for the construction of the metro and the Øresund Bridge and Tunnel (Ugeavisen, n.d.). As early as the 1990s, it was clear that the emphasis on ports would decline and that redevelopment would be possible (Respondent A, dated 2 July 2024).

Figure 5.13. The growth of Nordhavn through landfill. From Structure Plan Ydre Nordhavn, 2023 revision (By & Havn, Cobe, Sleth, & Raw Mobility, 2023, p. 62)

In 2005, the Danish government and the city of Copenhagen made a so-called agreement in principle to develop Nordhavn. It was enacted into law by the Danish parliament (Folketing) on 22 May 2007. (By & Havn, n.d.) As explained above, the transfer of land owned by the national government also forms the basis for financing the necessary investments for accessibility and other purposes (Katz & Noring, 2017 p. 18-19).

In 2008, By og Havn organised an ideas competition for the development of Nordhavn. The development of Nordhavn was presented as the largest development in Scandinavia for the coming decades. Respondent C explains that this request for proposals was prepared in collaboration with the city of Copenhagen. The state and municipality provide preconditions through legislation and urban visions, and By og Havn translates these into a request for proposals (Respondent C, dated 2 October 2024). The tender was aimed at delivering a design for a sustainable city for the future: ecological, lively, for everyone, on the waterfront, dynamic and with sustainable mobility (By & Havn,

2009). An important source of inspiration for this was the UN Climate Summit COP 15 in December 2009. The city wanted to present itself in a sustainable way at this event.

There were 180 entries from all over the world. Three entries were selected as joint winners. These entrants were given two months to further develop their plans. The winner was announced in March 2009. The design 'Nordholmene – Urban Delta' by Cobe, Sleth and Ramboll was chosen. In its report, the jury stated: 'The entry entitled 'Nordholmene – Urban Delta' stands out because of its visionary, compelling and well-prepared proposal for implementation of the vision for the development of Nordhavnen as the sustainable city of the future, featuring environmental responsibility, social diversity and added *value*'. And further: 'The area is used in such a way that buildings and green areas are combined in a very meaningful manner, and the extraordinary and very great potential of Nordhavnen is excellently utilised'. 'The area is laid out as a relatively compact city district with buildings reflecting the Copenhagen skyline and the cultural harbour environments worth preserving, the low city with its characteristic spires'. (Juel-Christiansen, Lund, Martinussen, & Halvorsen, 2008, as cited in By & Havn, 2012, see also By og Havn, 2008).

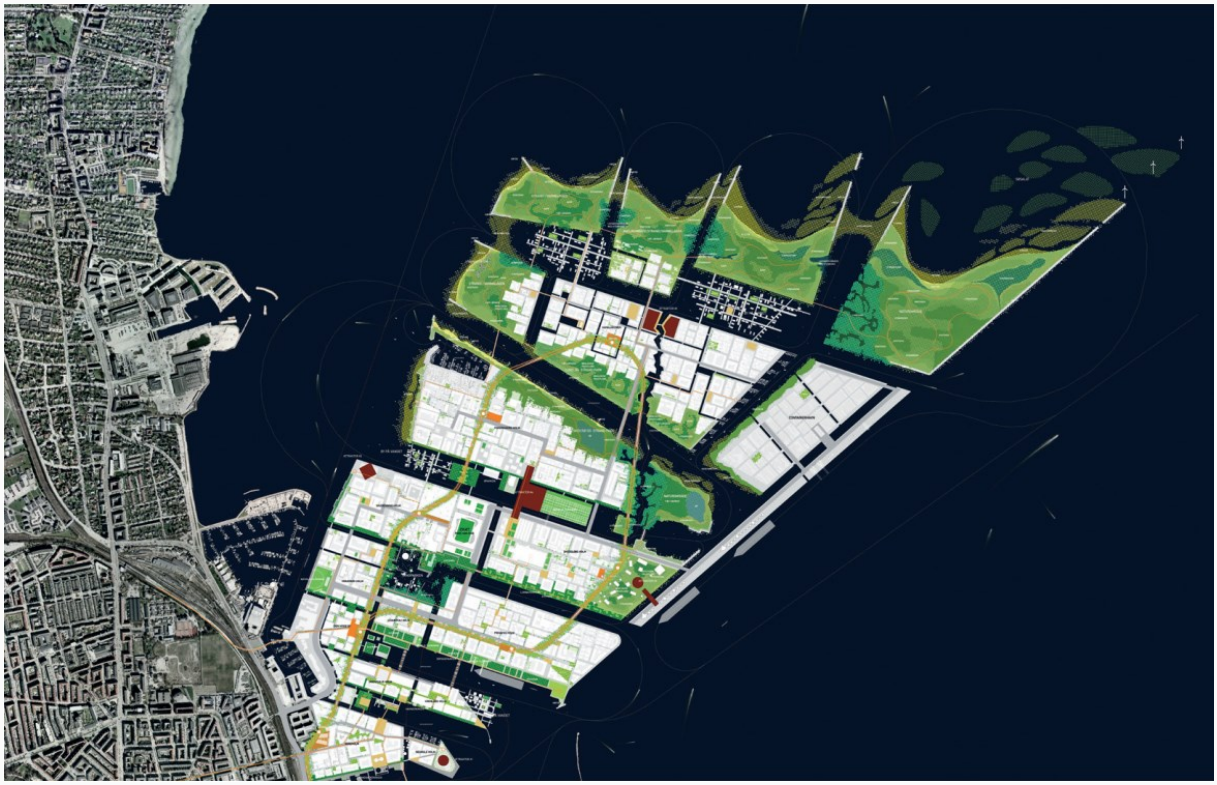


Figure 5.14. The winning design for the development of Nordhavn. The plan includes a metro line with seven stations. (By & Havn, 2009, p. 15)

As Cobe describes it: "The new Nordhavn is conceived as an urban archipelago or a series of densely populated neighbourhoods on the waterfront. The Nordhavn master plan, which plans island by island, is not an idealised urban vision, in which every detail is specified, but rather a robust and flexible guideline intended to inspire future generations of urban planners. It is a way of addressing one of the major challenges of urban planning: designing for today's needs and demands, while trying to predict and address the major environmental challenges that will shape our future" (Cobe, n.d.).

The *'Urban Strategy'* aims to develop Nordhavn as an integral part of Copenhagen, based on Copenhagen's identity (By og Havn, 2012, p.15.). Both Jacobsen and Foss mention in their interview that this was also prompted by criticism of Ørestad as a more isolated area and, in urban planning terms, much more deviant from the fine-meshed but still urban grain of Copenhagen in the nineteenth and part of the twentieth century, characterised by block developments with shared courtyards, mostly with six storeys and pitched roofs, and with a mix of functions in and around these residential blocks.

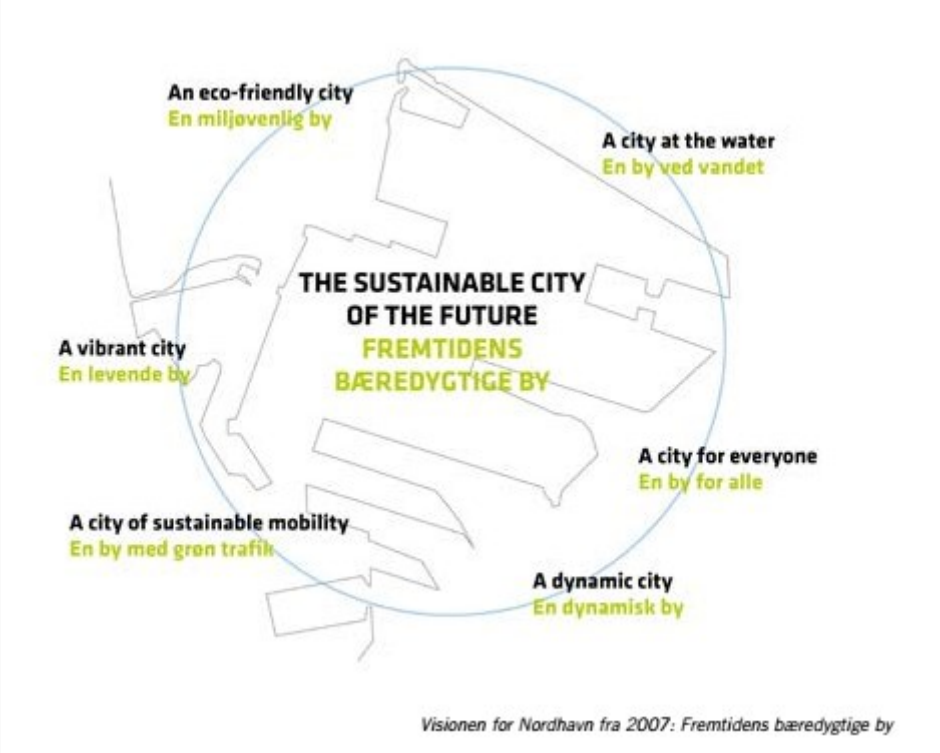


Image 5.15. Vision for Nordhavn from 2007: The sustainable city of the future. Outer Nordhavn structural plan, 2023 revision (By og Havn, Cobe, Sleth, Raw Mobility, 2023, p. 5)

The design offers space for the realisation of 3.6 million m² of functions. A significant part of the financing for the metros is provided by By og Havn taking out a loan based on the square metres to be realised, and By og Havn transferring these funds to Metroselskabet, which then takes on the realisation (Katz & Noring, 2017). The plan aims to develop a 5-minute city, and in order to offer this proximity, the original design included a kind of lasso for the metro, with a total of 7 metro stops. The first two metro stops were built in accordance with the initial design. However, as will become apparent, By og Havn and Metroselskabet intend to deviate from the original plan in the further planning for Ydre Nordhaven.

In 2009, Copenhagen-based architectural firm Cobe, together with Sleth Modernism, Polyform and Romboll, was appointed as consultants to assist in the further development of Nordhavn. The consultants then worked with By og Havn and the City of Copenhagen to further develop the plan based on the winning design. The City of Copenhagen embraced the plan and made the Inner Nordhavn section spatially possible (2010-2011). This allowed the first phase of development to begin. In 2014, a new cruise terminal was opened . In 2015, the first residents moved into the Arhuskwartier section. In the spring of 2020, the short Nordhavn branch of the metro was opened.

(Myldretid.dk, n.d.). By 2024, approximately 4,000 people will be living there. Nordhavn has become a very popular neighbourhood, resulting in high sales and rental prices (Respondent C, dated 2 October 2024).

By og Havn has divided the development into smaller sections so as not to offer too much at once (Katz & Noring, 2017, p. 20). As Jacobsen also points out, it was necessary to carefully manage the release of plots onto the market. Jacobsen emphasises that, in fact, the development of Nordhavn itself had to wait until Ørestad started to generate sufficient revenue (Respondent A, dated 2 July 2025). A very direct way of generating additional income is for By og Havn to charge an additional surcharge per home or business when issuing land near the metro in Nordhavn. Katz and Noring (2017, p. 23) indicate that this involves amounts of more than 10 euro per m2 for a period of 60 years for businesses and more than 5 euro per m2 for homes. This has a specific price-increasing effect on homes and may therefore also have the effect that some less affluent residents of Copenhagen choose to live further away from the metro stop. This puts pressure on inclusivity (Respondent C, dated 2 October 2024).

By og Havn charges a fee for every tonne of soil released during construction work in the city, thereby earning money from the creation of new land, which it can then develop (Katz & Noring 2017, p. 20). However, By og Havn only did this once it knew what could be done with the soil that was released, and so it found a tenant in the Port of Malmö, which will develop a fourth cruise terminal here. This means that By og Havn benefits in several ways. The city of Copenhagen also benefits from this, as the land and dykes are raised and help to protect the city from rising water levels. The city of Copenhagen has also indicated that parts of the new land will be used for recreation, thereby contributing to the intended urban life. In addition, the green recreational areas contribute to the attractiveness of the areas to be developed, giving this land a higher market value when it is sold (Katz & Noring, 2017, p. 23).

On the one hand, By og Havn must operate commercially from a legal perspective, i.e. apply market prices. On the other hand, however, By og Havn's sole purpose is to carry out the developments over a period of 30 to 50 years and is therefore essentially obliged to repay the debt. Once this task has been completed, the organisation must be dissolved. However, By og Havn anticipates that new developments (and new debts) will extend the organisation's lifespan (think of Lynetteholm). It is a project organisation, but has now acquired so much expertise and so many tasks that it seems to be outgrowing itself. As Jens Kramer Mikkelsen puts it: "By og Havn has extensive knowledge and professionalism in areas such as *urban planning,* construction, land sales, loan agreements, urban life and port management. I am sure that the owners will continue to use it after the current activities and agreements have been completed" (Katz & Noring, 2017).

5.4.3 The second phase: Ydre Nordhavn

We described the start in 1991-1992 and the realisation of the first metros and the development of Ørestad. We then discussed the further development of the organisations By og Havn and Metroselskabet, and their interactions with the state and the municipalities of Copenhagen and Frederiksberg. We explained the methods used to secure financing for the metro and the political considerations that were necessary for this. We then moved on to the planning of Nordhavn. We also gained an insight into the decision-making process behind the redevelopment of Nordhavn into a new residential area of Copenhagen. We explained how the M4 metro line was envisaged, financed and partially constructed. We will now discuss the recent planning for Ydre Nordhavn. Once again, we will focus on the interaction between the decision-making process for spatial development and the decision-making process and financing methods for the construction of the M4 metro in the area.

In September 2023, the Copenhagen City Council decided to adopt a revised structural plan for Nordhavn (2nd revision). This structural plan has been amended to respond to new spatial and political requirements. In September 2023, the city council also decided to start the environmental assessment report for the planned metro line with two stations, the so-called blue line (we will discuss the assessment process for this in more detail below). The construction phase for the metro line is expected to be 2025-2030 (By & Havn, 2024).The first part of Ydre Nordhavn to be developed is Levantkaj, for which the spatial planning process will be completed in 2024. Actual development will commence on Levantkaj in 2025, and the first residents are expected to move in in 2027 (By & Havn, 2024).

The Ydre Nordhavn planning area (Figure 5.17) extends from Levantkaj in the southern part to the new islands still under development in the north. At the heart of the area lies Tunnelfabriken and, above it, the protected nature reserve Nordhavnstippen. In the north-western part, there is a small marina with small-scale residential development. Most of Ydre Nordhavn is (or was) used for (large-scale) commercial activities. A new cruise terminal has already been built on the east side. And a container terminal is under construction at the northern tip. South of the planning area lies the southern part of Nordhavn, which has now been largely developed.

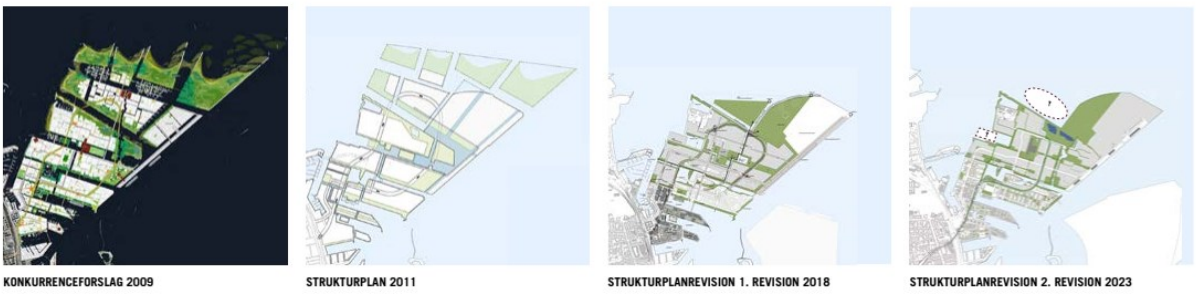


Image 5.16. An overview of the changes to the structural plan for Ydre Nordhavn, 2023 revision (By og Havn, Cobe, Sleth, Raw Mobility, 2023, p. 7)

Figure 5.17. Planning area Structural Plan Ydre Nordhavn, 2023 revision (By og Havn, Cobe, Sleth, Raw Mobility, 2023, p. 4)

Figure 5.16 provides a clear overview of how Ydre Nordhavn has changed from the initial plan in 2009 to the image in the 2023 structural plan. It can be seen that some elements have been scaled back, including the extent to which the various islands are separated from each other by water, the characteristic fan shapes on the north side have been changed, and an industrial estate is partly under development (container port). The metro line has also been changed from a loop with seven stops to a winding route with four stops. Figure 5.19 illustrates the various developments and policy choices that have influenced the changes in the revised structural plan for Nordhavn. These influences relate to nature and biodiversity, climate and water, green mobility, and architectural policy, among other things. In this thesis, we zoom in on the considerations regarding the metro in relation to area development.

