Tendering of Long-term Integral Maintenance Contracts

Improving tenders for management & maintenance of public space of municipalities and provinces
Zeg dit als aannemer nooit tegen een inkopende overheid:

“Ik doe dit werk nu al veertig jaar en u werkt hier een maand. U gaat me toch niet vertellen dat ik niet weet waar ik het over heb?”

“Ooooh? U gáát er niet over? Dan wil ik nú uw baas spreken.”

“Ik heb die facturen gezien, maar dat kan veel goedkoper. Scheelt al gauw een paar duizend euro, en daar kunt u leuke dingen van doen.”

“Luister vriend, ik betaal jouw salaris. Je doet dus gewoon even wat ik van je vraag. Ik betaal niet voor niks belasting.”

“Ik regel dat wel even met de burgemeester.”

Uit: “De Overheid als Klant” (Boon, 2014)
Title
Tendering of Long-term Integral Maintenance Contracts

Subtitle
Improving tenders for management & maintenance of public space of municipalities and provinces

Version
Public version

Location
Den Haag, The Netherlands

Date
7th of July 2016

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Preface

This thesis report is the result of my graduation research for the master Construction Management and Engineering. Almost exactly one year ago, I have joined a company day of Van Hattum en Blankevoort at the Ecoduct Boele Staal. On the ecoduct I met Emiel de Haan, who I explained that I was looking for an interesting subject for my master graduation. In the next months we kept in touch and together with his colleagues, we brainstormed about interesting subjects. I was looking for a subject related to a new development for tenders and contracts, which could also help Van Hattum en Blankevoort. I think, this didn’t make it any easier for them and me, but in the end I feel really happy that we have found such a subject. By investigating the tender processes of LiM-contracts, I found the exact type of research subject that I was looking for. This research gave me many opportunities to talk to interesting people at both clients and contractors in the field of civil engineering. For both my research and for me personally, I really benefitted from these opportunities. The last 8 months flew by and even though not everything went the way I planned it, I still really enjoyed my research. Finishing this thesis report feels like the end result of years of studying, but also feels like a very interesting introduction to my working career. Even though this is my research and my report, I could not have done this without the help of others. I would like to thank these people in Dutch:


De afgelopen 8 maanden bij Van Hattum en Blankevoort heb ik het ontzettend naar mijn zin gehad op het kantoor in Diemen en ben ik van begin af aan opgenomen als volwaardig collega. Speciale dank wil ik uiten aan de volgende personen. Emiel, na onze ontmoeting op het ecoduct hebben wij samen een mooi onderzoek op gezet. Je hebt mij het bedrijf en de branche echt helpen leren kennen en stond altijd open voor een goed gesprek op zowel professioneel als persoonlijk vlak. Ik wil je hiervoor hartelijk bedanken. Niels, ook jou wil ik graag van harte bedanken dat jij mij, nadat ik al even bezig was, ook wilde gaan begeleiden. Jouw kennis over asset management heeft mijn onderzoek naar een hoger niveau gebracht. Henk, bedankt voor het lachen en het tafelvoetballen maar ook voor je input voor zowel mijn onderzoek als mijn carrière. Marko, bedankt voor je wetenschappelijke blik op mijn onderzoek en Annette bedankt voor jouw contractuele kennis die mij echt heeft geholpen. En natuurlijk dank aan al mijn andere collega’s waar ik goede gesprekken mee heb kunnen voeren en waar ik altijd bij terecht kon.

Daarnaast wil ik graag al mijn respondenten bedanken die ik heb mogen interviewen. Ik kan jullie helaas niet bij naam noemen, maar dankzij jullie hulp kon ik echte praktijkkennis in mijn onderzoek verwerken. Ook wil ik graag mijn studiegenoten bedanken. We zaten allemaal in hetzelfde schuitje, maar over elkaars onderzoek praten kon vaak net voor dat stukje perspectief zorgen dat ik nodig had. Natuurlijk wil ik ook graag mijn familie bedanken, die mij altijd steunen en altijd geïnteresseerd zijn hoe het met mij gaat. Jullie hielpen mij aan de afleiding en rust, die ik af en toe gewoon nodig had. En Brent, de combinatie tweelingbroer en studiegenoot zorgde voor een goede hoeveelheid lol en ongezouten meningen, wat mij op de goede weg hielp. En als laatste, Karina. We weten precies wat we aan elkaar hebben, dus daar hoef ik eigenlijk niets over te zeggen. Bedankt dat je er altijd voor mij bent.

Good luck and enjoy reading this report.

Connor Elemans
Den Haag, 7th of July 2016
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Executive Summary

Introduction
Municipalities and provinces in The Netherlands are responsible for the management and maintenance of public space. These governments outsource large parts of the maintenance of public space to contractors in relatively small maintenance contracts. In recent years, more and more municipalities and provinces decided to outsource the management and maintenance of public space into long-term integral maintenance contracts, or LIM-contracts. These contracts have a contract length of multiple years, bear a large area and focus on multiple types of assets. This way, the small maintenance contracts with many contractors are clustered into large contracts with only a few contractors. This development requires a different mindset of both the clients that put these contracts out for tender and the contractors that are bidding for these contracts.

The municipality of Haarlem and the province of Noord-Holland were one of the first contracting authorities to outsource LIM-contracts to the private sector. One of the contractors that tendered for both of these LIM-contracts, was Van Hattum en Blankevoort (VHB). The bids of both tenders were evaluated based on the Economically Most Advantageous Tender, or EMAT. The idea behind EMAT-tenders, is that bidders have to deliver verifiable added value. For the tender of Haarlem, VHB was able to deliver significantly added value to the client and was awarded with the LIM-contract. Despite the similarities of the contracts and a similar tender approach, VHB was not able to deliver any added value to the client for the tender of Noord-Holland: they received the lowest EMAT-score.

Problem definition and research questions
This above described situation illustrates the difficulty for contractors in understanding what the client is looking for in a LIM-contract and what triggers him to award the LIM-contract to a particular contractor. In comparison to construction contracts, LIM-contracts are depending on qualitative bids, since no design and calculations are possible for this kind of contracts. As a result, also for clients it is difficult to determine during a tender what contractor is best suitable for executing the LIM-contract. To conclude, LIM-contracts are a new development for both clients and contractors. As a result, contractors are faced with difficulties in how to write a competitive bid and clients are facing difficulties how to put LIM-contracts out for tender.

As a result of this described problem for both clients and contractors, a research has been conducted. The objective of this research is to give recommendations to contractors and clients to improve the formation and approach of EMAT tenders for long-term integral maintenance contracts of public space, by creating insight into the formation of the clients’ objectives, corresponding expectations, award criteria and weighing factors and their appraisal by contractors. The clients to whom the recommendations are directed are the municipalities and provinces in The Netherlands. Nevertheless, also Rijkswaterstaat is included in this research as a result of their experience with LIM-contracts, but is not included in the recommendations. Rijkswaterstaat is only used as a reference to the other clients.

In order to reach the research objective, the following main research questions has been formulated:

Main research question
What are the causes for the difficulties that both clients and contractors are facing in the formation and approach of EMAT tenders for long-term integral maintenance contracts for public space and how can these causes be reduced?

To answer this main research question, the following six sub research questions have been formulated:

1. What process takes place in the clients’ formation of objectives and corresponding expectations concerning long-term integral maintenance for the public space?
2. How are the clients’ objectives and corresponding expectations translated to award criteria for the tenders of long-term integral maintenance contracts, and how are these perceived and approached by contractors?
3. How are the clients’ objectives and corresponding expectations translated to weighing factors for the evaluation of the contractors’ bids during the tenders of long-term integral maintenance contracts, and how are these perceived and approached by contractors?
4. To what extent do the client’s objectives, expectations, award criteria and weighing factors, play a role in the execution of long-term integral maintenance?
5. Are the clients’ objectives and corresponding expectations well aligned with the award criteria, the weighing factors and the experiences of long-term integral maintenance contracts and if not, how can this be explained?
6. To what extent does the (dis)continuity of the staff organization around EMAT tenders at the client and contractor, contribute to the current problems?

**Research methodology**

In order to execute this research and to answer all research questions, the following research methodology has been used. This research consists of a literature study and a case study. In the literature study, a theoretical introduction has been given about LIM-contracts and maintenance contracts in general. Subsequently, the development of LIM-contracts and the theoretical and practical applications of LIM-contracts have been investigated. After the literature study, a case study has been conducted. For this case study, four LIM-contracts have been investigated: municipality of Haarlem (Civil constructions and Shorelines), province of Noord-Holland (Kop van Noord-Holland), Rijkswaterstaat (Project A) and Rijkswaterstaat (Project B). The contracts of Rijkswaterstaat were investigated as reference cases, in order to use Rijkswaterstaat’s experience of LIM-contracts for well-founded recommendations to municipalities and provinces. The case study has been subdivided into the documentation analysis and interviews. In the documentation analysis, a set of predetermined variables are investigated in published documentation related to the cases. This documentation analysis resulted in case knowledge and data for formulating questions for the subsequent interviews.

For each case, five respondents have been interviewed with respectively the following roles: policy maker, tender advisor and contract manager of the client and tender manager and contract manager of the contractor. By dividing these roles for each case, data could be collected of both the policy phase, the tender phase and the contract phase of both the client and the contractor. In total 18 interviews have been conducted, which have been transcribed. From the transcriptions, relevant research data have been filtered. This research data has been analyzed in a qualitative data analysis (QDA). In the QDA, two types of analyses have been conducted that were both displayed in a matrix. First, a within-case analysis have been conducted for all four cases. In this analysis, a matrix display was created based on the response for each respondent, for each within-case topic, see Figure 2. From the four within-case analysis matrices, a cross-case analysis matrix have been created. In this matrix, the generalized outcomes for each case, for each cross-case topic have been displayed, see Figure 1.
From the cross-case analysis, a collection of generalized data could be retrieved. This generalized data aimed at being applicable to at least all investigated cases. From this generalized data, the conclusions and recommendations of this research were formulated.

An overview of the research methodology has been illustrated in Figure 3.

Figure 3: Overview of research methodology

Conclusion and recommendations

Based on this research, the following answer to the main research questions can be formulated:

Answer to the main research question

The causes for the difficulties that both clients and contractors are facing in the formation and approach of EMAT tenders for LIM-contracts are: the lack of alignment between the objectives, expectations, award criteria and weighing factors, the lack of staff continuity at both the client and contractor, the lack of completeness and correctness of area data and the lack of possibilities and willingness to understand the client.

These causes for difficulties can be explained as follows:

- **Lack of alignment**: the lack of alignment between the objectives, expectations, award criteria and weighing factors, reduces the understanding of the client by the bidders in the tender phase. Lack of alignment also results in a reduced role of the award criteria, etc. in the contract phase.
- **Lack of staff continuity**: the lack of staff continuity between the tender phase and contract phase for both the client and contractor, results in less input for the client’s tender documents, less understanding of the client and contract and a declined preparation for the contract phase.
- **Lack of completeness and correctness of area data**: the lack of complete and correct area data resulted in indistinctness about the scope, difficulties for calculations and discussions and time loss during the contract phase.
- **Lack of possibilities and willingness to understand the client**: contractors do not have enough contact moments with the client, in order to understand his problem, desires, wishes, etc. But, during these contact moment, the contractors also show not enough willingness to understand the client.

In order to reduce these causes for difficulties, the following recommendations are given to municipalities and provinces and to contractors:

<table>
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<tr>
<td><strong>Municipalities and Provinces</strong></td>
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<tr>
<td>Organize more contact moments with the bidders</td>
</tr>
<tr>
<td>Be transparent about the available area data</td>
</tr>
<tr>
<td>Strive for staff continuity</td>
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<tr>
<td>Strive for alignment between objectives, etc.</td>
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<td>Limit focus on processes</td>
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Management Samenvatting

 Introductie
Gemeenten en provincies in Nederland zijn verantwoordelijk voor het beheer en onderhoud van de openbare ruimte. Deze overheden besteden een groot deel van het onderhoud van de openbare ruimte uit aan aannemers in relatief kleine onderhoudscontracten. In de laatste jaren hebben steeds meer gemeenten en provincies besloten om het beheer en onderhoud van de openbare ruimte uit te besteden via meerjarige integrale onderhoudscontracten, of MIO-contracten. Deze contracten hebben een contractduur van meerdere jaren, bevatten een groot gebied en focussen op meerdere asset types. Op deze manier worden de kleine onderhoudscontracten met meerdere aannemers geclusterd in grote contracten met slechts enkele aannemers. Deze ontwikkeling vereist een andere mindset bij zowel de opdrachtgevers die deze contracten aanbesteden en de aannemers die zich inschrijven voor de aanbesteding van deze contracten. De gemeente Haarlem en de provincie Noord-Holland waren een van de eerste aanbesteders die MIO-contracten naar de markt uitbesteedden. Eén van de aannemers die zich inschreef voor de tenders van deze MIO-contracten was Van Hattum en Blankevoort (VHB). De inschrijvingen van beide tenders werden beoordeeld op basis van de Economisch Meest Voordelige Inschrijving, of EMVI. Het idee achter EMVI is dat inschrijvers verifieerbare toegevoegde waarde moeten leveren. Voor de tender van Haarlem was VHB in staat om significante toegevoegde waarde te leveren aan de opdrachtgever, en als gevolg werd het MIO-contract aan VHB gegund. Ondanks de overeenkomsten tussen de contracten en de vergelijkbare aanpak, was VHB niet in staat om toegevoegde waarde te leveren aan de opdrachtgever voor de tender van Noord-Holland: VHB kreeg de laagste EMVI-score.

Probleem definitie en onderzoeksvragen
De hierboven beschreven situatie illustreert de moeilijkheid voor aannemers in het begrijpen waar de opdrachtgever naar op zoek is voor MIO-contracten en wat hem prikkel om een MIO-contract aan een specifieke aannemer te gunnen. In vergelijking tot bouwcontracten, zijn MIO-contracten afhankelijk van kwalitatieve biedingen omdat er geen ontwerpen of berekeningen mogelijk zijn voor dit type contract. Als gevolg is het ook voor opdrachtgevers tijdens de aanbesteding moeilijk om te bepalen welke aannemers het beste geschikt is om het MIO-contract uit te voeren. Concluderend, MIO-contracten zijn een nieuwe ontwikkeling voor zowel opdrachtgevers als opdrachtnemers. Als gevolg worden aannemers geconfronteerd met de moeilijkheid hoe zij een concurrerende inschrijving kunnen doen en hebben opdrachtgevers moeilijkheden met hoe zij dergelijke MIO-contracten moeten aanbesteden. Als gevolg van het omschreven probleem voor opdrachtgevers en opdrachtnemers, is er een onderzoek uitgevoerd. Het doel van dit onderzoek is om aanbevelingen te geven aan opdrachtgevers en opdrachtnemers voor het verbeteren van de vorming en aanpak van EMVI-aanbestedingen voor meerjarige integrale onderhoudscontracten voor de openbare ruimte, door inzicht te creëren in de formatie van opdrachtgevers doelstellingen, verwachtingen, gunningscriteria en weegfactoren en hun aanpak door aannemers. De aanbevelingen zijn gericht tot provincies en gemeentes in Nederland. Desalniettemin, ook Rijkswaterstaat is meegenomen in dit onderzoek als gevolg van hun ervaring met MIO-contracten, maar wordt niet meegenomen in de aanbevelingen. Om de onderzoeksdoelstelling te bereiken, de volgende hoofdonderzoeksvraag is geformuleerd:

Hoofdonderzoeksvraag
Wat zijn de oorzaken voor de moeilijkheden waar zowel opdrachtgevers als opdrachtnemers mee geconfronteerd worden in de formatie en aanpak van EMVI-aanbestedingen voor meerjarige integrale onderhoudscontracten voor openbare ruimte en hoe kunnen deze oorzaken worden gereduceerd?

Om antwoord te geven op de hoofdonderzoeksvraag zijn de volgende subonderzoeksvragen geformuleerd:
1. Welke processen vinden plaats in de opdrachtgevers formulering van doelstellingen en verwachtingen voor meerjarige integraal onderhoud van de openbare ruimte?
2. Hoe zijn de opdrachtgevers doelstellingen en verwachtingen vertaald naar gunningscriteria voor de aanbesteding van meerjarige integrale onderhoudscontracten en hoe worden deze waargenomen en aangepakt door aannemers?
3. Hoe zijn de opdrachtgevers doelstellingen en verwachtingen vertaald naar weegfactoren voor de aanbesteding van meerjarige integrale onderhoudscontracten en hoe worden deze waargenomen en aangepakt door aannemers?

4. In hoeverre spelen de opdrachtgevers doelstellingen, verwachtingen, gunningscriteria en weegfactoren een rol in de uitvoering van meerjarig integraal onderhoud?

5. Zijn de opdrachtgevers doelstellingen en verwachtingen gekoppeld aan de gunningscriteria, weegfactoren en de ervaring van de meerjarige integrale onderhoudscontracten en zo niet, hoe kan dit worden verklaard?

6. In hoeverre speelt de (dis)continuïteit van de bemensing rond EMVI-tenders bij de opdrachtgevers en opdrachtnemers een rol in de huidige problemen?

**Onderzoeksmethode**

Om dit onderzoek uit te voeren en om alle onderzoeksvragen te beantwoorden, is de volgende onderzoeksmethode gebruikt. Dit onderzoek bestaat uit een literatuuronderzoek en een casusonderzoek. In het literatuuronderzoek is een theoretische introductie gegeven over MIO-contracten en onderhoudscontracten in het algemeen. Vervolgens, de ontwikkeling van MIO-contracten en de theoretische en praktische toepassing van MIO-contracten is onderzocht. Na het literatuuronderzoek is een casusonderzoek uitgevoerd. Voor dit casusonderzoek, vier MIO-contracten zijn onderzocht: gemeente Haarlem (Kunstwerken & Oevers), provincie Noord-Holland (Kop van Noord-Holland), Rijkswaterstaat (Project A) en Rijkswaterstaat (Project B). De RWS contracten werden onderzocht als referentie casussen om de MIO-ervaring van RWS te gebruiken voor goed onderbouwde aanbevelingen richting gemeenten en provincies. Het casusonderzoek is onderverdeeld in de documentatie analyse en interviews. In de documentatie analyse is een set van vooraf bepaalde variabelen onderzocht in gepubliceerde documentatie gerelateerd aan de casussen. Deze documentatie analyse resulteerde in casus kennis en data voor het formuleren van vragen voor de opvolgende interviews. Voor elke casus zijn vijf respondenten geïnterviewd met de volgende rollen: beleidsmaker, tenderadviseur en contractmanager van de opdrachtgever en tendermanager en contractmanager van de opdrachtnemer. Door deze rollen te verdelen per casus kon data worden verzameld voor zowel de beleidsfase, de tenderfase en de contractfase van zowel de opdrachtgever als de opdrachtnemer. In totaal zijn 18 interviews uitgevoerd die zijn getranscribeerd. Uit deze transcripties is de relevante onderzoek data gefilterd. Deze onderzoek data is geanalyseerd in een kwalitatieve data analyse (KDA). In de KDA zijn twee type analyses uitgevoerd die beiden zijn afgebeeld in een matrix. Eerst is een within-case analyse uitgevoerd voor alle vier de casussen. In deze analyse is een matrix gecreëerd gebaseerd op de antwoorden van de respondenten voor de within-case onderwerpen, zie Figure 5. Vanuit de vier within-case matrices is een cross-case matrix gecreëerd. In deze matrix is de gegeneraliseerde uitkomsten voor elke casus, voor elk cross-case onderwerp afgebeeld, zie Figure 4.

**Figure 5: Within-case analyse matrix**

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</tr>
</tbody>
</table>

**Figure 4: Cross-case analyse matrix**

<table>
<thead>
<tr>
<th>Casussen</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
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<td></td>
<td></td>
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<tr>
<td>B</td>
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<td>C</td>
<td></td>
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<td></td>
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<tr>
<td>D</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
Vanuit de cross-case analyse kon een collectie van generaliseerbare data worden verkregen. Deze generaliseerbare data had als doel om toepasbaar te zijn voor tenminste de onderzochte casussen. Vanuit deze generaliseerbare data, zijn de conclusies en aanbevelingen van dit onderzoek geformuleerd.