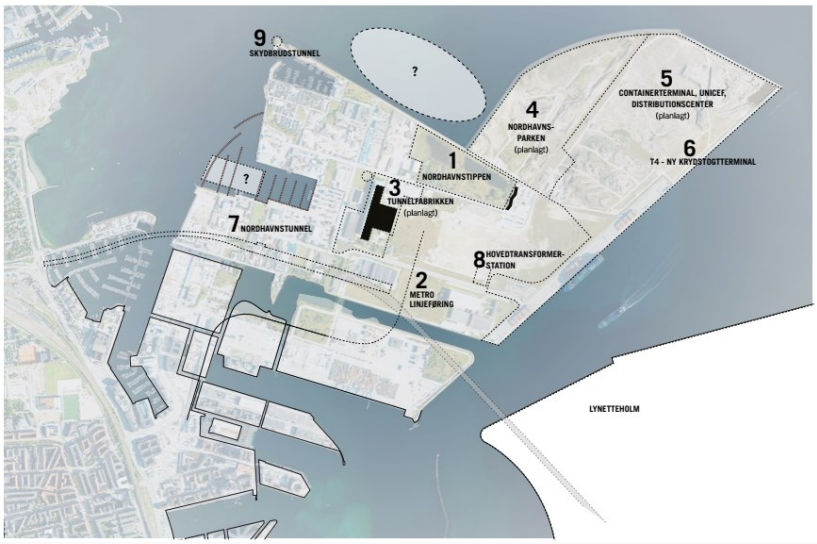


Figure 5.18. Structures and objects specified in the 2023 revision. Number 1 indicates the Nordhavnstippen nature reserve. Outer Nordhavn Structural Plan, 2023 revision (By & Havn, Cobe, Sleth, & Raw Mobility, 2023)

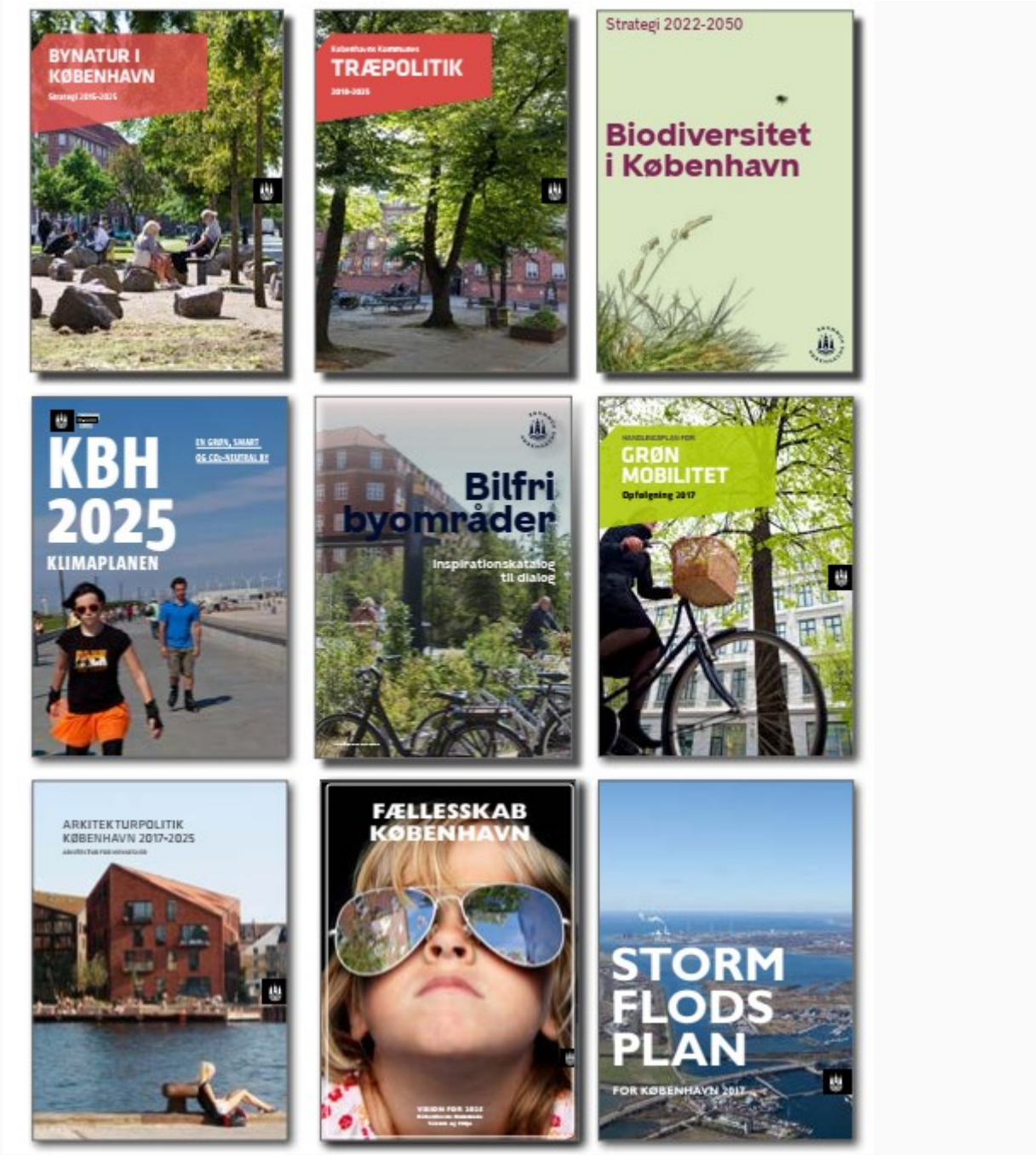


Figure 5.19. A non-exhaustive overview of policies that influence planning in the structural plan for Ydre Nordhavn, 2023 revision (By & Havn, Cobe, Sleth, & Raw Mobility, 2023, p. 10)

In 2014, the state and the city of Copenhagen reached an agreement on the financing of the metro in Nordhavn: *Principaftale om metro til Ny Ellebjerg via Sydhavnen samt udbygning af Nordhavnen* (Transportministeriet & Københavns Kommune, 2014). This agreement states that a solution will be sought and a decision reached on a number of metro stations in Nordhavn, in line with the development of the city. It also states that the financing will be provided by By og Havn and the rest by future metro revenues. On this basis, By og Havn has reserved an amount of DKK 1 billion in the long-term budget (Copenhagen Municipality, 2023).

On 22 June 2016, Copenhagen City Council discussed a screening report containing nine different options for extending the M4 metro line to Ydre Nordhavn. Based on this report, it was decided to proceed with the '*Lille* Spørgsmålstegn' (small question mark) route. In the 2019 Municipal Plan, it was then decided to investigate the options for the final stage of the Nordhavn metro, which is located south of Nordhavnstippen. This decision was necessary, among other things, to preserve the Nordhavnstippen nature reserve (Københavns Kommune, 2023).

The Metro Company then conducted a new screening, this time with four possible lines that do not affect Nordhavnstippen. In December 2021, the Copenhagen City Council decided to further investigate a possible line with three stations (red line) and a possible line with two stations (blue line) (Metroselskabet, 2021, p. 5.) Deputy Mayor Lars Weiss stated, "As we make room for more Copenhageners in Nordhavn, there will of course also be access to public transport. By extending the metro line to Ydre Nordhavn, we are connecting the area to the rest of the city, reducing the need for cars and at the same time preserving the Nordhavnstippen nature reserve" (Københavns Kommune Økonomiforvaltningen, 2021).

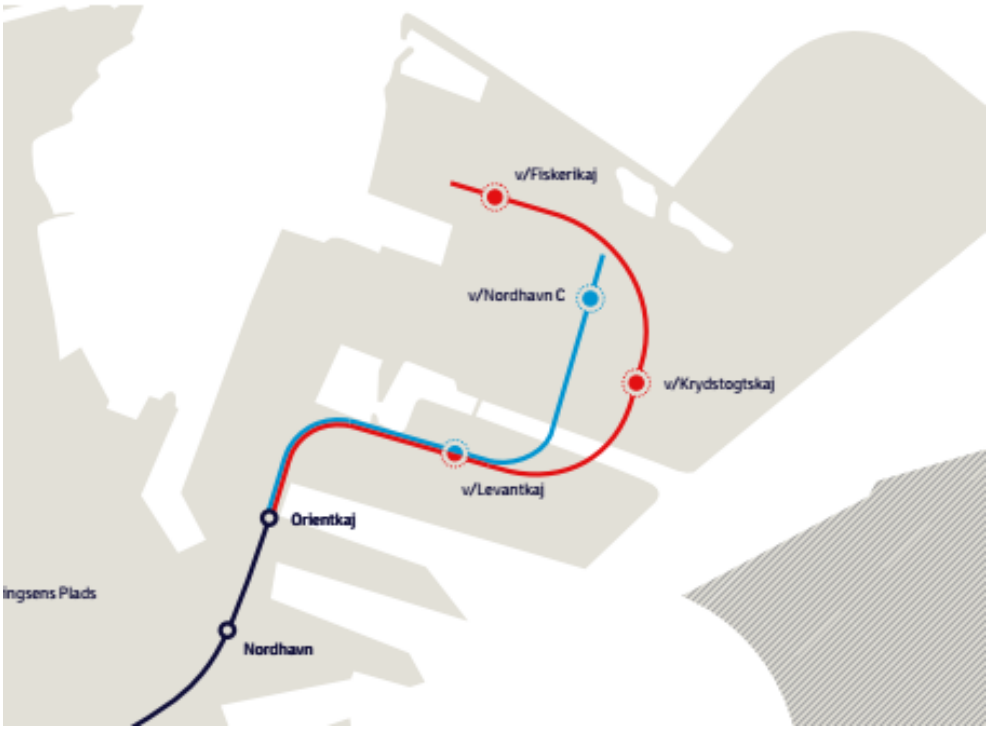


Image 5.20. Representation of the red line with three stations and the blue line with two stations. The black line indicates the section that has already been constructed (Metroselskabet, 2023a, p.9)

The red line is shaped like a question mark. It has three stations, at Levantkaj, Krydstogkaj (Cruise Quay) and Fiskerkaj. Figure 5.21 shows that the three stations cover a significant part of Nordhavn in terms of proximity. The blue line makes two right-angle turns and has two stations: Levantkaj and Nordhavn C. This line covers less of Nordhavn via the two circles. It is noteworthy that in the case of the blue line, the new cruise terminal on the east side is also outside the 'proximity' area.

According to the report, the limited coverage of the circles means that fewer people will live within an acceptable distance of a metro station on the blue line and may make different transport choices. On the other hand, the report states that the circles overlap considerably on the red line (Metroselskabet, 2023, p. 16).

Figure 5.21. Representation of the red line with three stations and the blue line with two stations, with the proximity circles (600-metre radius) indicated. (Metroselskabet, 2023a, pp. 10 and 16)

The two lines were also compared in terms of passenger numbers. This shows that the estimated number of passengers on the blue line is 23,000 and 25,000 for the red line per working day. This is not a very big difference (Metroselskabet, 2023a, pp. 11 and 16). Another weighting factor is the extent to which the construction of the metro contributes to reducing CO2 emissions. This stems from the Copenhagen Municipality Climate Plan 2025, which sets the goal of making Copenhagen the world's first CO2-neutral capital city. The metro company has laid down in its business strategy that it aims to halve the climate footprint of new metro projects compared to existing ones (Metroselskabet, 2023b).
In doing so, it has not only considered the length but also the nature of the line to be constructed. For example, constructing a metro line on an earthen embankment reduces CO2 emissions by 60 per cent compared to existing construction methods (Metroselskabet, 2023a, p.7.). A metro on two pillars, partly made of concrete and partly of wood(!), can be built with 40 per cent less CO2 emissions than the current construction method. It is not surprising that the blue line, which is shorter and has one less station in the various variants, comes out better (18,000 tonnes of CO2 versus 26,000 tonnes of CO2).
Building the metro at plus 1 on an earth dam is relatively inexpensive and has significantly lower CO2 emissions. However, integrating such a dam structure can be an architectural challenge in terms of spatial quality and cohesion between the different neighbourhoods. For this reason, parts of the metro line will be placed on pillars to provide sufficient connectivity.

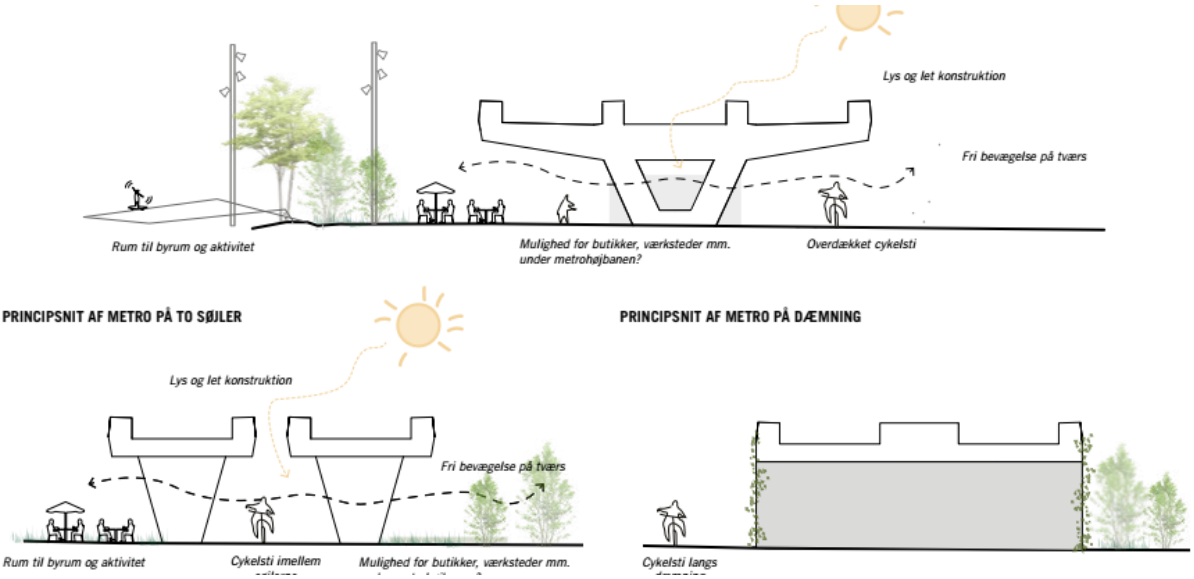


Image 5.22. A representation of possible construction forms for the metro. Structure plan Ydre Nordhavn, 2023 revision (By & Havn, Cobe, Sleth, & Raw Mobility, 2023, p. 36).

Image 5.23. End of the current Nordhavn metro line, with Orientkaj station (photo by author, 2024).

The costs are also distinctive. Table 5.1 shows the remaining financing requirement (Restfinancieringsbehov). The blue line and red line are shown side by side in two variants. The construction of the blue line is estimated at DKK 2,400 million and the red line at DKK 3,500 to 3,600 million. Reinvestment costs and operating costs must be added to this, totalling DKK 1,000 million for the blue line and DKK 1,500 million for the red line. On the other hand, income has been estimated at DKK 1,000 to 1,500 million. All in all, this gives a picture of a total additional investment of DKK 2,000 to 2,100 million for the blue line and DKK 3,500 to 3,600 million for the red line (Metroselskabet, 2023a, p. 33) .

Table 5.1. The estimated costs and revenues of the red and blue lines, with the estimated remaining financing requirement. (Metroselskabet, 2023a, p. 33)

Tabel 1 Restfinansieringsbehov

Mio. kr., 2022-priser[1], tilbagediskonteret til 2024[2]

	Blå		Rød	
	Hovedforslag	Variant	Hovedforslag	Variant
Anlæg	-2.400	-2.400	-3.600	-3.500
Reinvesteringer	-100	-100	-200	-200
Driftsomkostninger	-900	-900	-1.400	-1.400
Indtægter	1.400	1.400	1.500	1.500
Restfinansieringsbehov	**-2.100**	**-2.000**	**-3.600**	**-3.500**

Preference for the blue line

In their decision of 21 September 2023, the majority of Copenhagen City Council, based on the report *Udredning om og forlængelse af M4 til Ydre Nordhavn - resumé*, initiated the 'environmental assessment process' for the blue line, thereby opting for the blue line. The Enhedlisten party indicated that it was not in favour of the blue line. It was concerned that mistakes from the past would be repeated, because the red line does offer good accessibility and could tempt residents to leave their cars at home. It is also concerned that the construction method, namely large sections on a dam body, will divide the neighbourhood, as it sees this happening on Amager (M1). The Enhedslisten party therefore wants to invest more now to avoid the need for 'patchwork solutions' later on. However, the motion tabled by the Enhedslisten party was rejected by 36 votes to 18 (Københavns Kommune, 2023, 20 November).

A representative of the city of Copenhagen summarises it once again: the choice was mainly motivated by economic factors. The choice of two stations instead of three would make a difference of DKK 1.4 billion. And that while the number of passengers would not differ that much. The representative acknowledges that some residents will live more than 600 metres from a metro station, but that the city will nevertheless be partially planned as a car-free environment. Higher density will be pursued around the stations (see next paragraph). The municipality will continue to commit to good connections for pedestrians and cyclists during further construction (Respondent I, written interview, dated 3 April 2025).

The connection between the metro line and the buildings

The vision for the development of Nordhavn is to be a sustainable city, with homes located close to public transport, known as the 5-minute city (see the winning plan for Nordhavn by Cobe, Sleth Ramboll from 2009). The report examining the blue and red lines recognises that a smaller number of metro stations puts pressure on the vision for this 5-minute city. It states that good station service is a prerequisite for compact development and thus for creating space for the many thousands of new residents. Conversely, these residents are the potential users of the metro; if they do not live near the station, they may use other means of transport, putting pressure on the metro's operations. In order to investigate the relationship between possible adjustments to the metro construction and the spatial layout of the buildings, the structural plan for Nordhavn has also been revised (Metroselskabet, 202 3a, p.28).

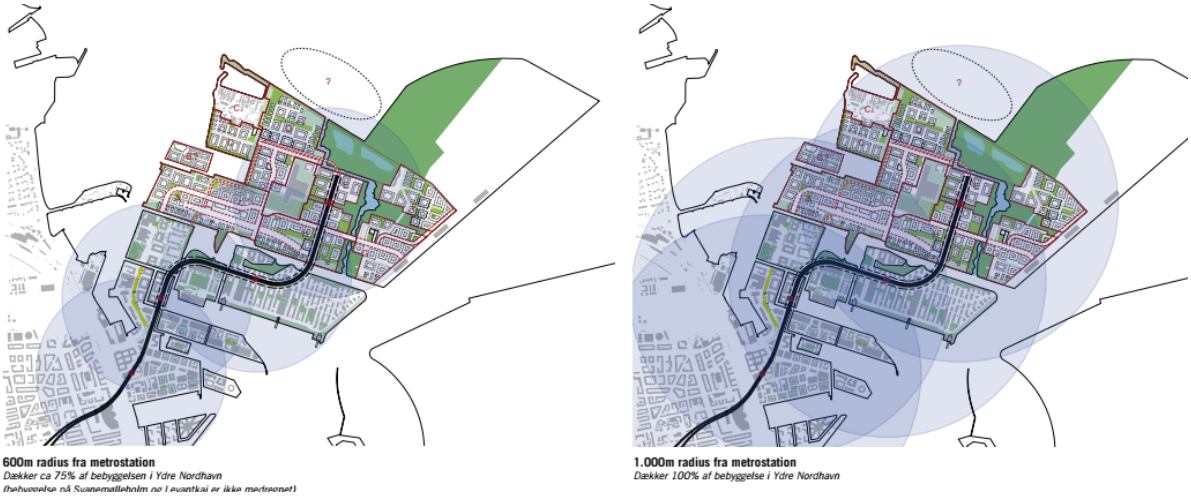


Figure 5.24. Accessibility of stations at 600 metres and 1,000 metres. Ydre Nordhavn structural plan, 2023 revision (By & Havn, Cobe, Sleth, & Raw Mobility, 2023, p. 37).

In addition to a 600-metre circle around the metro stops, an image showing a distance of 1 kilometre is also shown. The latter covers almost the entire Ydre Nordhavn area. However, on foot, this takes more like 15 minutes than 5 minutes. The 1-kilometre circles are therefore more focused on cyclists. The report also states that with the two metro stops, fewer people will be able to use a metro stop within a short period of time (the 5-minute city). The report therefore proposes to intensify development at the two planned metro stops and to extend development further away (Metroselskabet, 2023a). Four models were examined for this purpose in the structural plan. In addition to the basic models that follow the 'Copenhagen DNA', i.e. compact block parcelling of up to 24 metres in height, Model C examined a building height of up to 40 metres and Model D a height of up to 80 metres.

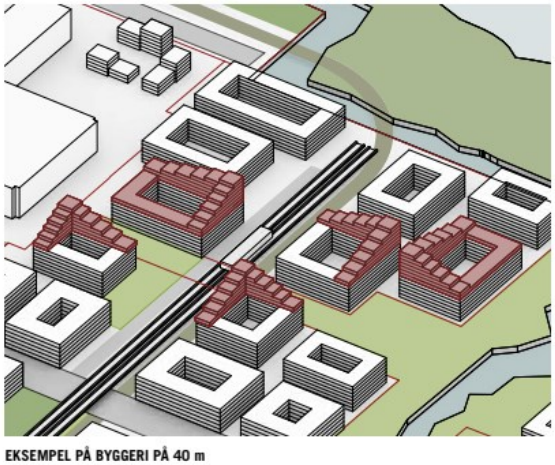


Figure 5.25. Model C: buildings near metro stations up to 40 metres high (deviating from the rule of a maximum of 24 metres). Ydre Nordhavn structural plan, 2023 revision (By og Havn, Cobe, Sleth, Raw Mobility, 2023 p. 51).