Een overzicht van de gebruikte onderzoeksmethode is afgebeeld in Figure 6.

**Conclusies en aanbevelingen**

Op basis van dit onderzoek, het volgende antwoord op de hoofdonderzoeksvraag kan worden geformuleerd:

**Antwoord op de hoofdonderzoeksvraag**

De oorzaken voor de moeilijkheden waar zowel opdrachtgevers als opdrachtnemers mee worden geconfronteerd in de formatie en aanpak van EMVI-aanbestedingen van MIO-contracten zijn: het gebrek aan koppeling tussen de doelstellingen, verwachtingen, gunningscriteria en weegfactoren, het gebrek aan continuïteit in de bemensing, het gebrek aan juiste en complete areaalgegevens en het gebrek aan mogelijkheden en bereidheid tot het begrijpen van de opdrachtgever.

Deze oorzaken kunnen als volgt worden toegelicht:

- **Gebrek aan koppeling:** het gebrek aan koppeling tussen de doelstellingen, verwachtingen, gunningscriteria en weegfactoren, reduceert het begrijpen van de opdrachtgever door de inschrijvers in de tenderfase. Het gebrek aan koppeling resulteert ook in een gereduceerde rol van de gunningscriteria, etc. in de contractfase.

- **Gebrek aan continuïteit in de bemensing:** het gebrek aan continuïteit in de bemensing tussen de tenderfase en de contractfase resulteert in minder input in tender documenten van de opdrachtgever, minder begrip van de opdrachtgever en het contract en een verslechterde voorbereiding van de contractfase.

- **Gebrek aan juiste en complete areaalgegevens:** het gebrek aan juist en complete areaalgegevens resulteert in onduidelijkheid over de scope, moeilijkheden voor calculaties en discussies en tijdsverlies tijdens de contractfase.

- **Gebrek aan mogelijkheden en bereidheid tot het begrijpen van de opdrachtgever:** opdrachtnemers hebben niet genoeg contactmomenten met opdrachtgever om hun probleem, verlangens, wensen, etc. te begrijpen. Maar, tijdens deze contactmomenten laten de opdrachtnemers niet genoeg bereidheid zien om de opdrachtgever daadwerkelijk te willen begrijpen.

Om de oorzaken voor deze problemen te verminderen, de volgende aanbevelingen zijn gegeven aan gemeenten en provincies en aan aannemers:

**Table 2: Aanbevelingen aan opdrachtgevers en opdrachtnemers**

<table>
<thead>
<tr>
<th>Gemeenten en provincies</th>
<th>Aannemers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organiseer meer contactmomenten met inschrijvers</td>
<td>Focus op het begrijpen van de opdrachtgever</td>
</tr>
<tr>
<td>Wees transparant over beschikbare areaalgegevens</td>
<td>Maak gebruik van contactmomenten met de klant</td>
</tr>
<tr>
<td>Streef naar continuïteit in de bemensing</td>
<td>Creëer koppelingen in het EMVI-plan</td>
</tr>
<tr>
<td>Streef naar koppelingen tussen doelstellingen, etc.</td>
<td>Streef naar continuïteit in de bemensing</td>
</tr>
<tr>
<td>Limiteer de focus op processen</td>
<td></td>
</tr>
</tbody>
</table>
Part ONE:
INTRODUCTION
1 Introduction

This chapter will discuss the subject of this research, the research problem, objective, questions, design and overview.

1.1 Introduction to the subject

This paragraph will first give a brief introduction to management and maintenance of public space. Then, two cases of long-term integral maintenance contracts of public space will be discussed.

1.1.1 Management and maintenance of public space

Public space can be found everywhere around us and can be defined from several perspectives: social, physical or functional. This research will particularly focus on the physical and functional perspective and less on the social perspective of public space. Based on definitions of Brunt and Deben (2001), Bouwmeester (2005, pp. 4, 5), Hoogstad et al. (2012, p. 7) and CROW (2002, p. 12), the following definition will be used for public space in this report:

*Public Space*

All assets that are part of the publically accessible area, both above and underground, that are facilitating transportation of any kind or abiding purposes, such as dry and wet infrastructure, green areas, civil works, public lighting and associated systems.

The assets as described in this definition are *built or physical* assets. Each of these built assets, for instance a road or a bridge, has a lifecycle that consists of the following phases (Schoenmaker, 2011, p. 18):

![Lifecycle phases of a built asset, adapted from (Schoenmaker, 2011, p. 18)](image)

Most built assets are designed to have a user phase of several decades. In the design phase, the asset is designed to have an expected design lifetime. For instance, road infrastructure has a design life of 50 to 80 years. Despite this design life, the actual technical life time of an asset can be shortened by wear, increased loads, changed users, etc. Once the technical life of the asset has ended, it cannot perform its function anymore. At this point, the user phase ends and the demolition phase could start. But, society can also demand to maintain an asset’s functionality (Verlaan & Schoenmaker, 2013, p. 1). By performing maintenance, the functional quality of an asset is being restored to its preferred quality level. Possible maintenance activities are: inspections, repairs, replacement and life time expanding measures (Dekker & van Noortwijk, 2001, p. 3) and always take place in the user phase of an asset’s lifecycle (Schoenmaker, 2011, p. 18).

Based on definitions of Visser and Visser (2014, p. 81), (ICID, 1989), Schoenmaker (2011, p. 19) and PAO (1999, p. 8), the following definition will be used for maintenance in this report:

*Maintenance*

The overall activities required in order to restore or maintain the dynamic desired condition level of an asset and the availability of its function(s)

Maintenance is often mentioned next to management (in Dutch: *beheer*). Even though, management and maintenance are often mentioned next to each other, there is a difference in their meaning. Van der Veen (1997, p. 474) wrote that management is no general concept with a uniform definition. Nevertheless, one particular similarity can be found in the given definitions: they consider

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1 For the entire definition search, see Appendix 1: Definitions
Management
The technical, legal, organizational and financial activities focused on maintaining and improving the functioning of a system of assets

So far, the meaning of public space and management and maintenance have been discussed. The Netherlands bear a large amount of public space, which requires management and maintenance. As the definition of public space states, all built assets that are part of the publically accessible area, are part of the public space. This publically accessible area can be for instance the sidewalk in a small village, the provincial road to a large city and even the large rivers that connect the provinces. The national road law, national water law, regional waterway decree and the local bye-law\(^2\) are leading in appointing the owners, managers and maintainers of the Dutch public space. According to this legislation, most public space is owned by the central government, the provinces, the municipalities and the water boards (Rijksoverheid, 1930, art. 13) (Sweers, 1995, p. 2). According to this same legislation, the management and maintenance of public space is also appointed to these governments. With the exception of the national public space, which is managed by Rijkswaterstaat in service of the ministry of Infrastructure and the Environment (Schoenmaker, 2011, p. 116). This research will focus further on the management and maintenance of public space in provinces and municipalities and will not focus on Rijkswaterstaat and water boards. For a complete description of governments that manage and maintain the Dutch public space, see Appendix 2.

1.1.2 Outsourcing management and maintenance at municipalities and provinces
As discussed, governments are responsible for the management and maintenance of public space. Nevertheless, in recent years municipalities and provinces decide to integrally outsource their management and maintenance of the public space to the private sector in long-term contracts. Outsourcing of maintenance of public space to the private sector occurs quite often, but this represents mostly smaller (one time) contracts for small periods of time (Altamirano, 2010, p. 114). In current development, governments cluster these smaller contracts into long-term integral maintenance contracts for larger areas or domains. Governments aim to make contractors responsible for the management and maintenance of a large part of the public space in a municipality or province. For example, the municipality of Haarlem outsourced the management and maintenance to all civil constructions and shorelines for 4 to 8 years, to one contractor (Gemeente Haarlem, 2014i). Another example is the Province of Noord Holland, that outsourced the management and maintenance of the entire public space in an area of 1/7\(^{th}\) of the entire province, into a 10 year contract for merely one contractor (Provincie Noord-Holland, 2014b).

1.2 Problem definition
The cases of the municipality of Haarlem and the province of Noord-Holland are both examples of long-term integral maintenance contracts for public space. Civil contractor Van Hattum en Blankevoort (VHB), has been pre-selected to join the tenders of both contracts. The tender for Haarlem was assessed completely on EMAT-criteria (Economically Most Advantageous Tender, or EMVI) without a price component. In this tender, the contractor had to deliver verifiable added value. By added value, the client means “activities or promises that are not included in the tender request, but is appreciated and perceived as important by the

\(^2\) In Dutch, respectively wegenwet, waterwet, vaarwegen verordening and algemene plaatselijke verordening
client” (Gemeente Haarlem, 2014f, p. 12). The bid of VHB for the domain civil works & shorelines in Haarlem turned out to be successful: they won this tender by delivering verifiable added value (Gemeente Haarlem, 2014g).

As a result of the similarities between the tender of Haarlem and Noord-Holland, VHB decided to use their approach of the Haarlem tender for the bid of the tender Kop van Noord-Holland. This tender had both an EMAT- and a price-component included, in which in the EMAT-component verifiable added value had to be delivered. Unfortunately, VHB’s successful approach in Haarlem, turned out to be unsuccessful in Noord-Holland: their EMAT-plan received the lowest score and in combination with their price bid they came second (Provincie Noord-Holland, 2015a, 2015b).

This situation is not unique for VHB and other contractors. At one tender the contractor writes a plan that delivers significant added value to the client and he wins the contract. While at another tender, a similar bid of the contractor is perceived differently by a client. As a result, the contractor is not able to create enough added value to the client and he loses the tender.

These results illustrate the challenges contractors are faced with, as a result of the emerging use of award-criteria next to the price component at tenders. While a price component can be evaluated objectively, the client’s assessment of the award-criteria bears a certain subjectivity. It is up to the contractor to comprehend what the actual expectations of the client are and what triggers him to award the project to a certain party. The difficulty of this lies in the degree to which a contractor is able to know what the client expects of him, and the degree to which the contractor has to interpret these expectations which also brings an uncertainty along. This uncertainty can be illustrated by a quote of one of the involved contractors during the tender of Kop van Noord-Holland. He was asked what he thought of the quality of the tender dossier, responding: “Until the end, it remained difficult to know what the client expected to read in the respective EMAT documents” (VolkerInfra, 2015, p. 3).

Furthermore, this respondent acknowledged that the client used many implicit objectives and expectations, which played an important role in the client’s bid evaluations, but the interpretation of what the client exactly required created difficulties for the contractor (VolkerInfra, 2015, p. 2).

The uncertainty and indistinctness of the expectations of the client, are confirmed by a recent study to evaluate the Tenderlaw 2012 (Aanbestedingswet 2012) commissioned by the ministry of Economic Affairs. In this study, the most important resentments of contractors during EMAT-tenders were investigated. It turned out that 46 percent of all interviewed contractors resent contentual ambiguities or incomplete and too complex information in tender documents (Ecorys & Van Zutphen, 2015, pp. 59, 60, 85). Furthermore, 28 percent of all interviewed contractors resent the motivation to adjudge a contractor in a tender. According to them this motivation is often unclear, insufficient, not transparent and subjective. And, 6 percent acknowledges lack of uniformity by tendering parties, which results in a variety of ways clients put their contract out for tender. Small differences in tender requests by clients, can result in much additional works for contractors (Ecorys & Van Zutphen, 2015, pp. 59, 60, 86).

This situation is rather urgent, since the EMAT-tenders have been introduced to challenge contractors to create bids that create a higher quality (Schultz van Haegen, 2015, p. 3). A high performing bid “can be seen as an indication of the ‘progressiveness’ of the EMAT award mechanism in the sense that it is an indication of the level of trust a procurer has in the ability of suppliers to deliver added value” (Dreschler, 2009, p. 65). When a contractor is not able deliver added value due to unclear expectations of clients, this level of trust in the ability of suppliers or contractors cannot be reached.

The results of this study represent EMAT-tenders in general, in which projects according both UAV 2012 (traditional contracts) and UAV-GC 2005 (integrated contracts) are included. The maintenance contracts of Haarlem and Kop van Noord-Holland were both integrated contracts according UAV-GC 2005 (Gemeente Haarlem, 2014i, pp. 4-5) (Provincie Noord-Holland, 2014d, p. 5). The term integrated contract refers to the fact that design and execution are in the hands of a single party in relation to the client (Chao-Duivis, Koning, & Ubink, 2013).

When dealing with an ordinary construction project that is tendered according the UAV-GC, for instance a design & build contract for a new bridge, a significant part of the contractor’s bid will include design plans and calculations. But, when dealing with a long-term integral maintenance contract that falls under UAV-GC, designing and making calculations is not part of the contractor’s bid.
To put this type of contract into perspective, the involved assets for the domain Civil Works & Shorelines at the Haarlem tender included: 219 bridges, 20 tunnels, 21 piers, 131 km of shorelines and 1 promenade (Gemeente Haarlem, 2014i, p. 11). It is ineffective and almost impossible for a potential contractor to include calculations and design drawings in his bid, for all assets that are potentially maintained in the next years. Therefore, the difficulty that both the client and the contractor are faced with during tenders of long-term integral maintenance contracts, is the way to formulate offer and bid qualitatively without using actual designs and calculations.

The difficulties that both client and contractors are faced with during tenders for long-term integral maintenance contracts, are also acknowledged by a CROW-working group. In this working group related to ‘specifying of long-term infrastructure maintenance’, a delegation from governments, contractors, engineering firms and universities are represented. According to this working group, clients are having general trouble with drawing up a sufficient tender specification when dealing with (infrastructure) maintenance contracts. Furthermore, according to them, contractors are having trouble producing a competitive bid and are having not enough means to make a good assessment of risks for these types of projects (Visser & Visser, 2014, pp. 7, 9).

The problem that has been described in this chapter, can be summarized as follows:

**Problem definition**
Both clients and contractors are confronted with a new type of contract that are put out for tender: long-term integral maintenance contracts for public space. Clients have implicit and non-measurable objectives and expectations for this type of project. Despite of similarities in the phrasing in tender documents of clients, contractors are faced with differences in how their bids are perceived by the clients. Contractors have to interpret what the client exactly requires, which makes it difficult to create significant added value in order to solve the problem of the client. Furthermore, integral management and maintenance tenders lack opportunities for design and calculations, which makes the contractor depending on qualitative bids. As a result, contractors are faced with insecurity how to write a competitive bid that creates added value to the problem of the client. Furthermore, clients are having general trouble with drawing up a sufficient tender specification and this situation causes a difficulty for the client to find the one contractor who he can confide with the management and maintenance of the area.

**1.3 Research objective**
From the problem description can be derived what difficulties for clients and contractors have arisen as a result of the development of long-term integral maintenance contracts, or LIM-contracts. Based on this problem, the following research objective has been formulated:

**Research objective**
The objective of this research is to give recommendations to contractors and clients to improve the formation and approach of EMAT tenders for long-term integral maintenance contracts of public space, by creating insight into the formation of the clients’ objectives, corresponding expectations, award criteria and weighing factors and their appraisal by contractors.

Because of the development of LIM-contracts for municipalities and provinces in The Netherlands, this research will focus on these two clients as well. Therefore, the recommendations of this research are solely directed to municipalities and provinces, but can be used by other clients as well. Furthermore, separate recommendations will formulated towards future contractors that are planning to be involved in LIM-tenders.
1.4 Research questions

The current process of the formation and approach of EMAT tenders for long-term integral maintenance contracts is for both clients and contractors not satisfactory yet. In order to improve this tender process, the reason and background of the evolved problems have to be investigated. Therefore, the following main research question has been formulated:

**Main research question**

What are the causes for the difficulties that both clients and contractors are facing in the formation and approach of EMAT tenders for long-term integral maintenance contracts for public space and how can these causes be reduced?

In order to find an answer to this research question, six sub-research questions have been formulated. The answers to these sub-research question will compose the answer to the main research question.

The first step in determining the causes for the current situation, is to investigate the starting point for an eventual long-term integral maintenance contract. A client, which could be for instance a municipality or province, decides on a high governmental level to investigate the possibilities to integrally outsource management and maintenance of public space. Eventually a policy will be derived from this study in which the objectives and corresponding expectations of this client will be formulated. This process is a relevant first step to find out how a client initiates a LIM-contract. Therefore, the following sub-research question has been formulated:

Sub research question 1:

What process takes place in the clients' formation of objectives and corresponding expectations concerning long-term integral maintenance for the public space?

Once has been determined how clients formulate their objectives and expectations, the research will look further into the tender process itself. In this process, two main decisions have to be made by the client which will determine the evaluation of the contractors’ bids: the formulation of award criteria and the determination of weighing factors. Both the award criteria and the weighing factors are a result of the pre-determined objectives and expectations. The motivation of a client to award the contract to a contractor, could be influenced by all four factors. But the level of alignment of these factors is significant for both clients and contractors to determine where the awarding of the contract is based upon. When there is for instance no alignment between the four factors, the awarding of the contract could be based on objectives, instead of award criteria. This will result in uncertainty for client and contractors. Therefore, the first step is to investigate how the four factors are translated into each other. Next, there has to be determined how this translation is perceived by the contractors and if they understand what the clients require. For this, the following two sub-research questions have been formulated:

Sub research question 2:

How are the clients’ objectives and corresponding expectations translated to award criteria for the tenders of long-term integral maintenance contracts, and how are these perceived and approached by contractors?

Sub research question 3:

How are the clients’ objectives and corresponding expectations translated to weighing factors for the evaluation of the contractors’ bids during the tenders of long-term integral maintenance contracts, and how are these perceived and approached by contractors?

Once the maintenance contract is awarded, the contractor will start the execution phase of the maintenance. During this phase, a client can experience how the contractor executes the maintenance and he can assess the contractor’s work. This will give him the opportunity to determine if the execution fulfills his objectives and expectations. It will also give him the opportunity to
determine to what extent the philosophy behind the award criteria and weighing factors are fulfilled by the contractor. Whether the objectives, expectations, award criteria and weighing factors play a role in the execution of the contract, is relevant for the earlier mentioned alignment. The role that these aspects play, is depending on the experience of the execution of both the client and the contractor. Therefore, the following sub-research question has been formulated:

Sub research question 4:
To what extent do the client’s objectives, expectations, award criteria and weighing factors, play a role in the execution of long-term integral maintenance?

Subsequently, the alignment of the objectives, expectations, award criteria, weighing factors and experiences is evaluated. Determined will be if there are large differences in the appraisal of these five factors and what actions have to be taken to change this. Therefore, the following sub-research question has been formulated:

Sub research question 5:
Are the clients’ objectives and corresponding expectations well aligned with the award criteria, the weighing factors and the experiences of long-term integral maintenance contracts and if not, how can this be explained?

This sub research question is schematized in Figure 8:

![Figure 8: Schematization of sub research question 5](image)

After answering the previous sub research questions, the research will make a side step in answering the main research question. This side step will focus on the staff organization of the client and the contractor, before, during and after the tenders of long-term integral maintenance contracts. While the previous research questions focused on the alignment of expectations, objectives, award criteria, experiences, etc., the next research question will focus on the continuity of the staff organization. My expectation is that if staff members who formulate objectives and expectations are the not the same staff members as the ones who formulate award criteria or experience the execution of the contract, then a certain amount of “information-loss” takes place. The same goes for the contractor’s staff: if the ones that are involved in determining the tender bid, are not (partly) the same as the one who are involved in the execution of the contract, information gets lost in the process. This could contribute to the problems that contractors and clients are facing. Therefore, the following sub-research question has been formulated:

Sub research question 6:
To what extent does the (dis)continuity of the staff organization around EMAT tenders at the client and contractor, contribute to the current problems?

1.5 Research methodology
This research is structured in two main parts: a theoretical framework and the research itself. A literature study will form the theoretical framework, which will be discussed in the next paragraph. For the research, first a research strategy has to be determined which will be discussed next. Then, the chosen research strategy will be discussed with its corresponding methods.