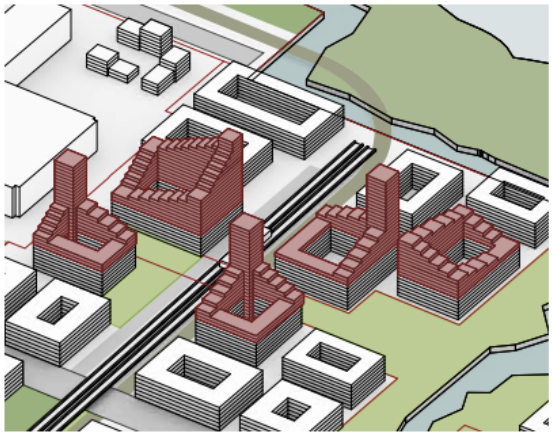


Image 5.26. Model D: buildings near metro stations up to 80 m high (deviating from the rule of a maximum of 24 metres). Ydre Nordhavn structural plan, 2023 revision (By og Havn, Cobe, Sleth, Raw Mobility, 2023, p. 52)

An employee of By og Havn indicates that the decision was made to concentrate the buildings near the stations. The structural plan indicates this in Table 5.2. A higher building percentage (153 to 163 per cent) allows for an almost comparable number of floor metres to be realised on a smaller land area. Figure 5.27 provides a bird's-eye view of the structural plan. It shows that higher buildings are planned, particularly at the Levantkaj metro stop and, to a lesser extent, at the Nordhavn C metro stop (Respondent C, dated 2 October 2024).

Table 5.2. Differences in land area to be developed and floor space in the 2018 and 2023 structural plans. (By og Havn, Cobe, Sleth, Raw Mobility, 2023)

2018:

YDRE NORDHAVN	
Bebyggelsesprocent (gns):	153%
Etagemeter:	2.342.500 m²
Grundareal*:	1.532.280 m²

2023:

YDRE NORDHAVN	
Bebyggelsesprocent (gns):	163%
Etagemeter:	2.242.800 m²
Grundareal*:	1.377.500 m2

Based on the structural plan, the municipality of Copenhagen states in the 2024 Municipal Plan that the M4 metro line will be extended to Ydre Nordhavn with two new metro stations, one at Levantkaj and a second in the centre of Ydre Nordhavn. It states that the two new metro stations will enable the next phase of urban development in Ydre Nordhavn, with large parts of the new urban areas

located near the stations (Københavns Kommune, 2024, p. 116). However, the rendering also shows that some neighbourhoods will be located further away from a metro stop.

Figure 5.27. Bird's-eye view of Ydre Nordhavn. Ydre Nordhavn structural plan, 2023 revision (By og Havn, Cobe, Sleth, Raw Mobility, 2023, p. 1)

Financing of final section via decision on the M5

Part of the decision-making process regarding the M5 is that a shortfall for the construction of the remaining section of the M4 will be covered by the expected proceeds from the realisation of Lynetteholm. This means that the financing for the construction of the remaining section of the M4 in Ydre Nordhavn is now complete (Transportministeriet & Københavns Kommune, 2025). The decision to cover part of the financing through the construction of Lynetteholm is essentially taking out a mortgage on the future. It means that the pressure to generate sufficient revenue in Lynetteholm will increase further. Whether this is the right choice can only be assessed in the (distant) future.

In conclusion, it can be said that in order to achieve a viable business case for Ydre Nordhavn, radical changes were deemed necessary to the metro route, the number of metro stations and the construction method. The spatial plan was also amended in response to the changed metro route, with a higher building density near the stations. Additional sources of income were also utilised. A remaining shortfall was resolved in the decision-making process regarding the M5.

5.5 Analysis of the Copenhagen case

In the previous chapters, we described the research methodology, identified the theoretical research framework, described the national/regional planning systems and provided a concise description of the Utrecht case study in order to describe the context of the research question. This was followed by a detailed description of the Copenhagen case study. The Copenhagen case study is divided into three parts: the beginning in the early 1990s, a middle section describing further developments up to the Ydre Nordhavn case study, which is examined in more detail in the third part. We can now move on to answering the sub-question: How was strategy used in the Copenhagen case to realise the metro in conjunction with area development, and how did this develop into a system over time?

Without anticipating the outcomes, one initial observation is relevant here: the Copenhagen case study shows that there has been a certain consistency over the course of almost 35 years. Given the limitations of this thesis, this is reason to choose to fill in *a* single *strategy wheel* for the entire case study description (see Figure 5.1.). It would certainly be interesting to fill in a separate *strategy wheel* for each phase described and to make further comparisons, but this has not been chosen here.

When analysing the Copenhagen case (and the comparison), the following seven dilemmas can help to unravel and analyse it:

1. Far-reaching government intervention or laissez faire?
2. Control by a few players or by a dynamic open network?
3. A limited role or connecting tasks?
4. Public space and private returns?
5. Soft instruments and hard returns?
6. An organisation close to or distant from politics?
7. Who leads: specific individuals or the institutional context?

These dilemmas are described in the theoretical framework.

An analysis will follow below, based on the *strategy wheel*. As explained in the theoretical framework, we distinguish *four* quadrants in the *strategy wheel*, each with two parts. Although everything is interrelated and it is difficult to know where to start, we have chosen to begin with the Commitment quadrant. We will also consider the opposite quadrant, Finance. Next, we will look at Legitimacy and the opposite quadrant, Ownership. Next, we look at Instruments and the opposite section, Information. We conclude with the Time/Results section and the opposite section, Expertise. We therefore choose to first view the analysis from the Deliberate perspective. In doing so, we examine the relationship in the opposite Emergent field. Is there a connection? How do the fields interact? This is interesting when we later look at *lessons learned* and/or whether these lessons are transferable to the Utrecht situation. Where possible, elements are distilled that are discussed as *lessons learned* in the following chapter, in which we also examine, through comparison with the Utrecht case, the extent to which these are transferable.

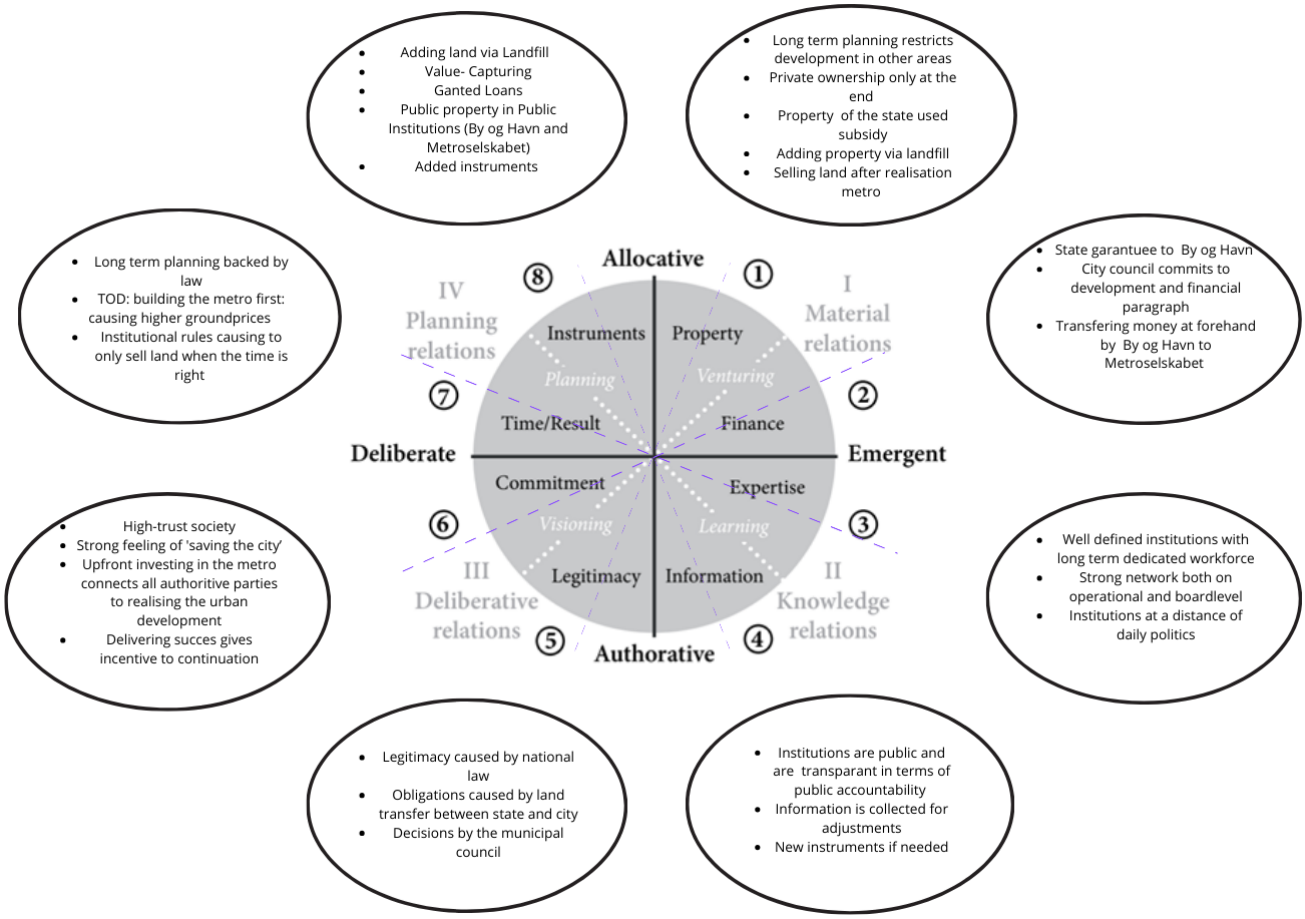


Figure 5.1. The completed strategy wheel for the Copenhagen case. The purple dotted lines indicate the relationship between the opposing fields.

The relationship between Commitment and Finance: starting from a limited role, but finding the solution in connecting tasks

In fact, it all starts with commitment: there is a problem and parties decide whether or not to commit to finding a solution. As we learn from the description of the case, there were major economic concerns in Denmark in the early 1990s. The city of Copenhagen was hit hard by the loss of jobs in the ports. Families also left the city centre for larger and better homes in the suburbs. Both the state and the city recognised that the city had to be saved.

A plan was drawn up that combined the tasks of the state and the city. An important goal was to position Copenhagen strongly on the international stage and thereby boost Denmark's economy. The construction of the bridge between Sweden and Denmark was part of this, as were various investments in urban renewal, culture and infrastructure, including car and train infrastructure. However, the city was spatially separated from the bridge between Denmark and Sweden and the airport. The Finger Plan was the dominant structure in which thinking and working took place. A

breakthrough was needed to connect the city of Copenhagen with these spatial developments. As the case study shows, cooperation between the government and the opposition was sought at the national level, and two committees were set up to come up with a proposal for this task.

The committees were placed under the Ministry of Finance. These committees therefore viewed the task through a financial lens. In essence, this can be interpreted as a relatively narrow role. At the same time, it did offer the opportunity to come up with a financially feasible plan. Financial commitment from the state was essential for the success of any plan. The committees had to work under difficult economic conditions; the state had little money available. Direct subsidies were ruled out to prevent other municipalities in Denmark from feeling disadvantaged. The solution had to be found locally, both spatially and technically. The leaders of these committees, Erik Jacobsen and Anne Grethe Foss, indicate that existing paradigms (Vingerplan, suburbs), organisations (DSB) and techniques (metro with driver) had to be set aside. As Jacobsen states: "if you have planning power, you have to use it" (Respondent A, personal interview, 2 July 2025).

A few players rather than an open dynamic network

In the Copenhagen case, therefore, it is more a question of control by a few players than an open dynamic network. Through the implementing organisations By og Havn and Metroselskabet, it is mainly the state and the city that are steering the outcome. However, the system is organised in such a way that legitimacy ultimately lies with the decision-making bodies of the state and the city.

1. Long-term joint financial commitment: The element that emerges here is that authoritative parties, i.e. the state/city, consider the task to be essential and dare to think outside the box, with the financial solution taking centre stage and parties questioning existing paradigms and willing to collaborate with each other in the long term, sharing (financial) risks.

The focus on finance was also essential in the choice of the first metro system, both spatially and technically. In terms of space, it was decided that two metro lines were needed. One to connect the airport with the city centre and on to Frederickberg, and the second line to open up the newly developed Ørestad area. The metro was only built underground where it was really necessary: under the historic city and to connect Copenhagen with the island of Amager. In other areas, the metro was built at level plus 1, partly on earthen embankments and partly on columns.

In terms of use, however, the committee led by Foss set one value at the highest level: for the metro to be a success, users must experience it as a smooth experience, as one with the city. In the solution that was found, the spatial, social, safety and financial challenges are truly interconnected. The solution was to create a system that is high-frequency, operates 24 hours a day, has no gates and has a high-quality, sober and recognisable appearance, with stations that are almost always in contact with daylight. The self-driving system is essential in this regard. The lower costs that result from this, together with a slightly higher ticket price compared to trains and buses, even provide a system that can pay for itself and cover part of the construction costs.

2. Integrally designed metro system: The key element here is to develop a metro system that is positioned, built and designed in such a way that it is experienced as an integral part of the city, can bear the annual maintenance costs and can even contribute to the initial costs.

We see a strong relationship between commitment and finance. Long-term commitment between authoritative parties is reflected in long-term financial agreements. It requires the transfer and partial

creation of land, the undertaking of long-term area developments, the taking out of loans with state guarantees and upfront investment in the construction of metro connections. This requires strong government control. And strong implementing organisations.

The granting of a state guarantee on the loans taken out by By og Havn to finance (among other things) the metro, with the income to be generated from the area development as collateral, is an important success factor. It has a lowering effect on the interest rate, because the total risk is assessed by banks at a later stage. With the reform in 2007, the distribution of tax revenues shifted even further to the city/municipality. This gives the city the opportunity to focus more strongly on its goals and makes it less dependent on the distribution of subsidies from the state.

3. Utilise financial instruments: The key point here is that the use of state guarantees for loans is an instrument that contributes significantly to feasibility and reduces pressure on risks. In addition, it is interesting to investigate the possibility of allocating a larger share of taxes to the regional/local level. This would enable regional/local authorities to exert greater control over (long-term) investments and reduce their dependence on the distribution of subsidies from the state.

It is striking that the region and some surrounding municipalities and districts of Copenhagen are not represented in this system. This is related to the initial choices made in 1991-1992, in which some municipalities were overlooked in terms of their interests and subsequently did not obtain a position in the implementing organisations. In addition, the 2007 Act significantly reduced the role of the regions in spatial planning. This further strengthened the position of the city, and Copenhagen in particular.

Although there are always winners and losers in decision-making, it is not a zero-sum game. The interventions increase the total value of the system. And that has a positive effect on surrounding municipalities. In principle, all parties, including the allocative ones, can benefit from this system. The authoritative parties have to take risks, but they also control where spatial development takes place. The allocative parties have to be patient, but they do get high-quality and attractive plots to develop.

The recently revived debate on the role of the region is interesting. Issues such as climate, water safety and accessibility do not stop at municipal boundaries. The metro company also wants to think more regionally. This raises the question of whether and, if so, how the authoritative parties in the system will engage in dialogue with the allocative parties to address these issues.

Legitimacy and Ownership: Strong government control.

In both the Legitimacy and Ownership fields, the roles of the authorities can be described as strong. There is also a strong relationship between the Legitimacy and Ownership fields. Strong government control was achieved through a strong ownership position for the state, which also applies to a lesser extent to the municipality of Copenhagen. This ownership position is reinforced by the fact that landfill is being used to create new land. This land belongs to the state by law. This gives the state a strong position to exercise control through its ownership position.

4. Create and utilise public land : The element that stands out: the creation of new land through landfill, and developing this land itself into public property.

The 1992 Act (lov) then laid down the *outline* of how the parties would cooperate during the period in which the entire project would take place. This means the relationship between the land, its valuation, the method of valuation, how the value is converted into revenue at the outset, part of which can then be used as a loan with a state bank guarantee to finance the metro. The Act also laid down how the parties should act. Important elements of this are that the valuation of the land must be in line with market conditions and that the land must be sold at the highest value. Several interviewees regularly referred to this law, which provides guidance throughout the entire process, even in the event of a crisis. With the recent decision on the M5, the choice has once again been made to use a law. And once again, essentially the same method has been applied. The fact that this has been applied again almost 35 years later is an important indicator that the method used, in the context of Copenhagen, works. However, it does mean that landfill and urban development on the east side have been chosen again, and thus to a lesser extent in line with the original Finger Plan.

5. Legally enshrine the agreement at national level: The element that emerges here is a nationally legally enshrined agreement between the state and city/cities, in which the state indicates where the spatial development will take place (and where not), the rights and obligations of the state and city/cities are described, in which land is contributed by the state and city, the city takes out loans through a delegated public development organisation based on the expected added value, and the state provides guarantees for the loans.

As the description of the case shows, not all parties agree with this course of action. In the 1992 decision, it is the suburbs (on the fingers) that are opposed, but they are ignored in the decision. The state and the municipality of Copenhagen considered other interests to be of greater value. And because the state enshrined it in law by a majority vote in the Folketing (2ndchamber), the decision gained long-term legitimacy. The fact that the outcome was presented by a committee set up jointly by the cabinet and the opposition will have contributed to this.

In addition, the (financial) system has significant spatial effects. For example, when deciding on the construction of the M4 to Nordhavn, it was decided to give priority to this construction over an extension of the metro to the north-west, which mainly serves existing suburbs. An important reason for this was again that income could be generated through landfill and redevelopment of the ports. And in the case of the M5, the decision was made to make the new residential area of Lynetteholm accessible by metro, again focusing on the relationship between (new) government-owned land and the financing of the metro. Part of the projected revenue from Lynetteholm has been allocated to cover the shortfall on the extension of the M4 in Ydre Nordhavn.

Instruments and Information: Powerful implementing organisations, working towards public goals in a commercial manner

The 1992 Act established a system in which both the state and the city of Copenhagen are the dominant actors. Through their shareholdings in the public development company (initially a single organisation, later split into By og Havn and Metroselskabet), the state, the city of Copenhagen and, to a lesser extent, Frederiksberg are in a position to exert fairly direct control, but this also makes them stakeholders in the success of the venture. This can have a self-reinforcing effect, meaning that the parties that have entered into financial commitments will (once again) give this interest considerable weight in further decision-making, both to cover any deficits and to find further funding

for further extensions of the metro. This has also emerged from the case of the extension of the M4 (and M5).

The articles of association of the implementing organisations and, in particular, the state guarantee on the loans provide some protection against major economic and political changes. The state guarantee means that the interest rate on the loans is relatively low. This fact, combined with the stipulation in the articles of association that land may only be sold at the best price, meant that in times of crisis (e.g. 2008), the pressure to sell land quickly at a lower price was resisted. The thinking is in terms of 100-year periods. The long-term agreements and risks taken help the parties to stay on track. This makes the system somewhat resistant to economic setbacks.