**1.5.1 Literature study**

According to Verschuren and Doorewaard (2007, p. 202), any research should contain a literature study. This literature study is founded on existing professional literature. This can be scientific articles, dissertations, master theses, scientific books, governmental reports, etc. For this research, the reason to conduct a literature study is first of all to give a theoretical introduction to the long-term integral maintenance contracts for public space. Secondly, the literature study will give a theoretical background on contracts and tendering. This background will act as basic knowledge to conduct the actual research and to help to understand the problem definition of this research. Thirdly, the literature study will look deeper into the scientific background and development of the subject of this research. This way, it can be understood where the current situations originated from and what the opinions of scientists are on this topic. This will be complemented by three theoretical methods and a practical example.

The literature study will act as a theoretical framework, that can help to better understand and conduct the research. But it will also give the opportunity to compare the results of the research itself, to what the literature says about the subject. This process is schematized in Figure 9.

![Figure 9: Interaction between the literature study and the research](image)

**1.5.2 Research strategy**

In order to answer the research questions of this research, a research strategy has to be determined. Verschuren and Doorewaard (2007) distinguish five research strategies, respectively: *survey, experiment, case study, grounded theory approach* and *desk research*. A suitable research strategy can be determined based on seven characteristics:

1. Domain (amount of research units)
2. Intensity of data generation
3. Depth or breadth research
4. Random or selective sample
5. Assertion based on variables or as a whole
6. Remote and closed or on site and open observation
7. Quantitative or qualitative data

The characteristics of this research will be as follows: (1) This research will focus on a low amount of research units or cases, between 3 and 5, in which an (2) extensive data generation will be executed. This extensive data generation will involve face-to-face interviews, in order to (3) gather specific and in-depth data. Furthermore, the research will make use of a thorough content analysis of textual material. (4) The cases will be strategically selected and this selection is based on a set of predetermined variables. (5) The focus of this research is to create in an integral perception of the cases as a whole. The variables within the cases, collectively create an integral picture of the cases. (6) A (limited) open observation on-site will take place in this research. This limitation relates to the fact that the observation takes place at one of the involved actors (I will cooperate and work with one of the involved contractors). From these observations, a more clear image of the situation can be created. Nevertheless, an actual participative observation as Verschuren and Doorewaard (2007, p. 235) describe, will not take place for this research. Main reason for this is that the observation take solely place at one of the actors, which could make the observations biased. (7) Most data that will be gathered will be predominantly of a qualitative nature.

Based on these characteristics and according to (Verschuren & Doorewaard, 2007), the *case study* is a suitable strategy for this research. In the next paragraph, the use of this case study will be further discussed.
1.5.3 Case study

As mentioned in the previous paragraph, the case study will be the strategy of this research. As discussed in Paragraph 1.3, this research will focus on giving recommendations to clients and contractors. These recommendations are focused on future tenders for long-term integral maintenance contracts at which these parties are potentially involved in. Therefore, this research is focused on generalizing the recommendations to large collection of (potential) cases, or in this case tenders. Swanborn (2008) calls a case study that is carried out in order to give recommendations in general, a pars-pro-toto research. Nevertheless, he mentions that there remains a certain amount of discussion about whether a research on a set of cases can say something about non-investigated cases (Swanborn, 2008, p. 66). But, Flyvbjerg (2006) discusses this misunderstanding that ‘one cannot generalize from a single case, because this cannot contribute to scientific development’. In his research he concludes the following:

“One can often generalize on the basis of a single case, and the case study may be central to scientific development via generalization as supplement or alternative to other methods. But formal generalization is overvalued as a source of scientific development, whereas “the force of example” is underestimated” (Flyvbjerg, 2006, p. 228).

Furthermore, since this research will give a generalized recommendation based on more than one single case as Flyvbjerg discusses, a certain amount of scientific development can be safeguarded. Besides, another method can be used to decrease the discussion on the validity of generalizing cases. Swanborn (2008, p. 143) suggests to use triangulation for case studies. Triangulation is used to prove that findings are supported by multiple independent observations. For this, it is aimed to find corresponding patterns by using multiple sources (Bergsma, 2003). Denzin (1978) distinguishes source, method, researcher and data triangulation. Both method and source triangulation, in which multiple methods and sources are worked with, will be used in this research. Source triangulation will be incorporated in this research, by using interviews with both clients and contractors. According to Swanborn (2008, p. 143), method triangulation can be used by combining intensive and extensive research. The intensive research goes deeper into the cases by identifying the content of a set of variables and formulating interview questions (Swanborn, 2008, p. 147). The intensive research represents in this case a documentation analysis, that also create knowledge about the investigated cases to the researcher. The data from this analysis will be solely collected from written documentation, without conducting any interviews. This way, the formulation of interview questions will be as unbiased as possible (especially related to the client-contractor relation). In the extensive research, the cases will be investigated in a broader way by conducting for example a questionnaire or in this case interviews. In the interviews, the predetermined interviews question of the intensive research will be formulated to the respondents. This way, their interpretations of the predetermined variables will collected. Furthermore, during the interviews will be reevaluated to the documentation analysis with the respondents. This way, differences can be interpreted and contested (Swanborn, 2008, p. 145). From the interviews, research data will be collected that will be further analyzed. The method for conducting the interviews, will be discussed in the next paragraph.

In Figure 10, the combination of the intensive and extensive research to perform method triangulation in the case studies is schematized.

![Figure 10: Combining intensive and extensive research in the case study](image-url)
1.5.4 Interviews

As discussed in the previous paragraph, the case study of this research will be separated into two parts: the documentation analysis and the interviews. The documentation analysis will mostly involve an analysis of textual material, to gain case knowledge and to interpret the predetermined variables in order to formulate interview questions. By conducting interviews, the interpretation of the variables by the different respondents are collected into research data. This research data will be further analyzed, in order to draw conclusions and recommendations.

Two types of data can be collected in an interview: qualitative or quantitative data. Each type of data corresponds with a specific type of interview style. For qualitative data, a structured interview has to be conducted. For quantitative data, a non-structured or open interview has to be conducted (Baarda, De Goede, & Van der Meer, 1996, p. 14). This research will focus on gathering qualitative data and conducting an open interview is therefore applicable. An open interview contradicts to the structured interview, for which the questions and answer possibilities are predetermined. Baarda et al. (1996) argue additional reasons to use the open interview style, which is representative for this research:

- When a research is aiming to explore ‘new problems’
- When a research is aiming to retrieve ideas, interpretations, perceptions and experiences

Both reasons are applicable for this research. The subject of this research involves a rather new type of contract, of which not much knowledge or experience is present. Furthermore, this research focuses on retrieving interpretations, perceptions, experiences, etc. of involved actors about this subject.

The interviews in this research will be of a semi structured form. This means that questions and answers are not predetermined, while the topics and their order are predetermined. Each topic starts with a predetermined start question, that gives the respondent the opportunity to extensively answer the questions. Additional questions can be asked to ensure a complete answer and a complete discussion of the topic (Baarda et al., 1996, p. 26).

The interviews that will be conducted for this research are so called expert interviews. For this type of interview, the respondents are well-informed about the subject and will have a clear overview of the problems discussed (Baarda et al., 1996, p. 30).

In cooperation with the documentation analysis, the interviews aim at retrieving data that helps in answering the sub research questions of this research. In order to answer all sub research questions, multiple expert respondents have to be interviewed for each case. The main reason for this is, that it is doubtful that one expert for each case can be found, to answer all questions. Furthermore, multiple respondents increases the validity of the conclusions of each case.

As the research objective states, this research will focus on giving recommendation to both clients and contractors. Therefore, both clients and contractors will be interviewed in this research, each bearing different expert roles. For clients, three expert roles will be distinguished: policymaker, tender advisor and contract manager. In Figure 11, each sub research question is linked to one or more of these experts, which are likely to (partly) answer the sub research questions.

For contractors, two expert roles will be distinguished: tender manager and contract manager. In Figure 11, each sub research question is linked to one or more of these experts, which are likely to
(partly) answer the sub research questions. It can be noted that there is no contractor expert role appointed to answer sub research question 1, which is related to the policy phase of the research subject at which the contractor is not involved in.

**Figure 12:** Connection between contractor expert interviews and the sub research questions

For this research, multiple cases will be investigated. As can be seen in above figures, answering each sub research question involves multiple respondents. In combination with the number of cases, this will result in a large amount of answers, perceptions, experiences, etc. from all respondents. All this data will be collected by transcribing the responses of each respondent for each interview. These transcriptions will mainly include all relevant data and do not include irrelevant or personal matters. This way a certain amount of relevancy in the research data will be safeguarded. Based on the collected research data of the interview transcriptions, the (sub) research questions cannot be answered yet. Therefore a certain amount of generalization has to be created in the research data (Miles, Huberman, & Saldaña, 2014, p. 101). For this a qualitative data analysis will be conducted, in which the research data will be analyzed and generalized. From this generalized data, the conclusions and recommendations can be formulated. The exact application of the qualitative data analysis will be further discussed in Paragraph 9.2. The methodology that is used for this research, is schematized in Figure 13.

**Figure 13:** Schematization of research methodology

### 1.6 Report overview

In Part Two of this report, a literature study will be conducted. An introduction to LIM-contracts and a theoretical background on maintenance contracts can be found in respectively Chapters 2 and 3. Subsequently, a discussion of the development of LIM-contracts and underlying theories for coordination can be found in Chapters 4 and 0. In Part Three of this report, a case study will be conducted. This will start off with an introduction in Chapter 6, followed by the documentations analysis in Chapter 7. Subsequently, the interviews and their analyses will be discussed in Chapter 0. In Part Four of this report, the advice of this research will be given. This advice consists of conclusions and recommendations in Chapter 9 and a discussion of the results can be found in Chapter 10. In Part Five of this report, the appendices are included.
Part TWO:
LITERATURE STUDY
2 Maintenance Contracts

This chapter will start with an introduction into contracts, followed by three different types of maintenance contracts.

2.1 Introduction into contracts

Chao-Duivis et al. (2013, p. 25) distinguishes four contract models that are used in the construction sector:

- The traditional model
- The design team model
- The integrated model
- The alliance model

For this research, the traditional model and the integrated model are most relevant. The traditional model is governed by the UAV 2012, or the Uniform Administrative Conditions for the Execution of Works and Technical Installation Works 2012. The integrated model is governed by the UAV-GC 2005, or the Uniform Administrative Conditions for Integrated Contracts 2005. The reason for these standardized conditions, is that these types of contract are so commonly used that it requires homogeneity by its users (Chao-Duivis et al., 2013, pp. 26, 100). The meaning and implications of the UAV 2012 and the UAV-GC 2005 will be discussed in Appendix 3: Types of UAV.

In Paragraph 1.1.1, the different phases of a built asset has been discussed: the design phase, build phase, user phase and demolition phase. For each separate phase or a combination of phases, contracts can be entered into by contractors. It also has been discussed that maintenance takes place in the user phase of a built asset. While UAV 2012 and UAV-GC 2005 are mostly used for construction projects, also maintenance projects are governed by these conditions. For maintenance, three different types of contracts can be distinguished (Visser & Visser, 2014):

- Collaboration with RAW tender specifications
- Long-term maintenance concepts
- Integrated collaboration concepts

Each type of contract will be discussed in the next subparagraphs.

2.2 Collaboration with RAW tender specifications

Typical for this type of maintenance contract is the separation of responsibilities between the client and the contractor, according the UAV 2012. This type of contract is tendered according the RAW system. Most projects in which only the execution is tendered, the RAW system is used. The RAW system is a system of legal, administrative and technical conditions for composing contracts and constitute the basis of drawing up tender specifications (in Dutch: bestek) according to a standardized, uniform method (PIANOo, N.D.-d). In the tender specification, the client describes what must be build, where it has to be build, of what it has to be build, under which conditions it has to be build. This is called technical specifying, and is used to give an exact description of the works to be built or maintained (PIANOo, N.D.-c). Among others, the client describes the required result, the required materials, the quality requirements, etc. In response, the contractor will describe in its bid, how he will build it, and with what he will build it (CROW, 2013, p. 5).

Within this type contracts, a distinction is made in two specific types of maintenance contracts: the framework agreement and the image specification.

Framework agreement

The Directive 2004/18/EG describes the framework agreement as “an agreement between one or more contracting authorities and one or more economic operators, the purpose of which is to establish the terms governing contracts to be awarded during a given period, in particular with regard to price and, where appropriate, the quantity envisaged” (European Parliament, 2004). A framework agreement is meant to settle on beforehand a set of future orders. On beforehand, the conditions for price, quality, quantity, delivery time, etc. are agreed upon, without knowing the exact content of these aspects. The client can decide to enter into a framework agreement with either one or a minimum of three contractors. In the latter case, for each order the client has the possibility to
organize a mini tender with the involved contractors. The framework agreement can be closed for a maximum of 4 years, which results in that a client does not have to tender each of his orders. He can directly award the order to his or one of his contractors (PIANOo, N.D.-b).

**Image specification**
The image specification (in Dutch: beeldbestek) registers the performance requirements to which maintenance has to comply to, in terms of images (Visser & Visser, 2014, p. 32). This type of RAW maintenance contracts deviates from the standard RAW system, since it does not describe when and how often something has to be carried out. Instead, it describes the continuous result of the maintenance. This can be accomplished by describing the quality level in such a way, that the involved contractor is aware what his obligations are. For this, often pictures with quality levels are used (CROW, 2011, p. 26). Every four weeks, an inspector of the client inspects whether the contractor complies to his obligations. A deduction of his reward could be the result if this is not the case (Visser & Visser, 2014, p. 32).

The maintenance contracts with RAW specifications according the UAV 2012 will be no further included in this research.

### 2.3 Integrated collaboration concepts

Instead of a separate maintenance contract, maintenance can also be part of an integrated collaboration concept. The UAV-GC 2005 for integrated contracts form the legal framework for this type of contracts. Possible contract types are Engineering, Construct & Maintain (ECM-contract) and Design, Construct & Maintain (Visser & Visser, 2014, p. 33). For these type of contracts, a **maintenance components** is added to the Design & Construct or Engineering & Construct contract. An important motivation for a client to choose a DCM over a D&C contract, is to prevent increased maintenance costs after delivery of the construction. By making the contractor responsible for both construction and maintenance, the (financial) lifecycle can be considered. This way, the contractor can consider both construction, management and maintenance costs, resulting in the Total Cost of Ownership. This type of contract aims at a more integrated and sustainable solution, by considering both the building and user phase of an asset. The length of the maintenance after completion, depends on the lifetime of the asset. Normally, the length of the maintenance component varies between 10 and 30 years (Sewbalak, 2014).

The integrated collaboration concepts such as the ECM and DCM contracts will be no further included in this research.

### 2.4 Long-term maintenance concepts

The long-term maintenance concept focuses on, next to the execution of maintenance, also on a limited design responsibility of the contractor. Due to this (limited) integration of design and execution, this concept is governed by the UAV-GC. In contradiction to the integrate collaboration concept, its focus lies on the preservation of existing assets, including determining maintenance measures. The contract that corresponds to the long-term maintenance concept is the performance contract (Visser & Visser, 2014, p. 32). Remarkable of this situation is that the UAV-GC originated explicitly for the integration of design and execution into one contract. Nevertheless as Visser & Visser describe, this integration is rather limited for long-term maintenance concepts. The UAV-GC as CROW (2005) describes, is mostly focused on new construction project and has very limited reference to maintenance. This reference is solely related to the integrated collaboration concepts (e.g. the long-term maintenance component in DBM contracts) and has no reference to contracts that involve maintenance only. It can therefore be questioned whether the UAV-GC is suitable to govern long-term maintenance concepts, since the focus in these contracts lies on the maintenance itself and not (so much) on the design. But, as long as there are no better suitable options for uniform administrative conditions for maintenance, the UAV-GC remains the best choice to govern performance contracts.
In Paragraph 2.2, the RAW maintenance contracts have been described. These types of maintenance contracts focus on a technical description and quantities. As of 2000, Rijkswaterstaat initiated the performance contracts, that linked the technical description for maintenance to activities (e.g. the grass should be mowed in such way that it will not get any longer than X cm). As of 2010, the performance contracts developed to contracts focused on performance targets determined by the client (e.g. availability). The clients were more and more looking for preservation and functionality (Lander, 2014). In contradiction the to the RAW maintenance contract, solely the performance level or intended result of the works is described by the client. The contractor can determine how this level or result can be reached. This is called functional specifying of the order (PIANOo, N.D.-c).

Martin (2007) describes the performance contract as “a contract that focuses on the outputs, quality and outcomes of service provision and may tie at least a portion of a contractor’s payment as well as any contract extension or renewal to their achievement”. This definition is supported by Tijnagel and Drunen (2014) who state that the contractor has its own responsibility for reaching the predetermined objectives. The payment to the contractor is linked to the level of accomplishment of these objectives.

The subject of this research, the long-term integral maintenance contracts, are based on the long-term maintenance concepts that are governed by the UAV-GC 2005 (Visser & Visser, 2014, p. 34). In the next chapter, the long-term integral maintenance will be further discussed.
3 Long-term integral maintenance contracts for public space

This chapter will cover the background of long-term integral maintenance contracts for public space. First, the definition this type of contract will be discussed. Next, the reason for governments to outsource such contracts will be discussed.

3.1 Definition

For the exact meaning of the long-term integral maintenance contract for public space, it is convenient to cut this term into pieces. Each piece will be defined separately:

Long-term

The UAV-GC 2005 defines the term long-term in the context of long-term maintenance as “the in the basic agreement mentioned long-term maintenance of the works that the contractor on the basis of the terms of reference and the bid by means of maintenance activities has to carry out” (CROW, 2005). Nevertheless, this definition does not cover a time or frequency component. For maintenance, a distinction can be made between one-off maintenance and cyclic maintenance or recurring maintenance (Gemeente Den Helder, 2013). In my opinion, long-term maintenance can be defined as recurring maintenance, with the focus on multiple years.³

Integral

In the context of contracts, Kuiper (2002) defines an integral contract as contracts that concern more than one technical discipline. An integral contract is an alternative to two or more separate contracts. An example of an integral contract is a contract that bears the construction of both a sewer system and the superjacent road. The term integral should not be confused with the earlier discussed term integrated, which implies the integration of at least design and execution into one contract. To conclude, an integral contract is related to multiple disciplines, while an integrated contract is related to multiple phases.

Maintenance

In Paragraph 1.1.1, maintenance has been defined as “the overall activities required in order to restore or maintain the dynamic desired condition level of an asset and the availability of its function(s).”

Contract

The Dutch Civil Code defines a contract as “an agreement in the meaning of this Title is a multilateral juridical act whereby one or more parties enter into an obligation towards one or more other parties” (Rijksoverheid, 2016, Art. 6:213).

Public Space

In Paragraph 1.1.1, public space has been defined as “all assets that are part of the publically accessible area, both above and underground, that are facilitating transportation of any kind or abiding purposes, such as dry and wet infrastructure, green areas, civil works, public lighting and associated systems.”

To conclude, the long-term integral maintenance contract for public space can be defined as: a maintenance contract that covers multiple disciplines of public space, such as both civil structures and roads, with a contract duration of multiple years. In the next chapters, the following abbreviation for long-term integral maintenance contracts will be used: LIM-contracts.

³ The Dutch use of the word long-term in this context is “meerjarig”, which literally means multiple years
3.2 Reason for outsourcing

A long-term integral maintenance project bears a significantly other level of requirements than new development projects. These requirements relate to for example the failure of a construction or the disability to comply to its function. A long-term maintenance project depends on the intervention level, that determines the moment of intervention by the asset manager. A long-term maintenance project does not focus on alterations or transformations, but focuses on the functional conservation of an asset and the continuously complying to its requirements (Visser & Visser, 2014, p. 16). In other words, the asset manager intervenes in the functioning of an asset by executing maintenance, if it does not comply to its requirements anymore. An asset manager can decide to either insource or outsource this maintenance.

By insourcing, the execution of maintenance is awarded to a department internally within the managing organization (Janssen, Kliphuis, & Van Learhoven, 2014), e.g. handing over maintenance to a municipal service department. By outsourcing, the execution of maintenance is “handed over to a third party external to an organization’s formal boundaries” (Kippenberger, 1997). Visser and Visser (2014) argue with a collection of pros and cons in the consideration to decide for outsourcing of long-term maintenance contracts, as can be seen in Table 3.

Table 3: Pros and cons to decide for outsourcing of long-term maintenance contracts, adapted from (Visser & Visser, 2014)

<table>
<thead>
<tr>
<th>Pro</th>
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<tbody>
<tr>
<td>1.</td>
<td>The managing organization lacks manpower and/or knowledge and experience to prepare, plan and execute or support a large amount of (deferred) maintenance.</td>
</tr>
<tr>
<td>2.</td>
<td>The managing (governmental) organization has limited means and wants to use these as effectively as possible. The private sector can have considerations without political and governmental influences.</td>
</tr>
<tr>
<td>3.</td>
<td>The private sector is more capable to steer on performances and tend to be more flexible in planning and organizing management and maintenance, in comparison to their clients.</td>
</tr>
<tr>
<td>4.</td>
<td>A potential contract extension, can be an incentive for a contractor to deliver high quality maintenance.</td>
</tr>
<tr>
<td>5.</td>
<td>A long-term contract, creates an incentive for contractor to initiate innovations.</td>
</tr>
</tbody>
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<table>
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<th>Con</th>
<th></th>
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<tbody>
<tr>
<td>1.</td>
<td>The success of outsourcing maintenance is completely depending on the method of execution by the contractor and the way the contract is supervised by the client. The lack of control of the client, can result in a decrease of motivation by the contractor to perform maintenance according to the contract.</td>
</tr>
<tr>
<td>2.</td>
<td>During the length of the contracts, politicians have less ability to influence the implementation of the contract as required from social developments.</td>
</tr>
<tr>
<td>3.</td>
<td>A decision to outsource maintenance for multiple years, is hardly reversible. It changes the client’s work method, personnel structure and shape of the organization.</td>
</tr>
</tbody>
</table>

So far, the reason to outsource long-term maintenance has been discussed. The reason to integrally outsource long-term maintenance, can have additional arguments. By integrating multiple disciplines for maintenance into one contract, the amount of maintenance contracts for the public space manager can be reduced. For example, 10 separate contracts for maintenance to asphalt, public lighting and traffic systems can be reduced to one road maintenance contract. An important advantage of integral contracts, is that the manager of public space can manage a single contract more effectively than multiple contracts. Furthermore, an integral contract requires one single tender instead of ten separate tenders, which reduces costs and time (Wals, 2015). Visser and Visser (2014) argue that an important motivation for managers of public spaces not to outsource maintenance integrally, is the preservation of jobs within the governmental organization. Less tenders and less contracts to manage, require less people which could result in laying off entire departments. They also argue that the financial motivation for outsourcing is not always a valid argument. Whether outsourcing reduces costs is depending on how the client organizes its management tasks. If he does not adapt the size and tasks of its organization after outsourcing, a “double” organization can be the result. This could be more costly than the decision not to outsource at all. In Appendix 4: Procurement and tendering will be discussed according to what procedure a contract is outsourced.

4 Nevertheless, outsourced maintenance also requires manpower and/or knowledge and experience
4 Development of LIM-contracts for public space

In the previous chapters, the meaning of long-term integral maintenance contracts (LIM-contracts) have been discussed. Also, the procedure and reason to outsource such a contract have been discussed. This chapter will look further into the background of the LIM-contracts. For this, first will be discussed how the interests in public space have developed. Then will be discussed how the involvement of both the public and the private sector in public space have developed in the last century. Subsequently, it will be discussed how in the last decades the management and maintenance of public space have developed. The last paragraph will discuss the changing roles of public and private parties and the implications of private sector involvement in managing and maintaining public space.

4.1 Development of interests in public space

Public space can be found everywhere around us. The pavement to walk on or the road that you use to drive to work. The park where you walk with your dog or the canal where you sail your boat on. Public space is more and more playing an important role in our lifestyles, both in social and economic perspective (Van Melik, 2008, p. 56). Since the Second World War, the amount of public space has been multiplied. This is a result of an increase in class distinction and a more specialized public life, with their own interests and needs (Carr, Francis, Rivlin, & Stone, 1992). Two trends can be appointed for this increased differentiation of urban lifestyle: individualization and multiculturalism (Florida, 2002). According to Carr et al. (1992), public space was no longer a requirement to get out of the crowded life, but became more important for abiding purposes. Due to changes in behavior and living conditions, people’s needs concerning public space changed along. But, as a result of this differentiation of needs, conflicting interests between the users evolved. Even though public space is defined as publicly accessible that anyone can use as one wishes, but it remains a shared space (Van Melik, 2008). Carr et al. (1992) describe that in a heterogeneous society, the interests of people become increasingly divers and competing. A particular social group can have certain dominant interests in the functioning of public space (Van Melik, 2008). For example, an area that houses many elderly inhabitants, creates a dominance in interests for peace and quiet in the public space. According to Van Melik (2008), this domination can both enliven the public space, but can also hamper the use by others. The dominance of commuter traffic on a certain road, could hamper the (safe) use of the road by school going children. This example illustrates the potential conflict of interests in public space.

The expectations of public space has developed as well. Ellin (2001) describes this as follows:

‘We no longer go out to mingle with the anonymous urban crowd in the hope of some new unexpected experience or encounter, a characteristic feature of earlier urban life. Unexpected experiences and encounters are precisely what we do not want. We go out for specific purposes, with specific destinations in mind and with a knowledge of where we will park and whom we will encounter.’

This illustrates that users have rather explicit expectations of public space. A road user expects to drive safely at a reasonable pace. A pedestrian expects to walk at an area solely accessible to pedestrians. A child plays soccer in a park, where he expects to have accessible grass that he can play on.

Also the feeling of security and the fear of danger play an important role in the expectations for public space. Brunt (1996) states that while criminality is mostly concentrated on certain locations, fear and feelings of insecurity are much more unspecific and spread-out. But not only criminality plays an important role in the feeling of security, also feeling safe in general is an important expectation for public space. When getting the green light at a busy traffic intersection, a driver expects that he can safely cross and that the crossing traffic has the red light. When a cyclist drives over a manhole cover, he expects that he does not have to evade this cover due to fear of falling into the sewer.

To conclude, from a social perspective the interests in public space plays an important role, in which the differentiation of inhabitants must be taken into account. Furthermore, also from an economical perspective, the interests in public space are significant. According to Wansborough and Mageean (2000), a safe and entertaining public space does not only
contribute to the inhabitant’s wellbeing. It also generates more economic activity merely by attracting people to an area. A competing atmosphere from within (e.g. shopping areas) and from outside (e.g. other cities), attracts higher-income residents, tourists, investments and business to the area (Van Melik, 2008). Especially competing from outside plays an important role for municipalities to invest in public space. According to Madanipour (2003), for a municipality it does not suffice anymore to have some impressive buildings and to organize a number of interesting events in the area. Businesses, tourists and other economic influences are also attracted by the public space that connect these buildings and activities. A well paved road, a well-organized car park or a peacefully looking park; these are examples of public spaces that can attract visitors that are economically interesting for an area. As a large city inhabitant myself, a decision to have a meeting with others is much influenced by its location. When taking into account for example parking facilities or accessibility of the location, makes me prefer one city over another. Cities therefore have an increased focus on public space and also invest in the improvement of its public space. This way, they can distinguish themselves from others areas and they can create a positive image (Van Melik, 2008).

From the economic perspective, I do think that also a competing atmosphere within an area is much influenced by the interests in public space. For example, local entrepreneurs have a high interest in an easily accessible access-road, an orderly entrance or a well-lit street. It is in the entrepreneur’s interest that that the public space is in such condition, that the attraction of customers is at least not negatively influenced.

4.2 Development of public-private involvement in public space

The roles of the government and private sector in The Netherlands concerning public space, has developed in waves in the last centuries. Many public spaces in cities in Western Europe, were until the 19th century privately owned (Cybriwsky, 1999). For example, many parts of Amsterdam and Rotterdam were developed in the 19th century on behalf of wealthy citizens. These areas could only be used by selected people, which makes the term public space rather relative. This era can be seen as a period of private-sector dominance (Van Melik, 2008, p. 65). As of the second half of the 19th century, parks and other open areas were developed for the entire public. Fortifications that became redundant were demolished and replaced by recreational facilities that were accessible to all inhabitants. In contradiction to the earlier public spaces, these areas were owned by the government. They were managed and maintained by government agencies (Cybriwsky, 1999). In the earlier decades of the 20th century, the roles of government and market concerning public space were balanced. But in the second half of the century, many Dutch cities were severely damaged as a result of the Second World War. This resulted in a governmental dominance in the spatial planning and public space development (Van Melik, 2008, p. 65).

In the last decades of the 20th century, a shift took place in The Netherlands concerning the role of the central government. Until the end of the seventies, a belief in a governance that could organize everything by themselves, dominated in The Netherlands. This belief was torn down by the social discontent about the developed bureaucracy (Plug, Twist, & Geut, 2003). As a result, in the early 1980s the Dutch government came with the direction mechanism “more market, less government”. This mechanism was initiated to stimulate the involvement of the private sector (Van de Coevering & Werff, 2001). This way, the government strived to look after the public interest by assigning operational responsibilities to the private sector (W.R.R., 2000).

The changing role of the central government developed even further in 2006, when the new Spatial Planning Act (Wet Ruimtelijke Ordening) was initiated. One of the cornerstones of this new act, was the philosophy of “de-central what is possible, central what is necessary”. The implications of this philosophy were the distribution of responsibilities and authorization in such a way, that the central government, provinces and municipalities could attend to their own interests. As a result, municipalities became responsible for their own municipal spatial policy. If this policy conflicts the provincial or central governmental interests, they have the authority to attend to and protect these interests (Kamphorst, Pleijte, Kistenkas, & Kersten, 2008). According to Zukin (1998), the retreating role of the central government is one of the main reasons for the involvement of the private sector in public space. She states that a lack of available state-money resulted in the privatized management and control of streets, parks and even entire districts. Van Melik (2008) supports this statement, by
arguing that the “responsibility for the development and management of public space is shifted from the national to the local government and to the private sector”. She acknowledges that this shift is a result of a lack of public budget. But she also states that “corporate investors now increasingly own and control publicly accessible space”. Even if the local governments still remain in full control over public space, the private sector is often active as a developer or investor (Van Melik, 2008, p. 63).

Next to the roles of the government and the private sector in the public space, also the spatial focus has developed in the last decades. While the decades after the war were completely focused on housing and city renewal, later on the focus shifted towards redevelopment of streets, waterfronts, and other kinds of public space. Van de Wiel, Buursink, and Boekema (1996) have described these shifts in spatial focus from 1945 until 2000, which are schematized in Figure 14.

![Figure 14: Shift in spatial focus, adapted from (Van de Wiel et al., 1996)](image)

### 4.3 Developments in management and maintenance of public space

According to Oc and Tiesdell (1999), the local authorities such as municipalities but also provinces used to be responsible for the management and maintenance of public space. But as described in the previous paragraph, decentralization and privatization have impacted the management and maintenance of public space in The Netherlands. As a result, local governments have declining powers and less monetary funds, which makes them unable to bare the sole responsibility of management and maintenance of public space (Van Melik, 2008, p. 73). In the Dutch society, an increased discontent has developed on the impoverishment of the public space (VROM-raad, 2009, p. 21). Lengkeek (2007) has allocated this situation to the deficit budgets for management and maintenance. According to him, a large portion of this budget is assigned to the maintenance of public green areas of post-war districts. While the budgets for management and maintenance have been reduced, the extent of public space have been increased in the last decades. Agricultural areas are being transformed into urban areas, with associated public space to make these areas accessible and appealing. New public space is developed as a result of new public functions (VROM-raad, 2009, p. 21). The VROM-raad (2009) also states that the increased shortage on budget for management and maintenance, is a result of the Dutch land dispatch policy in Dutch: gronduitgifte beleid. Due to this policy, the emphasis lies on the new construction projects and one-time spatial projects and not so much management and maintenance on the long-term.

Another development in management and maintenance in The Netherlands is related to the way governments look at public space. As the manager of public space, the government (central, regional and local) receives many social signals from citizens that do not only have requirements for their environment, but who also don’t hesitate to ventilate their wishes. More than in the past, society is learning to advocate for their personal interests. An indication of these interests have already been discussed in Paragraph 4.1. The developments of these interests, have radical consequences for the public space management. In recent past, governments used to focus their public space management on technical maintenance of all sorts of elements of public space, such as roads, public lighting,
vegetation and parking. These days, the government’s focus increasingly lies on the integral perception of public space in the area (Spitshoven et al., 2002, p. 9). This integral perception can be schematized in the ‘triangle for successful public space’ according Klandermans et al. (2011), see Figure 15. This triangle represents the usage of public space, its layout and the management of public space. Layout involves the design and construction of public space. During design and construction, the eventual user of the public space have to be considered, but also the manageability and its maintainability have to be taken into account. Furthermore, during the management and maintenance of public space, also the user of the public space has to be considered.

![Figure 15: Triangle for successful public space, adapted from (Klandermans et al., 2011)](image)

Especially the engagement between the management and the user of public space, plays an important role for governments. According to Spitshoven et al. (2002), the earlier mentioned user’s requirements and wishes, determine the performance that the manager of public space has to deliver. The government as public space manager is on one hand willing to deliver this performance. But on the other hand, the government is often not able to deliver this performance. Any action taken to the public space by the government, involves the use of public means and funds, which affects all inhabitants (e.g. resulting in higher municipal taxes). An example of these implications can be, when a municipality chooses to use their means and funds to perform maintenance to a certain road within the municipal area. This decision could imply that another road will not be maintained at that time, due to the lack of means or funds. As a result, one part of the inhabitants could be satisfied by this decision while another part will be disappointed. This example illustrates the interaction between public space management and the users of the public space, from Figure 15.

To (partly) relieve lacking public means and funds of governments, already in 2002 Spitshoven et al. (2002) introduced what they called entrepreneurial management of public space. This implied that the management of public space should no longer be perceived as a sole governmental tasks. Instead, public space management should be perceived as a business, that brings parties together into a form of partnership. An important result of entrepreneurial management, is that governments are increasingly retreating from their role as public space manager and that the private sector becomes more involved in the management and maintenance of public space (Spitshoven et al., 2002, p. 9). The VROM-raad (2009) acknowledges this development by stating that other parties are taking over roles of the government, such as contractors that are performing management and maintenance of public space instead of the government.

### 4.4 Changing roles of public and private parties

In the previous paragraphs have already been stated that the private sector is taking over management and maintenance tasks for public space from the government. Governments outsource these tasks to the private sector through contracts. This development requires a different mindset from both the government and the private sector. While the governments, and especially municipalities, have been managing (and maintaining) the public space themselves for a long time, they are changing into a role in which they have to retreat from these tasks.

Each municipality and province can have their own policy concerning management and maintenance of public space. As an example, the municipality of Nijmegen had in the 1990’s large maintenance services, that were responsible for most execution of maintenance in the municipality. The
municipality took care of the entire process of management and maintenance, from preparation until execution. Later on, these executing tasks increasingly disappeared and the municipality merely started focusing on managing the public space instead of maintaining, with the exception of the maintenance of green areas. The maintenance was outsourced to external contractors (Gemeente Nijmegen, 2012, pp. 7, 18). According to the Gemeente Nijmegen (2012), in their experience most contractors were able to carry out this work as least as good as the old municipal services.

The developments concerning the management and maintenance of public space in the municipality of Nijmegen, can be illustrated on the basis of the Deming circle or PDCA circle. This circle, distinguishes four phases: Plan, Do, Check, Act. According to Sokovic, Pavletic, and Kern Pipan (2010), using of the PDCA cycle means continuously looking for better methods of improvement. In the Plan phase, the organization is planning improvements and in the Do phase, it executes the planned activity. The organization monitors through e.g. an audit in the Check phase and if the required standards are not met, an action plan is formulated in the Act phase (De Jonge, Sint Nicolaas, Van Leerdam, & Kuipers, 2011, p. 341).

In the past, the municipality prepared (plan), executed (do), controlled (check) and adjusted (act) the management and maintenance of public space. Nowadays, contractors are responsible for the execution (do) of the maintenance, while the municipality remains responsible for the other phases. The municipality is planning to expand this in the near future, by also including the preparation of maintenance (plan) as a task of the contractor. Furthermore, the controlling (check) of the maintenance also becomes increasingly a task of the contractor (Gemeente Nijmegen, 2012, p. 18).

These developments are illustrated in Figure 16.

As seen earlier in Paragraph 4.1, public space bears many interests. These interests are linked to a diverse collection of stakeholders, such as pedestrians, motorists, retail operators, park users, law enforcement, etc. Between these stakeholders, a conflict of interests is significantly potential, considering the very ‘publicness’ of most public space (e.g. a road or a waterway). By managing the public space, “processes and practices are used to ensure that public space can fulfill all its legitimate roles, whilst managing the interactions between, and impacts of, those multiple functions in a way that is acceptable to its users” (De Magalhães & Carmona, 2009). It is a governmental task to take care for the divergent interests that play a role in the public space and to pursue the public interest (Bergmans, 2010).

When the government retreats from the role of manager and maintainer of the public space, the tasks to take care of divergent interests and pursuing the public interest, is being transferred to the party who takes over this role: the contractor from the private sector. According to Remkes et al. (2002), the government should express conditions on the basis of which the contractor is involved in, and receives the responsibility for, the management of the public space. This relates to participation, engagement, responsibility and the agreeing on the specific effort of the involved parties. Furthermore, for an intervention to the public space such as maintenance, a certain governmental coordination remains a requirement. This is necessary since during such intervention, there have to be dealt with a wide array of people and organizations. Therefore, it has to be ensured that the involved contractors pull in the same direction (Leach & Percy-Smith, 2001).
De Magalhães and Carmona (2009) argue that a private sector involved maintenance project, has important implications for the key dimensions of coordination. For public space managed by a public party, such as a municipality, the coordination mostly involves integrated links between public sector organizations at different levels (e.g. municipal maintenance services). For a private sector involved maintenance project, there is a need to coordinate the outcomes of the public-private agreements. Public sector organizations can be entrusted with commonly-agreed practices and objectives, which do not require much coordination and have become a certain routine. In comparison, a private sector involvement requires a completely different coordinating attitude of the public client. It requires from the government a considerable attention to contract specifications, negotiations on the agreements, monitoring and enforcing these agreements and also penalizing in cases of non-compliance (Sullivan & Skelcher, 2002).

The main objective of the coordination of a private contractor by the public client, is to make sure that this contractor conforms to public space policy objectives. Nevertheless, there remains a potential tension between these policy objectives of the public client and the lack of a public interest motivation of the private contractor. While the public client pursues the public interest, a private contractor pursues financial gain. Financial gain remains the main motivation for a contractor to deliver services to a public client (De Magalhães & Carmona, 2009, p. 123). A contractor will not be involved in a public space project to serve solely the public interest, but is mainly interested in obtaining a decent profit safeguarding the continuation of the firm (Heurkens, 2012, p. 31). In comparison, public sector organizations work according a non-profit motivation. Therefore, a shift from working with public sector organizations towards working with the private sector, requires a different mindset of the public client in understanding a contractor’s motivation. Furthermore, this shift also requires from the contractor to understand the expectations the client has concerning the many interests that play a role in the public space.

De Magalhães and Carmona (2009) imply another potential tension that could evolve between client and contractor, which relates to the task of defining and deploying maintenance routines. The client, normally a municipality or province, will define the basic elements of routines that will be specified in the contract (e.g. frequency, scope, quality, etc.). It is up to the contractor to deploy these routines, by adapting to the on ground conditions according to its own interpretation of the contract. Due to the shift from a public-relation to a public-private relation, it reinforces the importance of careful contracting drafting by the client. This way, the expectations that the client has, will be actually carried out by the contractor. Furthermore, this new type of relation requires from the contractor also a certain degree of flexibility to adapt to changes in demands of public space after the contract is drafted (De Magalhães & Carmona, 2009, p. 124).