6. Remote public participation: The element that emerges is one or more implementing organisations, in which the authoritative parties are represented through shareholdings , and provided with articles of association and financial obligations that protect against major economic and political changes.

Ultimately, it is up to the Copenhagen City Council to enable spatial developments. By og Havn and Metroselskabet advise on this. Together with the municipality, they investigate the possible spatial development, the possible nature of the metro construction and the financial parameters involved. It is then up to the state and city/cities to negotiate the contribution of land (most of which belongs to the state), the total investments, the loans and the associated guarantees. Agreements are also made about the lead time.

The case study shows that, over time, the plans have been adjusted for economic and/or political reasons. The initial plan for Nordhavn included seven stations, but there will ultimately be four. This also has spatial implications. All of this has been laid down in amended structural plans by the Copenhagen City Council. However, the scope for political manoeuvre appears to be limited: in the event of additional requirements (e.g. more stations), the state insists that the city must find the necessary resources itself.

The shares of the implementing organisations are wholly owned by the authoritative parties. This means that these parties also bear the full risk. By og Havn, in particular, has accumulated a substantial debt, which will ultimately have to be recouped through the area's development. Additional political demands will have to be weighed against this debt.

Public space and private returns? Yes, but one after the other.

The system as it was set up cannot work without the contribution of land with a relatively low land value prior to the area development. The solution in Copenhagen was found in publicly owned land. This mostly concerns land that has been reclaimed from the sea over time and which, by law, belongs to the state. The state decided to contribute part of this land to the area development. This land was not used, or only used intensively to a limited extent, and had a low land value. Copenhagen has a very long tradition of land creation. To some extent, this is comparable to the Netherlands, where land has also been reclaimed from the sea for many centuries.

It was decided not to offer these plots immediately on the market, but to place them in a newly established public organisation, whose aim was both to build the metro and to make the Ørestad

area development a success. This was later continued in Nordhavn, and in the future in Lyntteholm. Private returns only come into play after the metro has been built and By og Havn puts the plots on the market. These plots are/will be purchased at a high land value. According to a number of interviewees, this is due to the fact that the (already constructed) metro makes for attractive propositions. There is a strong market for flats near the metro, as evidenced by the high market rents in Nordhavn. These higher land revenues in turn provide additional funds to repay the loan taken out for the metro.

If we look at the initial decision-making process for the various metros, and more specifically in the Ydre Nordhavn case, we see that private parties such as developers only come into the picture when plots are issued. This means that they are not (or hardly) involved in the initial decision-making process, i.e. where and how to develop. In fact, the case study shows that the authorities prefer to develop where land is or will be in public hands. In addition, the authorities aim to release privately owned land located elsewhere for development in a controlled manner, so as not to saturate the market with housing and thus lose the opportunity for high returns. However, contacts with large landowners, including pension funds, are such that there is a common interest in the successful overall development of the city of Copenhagen and that, in the long term, other landowners can also benefit from this. This completely avoids the familiar debate about who should pay upfront for above-plan investments in infrastructure. Decision-making, any benefits and risks lie with the authoritative public parties.

7. First the metro: only put the land on the market once the areas are connected by high-quality public transport, in order to achieve the highest possible land yield.

In the areas developed by By og Havn, private parties only become owners when they purchase a plot from By og Havn. These private parties are not yet involved in the initial decision-making process, so they cannot offer any resistance, even if they wanted to. In this sense, private parties are truly allocative, i.e. replaceable, in this system. What is more, private parties can only act once the area development has progressed to the point where plots can be purchased. This makes them stakeholders in the successful realisation of the metro and other above-plan investments.

It also raises the question of whether the cost price of the plots is too high, because the costs for the metro, among other things, are included in advance. However, the market in Copenhagen is so strong that developers are keen to purchase the plots and develop the homes and commercial functions. There is also added value in this system for the developers. It is true, however, that house prices and rents in Nordhavn are among the highest in Copenhagen, which means that there is a selection process as to who can live there. This is counteracted to some extent by the (mandatory) allocation of some of the plots to non-commercial parties ('andels'). But this should certainly not be overestimated, at least in the beginning. These parties build at market cost but do not charge a profit margin. The effect of this will only become visible in the rent over the years. All this has led to a debate in the city about inclusivity. According to Foss, it has been suggested that By og Havn should no longer operate in line with market conditions. She indicates that this is not the right way forward, as By og Havn's mandate to operate in line with market conditions is precisely to protect the system (Respondent B, personal interview, 26 September 2024).

There is also no laissez-faire approach to the allocation of plots. This applies both to the moment of allocation and to the requirements imposed on the developer. What is mentioned, among others by

By og Havn, is that politicians (nationally, but especially locally), which can put pressure on the initial calculations of returns and thus either lead to higher returns (passing on costs to the developer and thus to the future tenant/buyer) or to less coverage of the loan that was initially taken out. As an additional instrument, an extra (long-term) subsidy is required for flats or offices near the stations in Nordhavn. This, of course, has a selective effect: not everyone will be able to live near the stations.

However, this subsidy does not resolve the financial issue. In order to find solutions, the structural plan has been amended, the nature of the metro to be constructed has been adjusted and additional funding has been found from other sources, as we see in the Ydre Nordhavn case. The metro plan has been scaled back due to a financial shortfall, the buildings near the stations are high-density and additional funding has been found in the decision for the M5. However, the latter essentially means that additional revenue must be found in the overall plan for the M5 and the construction of Lynetteholm. This essentially means that part of the solution to the M4 challenge has been postponed to the future.

In conclusion, however, it can be said that the Copenhagen case involves both public space and private returns. The metro will be built first and spatial development will be undertaken in conjunction with this. Returns are high because demand for living and working near the stations in Nordhavn is high. The proximity of the historic city centre and the water further contribute to this. However, compared to the initial plans, public space has been reduced (from 7 to 4 stations) and private returns are under pressure, meaning that high prices are required to make the plan feasible. Ultimately, this has a selective effect on who can live there.

The relationship between time and results (3) and expertise: flexibility, accountability, learning ability

Is the chosen system sufficiently flexible? Does it allow enough room to adapt to internal and external changes? What expertise is available? And how are agreements reached? Who is in charge? Are these specific individuals or the institutional context? To begin with the latter, the literature and interviews show that the lines of communication are short at both the administrative and civil service levels. The boards of By og Havn and Metroselskabet include or included directors with strong networks in the city of Copenhagen and/or the state. Another factor is that Copenhagen has been governed by mayors from the Labour Party for around a hundred years, which provides a great deal of stability but can also be a source of unrest for other political preferences. However, as interviews reveal, there is a culture of seeking compromise. The directors on the boards of By og Havn and Metroselskabet can influence decision-making through their strong network.

There is also cooperation at the official level. The success of the metro and, to a lesser extent, the appreciation for the developed neighbourhoods such as Ørestad and Nordhavn, mean that there is a certain pride among the employees of the parties involved. However, each party, i.e. the municipality of Copenhagen, By og Havn, Metroselskabet and the state, works within its own parameters, while seeking interaction. The decision-making process is a careful one in which the state and the city, and by extension By og Havn and Metroselskabet, contribute as advisory and executive parties, resulting in the adoption of national legislation and the Copenhagen City Council facilitating spatial development and the construction of the metro. What helps in this regard is that the outline for the developments was already provided in the initial plan in 1991-1992, in spatial, financial and governmental terms.

The literature and interviews paint a picture of Denmark as a *'high* trust' society (Respondent G, personal interview, 24 January 2025). The case study shows that parties faced with a complex task requiring a high level of joint commitment were and still are able to look beyond their own tasks and work together to find solutions in which responsibilities are shared on a long-term basis.

8. Utilise or develop *'high trust*': The element that emerges is a *'high* trust' culture: parties look beyond their own interests because they jointly recognise the higher value of the task.

The *high trust* culture also contributes to flexibility and the ability to practise patience together. The chosen system is essentially somewhat rigid: ultimately, the area development will have to be realised in such a way that the costs for the construction of the metro can be borne, i.e. the loans taken out are repaid. However, the case study shows that during implementation, the system offers scope for exercising patience, for example with the allocation of land. The Ydre Nordhavn case study shows that adjustments can be made in the planning of the metro and area development. It also shows that additional sources of financing have been found. What did contribute significantly was the predominantly upward economic trend and the continuing demand for housing in Copenhagen, which meant that the projected land revenues could be adjusted upwards. The question remains whether and how the system can withstand a major and prolonged crisis.

9. Build in incentives: The key element here is to develop a system that provides incentives to complete the project, possibly with a phased decision-making process and construction of the metro and related area development.

Looking at the time/result factors, we see that the decision to build the metro in advance of the area development itself has a strong steering effect. The lead time for area developments is estimated in advance, but may vary to a certain extent as a result of market developments. Pre-financing has two effects: the value of the plots to be sold is higher because there is demand for housing near the stations, and the parties are committed to completing the area development in order to pay off the costs of constructing the metro. Both have a reinforcing effect on the factors of time and result.

In the case of Nordhavn, a two-stage decision-making process was chosen. This made it possible to make adjustments in the second part (Ydre Nordhavn) to the metro route, the number of stations and the planning (structural plan).

10. Cherish, develop and pool knowledge: The element that emerges here is the organisation and cherishing of knowledge across the entire spectrum from metro construction to area development. Only the actual construction of the metro and the buildings is entrusted to private parties.

Almost 35 years of work has gone into the construction of metros, the development of areas and the management of the coherence between these two processes. It is striking that the organisations cherish knowledge and experience. This knowledge and experience is interdisciplinary in nature: concrete knowledge of the construction of the metro, its design, financing and management (Metroselskabet) is linked to knowledge of vision and planning, facilitating decision-making and the development of the areas up to the allocation of plots (By og Havn and the City of Copenhagen).

But are these soft instruments the ones that deliver hard returns?

Although the soft instruments of *'high* trust' and 'joint commitment' form the basis, it is certainly not a question of soft instruments alone. The case study shows that all steps have been carefully laid down in national legislation and municipal council decisions. The implementing organisations also operate within the framework of statutes in which public objectives must be achieved within commercial frameworks. It is the combination of soft and hard instruments that has contributed to the results achieved to date.

The case study also shows that *'high* trust' does not mean that all parties must be on board (think of the polder model). Other parties, such as other municipalities, the region or private parties, are not involved in the decision-making process. Interviews show that it is sometimes acceptable that allocative parties are not fully included, given the task at hand. The higher interest has prevailed, and ultimately a majority in the Folketing (parliament) or municipal councils of Copenhagen and Frederiksberg has been achieved for all decisions.

The recently presented decision on the M5 has once again focused attention on the development of the city of Copenhagen, with a significant proportion of the potential new residents of the Copenhagen region finding their homes or workplaces on the eastern side of Copenhagen city centre by 2070. Although the case study shows that this is logical from the perspective of the chosen system, the question can also be raised as to why, in a country that is roughly the same size as the Netherlands and has one-third of its population, the decision has been made to allocate the majority of new residents until 2070 to newly constructed land reclaimed from the sea, which is also located at the easternmost point of Denmark.

The debate on regional thinking, design and decision-making, which was partly initiated by the Arkitektenforening, shows that some allocative parties would like to see a reorganisation of the cooperation structures, partly because spatial challenges in the areas of climate and water safety are becoming increasingly pressing. Authoritative parties, such as Metroselskabet, also see a growing need for regional thinking.

Is there a system in place?

Now that we have analysed the elements, we can ask the question: is there a coherent system and, if so, can an element/lesson be distilled from it? A system was defined earlier in the thesis as: "A system is a defined set of interrelated elements that interact with each other within certain defined boundaries and are organised to perform a specific function or pursue a specific goal" (Rodin, 2014, p. 45). And if so, can conscious or emergent feedback loops be identified? Is the system in balance?

The above analysis based on the *strategy wheel* and the interaction or interconnection between the opposing fields does indeed reveal a system. A system that was not only applied in the initial decision-making process in 1991-1992, but also in the decision-making process for other metro construction projects, right up to the decision-making process in 2025 with regard to the M5. This is a consistent system that has shown a certain continuity over the course of almost 35 years (with the M3 being the only exception). The following lesson can be distilled from this:

- **11. Think in terms of a system with triple planning power**: the key element that emerges is to develop a system that utilises long-term planning power in the spatial, financial and governmental domains.

What does the system consist of? The state and city/cities regularly reach decisions supported by the state and city/cities, which are laid down in national and local legislation. In these laws, the state and city/cities lay down spatial choices with regard to coherent metro construction and area development, with a significant part of the area development projected on land owned by the state and/or city, and with part of the land often having been reclaimed from the sea and/or to be reclaimed. The state and city instruct implementing organisations in which they are shareholders to take care of the metro construction and to initiate the area development. The expected return on the spatial development is calculated in advance, and on that basis, the implementing organisation By og Havn takes out a loan. This loan is guaranteed by the state, which means that it can be taken out at a relatively low risk. By og Havn transfers part of the loan to the metro company in advance, enabling the metro company, together with the projected income from management, to construct the metro prior to the spatial development. By og Havn will only then allocate the land to allocative parties once the metro has been constructed, enabling relatively high land revenues to be achieved.

Literature research, interviews and the above analysis show that the system contains a number of emergent feedback loops that depend on long-term cooperation between the authoritative parties and their implementing organisations. The agreements laid down by law, the advance financing of the metro, the state guarantee and the assignment of tasks to implementing organisations contribute positively to maintaining the focus on completing the entire project. And, because the implementing organisations must operate in line with market conditions and generate the highest possible returns, the system is less sensitive to external influences, such as the 2008 credit crisis. Partly as a result of the state guarantee, the system has the flexibility to weather a crisis such as this. In addition, allocative parties are virtually only involved prior to the legislation, in the debate, and only after completion of the metro and the issuance of the land by By og havn. As a result, these allocative parties have relatively little influence during the realisation phase. This has a stabilising effect on further decision-making and implementation: there is a strong planning force. The efforts of the allocative parties (interest groups, landowners, developers) are also focused on the democratic decision-making moments, namely those at national and local level.

The limited number of actors in the system means that decisions on any adjustments can be made relatively flexibly. The Ydre Nordhavn case study shows that the spatial planning and the nature of the metro construction could be adjusted due to financial, environmental and nature aspects. The state and city went through a process in which the planning for the metro, the planning for spatial development and the financial aspects were controlled by the state and city. This ultimately led to an amended decision for a different route with four instead of seven metro stops, an amended structural plan and an amended financial decision. In doing so, the state and city resolved part of the financial shortfall in the decision-making process for the M5.

Is the system in balance?

The various decisions on the M1/M2, M4 and, more recently, M5 metro lines show that the system is fundamentally balanced, i.e. the financing structure based on *value capturing* and the investments made possible by the management of the metro can cover a large part of the total cost of implementation. The budget has been balanced through additional agreements, such as a higher price for a metro ticket, a surcharge per square metre near metro stops and possible contributions

from the city. For those who are wondering why the M3 is missing from this list: the municipal energy company was sold to finance the M3, which means that the system used for the M3 differs from that used for the other metros.

It should be noted, however, that no area development has yet been fully completed and that only upon final completion can it be analysed whether the accounts are indeed balanced. It also appears that a leap forward has been taken in part by covering a shortfall on the M4 in the decision on the M5.

Over the course of almost 35 years, the city of Copenhagen has climbed out of a deep trough, according to many partly due to the construction of the metro(s) and urban renewal, although it should be noted that there has been an overall revival of cities since the early 1990s (Glaser 2012). In the decision-making processes in both 1991-1992 and 2025, the state and city/cities dared to take on this mortgage on the future (again). In the case of the decision-making on the M5, this even extends to 2070. It remains a fact that By og Havn has accumulated and continues to accumulate debt that must be repaid. The trust that has been built up (also a feedback loop) in the success of the metro and the spin-off for the city (economic, spatial quality, environment, tourism) means that the authoritative parties continue to use the system and see support for it among the democratically elected political representatives of the national and local population.

Although the system is largely balanced, it does have a spatially compelling (emergent) effect: it should not be forgotten that land that is or will be reclaimed from the sea is being incorporated into the front end of the system. Nature organisations argue that this is detrimental to nature. It also leads to the city of Copenhagen growing mainly on the eastern side, for the time being to the detriment of the suburbs in the fingers of the original Finger Plan (see, for example, the decision to build the M4 metro line to Nordhavn, instead of to the north-western suburbs). As the description of the case shows, the debate on this issue is in full swing in the Copenhagen region.

The success of Copenhagen's spatial development, and more specifically in the Nordhavn case, and the way the system works (allocation of plots after completion of the metro, market-based prices and surcharges near metro stops), does have a price-driving effect on the price per square metre of homes in Nordhavn. This has the knock-on effect of putting pressure on affordability in Nordhavn, and thus on inclusivity. The question is whether this effect is due to the system described above, but it does lead to a debate about the commercial mandate given to By og Havn to operate in line with market conditions. This creates tension between By og Havn's mandate to pay off its debt and the city's goal of providing housing for everyone. By og Havn has indicated that the increasing (interim) requirements in this area are putting pressure on feasibility. This can be described as a negative feedback loop, either to the detriment of affordability or to the detriment of the financing of area development and the metro. With the decision on the M5, the state and the city aimed to find part of the solution in the realisation of more housing, in order to counteract price pressure, increase affordability and thus offer more inclusiveness.

Overall, the picture is that the system as described above is in balance, with the proviso that it depends on the input of new land owned by the state and the city. The system contains a number of emergent positive feedback loops, which reinforce the focus on results and reduce sensitivity to (external) influences. Negative feedback loops (higher costs, additional requirements, concerns about affordability) are addressed by the authoritative parties, partly through adjustments in planning,

partly through additional instruments and partly through additional decision-making, with part of the solution being postponed to the future.

6 Lessons from Copenhagen for Utrecht

6.1 Introduction

In the previous chapter, we placed the Copenhagen case in the *strategy wheel*, analysed the Copenhagen case on the basis of dilemmas in area development, and distilled lessons from the Copenhagen case. In this chapter, we focus on the sub-question: What lessons can be drawn from the analysis of the Copenhagen case and to what extent are these transferable to the Utrecht case? For international comparisons, we use the scheme developed by Heurkens (2012), which is based on Jansen-Jansen et al 2008 and Spaans & Louw, 2010. In the chapter 'Comparing institutional spatial development contexts', it was stated that, although there are some notable differences, the planning systems are essentially comparable. We will therefore choose to use the column *'Transfer between countries with similar* systems'. The lessons are presented in Table 6.1. Before we do so, the Utrecht case study is first presented in the *strategy wheel,* so that it can provide comparative material.