Another implication of private sector involvement entails a higher complexity in processes due to an increase in the amount of actors that are involved and that might have conflicting insights and objectives, leading in turn to a longer duration of the decision-making processes (Healey, 1998). These objectives can also relate to earlier mentioned potential conflict of interests related to the public interest and profit making.
5 Theories for coordination of public outsourcing

In the previous chapter has been discussed how the public and private parties are witnessing changing roles when management and maintenance is outsourced to the private sector. Even though, contractors will receive much responsibilities, public parties are not relieved from all of their responsibilities. As earlier mentioned, a certain government coordination remains a requirement.

To illustrate the implications of the new distribution of (coordination) roles between public and private parties, three theories will be discussed. The first theory will describe the principal-agent theory, that discusses the relation between the client and the contractor and its implications for the type of contract. The second theory will discuss a practical method for the coordination within a principal-agent relation. For this, the directing government will be discussed, which illustrates the coordination role that a government can develop. The third theory discusses new public management, that illustrates the global implications for an increased outsourcing tendency of governments and its implications on coordination.

5.1 Principal-agent theory

The implications of the shift from public management and maintenance of public space towards a private sector involvement, can be related to principal-agent theory. This theory relates to the relations the arises when one party (the principal) delegates work to another party who executes this work (the agent). Such relation is called the agency relation or principal-agent relation, in which a contract between both parties represents the relation (Schoenmaker, 2011, p. 67). Under this contract, “the principal engages another person to perform some service on its behalf, which involves delegating some decision making authority to the agent” (Jensen & Meckling, 1976, p. 308). The contract between a (local) government who outsources maintenance of public space to a contractor, can be perceived as a principal-agent relation. In this relation, the agent will not always act in favor of the principal’s interests. Two main causes can be appointed for this (Schoenmaker, 2011, p. 67):

- Incongruity of objectives: The interests and objectives of the principal and agent are divergent.
- Information-asymmetry: The agent normally possesses more information about its own behavior and effort than the principal. The principal is not capable of obtaining this information without costs.

In order to counteract these causes, so called agency costs have to be made. According to Jensen and Meckling (1976, p. 308), agency costs consist of the sum of:

- Monitoring costs: The principal can limit the agent’s undesirable behavior by monitoring this behavior and by giving the right incentives. This also involves a certain amount of steering, by setting e.g. instructions and directions.
- Bonding costs: Costs that an agent has to make, in order to guarantee he doesn’t take any action that result in negative consequences for the principal. This can be for instance contractually complying to certification norms and quality plans.
- Rest loss: The loss of revenue due to the difference between the agent’s decisions and the decisions that lead to a maximized benefit for the principal.

The focus of the principal-agent theory lies, according to Schoenmaker (2011, p. 69), on determining the optimal contract between the principal and the agent, by minimizing the agency costs required for dealing with incongruity of objectives and information-asymmetry. For this optimal contract, the principal will try to make sure that the agent acts as much as possible in favor of the principle. In this contract, the principal and agent will lay down today, what they promise to do tomorrow, depending on tomorrow’s conditions. Two types of contract are possible: the implicit and the explicit contract.

The implicit contract is not explicitly written and is based on mutual trust in long-term relationships. It doesn’t require much enforcement if both the agent and the principal have no interest in deviating from the contract. In comparison, in explicit contracts all information is verifiable, which is a costly and takes effort. But for this type of contract, both the principal and agent have the certainty that they can enforce the performance of the other. For outsourcing of public task by a public party (e.g. a municipality), mostly an explicit contract forms the basis (Teulings, Bovenberg, & Van Dalen, 2003, pp. 18,19, 27). Furthermore for outsourcing of maintenance to public space, these contracts will be incomplete due to uncertainty and limited rationality. This implies that for this type of contract, it
cannot be determined on beforehand what has to be done for each later situation. Therefore, not all decisions are made on beforehand, but this also leaves a certain amount of decision space to determine the rights and obligations of both the principal and the agent (W.R.R., 1999). The next paragraph will take a closer look at how a principal can coordinate the agent in practice, by discussing the **directing governments**.

### 5.2 Directing governments

In Paragraph 4.4 has been described that a private sector involved maintenance project, has important implications for the key dimensions of coordination. Outsourcing maintenance of public space to a contractor, does not imply a complete outsourcing of coordination by the client. As seen in the previous paragraph, according to the principal-agent theory, an agent or contractor will not always act in favor of the principal’s or client’s interests. Therefore, a certain amount of coordination is required in order to maintain a certain amount of direction by the client. This paragraph will discuss a method for coordination and direction by the principal in case of private sector involvement.

Maintaining of direction by governmental clients, has been developing in The Netherlands in the last couple of years. It is called *working in direction* (in Dutch: *werken in regie*) and is increasingly used by so called **directing governments**, for example municipalities. These municipalities are called **directing municipalities** (in Dutch: *regiegemeente*).

In the perception of directing government, its main task is governing which is carried out by the political organization. The administrative organization, with its civil servants, has the main task of supporting the political organization with its governing task. For the traditional government, the administrative organization has also the (partial) responsibility for the execution of the government’s policy. For the directing government, the execution of a policy is not an exclusive task of the government but should be appointed to the private sector. In perception of the directing government, private parties are better able to execute a policy by delivering the same quality for often a lower price. These executive works are organized by entering into a contract with external parties (Gemeente Amersfoort, 2010, p. 7).

To illustrate, in Figure 17, the organization structure for a directing municipality can be found. A clear distinction is made between the political organization, the administrative organization and the private sector.

![Figure 17: Organization structure for a directing municipality](image)

A directing government acts as a director and connector within the community of actors. These actors can be for example inhabitants, companies, associations, etc. Its task is not solving of all problems of these actors, but to activate and stimulate the community to take their responsibility in solving the problems. The directing government remains the guardian of the public interest and creates the foundation and support so that the community can take their responsibility (Bastiaanse, 2012, p. 3).

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5 In Dutch: *ambtelijke organisatie*
There are three types of government directions that can be distinguished (Van Mourik, 2015):

- **Co-creation**: the government develops together with societal partners new policies
- **Co-production**: the government directs societal issues together with professional organizations
- **Outsourcing**: the government makes use of the better available knowledge at the private sector

This last type of governmental direction, outsourcing, is most relevant for this research. Outsourcing relates to the execution of the governmental policy by the private sector. Examples are managing a library, garbage control, cleaning and, most relevant for this research, management and maintenance of public space. As a result of outsourcing of these tasks, the directing government becomes a compact and smaller organization that is more flexible, efficient and decisive (Bastiaanse, 2012, p. 3).

Outsourcing of execution tasks such as management and maintenance, does not mean that a directing government is relieved of all its tasks related to the execution. The political organization in the directing government remains responsible for setting the framework and remains politically responsible. The administrative organization assists the private contractors in finding the optimal solutions to (societal) problems and the execution of the tasks. A directing government will only have a chance of success if it realizes that it has become a director and is no longer a manager (Bastiaanse, 2012, p. 5).

In order to reach a certain quality level in the outsourced tasks, the direction from the government is required. The required quality can be guaranteed best, by laying down performance levels. The starting point for these performance levels are the government’s policy objectives. It is important that the directing government has an intensive consideration in determining the performance levels, since alterations to these performance levels is costly and quite irreversible after awarding a contract. Therefore, it is recommended that the directing government leaves a certain room for maneuver in the interpretation of the contract. More important, in order the reach the advantages of outsourcing, the contractor must have the opportunity to decide on its own interpretation how the reach the determined performance level. When the government starts detailing and specifying, the contractor is limited in its own ways of conducting business. This also requires more control by the government, since the details and specifications need enforcement (Gemeente Amersfoort, 2010, p. 11).

To summarize, directing governments have the opportunity to outsource the execution of their policy to private parties. This requires a certain amount of responsibility by these parties. Furthermore, for the government this results in a shift from managing behavior to directing behavior. For this, performance levels have to be determined that leave a certain amount of freedom for interpretation and execution by the contractors.

### 5.3 New Public Management

The existence of the directing governments from Paragraph 5.2, is a development that especially takes place in The Netherlands and mostly at municipalities. This development is a result of the earlier mentioned changes in national policy, that are described in Paragraph 4.2. These changes contained the privatization and decentralization of the government tasks, that resulted in increased outsourcing of tasks to the private sector. Although these developments are a result of a shift on the national policy, also globally similar developments took place in the 1980’s and was called **New Public Management** (NPM). This new governmental management philosophy was a result of the global economic crisis and was mainly initiated in Anglo-Saxon countries in order to modernize their public sector (Bovens, ‘t Hart, & Van Twist, 2007). In earlier views, the public sector was inefficient and too large and NPM therefore emphasized on minimizing and downsizing of the government (Alonso, Clifton, & Díaz-Fuentes, 2015).

According to Koppenjan and Klijn (2004), NPM bears the following set of characteristics:

- Improving the effectiveness and efficiency of government performance
- Focus on ideas and techniques which have established their value in the private sector
- Focus on the use of privatization and contracting out of governmental services
- Interest in the use of performance indicators to specify the desired output of the privatized part
Theories for coordination of public outsourcing

The use of privatization and contracting out of governmental services have played an important role in public management reforms in many Anglo-Saxon countries such as the US, the UK, New Zealand, Australia, Canada and also The Netherlands, as seen earlier. Due to these developments, a clear demarcations between the public and the private sector originated. This resulted in a different relationship between both sectors, but also created a shift in the distribution of responsibilities (Koppenjan & Klijn, 2004, p. 103). According to Osborne and Gaebler (1992), the government should be steering, by setting goals and trying to achieve them. A government should not execute these corresponding activities themselves. According to them:

‘Governments that focus on steering activity shape their communities and nations. They make more policy decisions. They put more social and economic institutions in motion. Some even do more regulating. Rather than hiring more public employees, they make sure other institutions are delivering services and meeting the community’s need’ (Osborne & Gaebler, 1992, p. 32)

By this argument, Osborne and Gaebler (1992) argue that there is a need for a clear separation of responsibilities. A government should be responsible for decision making and should not be involved in delivering the decisions made. This service delivery is the responsibility of the private sector. By this system of separation between the policy deciders and service providers, a competition between service providers can originate. It gives the contractors an incentive for quality performance. They know that if their quality is poorly, the client will go find someone else. Civil servants know that this is not possible for them, which results in a lacking incentive for quality performance (Osborne & Gaebler, 1992, p. 35). According to Koppenjan and Klijn (2004, p. 103), due to the clear separation of responsibilities, the government ‘only needs to focus on formulating objectives and starting points’. In short, the government is responsible for setting the goals, while the private sector is made responsible for the realization of these goals. But in order to make this separation work, two conditions have to be met (Koppenjan & Klijn, 2004, p. 105):

**The need for a clear product and goal specification**

It is essential that the governmental client knows exactly what is being contracted out. Therefore, a clear product and goal specification is a must. Furthermore, a clear product and goal specification also provides the client a basis for evaluating of the contractor. Nevertheless, when dealing with complex problems, a clear product and goal specification is hard to make as a result of knowledge uncertainty. Often, a client does not exactly know what the problem is, how much he knows about it or how he should tackle the problem (Koppenjan & Klijn, 2004, p. 105). This type of problems that require much collaborative effort to address, are defined as *wicked problems* (Meaklim & Sims, 2011). Even for what seems as a simple service delivery, such as road maintenance contracting, specifying its goals and products could turn out to be far more complex than anticipated. This makes it difficult to the specify the product and goal clearly in explicit terms. Therefore, first the wicked problems need to be “tamed” before it can be considered to use the NPM strategy. A clear product and goal can only be specified for wicked problems that are tamed. If this is not the case, contracting out will be very difficult (Koppenjan & Klijn, 2004, p. 105).

**The need for monitoring**

The quality of the realization of the client’s goals, depends on the effort that the contractor puts into the output of the contract relation. Monitoring of the output is important, so that the contractor has an incentive to deliver high quality (Deakin & Michie, 1997). Monitoring protects the client against potentially opportunistic behavior of the contractor (Koppenjan & Klijn, 2004, p. 106). Klein, Crawford, and Alchian (1978) define opportunistic behavior as the “unanticipated non-fulfillment of specified contractual obligations”. Monitoring to protect against this behavior, requires an effective and competent monitoring agency with skilled personnel. Furthermore, monitoring requires independent auditing by qualified managerial experts (Larbi, 1999).
Part THREE: CASE STUDY
6 Introduction to the case study

As discussed in the description of the research methodology in Paragraph 1.5.3, this case study consists of the documentation analysis and interviews. In this introduction to the case study, first the selection of the cases will be discussed. Then, the variables will be discussed that will be used in the following chapters.

6.1 Selection of cases

As discussed in Paragraph 1.5.3, case studies will be carried out in this research. In order to create context between the cases, the chosen cases should have as little variance as possible. Therefore, a homogeneous selection of cases must be created (Swanborn, 2008, p. 61). In order to create mutual comparability between the cases, the properties of the cases should be as homogeneous as possible. The variance between the variables should be minimized, but some heterogeneity is required for a good comparison (Schoenmaker, 2011, p. 108).

In order to create a high sense of homogeneity in this research, the following requirements are set for the selection of the cases:

- All cases represent maintenance contracts that are outsourced to the private sector
- All cases represent long-term integral maintenance contracts for public space
- For all cases, a tender has taken place that involved more than one contractor
- For all cases, the client of the contract belongs to the public sector
- For all cases, the tender took place according to the EMAT award mechanism
- For all cases, the contracts are governed according UAV-GC 2005
- For all cases, the tenders took place in the last 5 years.
- All cases took place in The Netherlands

As discussed, a certain degree of heterogeneity between the cases is required in order to make a good comparison. The heterogeneity in the cases will be applied by choosing a different kind of client for each project. As stated, all clients will be public clients that represent a form of government. The level of this government will differ between the cases. As stated in the previous chapters, the LIM-contracts are a rather new development for two types of government: the province and the municipalities. Both increasingly outsource their management and maintenance of public space to the private sector in LIM-contracts. Therefore, these governments will be used in the case selection and will be the main focus point for the recommendation of this research.

In Appendix 2, the role of Rijkswaterstaat as the executive agency of the Ministry of Infrastructure and the Environment has been discussed. The recommendations of this research will not focus on Rijkswaterstaat. Nevertheless, Rijkswaterstaat can act as an experienced reference for this research, since already in 2004 the agency decided that all structural road maintenance had to be integrally outsourced to the private sector in long-term contracts (Rijkswaterstaat, 2004, p. 9). Because of the experience Rijkswaterstaat has gained in the last 12 years concerning long-term integral maintenance contracts, using a case of Rijkswaterstaat as a reference could add new insights for the other cases.

To conclude, the following three types of clients will be used for the case selection: municipality, province and Rijkswaterstaat. Each will be discussed separately, for a suitable case selection.

Municipality

Thus far, a very small selection of Dutch municipalities have actually integrally outsourced their maintenance of public space to the private sector. Only two municipalities have been found that meet the homogeneity criteria: the municipality of Oldambt (Streekblad, 2013) and the municipality of Haarlem (Gemeente Haarlem, 2014d). The municipality of Haarlem will be chosen for this case study, since more documentation is available about the contracts of this client. Furthermore, this contract has been tendered more recently which makes the recommendations of this research more relevant. The municipality of Haarlem has awarded multiple contracts to the private sector. Civil contractor VolkerInfra has won the contract for civil works & shorelines, and will be cooperated with during this research. Therefore, the maintenance contract municipality of Haarlem: Civil works & Shorelines will be used as a case in this research.

VolkerInfra consists of Van Hattum en Blankevoort, KWS Infra, VolkerRail and Vialis
Province
Thus far, only two provinces have integrally outsourced their maintenance of public space to the private sector: the province of Zuid-Holland and the province of Noord-Holland. The province of Noord-Holland is most suitable for a case study, since this involves multiple contracts that have already been tendered and are planned to be tendered. This way, recommendations from this research will have a high relevance for this client.
As discussed, the province has already awarded one contract to the private sector: the area Kop van Noord-Holland. Therefore, this contract will be used as a case in this research.

Rijkswaterstaat
As mentioned, Rijkswaterstaat has much experience with long-term integral maintenance contracts. Therefore, from a large selection of contracts can be chosen to find a suitable case. Rijkswaterstaat has continuously developed their performance contracts in recent years (see Paragraph 2.4) Since the Rijkswaterstaat case(s) will be used as a reference for the other cases, recent contracts are preferred over older contracts. Rijkswaterstaat distinguishes two types of performance contracts: wet and dry contracts. The dry contracts have most resemblance with the contracts of the other cases and are therefore most suitable for use. Furthermore, the availability of documentations of all phases of the tender and execution is required for a useful reference case. As mentioned, in this research will be cooperated with VolkerInfra in order to collect the required documentation. This leaves two available performance contracts: the dry maintenance contract Project A\(^7\) and the dry maintenance contract Project B. The content of both contracts will be discussed later.

To summarize, the following cases will be investigated in this research:
- Municipality of Haarlem: Civil Works & Shorelines
- Province of Noord-Holland: Kop van Noord-Holland
- Rijkswaterstaat: Project A
- Rijkswaterstaat: Project B

### 6.2 Variables
As discussed in Paragraph 1.5.3, this case study consists of two parts: the documentation analysis and the interviews. In order to structure both parts, a set of variables will be determined. These variables are related to the sub research questions, and will act as focus points throughout the documentation analysis and the interviews. Each case gives its own interpretations of the variables and will be discussed for each case separately. For this, first the set of variables has to be determined. The variables that will be used in this research, are directly linked to sub research questions that are determined in Paragraph 1.4. From these sub research questions, the following variables are formulated: objectives, expectations, award criteria, weighing factors and staff continuity. Each of these variables is linked to one or more sub research questions. For example, the variable award criteria is linked to sub research question 2, 4 and 5 and the variable staff continuity is only linked to sub research question 6. A complete overview of the links between the variables and sub research question can be found in Figure 18.

\[\text{Figure 18: Link between variables and sub research questions}\]

\[\text{\textit{SRQ 1-4-5}}\]

\[\text{\textit{SRQ 1-4-5}}\]

\[\text{\textit{SRQ 2-4-5}}\]

\[\text{\textit{SRQ 3-4-5}}\]

\[\text{\textit{SRQ 6}}\]

\[^{7}\text{On request of Rijkswaterstaat, the content of both investigated Rijkswaterstaat contracts will not be made publically accessible in the public version of this report. They will be called Project A en Project B.}\]
Next, the meaning of each of these variables will be discussed:

Objectives & Expectations
The objectives and corresponding expectations are a result of the governmental policy concerning outsourcing of management and maintenance of public space to the private sector, as discussed in Chapter 4. The objectives are often the objectives that the client has for the LIM-contract and the expectations are often the expectations that the client has of the contractor of the LIM-contract.

Award Criteria & Weighing Factors
In Appendix 4: Procurement and tendering, the EMAT award mechanism has been discussed with its award criteria and weighing factors. The award criteria are used to determine the added quality that the contractor can deliver. A distinction is made between the award criteria, by appointing a weighing factor for each criterion.

Staff continuity
The variable staff continuity relates to the extent to which staff members of clients and contractors are continuously involved in the phases before, during and after the EMAT tender for LIM-contracts. This will also discuss how is dealt with staff discontinuity. As discussed in Paragraph 1.4, the discontinuity of staff could result in a certain amount information-loss that contributes to the current problems.
7 Documentation analysis

In this chapter, the cases that will be investigated for this research will be described. For each case, a documentation analysis will be carried out. In this documentation analysis, the interpretations of the variables for each case will be investigated, based on published documentation. By published documentation is meant, any documents that became available prior or during the tender of each specific case. In other words, this information has become accessible to any bidder of the tender. This published documentation is related to the variables: objective, expectations, award criteria and weighing factors. The variable staff continuity, is not discussed in this analysis since this information cannot be retrieved from the published documentations. As discussed in Paragraph 1.5.3, this main goal of the documentation analysis is to collect data for the preparation of the interviews and to create insight knowledge of the different cases.

For the sake of readability of this report, only a short description of each case will be included in this main report. The discussion of the objectives, expectations, award criteria and weighing factors are positioned in Appendix 5: Documentation analysis.

7.1 Municipality of Haarlem

In the year 2000 the municipality of Haarlem had, such as many other municipalities, their own department of management & maintenance for public space with large maintenance crews. These crews managed and maintained the public space in an intuitive and incidental steered way, without an official plan or approach. Municipal inspectors drove through the city in order to assess where maintenance was required. The department had no asset management system and was merely focused on operations and technical state. The management of the department steered on the available budget, but no accountability was held towards the city council about the performance and the effect of the maintenance works. Ad hoc replacement investments were made, while the municipality started budget savings. Eventually, this lead to deferred maintenance worth 38,6 million Euros in 2001 (Gemeente Haarlem, 2014e, p. 1). In a report of the Rekenkamercommissie that investigated the overdue maintenance of public space in Haarlem in 2005, they discovered that the overdue maintenance had increased to 60,8 million Euros.

As of 2005 until 2014, the policy for management and maintenance in Haarlem has changed. One commissioner became responsible for design, layout, management and maintenance in the entire area. By this change, the public space became perceived as an entire system instead of a sum of small components. By using standardization and manuals for spatial quality, the municipality of Haarlem started focusing on rational management and maintenance programs. As a result, the overdue maintenance in the city decreased to 34 million Euros (Gemeente Haarlem, 2014e, p. 1). The development of overdue maintenance from 1995 to 2014 can be found in Figure 19 (Rekenkamercommissie, 2005, pp. 12-14)

![Figure 19: Overdue maintenance in Haarlem, adapted from (Rekenkamercommissie, 2005, pp. 12-14)](image)

Despite the appointment of one responsible commissioner for all management and maintenance, most of the execution of the maintenance was outsourced to both the public sector and the private sector. 25 contracts were signed with Spaarnelanden NV, a maintenance and waste management company that is completely owned by the municipality of Haarlem. 50 maintenance contracts were signed by contractors from the private sector, which resulted in a total of 75 maintenance contracts.
These contracts were a variation on the framework agreement, specified according RAW and governed by the UAV 2012. Drawing up tender specifications for each contract and assessing all bids was a time consuming exercise. Furthermore, public space managers of the municipality, had to devote most of their time to responding on reports instead of planned work (Wals, 2015).

Due to the economic crisis, new policies of the central government and the large debt of the municipality, savings were necessary for Haarlem. In total, 10 million Euros of structural saving was required in order to create a balanced budget for the long term (Gemeente Haarlem, 2014b). Part of this 10 million, the municipality had to cutback 1 million on the maintenance spending (Gemeente Haarlem, 2014h, p. 3). 70 percent of this saving, came down to a cutback on the road maintenance (Binnenmars, 2014).

As a result of the financial situation of the municipality of Haarlem, a decision was made by the city council to reform the policy for management and maintenance. The city council required to make better use of the expertise that the private sector had to offer, create a higher efficiency and reduce costs for management and maintenance. In order to professionalize the client-contractor relationship, a new framework was created to integrally outsource maintenance contracts. The starting-point of this framework was a follows (Gemeente Haarlem, 2014c):

- Assembling of management and maintenance works into cohesive domains
- Awarding these management and maintenance works to a single contractor for each domain
- Distributing the domains among the private sector and Spaarnelanden NV
- Securing the by the city council determined financial framework, that determines the volume of works for each domain.

The result of this framework is twofold. First, the municipality becomes a directing government (see 5.2), in which many management tasks are outsourced. The focus lies on directing and steering tasks. By conducting professional contract management is strived to do more with less money. Second, less municipal employees are required to direct the maintenance, which saves 40 FTE in the new organization (Gemeente Haarlem, 2014e, p. 2).

As mentioned, the management and maintenance of the public space in Haarlem has been divided into domains, which have been tendered to both Spaarnelanden NV and contractors. Each of the contracts started on the first of January 2015 and last for four years, with the possibility of extension of two times two years (Gemeente Haarlem, 2014d, p. 5).

The distribution of the domains among the contracting parties are as follows (Sikkema, 2015, p. 4):

<table>
<thead>
<tr>
<th>No.</th>
<th>Domain</th>
<th>Contracting partner</th>
<th>Public/Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.a</td>
<td>Pavements (elements + roadside fixtures)</td>
<td>Spaarnelanden</td>
<td>Public</td>
</tr>
<tr>
<td>1.b</td>
<td>Pavements (asphalt + road marking)</td>
<td>BAM</td>
<td>Private</td>
</tr>
<tr>
<td>2</td>
<td>Parking</td>
<td>Spaarnelanden</td>
<td>Public</td>
</tr>
<tr>
<td>3.a</td>
<td>Public lighting</td>
<td>VolkerInfra</td>
<td>Private</td>
</tr>
<tr>
<td>3.b</td>
<td>Traffic regulation installations</td>
<td>Vialis</td>
<td>Private</td>
</tr>
<tr>
<td>4</td>
<td>Garbage &amp; cleaning</td>
<td>Spaarnelanden</td>
<td>Public</td>
</tr>
<tr>
<td>5.a</td>
<td>Civil works &amp; shorelines</td>
<td>VolkerInfra</td>
<td>Private</td>
</tr>
<tr>
<td>5.b</td>
<td>Movable bridges</td>
<td>Strukton</td>
<td>Private</td>
</tr>
<tr>
<td>6</td>
<td>Vegetation &amp; playgrounds</td>
<td>Spaarnelanden</td>
<td>Public</td>
</tr>
<tr>
<td>7</td>
<td>Sewerage &amp; groundwater</td>
<td>BAM</td>
<td>Private</td>
</tr>
<tr>
<td>8</td>
<td>Coordination guard duty &amp; reports</td>
<td>Spaarnelanden</td>
<td>Public</td>
</tr>
</tbody>
</table>

This case study will focus on contract 5a civil works & shorelines, which has been awarded to VolkerInfra. This contract has a fixed budget of 3,5 million Euros for four years (Gemeente Haarlem, 2014a).
7.2 Kop van Noord-Holland

In the previous paragraph has been introduced how the municipality of Haarlem managed and maintained their public space in the past and what motivated them to integrally outsource maintenance contracts to contractors. A similar development occurred in the province of Noord-Holland. Due to less available financial funds, the province was motivated to reform the management and maintenance of public space. Key directions for the province were (Movares, 2013, p. 4):

- Less governance, more private sector
- Improved quality
- Increased efficiency
- Directing instead of managing

These directions resulted in the province deciding to integrally outsource the management and maintenance of public space to the private sector. The province was subdivided into 7 subareas, for which each of these subareas a long-term integral maintenance contract will be composed, see Figure 20. These maintenance contracts consist of multiple types of (public) works. The first area that was tendered in the end of 2014, Kop van Noord-Holland (area 1), consisted of the following types of works (Provincie Noord-Holland, 2014d, p. 5):

- Regional road infrastructure
- Regional waterways
- Civil constructions
- Green areas
- Technical installations
- Buildings/terrains managed by province of Noord-Holland

Furthermore, this contract does not solely entail maintenance. Part of this contract is a partial sheet pile replacement and the replacement of six permanent bridges. This contract is awarded for a period of 10 years with a guaranteed remaining lifetime of 5 years (Provincie Noord-Holland, 2014a).

The long-term integral maintenance contract for the Kop van Noord-Holland, is just the beginning of the outsource ambition of the province. When all areas have been tendered to the private sector, the amount of maintenance contracts for the province of Noord-Holland will be reduced from the current 150 contracts to 20 contracts in the near future. This will reduce the costs for the province significantly, since far less tenders have to prepared, organized and evaluated for the same amount of maintenance works. Furthermore, by integrating large areas into single contracts and outsourcing all management and maintenance to the private sector, far less manpower from the province is required for directing these works. This will eventually bisect the amount of FTE required for management and maintenance at the province (Hesselmans, Bezemer, & Berkhout, 2015).

This contract is worth between 65 and 92 million Euros (Provincie Noord-Holland, 2015b).
7.3 Rijkswaterstaat: Project A

7.4 Rijkswaterstaat: Project B

On request of Rijkswaterstaat, the content of both investigated Rijkswaterstaat contracts will not be made publically accessible in the public version of this report.
8 Interviews

As discussed in the description of the research methodology in Paragraph 1.5.3, this case study consists of the documentation analysis and interviews. This chapter will discuss the interviews that were held as part of this case study. In the first paragraph, an overview will be given of the interviews that were held with different respondents. Next, the method for a qualitative data analysis will be discussed. In the subsequent paragraphs, the outcomes of each case for the different variables will be discussed.

8.1 Overview of interviews

For each case, a set of respondents with five different functions have been interviewed, as discussed in Paragraph 1.5.4. For the clients, these functions are: policymaker, tender advisor, and contract manager. The policymaker have been interviewed to discuss mainly the process of determining objectives and expectations of the client. The tender advisor has been interviewed to discuss mainly the translation of the objectives and expectations, towards award criteria and weighing factors. The contract manager have been interviewed to discuss mainly the role that the mentioned four variables play in the execution of the contract.

For the contractors, the following functions have been interviewed: tender manager and contract manager. The tender manager has been interviewed to discuss mainly the appraisal of the objectives, expectations, award criteria and weighing factors during the tender phase. The contract manager has been interviewed to discuss mainly the role that the mentioned four aspects play in the execution of the contract. In the following table, an overview will be given of the interviews that were held with different respondents.

Table 5: Overview of the conducted interviews

<table>
<thead>
<tr>
<th>Function for each case</th>
<th>Government/Company</th>
<th>Client/Contractor</th>
<th>Date of interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil constructions &amp; Shorelines</td>
<td>Municipality of Haarlem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policymaker</td>
<td>Municipality of Haarlem</td>
<td>Client</td>
<td>18-04-2016</td>
</tr>
<tr>
<td>Tender advisor</td>
<td>Municipality of Haarlem</td>
<td>Client</td>
<td>29-04-2016</td>
</tr>
<tr>
<td>Contract manager</td>
<td>Municipality of Haarlem</td>
<td>Client</td>
<td>06-04-2016</td>
</tr>
<tr>
<td>Tender manager</td>
<td>VHB Infra</td>
<td>Contractor</td>
<td>31-03-2016</td>
</tr>
<tr>
<td>Contract manager</td>
<td>Vialis</td>
<td>Contractor</td>
<td>21-03-2016</td>
</tr>
<tr>
<td>Kop van Noord-Holland</td>
<td>Province of Noord- Holland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policymaker</td>
<td>Province of Noord- Holland</td>
<td>Client</td>
<td>29-03-2016</td>
</tr>
<tr>
<td>Tender advisor</td>
<td>Province of Noord- Holland</td>
<td>Client</td>
<td>01-04-2016</td>
</tr>
<tr>
<td>Contract manager</td>
<td>Province of Noord- Holland</td>
<td>Client</td>
<td>01-04-2016</td>
</tr>
<tr>
<td>Tender manager</td>
<td>VolkerInfra</td>
<td>Contractor</td>
<td>21-03-2016</td>
</tr>
<tr>
<td>Contract manager</td>
<td>Dura Vermeer</td>
<td>Contractor</td>
<td>13-05-2016</td>
</tr>
<tr>
<td>Project A</td>
<td>Rijkswaterstaat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policymaker</td>
<td>Rijkswaterstaat</td>
<td>Client</td>
<td>16-03-2016</td>
</tr>
<tr>
<td>Tender advisor</td>
<td>Rijkswaterstaat</td>
<td>Client</td>
<td>05-04-2016</td>
</tr>
<tr>
<td>Contract manager</td>
<td>Rijkswaterstaat</td>
<td>Client</td>
<td>30-03-2016</td>
</tr>
<tr>
<td>Tender manager</td>
<td>VolkerInfra</td>
<td>Contractor</td>
<td>NA(^8)</td>
</tr>
<tr>
<td>Contract manager</td>
<td>VolkerInfra</td>
<td>Contractor</td>
<td>18-03-2016</td>
</tr>
<tr>
<td>Project B</td>
<td>Rijkswaterstaat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policymaker</td>
<td>Rijkswaterstaat</td>
<td>Client</td>
<td>16-03-2016</td>
</tr>
<tr>
<td>Tender advisor</td>
<td>Rijkswaterstaat</td>
<td>Client</td>
<td>04-04-2016</td>
</tr>
<tr>
<td>Contract manager</td>
<td>Rijkswaterstaat</td>
<td>Client</td>
<td>NA(^9)</td>
</tr>
<tr>
<td>Tender manager</td>
<td>VolkerInfra</td>
<td>Contractor</td>
<td>30-03-2016</td>
</tr>
<tr>
<td>Contract manager</td>
<td>VolkerInfra</td>
<td>Contractor</td>
<td>17-03-2016</td>
</tr>
</tbody>
</table>

\(^8\) This tender manager was not available for an interview

\(^9\) No permission was given by the contractor to interview this contract manager of the client
8.2 Method for Qualitative Data Analysis

The interviews discussed in the previous paragraph, has resulted in a large set of data. This data is recorded into the transcriptions that can be found in Appendix 8: Interviews. The relevant data cannot be simply retrieved from the transcriptions, but have to be analyzed first. Since all data is qualitative, a qualitative data analysis has to be carried out.

The four cases that have been investigated have both resemblances and differences with each other. In order to formulate conclusions and recommendations about these cases, a certain amount of generalizability has to be created. For this, two types of analyses will be carried out: a within-case analysis and a cross-case analysis. The goal of a within-case analysis is to “describe, understand and explain what has happened in a single case” (Miles et al., 2014, p. 100). This analysis will be carried out for each separate case, which will result in four analyses. Next, based on these analyses of the four cases, a cross-case analysis will be carried out. The cross-case analysis is conducted to “increase generalizability or transferability to other cases and to see processes and outcomes across many cases” (Miles et al., 2014, p. 101). Despite the differences between the different cases and especially concerning their clients, this cross-case analysis will attempt to formulate general conclusions and recommendations where possible.

Since all data from this research will be gathered from a large set of transcriptions, a certain amount of comprehensibility for both the researcher and reader has to be reached. For this, a display-oriented strategy will be used in this qualitative data analysis. This strategy aims at displaying the data analysis in a comprehensible display format. There are two types of display methods: matrices and networks. Both methods “condense the major data and findings from a study to further analyze and to represent and present the conclusions” (Miles et al., 2014, p. 107). In a comparable research of De Jong (2016) with many similarities with this research, has been made use of networks. For this has been made use of coded transcriptions that are analyzed in the software tool Atlas.TI. With respect, using this method would decrease the generalizability of the results of this research and is less suitable for a cross-case comparison. Furthermore, since for this research will made use of structured transcriptions, coding is not necessary. Therefore, the use of matrices is most suitable for this research and because they facilitate a cross-case analysis better than networks.

According to Miles et al. (2014, p. 119), there are five methods for displaying and analyzing qualitative data: exploring, ordering, describing, explaining and predicting. For this research the method of describing will be used, since this corresponds to the type of research questions that are formulated for this research. This method will give “a descriptive foundation of the data that enables higher level analysis and interpretation” (Miles et al., 2014, p. 162). For this method, there are three types of descriptions: describing participants, describing variability and describing action. Miles et al. (2014, p. 162) define describing variability as “charting the spectrum and landscape of what we’re finding in the field”, and will be used for this analysis. Within this type of description, there are three types of displays: construct table, folk taxonomy and conceptually clustered matrix. This last one, is suitable for bringing together major roles, research subtopics and variables. This type of display enables you to cluster several research questions so that a general conclusion can be generated more easily. This makes it suitable for this research, since it involves research questions that have to be linked together in a comprehensible display. This enables to collect all relevant data into one surveyable scheme, that creates a clear oversight. All steps taken for determining the type of data display are schematized in the decision model in Figure 21.

![Figure 21: Decision model for data display](image-url)
8.2.1 Conceptually Clustered Matrix

As discussed in the previous paragraph, a conceptually clustered matrix will be used as the display format for the qualitative data analysis in this research. This type of matrix is according to Miles et al. (2014, p. 175) very well suited for a later cross-case analysis, since it involves a certain amount of standardization in the outline of each used matrix for the within-case analysis.

The matrix consists of columns and rows, see Figure 24. For this research, in the first column the five respondents of each case will be appointed (A, B, C, etc.). As earlier discussed, a distinction is made between clients and contractors, which makes this matrix role ordered. In the first row, a set of within-case topics are appointed (1, 2, 3, etc.). These topics, are based on the research questions that are formulated for this research and will be discussed later. As discussed, four within-case analyses are carried out for the four cases, which results in four matrices. Each matrix has the same specifications in the first rows and column, which enables the cross-case analysis at a later stage.

The cells will be filled with entries, based on the transcriptions of the interviews. Each cell will display short summary phrases from the relevant responses of that particular respondent, for that particular topic. According to Miles et al. (2014, p. 116), for the collection of these entries, can be made use of coding or search functions. The use of search functions will be made use of in this case, since the transcriptions of the interviews are already structured on different topics.

8.2.2 Row and column entries

As discussed, in the first column will be the respondents of the interviews entered. These respondents will be named by expert roles, as discussed in Paragraph 8.1. For the client, these roles are respectively: policymaker, tender advisor and contract manager. For the contractor, these roles are respectively: tender manager and contract manager.

In the first row, the within-case topics are entered. There are two types of within-case topics used. The first type of within-case topic are the variables that have already been discussed in Paragraph 6.2. As discussed, these variables are linked to the sub research questions, and are the following:

- **Objectives**: the objectives for the LIM-contract determined by the client, which are communicated towards the contractor
- **Expectations**: the expectations that the client had for the LIM-contract, which are communicated towards the contractor
- **Award Criteria**: the EMAT-criteria that the client determined for the tender of the LIM-contract, on which the contractors’ bids are evaluated
- **Weighing Factors**: the values for each EMAT-criterion that the client determined, to make a distinction of the importance between the EMAT-criteria
- **Staff Continuity**: the level of continuity of both client’s and contractor’s staff that took place before, during and after the tender of the LIM-contract

The second type of within-case topics that will be used are topics are not so much related the sub research questions, but are expected to be relevant for formulating conclusions and recommendations. These topics are related to problems and advices that the respondents will appoint. It is also expected that communication plays a role in formulating conclusions and recommendations, and will therefore be included as a within-case topic.
The second type of within-case topics that will be used, can be described as follows:
- **Communication**: the way the objectives and expectations of the client are communicated to the contractors and how they are perceived by them.
- **Problems**: any problems that arose during the tender or during the contract phase, specifically related to LIM-contracts.
- **Advice to the client**: recommendations given by both clients and contractors, towards (future) clients who are planning to tender LIM-contracts.
- **Advice to the contractor**: recommendations given by both clients and contractors, towards (future) contractors who are planning to bid for LIM-contracts.

To conclude, the within-case topics consist of the five variables and four other topics. These nine within-case topics are displayed below:

<table>
<thead>
<tr>
<th>Within-case Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variables</strong></td>
</tr>
<tr>
<td>Objectives</td>
</tr>
<tr>
<td>Expectations</td>
</tr>
<tr>
<td>Weighing Factors</td>
</tr>
<tr>
<td>Staff Continuity</td>
</tr>
</tbody>
</table>

**Figure 23: Overview of the within-case topics**

### 8.2.3 Analysis
By schematizing the collected data into a matrix, the researcher and the reader will have a much more clear oversight of the outcomes of the conducted interviews. Nevertheless, this is only the first step in the analysis. The actual analysis in order to formulate conclusion, has to be conducted based on the created matrix. Miles et al. (2014, p. 178) distinguish many tactics for formulating conclusions based on matrix displays. In the case of this type of matrix, the most important ones are:

1. **Noting relations between topics**: for each respondent, relations but also contrasts between the entries for the topics have to found.
2. **Making comparisons between the respondents**: for each topic, the entries from the different respondents have to be compared to each other to look for comparisons or contrasts.

Eventually by using both tactics, a case-specific answer to the sub research questions can be deduced. With this step, the within-case analysis is complete. This outcome of all four analyses will be used for the last step of the qualitative data analysis: the cross-case analysis. This will be discussed in the next paragraph.