6.2 The Utrecht case in the *strategy wheel*

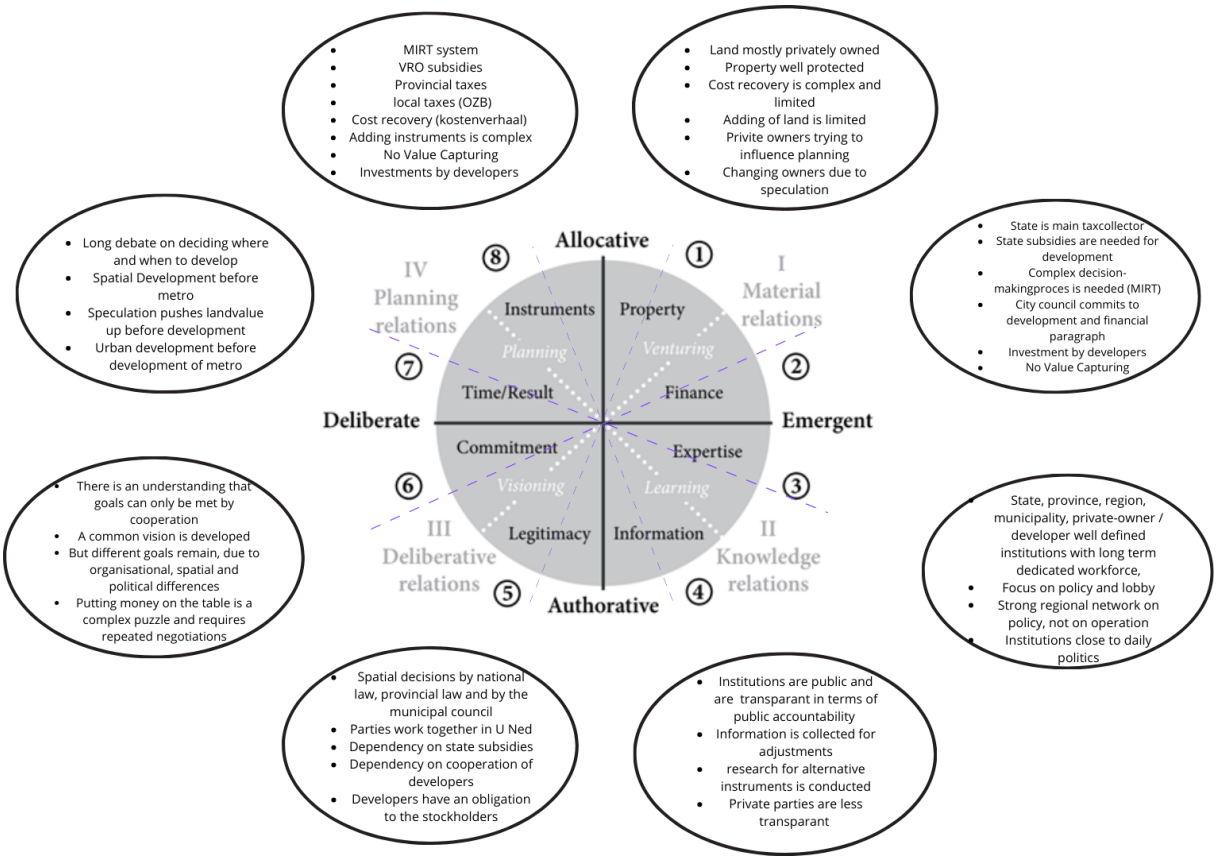


Figure 6.1 The *strategy wheel* containing the analysis of the Utrecht case.

Information has been distilled from the insights into the planning system and the concise description of the Utrecht case and placed in a *strategy wheel*. This makes it possible to compare information at a glance, by way of a ' ', by placing the completed *strategy* wheels side by side. We will not analyse the

completed *strategy wheel* for the Utrecht case further *here,* but we will use it in the following chapter to analyse the extent to which a *lesson learned* from the Copenhagen case can be transferred to the Utrecht case. Although it is beyond the scope of this thesis, a more in-depth analysis of the Utrecht case study using the *strategy wheel* could be interesting. When comparing the *strategy wheel* for the Copenhagen case with the *strategy wheel* for the Utrecht case, it should be borne in mind that Copenhagen has been making decisions about the metro for almost 35 years. At the time of writing, this possible decision has not yet been taken in the Utrecht case.

6.3 Lessons learned applied to the Utrecht case

Below are the *lessons learned* as mentioned in the analysis of the Copenhagen case. Each *lesson learned* is written down, followed by an analysis of the extent to which this lesson is transferable. The 11 lessons are listed in Table 6.1 below. They are explained one by one below.

Table 6.1. Transferability of lessons from Copenhagen to Utrecht, related to the method of transfer and the degree of similarity between planning systems, completed (according to Heurkens 2012)

Levels of lesson-drawing	lesson	Transfer within one country	Transfer between countries with similar systems	Transfer between countries with different systems
Inspiration, ideas, experiences	**Create and utilise public land**		Plausible	
	Utilise or develop 'high trust'		Highly plausible	
	Think from a system with triple planning power		Highly plausible	
Learning, concepts, mechanisms, principles	**Long-term joint financial commitment**		Plausible	
	Integrally designed metro system		Highly plausible	
	Legally enshrine the agreement at national level		Very plausible	
	Remote public participation		Very plausible	
	Utilise financial instruments		Very plausible	
	Metro first		Plausible	
	Build in incentives		Plausible	
	Cherish, develop and pool knowledge		Plausible	
Transplanting, policy instruments				

1. Long-term joint financial commitment*: The element that emerges here is that authoritative parties, i.e. the state/city, consider the task to be essential and are willing to think outside the box, with the financial solution taking centre stage and parties questioning existing paradigms and wanting to collaborate with each other in the long term, sharing (financial) risks in the process.*

The Utrecht case study shows that there are considerable differences in interests both between authoritative parties themselves and between authoritative parties and allocative parties.

The state has endorsed the national interest in spatial development (housing construction figures) and the search for appropriate public transport solutions, but has not yet made the full amount required available. The state mainly has the instrument of subsidies at its disposal. These subsidies come from a substantial but limited budget. The size of this budget is under pressure due to the sharp decline in revenues from natural gas.

The state has several interests to protect in this regard. For example, the costs of maintaining existing infrastructure are increasing. It is also the case that the state can potentially realise its national interest (i.e. housing construction figures) in several locations. The state has a duty to carefully consider where national interests can best be realised. This may lead to a situation where the state considers the task to be non-essential. However, the state has expressed its national interests through its visions and the decision to conduct the MIRT exploration of public transport and housing.

The regional authorities consider the task to be essential. The region is economically very strong and has a strong pull on businesses and residents. A so-called scale jump is needed to initiate area development that can meet the expected demand. The allocative parties do not have the same interest. They would like to realise housing, but at the highest possible return. Allocative parties own parts of the land that could potentially be developed. The allocative parties have no direct power, but they can influence decision-making processes at both national and regional level by withholding their cooperation and/or exerting influence. Recent research shows that they are actively doing so (Van Karnenbeek et al., 2025). Allocative parties have recently indicated that they want to contribute 200 million euros to the extension of the metro to Rijnenburg.

This element is not directly transferable to the Utrecht context. However**, lessons** can be learned from the Copenhagen case study. It is **plausible** that the underlying principles, concepts and mechanisms can contribute to breaking through long-standing conflicts of interest and providing long-term direction for the long-term development of (part of) the Utrecht region.

2. Integrally designed metro system *The element that emerges here is to develop a metro system that is positioned, built and designed in such a way that it is experienced as an integral part of the city, can bear the annual maintenance costs and can even make a significant contribution to the initial costs.*

In essence, it is possible to apply the design principles as formulated and implemented in the Copenhagen metro. The advantages have been described earlier in the analysis of the Copenhagen case study . Interviews reveal that the costs of constructing and managing public transport in the Netherlands are not cost-effective, let alone covering part of the construction costs. Given the Copenhagen case, in which a metro system has been developed that can pay for itself in terms of management and cover part of the construction costs, this element is certainly worth further study. At first glance, the spatial context between Copenhagen and Utrecht does not appear to be radically

different. It is not the subject of this thesis to investigate this in depth here. However, it is clear that the design of the metro and the way it functions contribute significantly to both spatial values and financial feasibility. This could be a particularly interesting element to investigate further in the Utrecht context.

It is not clear whether this element is directly transferable. Further research is needed to determine this. However, it is **very likely** that ***learning*** about principles, concepts and mechanisms can contribute to this.

3. Utilise financial instruments*: The element that emerges here is that the use of state guarantees for loans is an instrument that contributes significantly to the feasibility of the entire system and reduces the pressure on risks. In addition, it is interesting to investigate the greater allocation of taxes to the regional/local level. This would enable regional/local authorities to have greater control over (long-term) investments and be less dependent on the distribution of subsidies from the state.*

The granting of a state guarantee on the loans taken out by By og Havn to finance (among other things) the metro, with the income to be generated from the area development as collateral, is an important success factor. It has a lowering effect on the interest rate, because the total risk is estimated to be lower by banks. It could be an interesting way for the Dutch government to contribute to the major housing challenge in the Netherlands, to which the location in Utrecht could make an important contribution. The Dutch government has the instrument of state guarantees at its disposal and is also using it, as recently demonstrated by the decision to provide state guarantees for investments by Tennet, the national operator of the national high-voltage electricity grid (Central Government, 2025). What if the central government could use this instrument for one or more cases in the Netherlands and thereby help to make tens to hundreds of thousands of homes possible?

A striking difference between the Dutch and Danish contexts is the extent to which taxation is allocated to the various authorities. In the Danish context, a significantly larger proportion of taxation goes to the municipality. Although this is naturally offset by tasks, it does mean that the municipality has more options for how it wants to use the tax revenue, compared to the Dutch context. In the Dutch context, cities and regions, and the Utrecht region is no exception, are strongly focused on obtaining subsidies for large-scale spatial interventions, such as a metro. This leads to lobbying by the city/region towards the state. What if cities and regions were to have more resources at their disposal and could therefore take more direct action? What if cities and regions were given more opportunities to levy taxes? For example, on land, property, motor vehicles, or rush hour traffic?

The instrument of tax redistribution is essentially transferable. But it would mean a radical redistribution of responsibilities between the state and the city/region. Such a process would also take a long time. The use of the state guarantee instrument is more promising. It is available, and it is **very likely** that principles, concepts and mechanisms from Copenhagen can be used to analyse how this instrument can be used in the Dutch/Utrecht context (***learning)***.

4. Create and utilise public land*: The element that stands out is the creation of new land through landfill and developing this land in public ownership.*

The Netherlands has a long tradition of reclaiming land from the sea. This has not only made the country safer against flooding, but also exploited the value of the land for area development. Cities such as Amsterdam (construction of IJburg in the IJsselmeer) and Rotterdam (construction of the

Maasvlakte and the resulting release of ports near the city centre that can be used for area development) make use of the principle of value enhancement through the creation of new land.

However, the Utrecht case shows that this is difficult. There are few or no locations in the vicinity of Utrecht where new land can be created. This makes the issue of area development in Utrecht more of a process in which an existing piece of land changes function. The process of changing function can create added value. However, this added value is often smaller than when new land is reclaimed. In an intensively used country such as the Netherlands, every piece of land has value. However, what makes the decision-making process more complicated than in the Copenhagen case is that the existing land has various owners. These are often allocative parties that have the freedom to buy and sell land. This means that the position of authoritative parties in Utrecht is less strong than in the Copenhagen case. This is possibly the most essential difference between the Copenhagen case and the Utrecht case. And it has an impact on all other elements. Whereas in the Copenhagen case there is a very strong connection between the fields of Legitimacy and Ownership, this connection is much weaker in the Utrecht case. What is more, the allocative parties influence land value and function through land ownership and influence the decision-making process through lobbying. The alternative, in which the authoritative party strengthens the connection between the fields of Legitimacy and Ownership through land expropriation, is rarely used. In the Netherlands, authoritative and allocative parties are therefore more dependent on each other to achieve results. Due to the difference in interests, this can have a delaying effect on decision-making.

However, the Copenhagen case shows that there is a promising prospect for authoritative parties and allocative parties in the Utrecht case. It is possible to link the fields of Legitimacy and Ownership in such a way that the added value of land can be skimmed off in a targeted manner and used to increase the value of that same land (construction of a metro), thereby allowing both authoritative and allocative parties to benefit from this added value. In the Netherlands, these constructions take the form of public-private partnerships. This means that this element from the Copenhagen case is not directly transferable. However, it is **plausible** that the element **offers inspiration** to authoritative and allocative parties**.**

5. Legally enshrine the agreement at national level*: The element that emerges here is a nationally legislated agreement between the state and city/cities, in which the state indicates where spatial development will take place (and where it will not), the rights and obligations of the state and city/cities are described, in which land is contributed by the state and city, the city enters into loans via a delegated public development organisation based on the expected added value, and on which the state provides guarantees for the loans.*

In the Dutch context, the state, region and city each decide separately on their share of the spatial and financial task involved in the realisation of public transport connections. The state is often not a stakeholder in area development or the realisation of regional public transport connections. The name says it all: it is a regional connection. This is in contrast to the national railways and motorways. It is therefore interesting to note in the Copenhagen case that it is precisely the state that, through legislation, helps to guide the spatial choices and financial agreements associated with a regional public transport connection. This involves the transfer of state-owned land and the provision of state guarantees, which must be offset by strong and unchangeable or barely changeable income from area development. The parties offer each other securities through legislation.

In the Dutch context, it is possible to issue state guarantees on loans. For example, the state recently issued state guarantees on loans that Tennet has to take out for the expansion of the national high-voltage grid. It could be an interesting consideration for the state to work towards a system in which state guarantees play a role, in addition to direct subsidies, at a number of locations in the Netherlands with large-scale area development projects (e.g. more than 50,000 homes). These locations may be related to the NOVEX areas.

However, what is missing in the Utrecht case (and other cases in the Netherlands) is the contribution of state-owned land. The land is largely owned by private, allocative parties. Legislation by authoritative parties will guide spatial development, but if there is also to be a financial agreement on the *value capturing* of land, then these owners must also be part of the agreements. This in turn means that these allocative owners commit themselves to the task for the long term and can only expect to see a return at a later stage.

This element is not directly transferable from the Copenhagen case. However, it is **very likely** that it offers principles, concepts and mechanisms (***learning***) for authoritative and allocative parties to resolve the conflict of interests. To this end, both authoritative and allocative parties must be willing to enter into long-term agreements.

6. Remote public participation*: The element that emerges is one or more implementing organisations, in which the authoritative parties are represented through shareholdership, and equipped with statutes and financial obligations that protect against major economic and political changes*.

The Utrecht case study shows that expertise and responsibilities are spread across the various authoritative parties. It would be interesting to pool this knowledge in one or more implementing organisations. A regional (relatively small-scale) example of this is the Utrecht Development Company (OMU). One or more larger implementing organisations with shareholders such as the state, province and city could take on the task of constructing (and managing) a metro and developing the area. This does require that the parties are willing to transfer part of their responsibilities to the implementing organisation and also to steer it together with other authoritative parties through their shareholdings.

A major complicating factor in the establishment of an implementing organisation in the Utrecht case is the position of the allocative parties. Whereas in the Copenhagen case these parties only come into play when land is issued, in the Utrecht case they are involved from the outset due to the factor of land ownership. A public-private partnership might seem obvious, but the question is whether allocative parties are willing to share the risks of building a metro. It is also more complicated to make the implementing organisations accountable to democratically elected bodies. The question of whether the implementing organisation puts public interests first is already regularly raised in the Copenhagen case. This will become even more pressing in public-private partnerships. Such a partnership will have to operate on the basis of a very clear set of agreements. It is precisely in this respect that the Copenhagen case offers clear principles, concepts and mechanisms. The element is not directly transferable. However, it is **very likely** that the element offers principles, concepts and mechanisms on the basis of which authoritative and allocative parties can ***learn***.

7. First the metro*: only put the land on the market once the areas are connected by high-quality public transport, in order to achieve the highest possible land yield.*

The Utrecht case study shows that it is difficult, if not impossible, to develop new land. The task must be accomplished with existing land, which has a current value based on its current function, or a speculative value based on a possible expected function. The current owner often has a need to realise the potential added value within the foreseeable future or to maintain the current function. This contrasts with the element from the Copenhagen case study presented here: here, the decision has been made to realise the value of the land after the metro has been built. This requires the allocative parties to refrain from realising any potential added value for a long period of time, and the authoritative parties to bear the costs of developing the metro for a long period of time. It also requires the allocative parties to transfer part of the added value to the authoritative parties upon sale of the land after completion of the metro in order to (partly) cover the costs of metro construction.

This element is not directly transferable. However, it is **highly likely** that it offers principles, concepts and mechanisms (***learning***) for both authoritative and allocative parties. There is added value for both parties if the land is only released after the metro has been built. The question is what is needed to enable parties to work together in the long term and refrain from cashing in for a long time.

***8. Utilise or develop 'high** trust': The element that emerges is a 'high trust' culture: parties look beyond their own interests because they jointly recognise the higher value of the task.*

Dutch culture is known for its cooperation (polder model). The underlying idea is that the Dutch, forced by threats from the sea, had to cooperate. The Utrecht case study shows that authoritative parties have collaborated on a vision for the development of the region and are working towards investments to enable parts of this development (MIRT exploration of public transport and housing). At the same time, it also shows that there are very lengthy consultations between authoritative parties and also between authoritative and allocative parties. Interests do not always coincide, or sometimes do not coincide at all. There is a need for direction and mutual understanding of each other's interests. Parties often look to the ' ' subsidies from the state as the solution. The state argues that financial resources are limited and that decisions must be carefully considered and weighed against other national interests.

The Gebiedsontwikkeling.nu website uses the GO Barometer developed by Delft University of Technology to track how actors in the Netherlands experience working in area development practice. In an analysis of the results, Daamen, Verdaas and Boeve (2025) state that "although trust between those directly involved may be high, mistrust in the environment of proposed projects does not benefit the process". The authors point out that trust in society as a whole is under pressure. As a result, tensions between citizens and government, between governments themselves, and between market parties and municipalities are more likely to arise in the practice of area development. Daamen, Verdaas and Boeve (2025) argue: "Trust is not a luxury, but a necessary condition for the realisation of area development".

The Copenhagen case study shows that a *'high* trust' culture can contribute to finding a solution. Parties, both in the government and the opposition, see the need to find a solution and dare to put their own interests aside. The Copenhagen case study shows that it is precisely because of the great pressure to find a solution and the limited access to subsidies that parties have dared to make a long-term commitment.

This *high-trust* culture is strongly linked to a more egalitarian society. It contributes to a culture of cooperation in which parties are willing to engage in long-term collaboration. In addition, they have the mutual trust, network, culture of consultation and culture of decision-making to weather any crises.

At the same time, the Copenhagen case also shows that the solution was found within economic parameters that satisfy the market. Through legislation and statutes, parties are bound to realise a metro and area development that is in line with market conditions. If allocative parties consider cooperating on a solution found in the Copenhagen case, the challenge for the allocative parties in the Utrecht case is to get their stakeholders (shareholders) on board in such a way that these shareholders also see the importance of entering into a long-term partnership whose returns will only become apparent later.