### 8.2.4 Cross-case analysis
As discussed in the beginning of this paragraph, this research aims at formulating general conclusions and recommendations where possible. A cross-case analysis helps to increase the generalizability among single cases (Miles et al., 2014, p. 101). For this, two approaches can be used: *variable-oriented approach* and *case-oriented approach*. This last one “looks at configurations, associations, causes, and effects within the case and only then turns to comparative analysis of a usually limited number of cases” (Ragin, 1987). This approach is suitable for finding specific patterns for a small set of cases, but its findings often remain particularistic and less suited to generalize. This makes this approach rather suited for this specific research. This research investigated three types of governments, with each their own specific characteristics. Therefore, some conclusions drawn will be particular for that specific client. Other conclusions might be suitable for generalization for all investigated clients. From the cross-case analysis, this distinction have to be made between the general and particular conclusions.
For the cross-case analysis, a new matrix will be constructed that is called the case-ordered display (Miles & Huberman, 1994, p. 187). In this display, the main outcomes of the four within-case analyses will be condensed into one matrix. This matrix displays all four cases in the first column (A,B,C,D):
- Municipality of Haarlem
- Kap van Noord-Holland
- Rijkswaterstaat: Project A
- Rijkswaterstaat: Project B

In the first row, five cross-case topics (1,2,3,4,5) will be displayed. The cell entries will consist of a generalized outcome from the within-case analysis for each particular cross-case topic for each case. This results in the cross-case analysis format as can be seen in Figure 26. The five cross-case topics, are a result of one or more of the nine within-case topics, as can be seen in Figure 27. The cross-case topics are formulated as follows:

1. **Alignment**: in sub research question 5\(^{10}\), the question was raised whether there could be found alignment between the objectives, expectations, weighing factors and award criteria. Based on these four within-case topics, the cross-case topic alignment will be discussed.

2. **Staff Continuity**: from the separate answers about the staff continuity for each case, a general answer will be given to the question whether there was continuity in staffing for each case.

3. **Causes for problems**: in the within-case analysis, the problems that arose are discussed. To this, the problems as a result of communication, alignment and staff continuity are added, resulting in the causes for problems.

4. **Recommendations to clients**: in the within-case analysis, both clients and contractors have given advice to future clients of LIM-contracts. To this, the discussed causes for the problems are added, resulting in recommendations to clients.

5. **Recommendations to contractors**: in the within-case analysis, both clients and contractors have given advice to future contractors of LIM-contracts. To this, the discussed causes for the problems are added, resulting in recommendations to contractors.

After creating the cross-case matrix, the cross-case data can be analyzed to draw conclusions. For this, the same strategies as discussed in Paragraph 8.2.3 can be used. As discussed, a distinction have to be made between conclusions and recommendations that can be generalized for the different clients and the ones that are particular for each case.

In the next two paragraphs, the within-case analyses and the cross-case analysis will be discussed. These analyses are based on the interview transcriptions of Appendix 8: Interviews.

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\(^{10}\) Sub research question 5: Are the clients’ objectives and corresponding expectations well aligned with the award criteria, the weighing factors and the experiences of long-term integral maintenance contracts and if not, how can this be explained?
8.3 Within-case analysis
In this paragraph, four within-case analyses will be conducted based on the four investigated cases. For each within-case analysis, a within-case matrix has been created. The four within-case matrices can be found in Appendix 6: Within-case matrices and are based on the interview transcriptions in Appendix 8: Interviews. As discussed in the previous paragraph, nine within-case topics are discussed in the within-case matrix. Based on these topics that are displayed in the within-case matrices, a deeper analysis will be carried out. For each case will be discussed how the variables objectives, expectations, award criteria and weighing factors are formulated by client and approached by contractors. Next will be discussed to what extent alignment between these variables can be found, followed by a discussion of the level of staff continuity. Then, the causes for problems, recommendations to clients and recommendations to contractors will be discussed.

8.3.1 Municipality of Haarlem
Formation and approach objectives and expectations
The objectives and expectations for this contract are formulated by the administrative organization of the municipality. The main incentives for this formulation were cost savings and reduction of employees, resulting in a translation to objectives for working in direction. The expectations were formulated based on the client’s idea of collaboration with the contractor and how he should behave. During the tender, it was clear for the contractor what was meant by the client’s objectives and expectations. But, in order to write a good plan, the contractor had to find out what the idea was behind these objectives and expectations. This was essential, since some were formulated vaguely resulting in much room for interpretation. For the contractor, the link between the objectives and expectations was clear which was important for the structure of the plan. During the execution, the objectives play an increasingly active role for both the client and contractors. They are translated to contract requirements, which are audited on by the client. The expectations are concretized by contractors in the EMAT-plans, which are audited on by client. But the personal expectations of the client during the contract, play a more important role than the expectations that were published in the tender documents.

Formation and approach award criteria and weighing factors
The client formulated the award criteria as a translation of the project objectives. For the criteria, it was important that the contractors could write a measurable plan. For the client, the focus laid on collaboration and partnership, resulting in a significant higher weighing factors than the other criteria. For the contractor, the link between the objectives, expectations and award criteria was clear. This link was also included in the EMAT-plan. It was also clear where the differences in weighing factors came from, but not much difference in effort was put on the different criteria. During the execution, the award criteria do not play much of a role for the contractor. The EMAT-plan is not looked into often, but it is expected that this will be required by the client in the near future. The client confirms this: the expectations that were published in the EMAT-plan based on the award criteria have become requirements, which will be audited increasingly in the future. For both the client and contractor, the collaboration and partnership, which was weighed highest, is put most focus on. For the other criteria, not distinction is made based on the weighing factors.

Alignment
Based on the discussion of the two previous topics and the within-case matrix, the following conclusions regarding alignment can be drawn for this specific case: the client has reasonably aligned the objectives, expectations, award criteria and weighing factors for this tender. The objectives are translated to the award criteria and the highest weighing factors are based on the objectives. Indirectly, the expectations are an interpretation of the formulated objectives. For the contractor, this alignment was clear and played an important role in writing the EMAT-plan. Also in the evaluation of the bids by the client, especially the alignment between the objectives and award criteria played an important role. In the experience of the client and the contractor, the objectives and expectations and, to a lesser extent, the award criteria and weighing factors still play an active role in the execution of the contract. To conclude, medium to high alignment is found between the four aspects for this contract.
Staff continuity
At the client, a high level of staff continuity can be found. Both the policy maker and the tender advisor were actively involved in setting up the contract and other tender documents. They continued their work during the execution of the contract as advisors. The contract manager was already involved during the tender as an advisor and therefore had a good understanding of the contract and the idea behind it. At the contractor, a very limited staff continuity can be found. There was a clear separation between the tender team and the contract team. This resulted in less understanding of the contract and the client’s objectives and expectations. According to both the client and the contractor, more staff continuity at the contractor would have resulted in an increased mutual understanding and a better link between the EMAT-plan and the execution.

Causes for problems
The most important problem for this case that almost all respondent have pointed out, is the lack of (correct) available area data provided by the client. Already during the tender, both the client and the contractor have pointed out this problem. During the contract, this resulted in delays and time spent on improving this area data instead of executing maintenance. Another problem that is mentioned by multiple respondents, is the intention of the contractor to understand the client. The client has organized plenary meetings to explain their objectives and expectations, at which contractor’s did not put much effort in understanding the client’s intentions. This is confirmed by the contractor, whose tender team did not have the urge to understand the client. Also internally at the client, the lack of understanding their own intentions resulted in unwilling and incapable employees at the client. The discontinuity of that contractor’s staff did not contribute in solving this problem. Another problem that is stipulated, is the client’s augmented focus on processes instead of the actual execution of maintenance. This results in less work outside and political interference.

Recommendations to clients
The following recommendations to clients of LIM-contracts are pointed out by multiple respondents of the client: According to multiple respondents of the client, future clients should have an internal team with vision that can manage and understand LIM-contracts, but that can also brake internal resistance. It is important to have internal support first, before actually tendering such contracts. Another recommendation is to include large maintenance in the LIM-contract and not limit these contracts to daily maintenance. As mentioned earlier, clients should also be aware of the importance of complete and correct area data, and the time the transition phase will cost. Contractors recommend clients to be open about their expectations for the LIM-contract in the tender phase. Some unambiguity can be found between the respondents how this openness can be created: some prefer individual dialogue to ask specific questions, while others are afraid of disturbing the level playing field. There is consensus about the plenary meetings, which would contribute to the explanations of the client’s expectations. Another recommendation to clients is related to the limitation of required processes in LIM-contracts, and more focus on the actual maintenance outside.

Recommendations to contractors
Both clients and contractors recommend contractors that for a good EMAT-plan, the contractor’s knowledge must reach further than understanding the client’s published documents. This includes having local knowledge of the area, listening to the client’s vision and taking into account local stakeholders. This understanding can be reached by using individual dialogue to learn to know the client when possible, but also using plenary meetings and personal contact with client outside the tender. This also requires a certain incentive at the contractor to invest in understanding the client and LIM-contractors. It is also recommended that if contractors can only ask questions publically, to seize this opportunity and to have faith in their own strength instead of worrying about the competition and leaving questions unasked. It is better for both contractors and clients if questions are asked, so that better EMAT-plans can be written. A more open attitude of the client, also requires an open attitude of the contractor. The client also recommends contractors to be aware of the things that are promised in the EMAT-plan, should have a clear link with the objective of the client but should also have an achievable link with the execution. All promises that are made in the EMAT-plan, become requirements in the contract and should be executed.
8.3.2 Kop van Noord-Holland

*Formation and approach objectives and expectations*

The client’s policy objectives are a translation of the current and new provincial policy. Based on the policy objectives, the coalition agreement and objectives of the managing organization, the project objectives are formulated by the administrative organization. The expectations are an elaboration of these project objectives and are based on the expectations of several parties. These expectations are standardized for each contract. During the tender, the client expected to read in the bids how the contractor would meet the project objectives and expectations. For the contractor, the objectives and expectations were clear but non-concrete and non-measurable, resulting in much room for interpretation. The objectives are included in the EMAT-plan and expectations helped in writing the plan, but no link was found between the objectives and expectations as intended by the client. Both the client and the contractor agree on the role that objectives and expectations play during the execution of the contract: both play an active role. The objectives and expectations were concretized and made measurable in the EMAT-plan by the contractor, resulting in contract requirements. These requirements are strictly followed according to the contract and leave no room for personal preference by the client.

*Formation and approach award criteria and weighing factors*

The award criteria are based on the objectives and expectations. According to the client, the bids had to have a link between the objectives, expectations and award criteria. The weighing factors are based on the importance of each of the criteria. The interview was most important to the client, since this gave the opportunity to check whether the contractor understood what was important to the client. During the tender, the contractor did not understand where the award criteria and weighing factors came from. He could not add much value in his EMAT-plan based on these award criteria. Furthermore, the contractor could not find a link between the client’s objectives and the award criteria. For the contractor that executes the contract, the award criteria itself play no role in the execution. But, the EMAT-plan is written around these criteria in which promises are made, which have become contract requirements and are audited by the client. The answers to the interview became literally part of the contract and are also audited by the client. The weighing factors play no role in the execution, only during the tender.

*Alignment*

Based on the discussion of the two previous topics and the within-case matrix, the following conclusions regarding *alignment* can be drawn for this specific case. The client has significantly aligned the objectives, expectations, award criteria and weighing factors for this tender. The expectations are a translation of the objectives and the award criteria are a translation of the objectives and expectations. This alignment also played an important role in the evaluation of the bids, where the client wanted to see the link between the objectives, expectations and award criteria. The bidding contractor did not see this alignment that the client intended. He saw no link between the objectives and expectations and did not understand where the award criteria and weighing factors came from. He did include the objectives and expectations in his EMAT-plan. In the experience of the client and the (other) contractor, the objectives, expectations, award criteria and, to a lesser extent, the weighing factors still play an active role in the execution of the contract. To conclude, the client has aimed to reach a high alignment between the four aspects during the tender and execution of the contract. Nevertheless, this intended alignment did not reach at least one of the bidding contractors during the tender.

*Staff continuity*

The client had the intentions to reach a high level of continuity. For all contracts, the same contract team formulates the contract. The IPM-team is already involved during the tender as advisor and for the evaluation of the bids. The entire team shifts to the contract phase, which increases the

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11 This contract manager is from another contractor than the tender manager that was interviewed. This tender was won by the contractor related to the contract manager and lost by the contractor related to the tender manager.
understanding of the contract and what choice are made. This continuity adds value to the client. In practice, members of the IPM-team (Integral Project Management-team) changed during and after the tender. The tendering contractor started the tender with a team that had continued during the mobilization, if he would have won the contract. This staff continuity was important to him, because otherwise knowledge gained during the tender would have gone lost in the contract phase. It also adds value because it gives the opportunity to build a better relation with the client. The contractor that won the contract, had almost a strict separation between the tender team and the contract team. Only the project manager continued after the tender and the other IPM-roles had to be found after awarding the contract. An increased staff continuity would have added value to have a quicker start, a better preparation and a better starting relation with the client.

Causes for problems
Both clients and contractors acknowledge that this contract had much room for interpretation. For the contractors this meant that it was unclear what the client wanted, why choices are made and what the client expected of the contractor. The client stipulates that despite the room of interpretation, the contractors did not ask questions about what his intentions were. Only detailed questions were asked. Furthermore, contractors often repeated the requirements of the client in their EMAT-plans instead of delivering real added value. However, for the contractor it was unclear how to deliver this added value. An individual dialogue was used, but the contractor had not enough chance to get to know the client’s wishes. Also market consultations were used, but during these meeting all contractors were reluctant to talk openly. For this contract, much area data was not up to date or present. This resulted in indistinctness about the area for the contractors during the tender and a long transition phase of the contractor in the contract phase.

Recommendations to clients
The client recommends to future clients of LIM-contracts to use plenary meetings to explain objectives and expectations to the bidders. By using market consultations, the clients can also better understand the contractors prior to the tender. During plenary meetings with the bidders, the client should also be transparent about the available area data. After award, clients should evaluate the bid assessment with all bidders to explain their choices made. Furthermore, client should consult fellow governments on their experience with LIM-contracts and to take advantage of their experience. The contractors recommend to future clients to explain better what the client’s desires and expectations are, by being more open about this in tender documents, during individual dialogues, plenary meetings and excursions. And they should keep valuing the added value delivered in the EMAT-plans. Furthermore, they recommend to have first an internal uniformity about this, before contracts are tendered. This is acknowledged by the client, who recommends to include the internal organization in formulating the LIM-contract and require internal changes to avoid resistance within the client’s organization.

Recommendations to contractors
The client recommends to future contractors to look further than the published documents. They state that for a better understanding of the client, also understanding of the client’s organization by reading e.g. policy documents can be beneficial. But also hiring former civil servants, can make them understand the client better. Attending at market consultations is also recommended, but then they should dare to ask questions openly without being afraid of the competition. This would improve their own bid. Part of understanding the client, requires a better focus on delivering added value instead of repeating the client’s requirements. And after award, contractors should ask for feedback to improve their next bid. The contractor adds to these recommendations, that future contractors should have knowledge of the local area and people, in order to have a better understanding of the client. It is also recommended to perform small jobs in the area, to have some experience with that particular client. Next to internal uniformity at the client, also internal uniformity in the contractor’s processes is recommended. This saves time and money and creates a uniform image to the client.
8.3.3 Rijkswaterstaat: Project A

Formation and approach objectives and expectations
The project objectives are based on the wishes of the customer and client and formulated by the project team and advisor BVP. The objectives are SMART formulated and prioritized for each project specifically. The expectations are centrally determined by the BVP core-team and are uniform between the contracts of the clients. The contractors bids should have a link with the objectives and the expectations offer a helping hand to the contractor how he should act and collaborate during executing the maintenance. There is no data available about how the contractor perceives the objectives and expectations during the tender. During the execution, the objectives play a role for both the contractor and the client. The contractor uses the objectives in communicating arguments to the client, when decisions have to be made. There are also internal and additional objectives formulated in accordance with the client, to create more focus. The expectations leave some room for interpretation during the execution, and some are therefore made explicit at the start. Since this is a BVP-contract, the expectations play a more active role in determining the collaboration between the client and the contractor. But, the expectations are not continuously fallen back to.

Formation and approach award criteria and weighing factors
Normally, the award criteria are linked to the top 5 risks of the specific region. In this case, the award criteria are standardized by the BVP core-team according to the BVP methodology. In the bid evaluation, the objectives and expectations are taken into account, but are not used for the formulation of the award criteria. The weighing factors are based on fixed percentages of the ceiling price. The formation of the award criteria and weighing factors for this case, is in comparison to traditional methods, a low time consuming activity. During the execution, the interview does no longer play any role. Answers that are given in this interview have become requirements, but these are not steered on by the contractor or audited by the client. The chance dossier has been used in the beginning of the contract, but no longer plays a role. The collective risk dossier however, does play an active role for the risk management of the contractor.

Alignment
Based on the discussion of the two previous topics and the within-case matrix, the following conclusions regarding alignment can be drawn for this specific case. The client has no alignment between the objectives, expectations, award criteria and weighing factors. The objectives are specifically for each contract formulated, while the expectations are standardized with no link to the objectives. Also the award criteria and weighing factors are standardized for each contract. This is a result of using the BVP methodology for this contract. Nevertheless, the objectives and expectations do play a role in the evaluation of the bids by the clients. During the execution, the objectives and expectations still play a role for both the client and the contractor. More focus lies on the expectations with regard to collaboration between the client and contractor, due to the use of a BVP contract. Concerning the award criteria, only the risk dossier plays an active role in the execution. The interview plays no role and the chance dossier does not play a role anymore, for both the client and the contractor. The weighing factors also don’t play any role during the execution. To conclude, as a result of the use of BVP, low alignment can be found in this contract.

Staff continuity
The tender advisor who draws up the tender documents, was not involved in the bid evaluation. This evaluation is carried out by an independent team that was not actively involved in tender set-up, but did deliver input for the tender documents. Some members of the IPM-team were already involved during the tender as advisors, and continued in a complete team after awarding of the contract. Also the tender advisor is still involved in the contract phase, for any contract changes. This continuity adds value to the client, since then the IPM-team understands the origin of the contract and the idea behind BVP. The IPM-team of the client that had started the execution, has been almost entirely changed after a few years. This happened in a short period of time, resulting in discontent at the contractor, a non-sufficient handover and an IPM-team that had to learn the contract and contractor all over again. The contractor’s contract manager has been changed after almost a year, without a handover towards his replacement to choose a new course. Increased continuity by involvement
during the tender, would have added value for client and contractor and is already applied for new
tenders of LIM-contracts. This results in a better understanding of the essence of the contract and a
better start after awarding the contract.

**Causes for problems**
An important problem for both the client and the contractor of this contract was the staff
discontinuity at the client and contractor. This has caused discontent at the contractor about e.g.
discussion that had to be held all over again and the loss of time for rediscovering the contract for
both. Another problem that is considered by the client, is the lack of making use of the individual
dialogue by contractors. This resulted in missteps of contractors, because they didn’t understand the
client’s expectations. This lack of understanding also caused less differentiation between the bidders
and a decreased strength of the EMAT-criteria. In the contract phase, the EMAT-criteria also play in
this contract a limited role. Another problem that is reckoned by both client and contractor, is that in
the beginning of the contract the client thought that BVP did not require much effort and
communication with the contractor, who was supposed to be the expert. This didn’t improve the
relation between the client and contractor and these expectations had to be adjusted. A final problem
that affects both the client and the contractor, is the lack of correct and up-to-date area data.

**Recommendations to clients**
This LIM-contract was tendered through the BVP-methodology, and both client and contractor
recommend to future clients to do this as well. BVP would strengthen the role of EMAT, increases the
mutual understanding and creates the intention for collaboration. When clients use BVP, it is
recommended to focus on mutual transparency but also to make sure that the BVP-mindset is
present in the entire team. The client also recommends to make use of the opportunities to have
contact with contractors, through market consultations, individual dialogue and plenary meetings.
This helps to explain the BVP expectations of the client, to create mutual understanding and to create
distinctive bids. The client recommends to strive for staff continuity. Nevertheless, staff changes are
inevitable and can be advantageous. But, these changes should occur in steps and with good
handovers to successors. A final recommendation is given by the client: less required personnel for
clients is an advantageous result of LIM-contracts, but should not be the reason to outsource all
maintenance to the private sector.