The element is not directly transferable. In the Copenhagen case, there is primarily a *high-trust* culture between the authoritative parties. It is not possible to determine how the Copenhagen case would have developed if the land had been owned by allocative parties. However, in the Utrecht case, investments have been made over the past 10 years in building a network between the authoritative parties in particular, in which a shared vision, language and working method have been developed. The next step is to invest and implement. That is where the challenge lies. The element *of 'high* trust' in the Copenhagen case shows that *high trust* does not mean that parties give each other free rein. It is precisely trust in legislation and the fulfilment of agreements made that enables parties to reach compromises. Given the *'high* trust' that is also present or developing in the Dutch and, more specifically, Utrecht case, it is **very likely** that the element 'Utilise or develop *high* trust' can provide **inspiration**.

9. Build in incentives*: The element that emerges here is to develop a system that provides incentives to complete the project, possibly with phased decision-making and the construction of a metro and related area development.*

It is tempting to start area development before high-quality public transport has been realised. However, the risk is that only parts of the total intended development will be realised. On the other hand, there is a risk that area developments will not be realised or will be significantly modified after the construction of high-quality public transport. If authoritative parties and, in the Utrecht case, allocative parties are not bound to each other by legislation and underlying financial agreements, there is a risk that the individual interests of the parties will prevail in the course of the project.

The Copenhagen case study reveals an emergent advantage, namely that the way in which the agreements were made and the sequence of the development, i.e. bringing forward the construction of the metro, forces the parties to realise the associated area development on time in order to repay the loans that have been taken out on time.

Although this is an emergent advantage, it can be used as a deliberate advantage in the Utrecht case. The element of 'organising incentives in such a way that the area development is realised quickly and purposefully' is not directly transferable, but it can offer more than just inspiration. By pre-financing the construction of the metro and committing all parties to it, it is **likely** that this element offers principles, concepts and mechanisms from the Copenhagen case to ***learn*** from.

10. Cherish, develop and bundle knowledge*: The element that emerges here is the organisation and cherishing of knowledge across the entire spectrum from metro construction to area development. Only the actual construction of the metro and the buildings is entrusted to private parties.*

The Copenhagen case study shows that the decision to set up a separate development company for the metro and area development in Ørestad (initially together, later split into Metroselskabet and By og Havn) greatly contributes to the possibility of achieving careful design, decision-making, implementation, management and coordination with area development. It also helped to ensure optimal coherence between these components. What emerges is a long-term approach combined with a focus on efficiency, which is reflected in the design of the stations, their use and the self-driving system. With regard to area development, By og Havn has also accumulated a great deal of knowledge about vision and planning and translating the spatial challenge into financial parameters.

The knowledge within the organisations involved in planning the construction and management of a metro in Utrecht is still being developed. It makes perfect sense to utilise the knowledge gained from the Copenhagen case study. The element is essentially transferable. It is **highly likely** that a closer study of the principles, concepts and mechanisms of the element (***learning)*** will offer opportunities for the Utrecht context. This will enable Utrecht to find an organisational form in which the spatial design of both the metro and area development can be combined with knowledge of the management and financing of both the construction and management of the metro. See also the element on the implementing organisations and the position of authoritative and allocative parties.

11. Think in terms of a system with triple planning power*: the key element here is to develop a system in which long-term planning power in the spatial, financial and governmental domains is used in a coherent manner.*

It is unlikely that the Copenhagen model can be adopted one-to-one. However, together with the focus on the 10 elements discussed above, it is **very likely** that the triple planning power of the Copenhagen case can be used as **inspiration** in creating a triple system that can function in the Utrecht case. To quote Teisman: sometimes making the task more complex can increase the chance of finding a solution. The framework of the triple planning power system, as it emerges in the Copenhagen case, can provide a basis for this.

7 Conclusions, reflection and recommendations

7.1 Conclusions

We can now answer our main question: **What can we learn from the strategy used in the realisation of the metro in conjunction with area development in Copenhagen, more specifically in Ydre Nordhavn?**

This study started from the hypothesis that the Copenhagen case is a *best case* for the question of how to develop a metro in conjunction with spatial development, applying and utilising the principles of *' '* and *'value capturing' (*). The study focuses on how strategy was deployed and what can be learned from this. It describes the start (1991-1992), further developments up to Nordhavn and, finally, examines the Ydre Nordhavn case in more detail, with completion scheduled for 2025. The study also started with the underlying question of whether *lessons learned* can be distilled from the case that may be of interest to other cities. The study then examined the transferability of these *lessons learned* to the Utrecht case, for which a concise description is included in this study. The latter provides insight into the fact that the Copenhagen case contains a number of specific aspects that other cities do not always have at their disposal.

The Copenhagen case study provides insight into how the state and city not only collaborate in spatial planning, but also actively participate in the construction of the metro and its spatial development and financing, and have created specific development and implementation organisations for this purpose. The Copenhagen case study shows that there is a triple planning power system in which spatial, financial and governmental strategies have been developed in conjunction with each other, which together form a (to a considerable extent) self-functioning system in which metro development can take place prior to area development and in which *value capturing* functions well as an instrument. The Copenhagen case also shows that this triple planning power system has emergent effects that put pressure on regional spatial choices. The model for regional cooperation that emerges from the Utrecht case can serve as inspiration for addressing these emergent effects.

What we can learn from the strategy in the Copenhagen case is that it is advisable to view potential (complex) area development from the perspective of the triple planning power system as developed in Copenhagen, carefully considering the local aspects and examining which elements in the case need to be or can be mitigated in order to make the triple planning power system work for the specific case.

In addition to this central lesson, ten elements have been distilled from the Copenhagen case study, which are related to the Utrecht case study as lessons. It has been found that these lessons can mainly serve as inspiration or *learning points*. These specific lessons are discussed in detail in section 6.3, but are listed here in succession with a brief explanation (see Table 7.1).

Table 7.1. Lessons for Utrecht from Copenhagen on strategy for the realisation of the metro in conjunction with area development.

Level	Lesson	Explanation
Inspiration Highly plausible	**Think in terms of a triple planning power system**	The parties recognise that the objectives of the area development can be achieved by deploying long-term financial instruments.
Inspiration Plausible	**Create and utilise public land**	The creation of new and/or use of public land provides the basis for the success of the Copenhagen case study.
Inspiration Highly plausible	**Utilise or develop 'high trust'**	Parties develop a culture of cooperation and, by sharing each other's interests and goals, arrive at joint visions and implementation.
Learning Plausible	**Long-term joint financial commitment**	Parties recognise that the goals of area development can be achieved by deploying long-term financial instruments.
Learning Highly plausible	**Integrally designed metro system**	The insight that the design of the metro is an essential element for the success of the triple planning power system.
Learning Highly plausible	**Legislate the agreement at national level**	The law binds parties for the long term and also provides the national government with certainty regarding its rights and obligations, enabling it to participate on a truly long-term basis.
Learning Highly plausible	**Remote public participation**	Long-term agreements are implemented by implementing organisations in which the authorities are shareholders.
Learning Highly plausible	**Utilise financial instruments**	The instrument of state guarantees in particular, in conjunction with the legal codification of agreements, can make a difference in the deployment of *value capturing.*
Learning Plausible	**The metro first**	By building the metro first, greater certainty is offered to buyers (developers) and the yield from land is higher, which in turn contributes to *value capturing*.
Learning Plausible	**Build in incentives**	From the moment the decision is made, it is important for all parties, both authoritative and allocative, to see the project through to completion.
Learning Plausible	**Cherish, develop and pool knowledge**	The triple planning power system requires knowledge and skills across the three fields of spatial, financial and governmental. Precisely in the relationships between them.

The study shows that the authoritative parties have both the legitimising instruments and the allocative assets at their disposal, which has resulted in the creation of a 'triple planning power' that has also been utilised. The case study shows that the authoritative parties have developed a tripartite planning power system ( ) through national legislation, which includes agreements on the scope of the area development, the nature of the metro construction, the transfer of state-owned land to an

implementing organisation, the taking out of loans and state guarantees on these loans. The implementing organisations Metroselskabet and By og Havn are owned by the state and the city through shareholdings. These public organisations operate within commercial frameworks and work with strongly results-oriented assignments, namely the delivery of the metro and the delivery of plots for allocation to developers. By og Havn has the task of ultimately repaying the loans taken out through the allocation of plots. The system operates at some distance from politics. Legislation, long-term agreements and the decision to prioritise the construction of the metro over spatial development have had a positive impact on time and results.

The system proved to be financially robust in relation to the economic crisis in 2008. The system also demonstrates flexibility, but also some cracks, especially in the Ydre Nordhavn case. When deciding on the metro in Ydre Nordhavn, the nature of the line and the number of stations were adjusted due to financial and nature aspects. The structural plan was also adjusted. In addition, an additional shortfall was covered as part of the decision for the M5. This shows that the authoritative parties want to find solutions together and are willing to adjust the planning and the underlying vision to achieve this.

The study shows that the system in Copenhagen contains four elements that make it more difficult to transfer the system directly to another city, more specifically in the Netherlands and even more specifically to a city that is not located by the sea, such as Utrecht.

The first element is the system's dependence on newly reclaimed land in the sea, which becomes state property by law. As described in the case study, this offered the state the opportunity to contribute land instead of subsidies. Ørestad was then developed on this land. The proceeds from this largely covered the costs of constructing the metro. The study shows that the availability of, or making available, land owned by the state and/or city is often a decisive factor in deciding where and how to build the metro.

The second element, which is closely related to the first, is that a significant portion of the land in the Utrecht case is not owned by the state, city or province, but is privately owned. The analysis in the *strategy wheel* shows that this influences the planning power of the authoritative parties. The land already has a function and an associated value. This value cannot then be used to finance a metro via the *value capturing* instrument.

A third element is the way in which taxes are divided between the state and the city/province. In the Danish context, a significantly larger proportion of taxes goes to the city, which also has considerable planning power. Together, this enables the city to exert greater control over its (long-term) investments. It also makes the city less dependent on lobbying for financial resources from the state. An additional advantage is that, in the case of the metro, a higher amount can be charged per ticket.

A fourth element requires further investigation. The Copenhagen case study shows that a metro design was chosen that is not only capable of maintaining itself financially , but can even contribute to the repayment of the loans taken out for the construction of the metro. As far as the research shows, this has not been at the expense of quality. In fact, based on the deeper insight that the metro should be experienced as an integral part of the city, a metro has been created that is perceived as safe and highly accessible.

It is recommended to compare the scientific application of the *strategy wheel* in combination with the method international comparing and to apply the *lessons learned* method more often to analyse complex area developments and compare them with other international cases. This is because it provides insight into how strategy has been applied in area developments and provides a means of assessing whether and, if so, to what extent the lessons learned are transferable.

In addition, it can be said that the hypothesis that strongly developed relationships (both through conscious and emergent strategies) between the opposing fields in the *strategy wheel* contribute to the success of area development, as investigated in this thesis, is interesting, but that further research is needed to substantiate this further .

More detailed answers to the various sub-questions of the research can be found in sections 2.5, 3.6, 4.5, 5.5 and 6.3. This is due to the possible effect of an overly high level of abstraction and repetition of the answers.

7.2 Reflection on methodology

Both Yin (2018) and Flyvbjerg (2006) consider the external validation of data obtained from a qualitative *single case study*. Yin argues that "In analytical generalisation, the investigator is striving to generalise a particular set of results to some broader theory." (Yin, 2018, p.38). Yin points out that additional theoretical knowledge can be obtained, provided that the *single case study* is theoretically substantiated and the results are consistent with previously developed concepts. Flyvbjerg (2006) argues that, provided a *single case study* has been carefully selected, the findings contained therein may also apply to other relevant cases. Such a critical case can then have strong external validity.

The focus of this thesis is mainly on the Copenhagen case. In this *single case study*, a system spanning almost 35 years was examined, with a more detailed (*in-depth*) look at the start of the system and one of its most recent manifestations, in Ydre Nordhavn. This made it possible to follow developments within the *single case* and to use documents and interviews to investigate how these developments were viewed and experienced over time (reception history). This, in turn, provided insight into the sustainability of the system and the mitigating measures that were taken to keep it running.

At the start of the empirical research, the scope of the research was broadened because the opportunity arose to interview *key players* from the start of the Copenhagen case. This led to a deepening of information, proximity and reflection. However, it did mean that the scope of the case increased considerably, and with it the scope of the thesis. In order to keep the information readable, it was decided to work chronologically, first at the level of the institutional spatial development context and then at the project level.

The choice of a *single best case study* (selected on the basis of literature and personal observation) proved successful in achieving the research objective. The study of the case yielded various specific *lessons learned* that may be of interest to other locations with similar development challenges. However, there is also a caveat. The limitation of choosing a *single best case* means that it was not possible to determine whether and how other (*best) cases* could contribute to knowledge. Given the

limited time available to conduct this research, the decision was made not to conduct a comparative *in-depth* case study.

The fact that actors from the initial phase and actors currently working on the Ydre Nordhavn case were able to reflect on each other in the Copenhagen case and the debate being conducted in the Copenhagen region itself about the system and its effects does provide an opportunity for reflection on the Copenhagen case. This has also adjusted the image of 'only success'. Another point to note is that the analysis has also made it clear that certain elements are strongly geographically bound and cannot (simply) be transferred. This means that the statement 'do as Copenhagen does' is certainly not easily applicable to other regions.

The international comparison methodology has provided insight into both the Danish (Copenhagen) and Dutch (Utrecht) institutional spatial development contexts. At the project level, there is obviously a significant imbalance in the scope of research between the Copenhagen and Utrecht cases. However, although the Utrecht case study is described in limited detail, documents, interviews and observations provided sufficient information to complete the *strategy wheel* for the Utrecht case study as well. This made it possible to compare the two *strategy wheels* and identify similarities and differences.

It was decided to analyse each *lesson* learned from the Copenhagen case to determine whether and to what extent this lesson could be transferred to the Utrecht case. Although many principles, concepts and mechanisms of the *lessons learned* may be useful (*learning)* in the Utrecht case, essential differences have been observed that mean that the system as developed in Copenhagen is not directly transferable. Here too, the *lessons learned* must be viewed in context.

7.3 Reflection on Theory

The theory of the *strategy wheel* was applied in this study. The *strategy wheel* makes it possible to categorise the various distinct components of a decision-making process into fields arranged in a grid with Deliberate – Emergent on the horizontal axis and Authoritative – Allocative on the vertical axis. This results in four quadrants, each of which contains two fields.

The use of the *strategy wheel* in both the Copenhagen and Utrecht cases made it possible to organise the complex material from the description of the cases per field. In the Copenhagen case, the most relevant elements are listed per field. In the Utrecht case, no decision has yet been made, at least not with regard to the construction of a possible first metro line ( ). For this reason, we have chosen to present the most important elements in the cooperation process to date.

The Copenhagen case, which spans almost 35 years, presents a fairly consistent picture, with the decision-making process in 1992 even resembling that in 2025 to a large extent. For this reason, it was decided to conduct a single *strategy wheel* analysis for the entire Copenhagen case, rather than multiple analyses for each phase. Differences/developments are mentioned in the accompanying description. It was decided to identify a few elements per field in order to focus on the complex subject matter. This does not, of course, cover the entire picture.

Compared to the theory of the *strategy wheel* as taken from the literature and applied, this study investigated an additional hypothesis: Is there a connection between the opposing fields and is there

a conscious or emergent strategy? In the analysis, it was therefore decided to describe the two opposing fields in relation to each other and to identify any similarities, differences or even causal links. And if these exist, what can be concluded with regard to the central research question? The study shows that in the Copenhagen case, the correlation between the fields of Commitment – Finance and Legitimacy – Ownership is particularly strong. In addition, over the course of almost 35 years, a system has been built in the Copenhagen case, with implementing organisations. It is precisely here that strong relationships can be observed in the fields of Instruments – Information and Time/Results – Expertise. The question is whether these assumed opposing relationships are also valuable as an analytical framework for other types of cases and for testing. It can be argued that the hypothesis that strongly developed relationships (both through conscious and emergent strategies) between the oppositely positioned fields in the *strategy wheel* contribute to the success of area development, as investigated in this thesis, is interesting, but that further research is needed to substantiate this.

The analysis utilised the seven dilemmas in area development. Various elements interact in such a way that positive and negative feedback loops arise. It is particularly difficult to achieve an optimum, especially since this optimum can vary from case to case. The description shows that in the Copenhagen case, deliberate solutions were sometimes created and sometimes emergent effects arose in order to utilise/reinforce positive feedback loops (e.g. increase in land value after the construction of the metro) and to weaken some negative feedback loops (e.g. placing part of the decision-making process at some distance from politics).

In conclusion, it can be said with some caution that, although only investigated in a *single case study*, the *strategy wheel*, with the addition of viewing the opposing fields in conjunction, is interesting and could potentially add value to research into strategy in area developments. This is without disqualifying other possible relationships.

7.4 Recommendations

7.4.1 Scientific recommendations

Three (main) recommendations can be formulated on the basis of this research.

- It is recommended that the *strategy wheel* be used more often when comparing (complex) area developments.

This thesis and the Copenhagen case study show that the *strategy wheel*, as developed by Daamen (2010), is well suited to distinguishing between the various control mechanisms in a decision-making process. It is therefore recommended that this theoretical model be used more often in the analysis of (complex) decision-making processes in area developments. It is also interesting to compare cases using the *strategy wheel.* Although the Utrecht case study is less detailed than the Copenhagen case study, this thesis shows that some comparison is already possible. The way in which the information is presented, with the *strategy wheel* and the 'balloons', allows for the comparison of a great deal of complex information. When studying and comparing multiple cases in which the *strategy wheel* is applied, it is advisable to capture the information in a single image.

It may be helpful to include the seven management dilemmas from *Learning from urban transformations. Essay on management dilemmas and resilience in inner-city area development* (2019) by Verheul et al., as these dilemmas can bring order to the way in which the data collected in the *strategy wheel* can be analysed.

- Management tools may be specifically related to the geography of the area in which the (complex) area transformation is being planned or implemented. It is advisable to give greater emphasis to these (regional) geographical aspects in the analysis using the *strategy wheel* and in any comparison with other cases.

The analysis of the Copenhagen case using the *strategy wheel* shows that the Copenhagen system is closely linked to the creation of new land, reclaimed from the sea, which by law belongs to the state. This specific geographical element has been converted into an opportunity to develop the city. This specific geographical and legal control mechanism is not transferable in all cases to other (complex) area developments.

- When analysing the *strategy wheel*, it is advisable to focus specifically on the relationship between the control mechanisms in the opposing fields.

In theory, in addition to the *strategy wheel,* it has been suggested that the analysis in the *strategy wheel* should pay special attention to the coherence between the opposing fields and examine whether, and if so, what coherence or lack thereof can be observed between the control mechanisms mentioned in these fields. This is based on the assumption that a higher degree of coherence between the control instruments in the fields can contribute to the degree of success in (complex) decision-making and area development. The thesis shows that in the Copenhagen case, there is indeed a strong connection between the control mechanisms mentioned in the fields opposite each other and that these, as also mentioned in interviews, contribute to the success. In contrast, the Utrecht case shows that the control mechanisms mentioned there ( ) are (as yet) less coherent, with interviews revealing that this does indeed create factors that could potentially stand in the way of success.

It should be noted, however, that this does not rule out the possible relevance of coherence in control mechanisms between other fields. However, the assumption here is that strong coherence in control mechanisms that lie on the one hand in the Authoritative/Deliberate field and on the other hand in the Allocative/Emergent field, or in the Authoritative/Emergent field and Allocative/Deliberate field, can offer added value. See also the social recommendations below.

7.4.2 Social/practical recommendations

The social/practical recommendations are potentially close to the *lessons learned* as formulated above. Here, we have chosen to translate parts of the *lessons learned* into social and/or practical recommendations, for example for the method of research at the start of a (complex) area development or policy recommendations. In doing so, we incorporate the social and practical recommendations previously formulated by both Katz and Noring (2017) and Van Zoest and Daamen (2023). Do the findings of this thesis support these recommendations or other recommendations?

Katz and Noring (2017, p. 37) conclude that the opportunities for implementing the 'Copenhagen model' in other cities, although difficult, could not be better. They point to developments in the possibilities and pressure from demographic developments and the market. They link this to the retreating (national) governments, which will force many cities to look for new ways of designing, financing and delivering large-scale redevelopment and transformative infrastructure projects. They point to the possibility of capitalising on the (increasing) value of public property through an institutional vehicle that is focused on the long term. The lessons that Katz and Noring draw from the case study (up to 2017) and as social and practical recommendations can be summarised as follows:

- Make public ownership transparent
- Bundle social assets by bringing public bodies together
- Encourage state and local government to work together
- Decouple development from political influence
- Enable long-term thinking and stewardship

Van Zoest and Daamen (2023) were commissioned by the Knowledge Foundation for Area Development and the Mobility and Areas programme management of the Ministry of Infrastructure and Water Management to conduct a comparative study of funding strategies for public transport in relation to the *value capturing* instrument. The six insights are:

- Convince each other that things need to change
- Make use of local value development
- Prioritise the common interest
- Reform, but do so in moderation
- Create powerful investment plans
- Ensure balanced implementation

In an article on Gebiedsontwikkeling.nu, Daamen and Van Zoest (2021) make three recommendations based on their research for sustainable financing of area development: Work decisively and urgently on sustainable financing for the Dutch urbanisation challenge; Ensure multi-layered implementation power; And add funding from the skimming of beneficiaries to the Dutch funding palette.

This thesis shows that the recommendations made by both Katz and Noring and Van Zoest and Daamen can be supported. We have therefore decided to make a few additions:

- Develop a strategy for (complex) area development in which the authoritative parties can steer the nature of and coherence between the control instruments in the opposing fields in the *strategy wheel*.

In conjunction with the previous scientific recommendation, a social recommendation can be distilled from the analysis of the coherence between the control instruments in the opposing fields. Authoritative parties, but also allocative parties, would do well to analyse, at the start of the decision-making process on a (complex) area development, the extent to which there is coherence in the control mechanisms in the opposing fields of the *strategy wheel.* As the Copenhagen case study shows, the planning power of the authoritative parties is strongly linked to the control mechanisms available to them in both the authoritative and allocative fields.

- Consider a potential (complex) area development from the perspective of the system (thinking) developed in Copenhagen and then consider which elements in the case study need to or can be mitigated in order to make it work for the specific case study.

The systems thinking that emerges from the Copenhagen case study is potentially interesting to apply to other (complex) area developments. It is recommended that the Copenhagen system thinking be taken as a starting point in the preparations for decision-making for these cases and then, using information from, for example, an analysis with the *strategy wheel,* examine where the case corresponds and where it deviates. Also take into account the differences in geography. The question that can then be asked is how the differences can be mitigated. If this is feasible, a potentially very powerful development model/system will emerge.

Mitigation also concerns the allocative parties. Allocative parties, such as private owners or investors, may also benefit from reviewing the Copenhagen system and working with authoritative parties to see how, with the input of allocative resources, they can achieve a coherent system that serves the long-term interests of both the authoritative and allocative parties and enables successful area development with (prior) construction of a metro or other high-quality transport system.

Both authoritative parties and allocative parties will need to be prepared to explain to their respective representatives and shareholders why this system is useful and why both representatives and shareholders will be relatively distant after the initial decision-making process. This is because the parties are entering into a long-term agreement, with investments being made up front and returns only being generated later in the system. The Ydre Nordhavn case shows that the system offers some flexibility and that representatives of the people have influence over it, but that the financial frameworks agreed upon at the outset also impose limitations.

- It is recommended that further research be conducted into how the metro in Copenhagen was built and is managed.

Documents and interviews show that the metro itself can make a (significant) contribution to the development costs of the metro. It is beyond the scope of this thesis to provide an answer as to exactly how this is possible. This thesis presents various possible arguments for this, including the self-driving metro. It is recommended that further research be conducted into the determining factors in the high efficiency of the Copenhagen metro. This could be an important addition to determining success and failure factors in other cases.

- For Copenhagen, it is advisable to involve regional interests in further spatial considerations for future metros in relation to area developments, as well as to utilise the planning power and instruments developed by it (with the state) for this purpose.

The Copenhagen case shows that the system has potential and, even after almost 35 years, is still largely applicable, with the decision on the M5 as the latest example. Planning power has been used on a number of occasions, taking advantage of opportunities that particularly benefit the development of the city of Copenhagen itself. The public debate and interviews reveal a need for greater regional cooperation in order to address various regional challenges. It may be of interest to the state and the city of Copenhagen to use the knowledge gained, organisational structures and planning capacity developed therein for these more regional goals and challenges.

7.5 Personal reflection

I would like to provide some insight into my personal reflection on the research and the MCD as a whole by answering the questions below.

- What have I learned from conducting this scientific research and what is important about it, what is its added value for me as a professional?

One of the reasons for starting the MCD was to further develop my knowledge of the various fields (spatial, financial, governance) in area development. During the programme and also in this scientific research, I focused on the connections between these fields. Those who have knowledge of the fields themselves and knowledge of how the connections between these fields can be made are better able to manage the whole. Studying the *best case* of Copenhagen and the specific choice to focus my main question on the coherence between the aforementioned fields has given me the opportunity to acquire useful knowledge and promising skills that I hope to be able to use in other cases.

By making international comparisons, I have been able to distance myself from the practice in the Netherlands, which helps me to view the practice in the Netherlands as less self-evident. The Copenhagen case study has given me the insight that it is possible to develop a system in which the development of the metro can go hand in hand with area development. And that, among other things, the instrument *of value capturing* can make an important contribution to this. I expect to ask the question more often: and why do you think that's not possible?

- To what extent have I achieved my personal learning objectives in this thesis research (knowledge and/or skills acquired)?

As an architectural historian and former manager in the heritage field, I was delighted to join the long-term visioning process for area development as a 'lateral entrant'. I wanted to use the MCD to develop a scientific framework and foundation for myself. I feel that I have succeeded in this. I attended the various modules with great attention and successfully completed them. And in this final thesis, I was able to focus on what I believe to be my greatest added value: connecting people, ideas, interests and goals with a long-term vision. In addition, by also focusing on the implementation side in my thesis, I have broadened my range of skills.

- What has the MCD programme brought/taught you for your work (vision/approach)?

The multidisciplinary nature of the MCD suits me well. In the past, it was sometimes difficult not to belong to a specific field (specialist). The MCD programme has reinforced my understanding that being able to look across fields and see the connections between them is also a specialism. This allows you to have a toolbox at your disposal so that you can actually steer things in the right direction. I have learned that my attention to and knowledge of the long term can be an added value in organisations that are often strongly influenced by the issues of the day.

Literature review

Adams, D., & Tiesdell, S. (2010). Planners as market actors: Rethinking state–market relations in land and property. *Planning Theory & Practice, 11*(2), 187 207. https://doi.org/10.1080/14649351003759647

Albrechts, L. (2003). Planning and power: Towards an emancipatory planning approach. *Environment and Planning C: Government and Policy, 21*(6), 905–924. https://doi.org/10.1068/c29m

Albrechts, L. (2004). Strategic (spatial) planning reexamined. *Environment and Planning B: Planning and Design, 31*(5), 743–758. https://doi.org/10.1068/b3065

Amram, M., & Kulatilaka, N. (1999). *Real options: Managing strategic investment in an uncertain world*. Harvard Business School Press.

Ankerstjerne, M., & Horneman, U. F. (2020, 1 December). *Sharp criticism of Lynetteholm report: Insufficient basis and contrary to EU directive*. TV 2 Kosmopol. Retrieved on 1 July 2025, from https://www.tv2kosmopol.dk/koebenhavn/skarp-kritik-af-lynetteholm-rapport-utilstraekkeligt-grundlag-og-i-strid-med-eu-direktiv

's Local Management in Copenhagen. (2025). *Jury report on the Fingerplan 2.0 competition: Visions for the capital region of the future*. Arkitektforeningen.

Benner, T., & Bjerre, R. M. (2025, 14 January). Experts rejoice over new mega plan for Copenhagen. *Politiken*.

Boeve, M., Daamen, T., & Verdaas, C. (2025). *Trust in area development: a prerequisite for results*. Gebiedsontwikkeling.nu. https://www.gebiedsontwikkeling.nu/artikelen/vertrouwen-in-gebiedsontwikkeling-randvoorwaarde-voor-resultaat/

Bryson, J. M. (2011). The strategy change cycle: An effective strategic planning approach for public and nonprofit organisations. In J. M. Bryson (Ed.), *Strategic planning for public and nonprofit organisations: A guide to strengthening and sustaining organisational achievement* (4th ed., pp. 41–80). Jossey-Bass.

By og Havn. (2008). *Nordhavn. Jury report open international ideas competition Copenhagen 2008*. By og Havn.

By & Havn. (2009). *Nordhavn: Structural plan*. By & Havn. https://www.kk.dk/sites/default/files/agenda/75cbc64c-2861-4189-84a6-a38f3288184c/176b998b-10bd-40d9-b2e1-628bc8bb3fda-bilag-4.pdf

By & Havn (2012). *Nordhavn: From Idea to Project. Inner Nordhavn, Århusgadekvarteret.*

By & Havn. (2015). *Annual Report 2014*. Development Company By & Havn I/S. Retrieved on 1 July 2025, from https://byoghavn.dk/wp-content/uploads/2019/04/Aarsrapport-2014underskrevet.pdf

By & Havn. (2017). *Invited competition: Masterplan Levantkaj Nordhavn – Programme February 2017*. By & Havn. https://www.kk.dk/sites/default/files/agenda/8315d528-98ac-403c-84ac-14b6744caa66/92586f71-c58a-4431-ae7e-91777c693a50-bilag-2.pdf

By & Havn. (n.d.). *Nordhavn – før og nu*. Retrieved on 1 July 2025, from https://byoghavn.dk/nordhavn/nordhavn-foer-og-nu/

By & Havn, Cobe, Sleth, & Raw Mobility. (2023). *Outer Nordhavn Structure Plan: 2023 revision*. Retrieved on 1 July 2025, from https://www.cobe.dk/projects/nordhavn

By & Havn. (2024). *Annual Report 2023*. https://byoghavn.dk/wp-content/uploads/2019/04/Årsrapport_2023-for-By-Havn.pdf

Central Bureau of Statistics. (n.d.). *Tax revenues*. CBS. Retrieved 30 June 2025, from https://www.cbs.nl/nl-nl/onze-diensten/leren-met-het-cbs/gereedschappen/belastingopbrengsten

City Population. (n.d.). *Ørestad city (Quarter, Denmark) - Population Statistics, Charts, Map and Location*. Retrieved on 2 July 2025, from https://www.citypopulation.de/en/denmark/copenhagen/admin/amager_vest/21210__ørestad_city/

Christiansen, H. C. (2018). *Parking policies and sustainable mobility in Copenhagen*. City of Copenhagen. https://www.pdays.eu/pdays/images/PDF/2018/10_CHRISTENSEN.pdf

Cobe. (n.d.). *Nordhavn*. https://www.cobe.dk/projects/nordhavn

CPH City and Port Development. (2009). *Nordhavn urban strategy*. http://www.nordhavnen.dk/~/media/_newnordhavnen/nordhavnen_strategy_271009.pdf?la=da-dk

Daamen, T. (2010). *Strategy as force: Towards effective strategies for urban development projects: The case of Rotterdam City Ports* [Doctoral dissertation, Delft University of Technology]. IOS Press.

Daamen, T., & van Zoest, S. (2020, 23 December). *Alternative funding of public transport infrastructure: lessons from abroad.* Gebiedsontwikkeling.nu. https://www.gebiedsontwikkeling.nu/artikelen/alternatieve-bekostiging-van-openbaar-vervoerinfrastructuur-lessen-uit-het-buitenland

Daamen, T. A., & van Zoest, S. P. (2021). Decisiveness and drive: Six insights from an in-depth study into the funding of public transport in New York, London and Copenhagen. Delft University of Technology.

Daamen, T., & van Zoest, S. (2021, 14 April). *Three ways to fund urbanisation sustainably*. Gebiedsontwikkeling.nu. https://www.gebiedsontwikkeling.nu/artikelen/3-manieren-om-verstedelijking-duurzaam-te-bekostigen/

Daamen, T., Verdaas, C., & Boeve, M. (2025, 6 March). *Trust in area development: a prerequisite for results*. Gebiedsontwikkeling.nu. . https://www.gebiedsontwikkeling.nu/artikelen/vertrouwen-in-gebiedsontwikkeling-randvoorwaarde-voor-resultaat/

Denmark. Ministry of Finance. (1992). *Act No. 477 of 24 June 1992 on Ørestaden, etc.* Legal information. Retrieved on 2 July 2025, from https://www.retsinformation.dk

Danmarks Statistik. (2025). *Municipal accounts and budgets*. https://www.dst.dk/da/Statistik/emner/oekonomi/offentlig-oekonomi/kommunernes-regnskaber-og-budgetter

Dijkstra, L., Annoni, P., & Khabirpour, N. (2023). *EU Regional Competitiveness Index 2.0 – 2022 edition (Revised May 2023)*. Publications Office of the European Union. https://doi.org/10.2776/46106

Dühr, S., Colomb, C., & Nadin, V. (2010). *European spatial planning and territorial cooperation*. Routledge.

European Commission, DG REGIO & DG JRC. (2022). *EU Regional Competitiveness Index 2.0 – 2022 edition*. https://ec.europa.eu/regional_policy/information-sources/maps/regional-competitiveness_en

Eysenck, H. J., & Wilson, G. (1976). *Know your own personality*. Barnes & Noble.

Faludi, A., & Van Der Valk, A. (1994). *Rule and order: Dutch planning doctrine in the twentieth century*. Springer. https://doi.org/10.1007/978-94-017-2927-7_2

Feick, L. F., & Price, L. L. (1987). The market maven: A diffuser of marketplace information. *Journal of Marketing, 51*(1), 83–97. https://doi.org/10.1177/002224298705100107

Ministry of Finance. (1991) . *Report on investments in the capital's transport system* [Würtzen report]. Copenhagen: Ministry of Finance.

Flyvbjerg, B. (1993). Rationality and power. A case-based study of planning, politics and modernity. 4th edition. Copenhagen, DK: Akademisk Forlag.

Flyvbjerg, B. (1998a4). Habermas and Foucault: Thinkers for civil society? *British Journal of Sociology, 49*(2), 210–233. https://doi.org/10.2307/591310

Flyvbjerg, B. (1998b). *Rationality and power: Democracy in practice*. University of Chicago Press.

Flyvbjerg, B. (2001a). *Making social science matter: Why social inquiry fails and how it can succeed again*. Cambridge University Press. https://doi.org/10.1017/CBO9780511810503

Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Inquiry, 12*(2), 219–245. https://doi.org/10.1177/1077800405284363

Flyvbjerg, B. (2021) . *Top 10 Behavioural in Project Management: An Overview*. Project Management Journal, 52(6), 531–546. https://doi.org/10.1177/87569728211056820

Forrester, J. W. (1969). *Urban dynamics*. MIT Press.

Frid-Nielsen, N. (2025). *I am a Copenhagener*. Politikens Forlag

Gaardmand, A. (1991). *Bridge to dreamland*. The future of the capital. Growth visions and power games. Forlaget Urania.

Galland, D. (2012). Understanding the reorientations and roles of spatial planning: The case of national planning policy in Denmark. *European Planning Studies, 20*(9), 1359–1392. https://doi.org/10.1080/09654313.2012.680584

Municipality of Utrecht. (2025, 17 June). *Unique collaboration for Merwedelijn tram line: consortium of landowners makes substantial investment offer*. https://www.utrecht.nl/nieuws/nieuwsbericht-gemeente-utrecht/unieke-samenwerking-voor-tramlijn-merwedelijn-consortium-van-grondeigenaren-doet-forse-investeringsaanbieding

Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration*. University of California Press.

Glaeser, E. L. (2012). *Triumph of the city: How our greatest invention makes us richer, smarter, greener, healthier and happier*. Pan Books.

Goudappel, APPM, Rebel & MUST. (2022). *Mobility strategy: Final report*. Commissioned by the Programme Council U Ned. Programme U Ned. https://programma-uned.nl/relevante+documenten/handlerdownloadfiles.ashx?idnv=2344957

Hajer, M., & Zonneveld, W. (2000). Spatial planning in the network society—rethinking the principles of planning in the Netherlands. *European Planning Studies, 8*(3), 337–355. https://doi.org/10.1080/713666411

Harkes, N. (2008). *Value capturing*. Real Estate, Vol. 56 pp. 27–29

Healey, P. (2004). The treatment of space and place in the new strategic spatial planning in Europe. *International Journal of Urban and Regional Research, 28*(1), 45–67. https://doi.org/10.1111/j.0309-1317.2004.00502.x

Healey, P. (2007). *Urban complexity and spatial strategies: Towards a relational planning for our times*. Routledge.

Hengstermann, A., & Hartmann, T. (2018). *Instruments* of land policy: Four types of intervention. In J.-D. Gerber, T. Hartmann, & A. Hengstermann (Eds.), *Instruments of Land Policy: Dealing with Scarcity of Land* (pp. 27–32). Taylor & Francis. https://doi.org/10.4324/9781315511658-3

Heurkens, E. (2012). *Private sector-led urban development projects: Management, partnerships and effects in the Netherlands and the UK* [Doctoral dissertation, Delft University of Technology]. A+BE | Architecture and the Built Environment. https://doi.org/10.7480/abe.2012.1

Heurkens, E. & Hobma, F. (2014), 'Private sector-led urban development projects: comparative insights from planning practices in the Netherlands and the UK', *Planning Practice and Research*, **29**, 350–69.

Heurkens, E., Adams, D., & Hobma, F. (2015). Planners as market actors: The role of local planning authorities in the UK's urban regeneration practice. *Town Planning Review, 86*(6), 625–650. https://doi.org/10.3828/tpr.2015.37(https://www.academia.edu/54167197/Planners_as_market_actors_the_role_of_local_planning_authorities_in_the_UK_s_urban_regeneration_practice)

Hjøllund, T., Bøldt, J., Hendriksen, N., & Sieverts Nielsen, P. (2014). *Urban Transform EU: Copenhagen, Nordhavn – Implementation plan*. Urban Transform EU. http://urbantransform.eu/wp-content/uploads/sites/2/2015/07/D4.2-Copenhagen.pdf

Hobma, F. (2011). Successful urban area development. In A. Franzen, F. Hobma, H. de Jonge, & G. Wigmans (Eds.), *Management of urban development processes in the Netherlands: Governance, design, feasibility* (pp. 219–237).

Hong, Y.-H., & Brubaker, D. (2010). *Integrating value capture and land use planning*. In G. K. Ingram & Y.-H. Hong (Eds.), *value capture and land policies* (pp. 3–20). Lincoln Institute of Land Policy.

Ministry of the Interior and Health. (2005). *Act No. 537 of 24 June 2005 on regions and the abolition of county municipalities, the Capital Region Development Council and the Capital Region Hospital Association*.https://www.retsinformation.dk/eli/lta/2005/537

Janssen-Jansen, L., & Hutton, T. (2011). Rethinking the metropolis: Reconfiguring the governance structures of the twenty-first-century city-region. *International Planning Studies, 16*(3), 201–215. https://doi.org/10.1080/13563475.2011.591144

Juel-Christiansen, C., Lund, A., Martinussen, K., & Halvorsen, S. (2008). *Nordhavnen: The sustainable city of the future: Judge's report*. By & Havn.

Katz, B., & Noring, L. (2017). *The Copenhagen City and Port Development Corporation: A model for regenerating cities* . Brookings Institution Press.

Keogh, G., & D'Arcy, É. (1999). The property market and urban competitiveness: A review. *Urban Studies, 36*(5–6), 917–928.

Keping, Y. (2018). Governance and good governance: A new framework for political analysis. *Fudan Journal of the Humanities and Social Sciences, 11*(1), 1–8. https://doi.org/10.1007/s40647-017-0197-4

Knowles, R. D. (2012). Transit oriented development in Copenhagen, Denmark: From the Finger Plan to Ørestad. *Journal of Transport Geography, 22*, 251–261. https://doi.org/10.1016/j.jtrangeo.2012.01.009

Korsten, A. F. A. (2008). *Policy-oriented research in public administration*. Lemma.

Korsten, A., Van der Steen, M., & Twist, M. van. (2008). *The importance of IVO: Fashion and necessity*. The Hague: NSOB (Netherlands School of Public Administration).

Knowles, R. D. (2012). Transit oriented development in Copenhagen, Denmark: From the Finger Plan to Ørestad. *Journal of Transport Geography, 22*, 251–261. https://doi.org/10.1016/j.jtrangeo.2012.01.009

Copenhagen Municipality. (2023). *Metro to Ydre Nordhavn – Decision on route and initiation of environmental assessment process.* https://www.kk.dk/dagsordener-og-referater/%C3%98konomiudvalget/m%C3%B8de-23082023/referat/punkt-8

Copenhagen Municipality. (2023, 20 November). *Appendix 1: Overview of political deliberations – City Council decision at the meeting on 21 September 2023*. https://www.kk.dk/sites/default/files/agenda/e9ad3031-51ef-4a3c-827d-1e5bc0628f89/93420fef-c059-43f6-8e5e-c9794da5785f-bilag-1.pdf

Copenhagen Municipality. (2024). *Municipal Plan 2024*. https://www.kk.dk/sites/default/files/2025-05/KP24_pixie_engelsk_opt-a.pdf

Copenhagen Municipality. (n.d.). *About Lynetteholm*. Lynetteholm. Retrieved on 1 July 2025, from https://lynetteholm.kk.dk/om-lynetteholm

Copenhagen Municipality. (n.d.). *Citizen dialogue*. Lynetteholm. Retrieved on 1 July 2025, from https://lynetteholm.kk.dk/borgerdialog

Copenhagen Municipality Financial Administration. (2021, 20 December). *Metro til Ydre Nordhavn er kommet et stop nærmere*. https://via.ritzau.dk/pressemeddelelse/13639376/metro-til-ydre-nordhavn-er-kommet-et-stop-naermere

Lincoln Institute of Land Policy. https://www.lincolninst.edu/app/uploads/legacy-files/pubfiles/value-capture-and-land-policies-chp.pdf

Meadows, D. H. (2009). *Thinking in systems: A primer* (Kindle ed.). Chelsea Green Publishing.

Meadows, D. H., Meadows, D. L., Randers, J., & Behrens, W. W. (1972). *The limits to growth: A report for the Club of Rome's project on the predicament of mankind*. Universe Books.

Metroselskabet. (2023a). *Report on the extension of M4 to Ydre Nordhavn*. Metroselskabet.

Metroselskabet. (2023b). *The metro of the future: Business strategy 2023–2026*. Retrieved on 2 July 2025, from https://m.dk/media/yo1cwgt4/baeredygtighedsrapport-2022.pdf

Myldretid. (n.d.). *Myldretid.dk*. http://myldretid.dk

Ministry of the Environment. (2007). *Fingerplan 2007: National planning directive for the planning of the capital region* (pp. 15–17). https://www.planinfo.dk/publikationer-og-vejledninger/2007/jan/fingerplan-2007

Ministry of the Environment. (2010). *National Planning Report 2010*. Agency for Urban and Rural Development. https://www.plst.dk/Media/637915785920674069/landsplan2010endelig_0.pdf

Ministry of the Environment, Forest and Nature Agency. (2007). *Finger Plan 2007: National Planning Directive for the Capital Region*. https://www.planinfo.dk/publikationer-og-vejledninger/2007/jan/fingerplan-2007

Ministry of Infrastructure and Water Management. (n.d.). *Multi-year Programme for Infrastructure, Spatial Planning and Transport (MIRT)*. Central Government. https://www.rijksoverheid.nl/onderwerpen/ruimtelijke-ordening-en-gebiedsontwikkeling/meerjarenprogramma-infrastructuur-ruimte-en-transport-mirt

Mintzberg, H. (1978). Patterns in strategy formation. *Management Science, 24*(9), 934–948. https://doi.org/10.1287/mnsc.24.9.934

Mintzberg, H. (1994). *The rise and fall of strategic planning: Reconceiving roles for planning, plans, planners*. Free Press.

MUÑOZ GIELEN, D. (2010), *Capturing value Increase in Urban Redevelopment: A Study of How the Economic values Increase in Urban Redevelopment can be used to Finance the Necessary Public Infrastructure and Other Facilities,* Leiden, Sidestone Press.

Murakami, H. (2005). *Kafka on the Shore* (P. Gabriel, Trans.). London: Vintage.

Murakami, J. (2010). *Rail transit technologies, urban regeneration programmes, and land value redistributions in the Tokyo Megalopolis Region* (Research Report No. UCTC-FR-2010-14). University of California Transportation Centre. https://jinmurakami.net/pdf/jinmurakami_trb90thmanuscript.pdf.pdf

Murakami, J. (2012). Transit *value* capture: New town codevelopment models and land market updates in Tokyo and Hong Kong. In G. K. Ingram & Y.-H. Hong (Eds.), *value capture and land policies* (pp. 285–321).

MUST (2023). *Development perspective Utrecht-Amersfoort: Healthy growth in proximity – NOVEX area 2040*. Commissioned by the Ministry of Infrastructure and Water Management, Ministry of the Interior and Kingdom Relations, Ministry of Economic Affairs and Climate Policy, Province of Utrecht, Municipality of Utrecht, Municipality of Amersfoort, U10 & Amersfoort Region. Programme U Ned.

MUST & Move Mobility. (2021) . *Development vision for the Amersfoort Central Region! Development vision and strategy 2030–2040*. Commissioned by the Amersfoort Region and the Province of Utrecht. https://www.regioamersfoort.nl/images/bestandenomgeving/ontwikkelbeeld_regio_amersfoort.pdf

MUST, TwynstraGudde, MOVE Mobility, Decisio & Sweco. (2022) . *Utrecht Nabij: Development perspective for the Utrecht Metropolitan Region.* Commissioned by the Ministry of Infrastructure and Water Management, Ministry of the Interior and Kingdom Relations, Ministry of Economic Affairs and Climate Policy, Province of Utrecht, Municipality of Utrecht & U10. Programme U Ned. https://www.must.nl/projecten/utrecht-nabij/

Nadin, V. (2007). The emergence of the spatial planning approach in England. Planning Practice and Research, 22, 43-62.

Nadin, V. (2008). Characterising European planning systems. Paper presented to the AESOP-ACSP Joint Congress. Chicago, 6-11 July (unpublished)

Nadin, V. (2011). *International comparison of spatial development and planning: Four models* [Lecture, Master City Developer]. Rotterdam, 9 November. (Unpublished).

Nadin, V. (2023). *Next steps for Planning Practice and Research*. *Planning Practice & Research*, 38(1), 1–5. https://doi.org/10.1080/02697459.2023.2168866

Needham, B. (2000). Spatial planning as a design discipline: a paradigm for Western Europe? Environ. Plan. B: Plan. Des. 27, 437–453.

Needham, B. (2007**).** *Dutch land use planning: Planning and managing land use in the Netherlands, the principles and the practice*. SDU Publishers

OECD. (2009). *OECD territorial reviews: Copenhagen, Denmark*. OECD Publishing. https://doi.org/10.1787/9789264060036-en

Offermans, R.N. (2004), *value capturing*: Potential financing instrument for the Netherlands? Rotterdam: eUR

Ørestadsselskabet. (1994). *Ørestaden idékonkurrence*. Ørestadsselskabet.

Østergård, N. (2009). Med kommunalreformen fulgte en planlovreform. *Plan, 3–4*, 4–11.

Pierre, J., & Peters, B. G. (2012). Urban governance. In P. John, K. Mossberger, & S. Clarke (Eds.), *The Oxford handbook of urban politics*, Oxford University Press.

Pickvance, C. G. (2001). Inaction, individual action and collective action as responses to housing dissatisfaction: A comparative study of Budapest and Moscow. *Research in Social Movements, Conflicts and Change, 23*, 179–206.

Province of Utrecht. (2020, November). *Utrecht Nabij: Healthy living in an urban region for everyone*. https://www.provincie-utrecht.nl/sites/default/files/2020-11/Utrecht%20Nabij.pdf

Province of Utrecht. (2024, 18 October). *Adaptive development strategy NOVEX Utrecht-Amersfoort* (Version 1.0). https://stateninformatie.provincie-utrecht.nl/Documenten/1FLYER-1.PDF

U Ned (2023), Growing in Proximity, NOVEX Development Perspective 2040 Utrecht-Amersfoort, Documents | U Ned

Province of Utrecht. (2024, 12 March). *Provincial Council letter on progress of MIRT exploration of public transport and housing and MIRT study of the A12 zone in connection with Rijnenburg*. https://www.stateninformatie.provincie-utrecht.nl/documenten/SB-Voortgang-MIRT-verkenning-OV-en-Wonen-en-MIRT-onderzoek-A12-zone-ism-Rijnenburg.pdf

Province of Utrecht. (2025). *Provincial Council letter: Outcome of Administrative Consultation on the Northwest Living Environment, 10 June 2025*. https://stateninformatie.provincie-utrecht.nl/Documenten/Statencommissie-Ruimtelijke-ontwikkeling-en-Wonen/SB-Uitkomst-BOL-10-juni-2025.pdf

Province of Utrecht. (2025, 4 June). *Environmental Vision and Environmental Regulations*. Province of Utrecht. https://www.provincie-utrecht.nl/onderwerpen/omgevingsvisie-en-omgevingsverordening

Rakers, D., van Blokland, J., & Topper, H. (2010). *Uncertainty, flexibility and value in integrated area development*. AT Osborne / University of Twente.

Relsted, J., Rusfort, R., & Dahlin, U. (1992, September). Ballads about the blue banana. *Månedbladet PRESS*, (82), p. 16-20, p.68)

Central Government. (2022). *NOVEX programme*. https://www.rijksoverheid.nl/documenten/rapporten/2022/07/01/programma-novex

Central Government. (2019). *Start of U Ned collaboration: investing in accessibility and quality of life in the Utrecht region*. https://www.rijksoverheid.nl/actueel/nieuws/2019/07/05/start-samenwerking-u-ned-investeren-in-bereikbaarheid-en-leefbaarheid-regio-utrecht

Central Government. (2023). *Prinsjesdag 2023: Ministry of Infrastructure and Water Management puts maintenance in the spotlight*. https://www.rijksoverheid.nl/actueel/nieuws/2023/09/19/prinsjesdag-2023-ministerie- van-ienw-zet-onderhoud-in-de-schijnwerpers

Central Government. (2025, 17 April). *Structural solutions for financing TenneT*. https://www.rijksoverheid.nl/actueel/nieuws/2025/04/17/structurele-oplossingen-financiering-tennet

Rodin, J. (2014). *The resilience dividend: Being strong in a world where things go wrong*. PublicAffairs.

Roodbol-Mekkes, P. H., & van den Brink, A. (2015). Rescaling spatial planning: Spatial planning reforms in Denmark, England, and the Netherlands. *Environment and Planning C: Government and Policy, 33*(1), 184–198. https://doi.org/10.1068/c12134

Rose, R. (1993). *Lesson-drawing in public policy: A guide to learning across time and space*. Chatham House Publishers.

Scharpf, F. W. (1997). *Games real actors play: Actor-centred institutionalism in policy research*. Westview Press.

Shahab, S., Hartmann, T., & Jonkman, A. (2021). Strategies of municipal land policies: Housing development in Germany, Belgium, and the Netherlands. *European Planning Studies, 29*(6), 1132–1150. https://doi.org/10.1080/09654313.2020.1817867[1](https://research.wur.nl/en/publications/strategies-of-municipal-land-policies-housing-development-in-germ)

Sorensen, A. (2018). Institutions and urban space: Land, infrastructure, and governance in the production of urban property. *Planning Theory & Practice, 19*(1), 21–38. https://doi.org/10.1080/14649357.2017.1406985

Squires, G., & Heurkens, E. (2016). Methods and models for international comparative approaches to real estate development. Land Use Policy, 50, 573-581. https://doi.org/10.1016/j.landusepol.2015.10.005

Copenhagen City Planning Commission. (1947). *Fingerplanen 1947: Hovedstadsområdets fremtidige udvikling*. Copenhagen: Ministry of Housing.

Sund & Bælt. (n.d.). *Østlig Ringvej*. Retrieved on 1 July 2025, from https://oestligringvej.dk/

Teisman, G. R., Van Buuren, A., & Gerrits, L. (2009). *Managing Complex Governance Systems: Dynamics, Self-Organisation and Coevolution in Public Investments*.

Teisman, G. (2012). Process art. New-style area development. Utrecht: Stichting Nederland Boven Water.

Tiesdell, S., & Allmendinger, P. (2005). Planning tools and markets: Towards an extended conceptualisation. *Planning Theory & Practice, 6*(1), 33–50. https://doi.org/10.1080/1464935042000334961

Ministry of Transport, Copenhagen Municipality & By & Havn. (2007, June). *Agreement on the Metro City Ring and Nordhavn Metro*. The government and the parties behind the metro agreement.

Ministry of Transport & Copenhagen Municipality. (2014). *Principle agreement on metro to Ny Ellebjerg via Sydhavnen and expansion of Nordhavnen*. https://www.transportministeriet.dk/media/v2pkzfdy/principaftale-om-sydhavnsmetro.pdf

Ministry of Transport & Copenhagen Municipality. (2025). *Agreement between the government and the City of Copenhagen on: Urban development and infrastructure for Lynetteholm.* Retrieved on 1 July 2025, from https://www.ft.dk/samling/20241/almdel/tru/bilag/186/3004049.pdf

Ugeavisen. (n.d.). *The history of Nordhavn: From industry to residential area*. Retrieved on 1 July 2025, from https://ugeavisen.dk/oesterbro/historien-om-nordhavn-fra-industri-til-beboelse

U Ned (2025), MIRT Exploration Ov and Housing in the Utrecht region. Interim report: findings from the in-depth phase. U Ned.

Urban Transport Magazine. (2024, 22 April). *Driverless in 2030: Siemens Mobility upgrades signalling for S-Tog Copenhagen.* Retrieved on 2 July 2025, from https://www.urban-transport-magazine.com/en/driverless-in-2030-siemens-mobility-upgrades-signaling-for-s-tog-copenhagen/

Van Karnenbeek, L., Van den Hurk, M., Pelzer, P., Lebbing, J., & Buitelaar, E**.** (2025, 26 March). *As a landowner, influencing a future function: 30 years of institutional entrepreneurship in Rijnenburg*. Gebiedsontwikkeling.nu.

Van Zoest, S., & Daamen, T. (2023). *Decisiveness and drive: Alternative funding in area development*. nai010 publishers. (TU_Urgency_and_decisiveness.pdf https://dh1hpfqcgj2w7.cloudfront.net/media/documents/TU_Drang_en_daadkracht.pdf)

Van Zoest, S., & Daamen, T. A. (2024). Explaining *value* capture implementation in New York, London, and Copenhagen: Negotiating distributional effects. *Urban Affairs Review,* 60(5), 1349-1381. https://doi.org/10.1177/10780874231222174

Vejdirektoratet. (n.d.). *Nordhavnstunnel*. Retrieved on 6 July 2025, from https://www.vejdirektoratet.dk/projekt/nordhavnstunnel

Verheul, W. J. (2012). *From argument to concrete: On the practice of inner-city area development*. TU Delft / Chair in Area Development.

Verheul, W. J., Daamen, T., Heurkens, E., Hobma, F., & Vriends, R. (2017). Area transformations: Room for daring and diversity. Delft University of Technology.

Verheul, W. J., Daamen, T., Heurkens, E., Hobma, F., & van Zoest, S. (2019). *Learning from urban transformations: Essay on management dilemmas and resilience in inner-city area development*. Platform31 / TU Delft.

Woestenberg, A., Van der Krabben, E., & Spit, T. (2019). *Financing urban redevelopment: A comparative analysis of Dutch value capturing instruments*. *Land Use Policy, 86*, 191–200. https://doi.org/10.1016/j.landusepol.2019.04.027

Wolman, H. (2009). Comparing local government systems across countries: Conceptual and methodological challenges to building a field of comparative local government studies. *Environment and Planning C: Government and Policy, 27*(1), 87–103. https://doi.org/10.1068/c08122

Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed., p. 38). Thousand Oaks, CA: Sage Publications.

Appendix 1 Overview of interviews

Interviewee	Organisation	Date	Number
Erik Jacobsen	Retired	02-07-2024	A
Anne-Grethe Foss	Metroselskabet	26 September 2025	B
Anonymised	By of Havn	2 October 2024	C
Anonymised	Barcode architects	15 October 2024	D
Anonymised	Province of Utrecht	07-01-2025	E
Anonymised	Metroselskabet	16 January 2025	F
Anonymised	AM landscape	24 January 2025	G
Anonymised	Province of Utrecht	6 March 2025	H
Anonymised	Municipality of Copenhagen	03-04-2025	I
Erik Jacobsen	Retired	11 June 2025	A

Appendix 2 Meeting reports