**Recommendations to contractors**
Both the client’s and contractor’s recommendations to future contractors, are related to the
understanding of the client. They recommend to make use of individual dialogue where possible, in
order create better bids and to understand how the client thinks and works. During these dialogues,
the contractor should not ask general question that can be asked plenary. They should ask specific
questions and questions outside the project to get to know the client. Another recommendation for a
better understanding of the client is to walk along with the client (or the client with the contractor),
to see with their own eyes how a client works. This will result in that both parties better respect and
understand each other’s interests and understand how they work and are organized. More
transparency, also results in an increased mutual trust. The client recommends that future
contractors are aware of the integrality of disciplines for LIM-contracts. This integrality requires
contractors to look for combination partners, to be able to execute maintenance for all disciplines.
Finally, the contractor also recommends other contractors to get involved already during the tender,
to have a good start after awarding of the contract.
8.3.4 Rijkswaterstaat: Project B

Formation and approach objectives and expectations
The policy objectives are formulated by the client, which are based on agreements with the ministry of I&M. Some project objectives are standard for all contracts and others are district specifically determined. These objectives are concretized for each project. The expectations are centrally formulated and standardized in a model contract, which are used for each project. The objectives are used in the evaluation of the bids during the tender, but the expectations play almost no role in the evaluation by the client. This is often a result of the time pressure during the bid evaluation and because the expectations are always the same. The expectations are supposed to give a framework towards the bidders. This is acknowledged by the contractors, who did not pay much attention to the expectations and objectives, due to time pressure and because they were the same as any tender. It did give the contractor a framework for the EMAT-plan, but it remained an interpretation of their meaning. According to the contractor, the objectives were also standardized and centrally formulated and therefore played no role during the tender. During the contract phase, the objectives are applied in the context of the execution. Because the objectives were generally formulated, they were further specified to put more focus on the interests of the client and contractor. The expectations gave directions to the contractor during execution, but were rather umbrella terms.

Formation and approach award criteria and weighing factors
The award criteria and weighing factors are determined by the contract team in a set of sessions, based on the regional interpretation of the top 5 risks. For the award criteria, central approval is required to check whether added value can be delivered by the bidders. This is not the case for the weighing factors. For determining the award criteria is looked at the objectives, to create a clear link. For determining the weighing factors is also looked at policy objectives and current trends. The contractor had to use individual dialogues to understand the origin and meaning of the award criteria. How the evaluator of the client thinks and scores, was more important than the exact meaning of the criteria. There could be found some links between the objectives and the award criteria. During the execution, the contractor was not aware of the content of the award criteria. The EMAT-plans were transferred to requirements which are audited by the client and contractor. The weighing factors play no role to the client and contractor during the execution.

Alignment
Based on the discussion of the two previous topics and the within-case matrix, the following conclusions regarding alignment can be drawn for this specific case. The client has limited alignment between the objectives, expectations, award criteria and weighing factors. Most objectives are specifically for each contract formulated, while the expectations are standardized with no link to the objectives. The award criteria and weighing factors are specifically formulated for the contract, and do have a link with the project and policy objectives. During the tender, the objectives and expectations almost played no role for the client. The contractor could find some links between the award criteria and objectives, but the objectives and expectations played almost no role during the tender. According to the experience of the contractor, the objectives and experiences play a small role during the execution. Nevertheless, both are formulated in a general way, which required a concretization in order to apply them. The award criteria play no role during the execution, but have a link to the EMAT-plans which are audited. As a result of limited links between the objectives, expectations, award criteria and weighing factor and the small role that these play both during the tender and contract phase, can be concluded that medium alignment can be found in this contract.

Staff continuity
The tender advisor formulated with his team the contract, and was also part of the bid evaluation. After awarding of the contract, the tender advisor stopped and was taken over by the contract manager. In this contract, the contract manager was not involved during the tender because this often results in conflict of opinions between the contract and the execution. This results in that the tender advisor understands the history of the contract, but this knowledge stops after awarding the contract. Increased staff continuity would maintain the contract knowledge in the contract phase or at least create a better handover. At the contractor, the tender manager continued for one year after
the awarding the contract in the role of contract manager due to a lack of a replacement. Then he was replaced by the current contract manager. Other team members were also both involved during the tender and contract phase. This continuity adds value. Staff changes should be possible, but overlap and good handovers are important. The contractor also saw continuity at client, at which the IPM team that was involved during the tender, continued in the contract phase. This also added value to the contractor.

*Causes for problems*
An important problem for both client and contractor in this contract, was the lack of up-to-date area data. For the client during the tender, this resulted in losing credibility towards the bidders. During the construction, the lack of correct area data resulted in discussions between the client and contractor. During the tender, individual dialogues and plenary meetings were held. For the contractor, these moments were too short to learn to understand the client. According to the client and the contractor, during the plenary meetings the contractors were reluctant to talk openly. Furthermore, the standard objectives and expectations did not trigger the contractor to think further, and left too much space for own interpretations.

*Recommendations to clients*
The client recommends to future clients to focus more on the dialogue with contractors. They recommend the use of individual dialogue, market consultations, but also competitive dialogue. This way client and contractor can understand each other better, make use of each other’s knowledge and to explain documents and wishes. These recommendations are confirmed by the contractor. The use of BVP is recommended by the client, in order to make better use of EMAT. The contractor recommends the client to increase the importance of the objectives during the tender. He also recommends to put not too much focus on the process, but more on the maintenance outside. Both the client and the contractor recommend to include a base level of area data in the contract.

*Recommendations to contractors*
The client recommends to future contractors, that they should behave more pro-actively during tenders. By showing their interest in the project and the client, the client will have the feeling that he wants to know the situation. They can also show their interest by walking along with the client and by asking questions outside the project. The contractor recommends to future contractors that they understand their client, instead of depending on vague objectives and expectations in the published documents. When writing the EMAT-plan, everything should be written down as SMART as possible in order to create a complete understanding for the client. But, the promises should not be made too concrete which makes it difficult to verify during the contract phase. Furthermore, in the EMAT-plan should be made a clear distinction between the requirements and the added value that wants to be delivered.
8.4 Cross-case analysis

In the previous paragraph, four within-case analyses have been carried out. As discussed in Paragraph 8.2.4, based on these analyses a cross-case analysis will be carried out. For this, a cross-case matrix have been composed (see below). In this matrix, all four cases are compared to the five cross-case topics as discussed.

<table>
<thead>
<tr>
<th>Case</th>
<th>Alignment</th>
<th>Staff Continuity</th>
<th>Causes for Problems</th>
<th>Recommendations to Clients</th>
<th>Recommendations to Contractors</th>
</tr>
</thead>
</table>
| Municipality of Haarlem | Medium to high alignment | High staff continuity at client, low staff continuity at contractor | - Lack of correct and up-to-date area data  
- Low intention of contractors to understand the client’s objectives and expectations  
- Lack of internal understanding at client  
- Too much focus on processes instead of work outside  
- Staff discontinuity at contractor | - Internal team with vision for LIM-contract  
- Be aware of importance area data  
- Be open about expectations for LIM-contract  
- Use individual dialogue or plenary meetings  
- Limit processes and focus on maintenance | - Look further than published documents, in order to understand client’s objectives and expectations  
- Invest in understanding client (e.g. time or money)  
- Seize opportunity for plenary questions and have faith in own strength: create an open attitude  
- Create links between promises, client’s objectives and execution |
| Kop van Noord-Holland  | High alignment | Medium to high staff continuity at client, low staff continuity at contractor | - Unclear for contractors what client wanted  
- Contractor didn’t ask about client’s intention  
- Repetition of requirements in EMAT-plans  
- Contractors reluctant to talk openly  
- Lack of correct and up-to-date area data  
- Contractor could not find the alignment during the tender | - Be transparent about the available area data  
- Use plenary meetings, individual dialogues and market consultations to explain objectives, expectations and documents to bidders  
- Evaluate bid assessment with all bidders  
- Create internal uniformity for LIM-contracts  
- Consult fellow governments on their experience with LIM | - Look further than published documents, also understand the client’s organization  
- Dare to ask questions openly in plenary meetings  
- Focus on added value, not on requirements  
- Have knowledge of local area, people and client  
- Create uniformity in internal processes |
| Rijkswaterstaat: Project A | Low alignment | Medium staff continuity at client, medium to high staff continuity at contractor | - Staff discontinuity at the client and contractor  
- Lack of making use of individual dialogues by contractor: no understanding of client  
- Award criteria played limited role in execution  
- Wrong use of BVP in communication  
- Lack of correct and up-to-date area data | - Use BVP for future tenders of LIM-contracts  
- Focus on mutual transparency and BVP mindset  
- Use plenary meetings, individual dialogues and market consultations to explain BVP expectations  
- Strive for staff continuity and good handovers  
- Personnel savings should not be reason for LIM | - Make use of individual dialogue to understand client. Then ask specific questions, also outside the project  
- Walk along with client (and other way around) to see how the client works: understanding of organization and interests  
- Be aware of the integrity of LIM-contracts  
- Get involved during tender, for a good project start |
| Rijkswaterstaat: Project B | Medium alignment | Medium staff continuity at client, medium to high staff continuity at contractor | - Lack of correct and up-to-date area data  
- Individual dialogues too short to understand client  
- During plenary meetings, contractors were reluctant to talk openly  
- Standard objectives and expectations did not trigger contractor to think further | - Use individual dialogue, market consultations, and competitive dialogue for better mutual understanding  
- Use BVP to make better use of EMAT  
- Increase importance of objectives during the tender  
- Limit focus on processes and focus on maintenance  
- Include a base level of area data in the contract | - Behave more pro-actively during tenders  
- Show interest in client: visit the area and ask questions outside the project  
- Understand client, instead of depending on published documents  
- Create SMART EMAT-plans, but not too concrete  
- Distinction between requirements and added value |
The goal of the cross-case analysis, is to increase the generalizability of the outcomes of this research. With use of the cross-case matrix and the four within-case matrices, is aimed to draw conclusions that transcend the specific conclusions for each case and that are applicable to at least all investigated cases. Therefore, in the next paragraphs are solely general conclusions discussed that transcend the four cases.

8.4.1 Alignment

From the cross-case matrix, a clear distinction can be found concerning the alignment between the three different types of clients. Both the municipality and province score medium to high on alignment, while Rijkswaterstaat scores low to medium. A potential reason for this could be the fact that Rijkswaterstaat lies many years ahead of the municipalities and provinces concerning tendering of LIM-contracts. Multiple LIM-contracts are annually tendered by Rijkswaterstaat, leading to high transaction costs. Standardization in tender documents and contracts contributes to limiting these costs in the tender phase. Then, the members of the contract team only have to “fill in the blanks”. Despite this reduction in transaction costs, the standardization has its impact on the alignment during the tender. While some topics such as the expectations are standard for each contract, objectives and award criteria are still specifically determined for each contract. Furthermore, with the rise of the use of BVP for LIM-tenders, also the award criteria and weighing factors are being standardized. This results in an increased independency between the objectives, expectations and award criteria and thus a decreased alignment between these factors.

The fact that municipalities and provinces score higher on alignment than Rijkswaterstaat, is probably the result of the fact that the LIM-contracts are new to these clients. Determining the objectives, expectations, award criteria and weighing factors for the LIM-contracts, turned out to be an important process in setting up the contracts. Much time was spent on their formulation and involved large parts of the organization. Both clients were also focusing on guarding the alignment, both in formulating the tender documents, evaluating the bids and also in managing the contract. Concerning this last aspect, in the contract phase a significant difference can be found between Rijkswaterstaat and the other clients. Both client and contractors at RWS contracts acknowledge the limited roles of the objectives, expectations and award criteria during the contract phase. At the municipal and provincial contract, this role is significantly larger. Potentially, this could be the result of the earlier discussed standardization but also the result of the success of the contract. Both investigated RWS contracts were heading to the contract end, with not much financial success to the contractors. As a result, the focus point of the contractor is probably not on the client’s objectives, etc., but more on making the contract profitable. When contracts are not going as planned, the client will also focus more on “crisis management” than on the contract management that guards the objectives, expectations and award criteria of the client.

Despite the intentions that a client can have for a proper alignment, the alignment will only work once this also reaches the bidders. When a client understand and sees the links between the objectives, expectations and award criteria, does not necessarily mean that the bidders see these links as well. That was the case for the tender of Kop van Noord-Holland. This causes mutual annoyance: a client can be annoyed because he doesn’t see his intended alignment back in the contractors’ bids and the contractor can be annoyed because he does not understand the client’s intentions for alignment. Therefore, a high alignment is not always the key to success if the contractor does not see or understand this alignment.

Looking further into the future, when municipalities and provinces decide to increase the number of LIM-contracts that are being tendered, they can also decide to standardize e.g. their expectations or award criteria similar to RWS. This would decrease the transaction costs and this uniformity is also suggested by one of the contractors. But, as mentioned for RWS, this standardization could also result in a decrease in alignment between the objectives, expectations and award criteria for municipalities and provinces. This could result in a decrease in the intended alignment and could result in less understanding of the alignment by the bidders.
8.4.2 Staff continuity
Concerning the staff continuity, it becomes clearly from the cross-case matrix that clients have a higher focus on staff continuity than contractors. Only one contractor scores high on staff continuity, and according to the interviews this only had to do with the fact that the tender manager had to continue as contract manager due to a lack of a replacement. For the other contracts, a more strict separation was present between the staff in the tender phase and the staff in the contract phase. For the clients, this separation was much less present and more continuity and overlap was intended and used between the two phases. A possible reason for this difference between clients and contractors, is that clients know for certain that they will be involved during both the tender and contract phase. But, contractors are never certain to be involved in both phases. This depends on whether they are being awarded with the contract or not. As a result, they are not organizing a team for the contract phase yet, until they know for certain that they have won the contract.

Both clients and contractors of all contracts acknowledge the added value that staff continuity brings: e.g. it sustains the clients vision in the tender phase better in the contract phase, it results in a better contract start and understanding of the contract by the contractor and it results in a better start of the relation between the client and the contractor. But, not all respondents necessarily aim for a continuity of the staff between the tender phase and contract phase. According to them, not all tender managers are suitable as a contract manager. Therefore, a good overlap between these two roles could be sometimes better than integrating these roles for one person.

Next to a staff continuity that adds value, it turns out that contracts where staff discontinuity took place, this also caused problems in these contracts. The problems are related to a slow and unprepared start by the contractor in the contract phase when a new team starts after the tender, unawareness about the clients vision of LIM during the contract phase, promises in the EMAT-plans that were not achievable in the contract phase, and loss of time by the client in order to re-read all documents after team changes. Next to these problems that the party affected who had a staff discontinuity, also his counterpart (client or contractor) was affected by this discontinuity. Both clients and contractors appointed the discontinuity of their counterpart as inconvenient, and sometimes caused misunderstandings and worsen relationships. Contracts where the staff continuity was higher, these problems occurred less.

8.4.3 Causes for problems
Four different causes for problems can be identified from the cross-case matrix, that will be discussed separately.

Lack of alignment
Earlier, the alignment in objectives, expectations, award criteria and weighing factors and the role they play in the contract phase for the investigated cases have been discussed. It has been concluded that there are differences between the level of alignment that have been reached between the investigated clients. These differences are partly related to the level of standardization the client uses in his tender documents. When looking for relations between the level of alignment and causes for problems, the following can be noticed. For the tender Kop van Noord-Holland with a high level of alignment, but with no understanding about this alignment by the bidders, the level of understanding of the client is also limited according to the bidders. Not understanding the client, could be related to not understanding where for example the client’s objectives and award criteria came from and how they are aligned. This could also be linked to low scores that bidders received for that specific tender, see Appendix 9: Scoring table Kop van Noord-Holland. For the tender of the municipality of Haarlem with a high level of alignment, with also understanding about this alignment by the bidders, the level of understanding the client is also higher. One of the bidders claimed to understand the client and the alignment, which can be supported by the high EMAT-scores he received. The two Rijkswaterstaat contracts that have been investigated, had a low to medium alignment. Already has been mentioned that this was related to standardization. And it also caused problems in the tender, since both the client and the contractor did not put much effort in understanding the objectives and expectations, since they were standard and not unique for LIM-contracts. As a result, not much attention was paid
to them by both the client and the contractor. Thus, due to standardization, limited alignment is reached, which results in that clients and contractor don’t put their focus on the objectives and expectations during the tender. As a result, also during the contract phase the objectives and expectations play a limited role. Even the award criteria play a very limited role in the contract phase. This is remarkable, since the basis of EMAT tenders is that bidders are evaluated on award criteria and their interpretation in the EMAT-plans.

To conclude, a low alignment or an alignment that does not reach the bidders, causes problems for the bidders in the understanding of the client during the tender. It also causes the limited role that the objectives, expectations and award criteria play in the contract phase. Based on the investigated cases, it can be deduced that there is some relation between the level to which objectives, expectations, award criteria and weighing factors are linked together, the level to which bidders understand these links, and the level to which bidders are able to write a successful EMAT-plan. From the cases can also be deduced that there is some relation between a low alignment during the tender, and the small role of the objectives, expectations and award criteria during the contract phase. Based on the investigated cases, it can be deduced that contracts with a higher staff continuity of the client, also had a higher level of alignment. Presumably this relation can be explained as followed: a client’s contract (IPM) team that was already involved during the tender phase, were more engaged with the importance of the objectives, expectations and award criteria than contract teams that became involved after the tender phase. These teams received the contract in the contract phase and were probably not fully aware of why certain choices were made during the tender. Therefore, the engagement with the objectives, expectations, etc. was probably less than when they would have been already involved in formulating the objectives, etc. Despite this probable relation, it cannot be stated without a doubt that small role that the award criteria, etc. play during the contract phase is directly related to staff discontinuity. As mentioned earlier, both contracts with a low staff continuity were both contracts that were not very successful. This could also explain why more staff changes took place than with the other contracts that were investigated.

Lack of staff continuity
In the previous paragraph have already been discussed that contracts where staff discontinuity took place, have caused problems for both the client and the contractor. Problems that were mentioned in the investigated cases are for example unpreparedness of the contractor at the start of the contract, unawareness of the client’s vision of LIM during the contract phase, promises in the EMAT-plans that were not achievable in the contract phase, and loss of time by the client in order to re-read all documents after team changes. When looking at the within-case and cross-case matrices, some relations can be found between the level of staff continuity and the level of alignment for the different cases.

For the investigated cases can deduced that contracts with a higher staff continuity of the client, also had a higher level of alignment. Presumably this relation can be explained as followed: a client’s contract (IPM) team that was already involved during the tender phase, were more engaged with the importance of the objectives, expectations and award criteria than contract teams that became involved after the tender phase. These teams received the contract in the contract phase and were probably not fully aware of why certain choices were made during the tender. Therefore, the engagement with the objectives, expectations, etc. was probably less than when they would have been already involved in formulating the objectives, etc. Despite this probable relation, it cannot be stated without a doubt that small role that the award criteria, etc. play during the contract phase is directly related to staff discontinuity. As mentioned earlier, both contracts with a low staff continuity were both contracts that were not very successful. This could also explain why more staff changes took place than with the other contracts that were investigated.

Lack of completeness and correctness of area data
One of the most mentioned causes for problems that affected all investigated contracts, was the lack of correct and up-to-date area data. During the tenders, this caused indistinctness at contractors about the scope of the contract, which made it more difficult to write a complete EMAT-plan with a conforming calculation. Furthermore, the lack of data about the quantity and quality of the assets in the area, resulted in miscalculations for the budget of the client. In the contract phase, the lack of area data caused many discussions between the client and contractor: e.g. discussions about the exact scope determination, the length of the transition phase and the costs of updating the area data. The allocation of risks and responsibilities of the completeness and correctness of the area date, causes discontent at both the clients and the contractors.

The fact that the lack of area data causes problems for all contracts regardless of the type client, presumably makes this problem inherent to the difficulties of LIM-contracts. The result of LIM-contracts is that one contractor is responsible for a large amount of maintenance, for a large area, for a long period of time. This also requires a large amount of correct area data, which absence strikes more the attention than when small contracts lack correct area data. The investigated LIM-contracts
underline the importance of correct area data for client and contractors, and probably make this importance more visible. As mentioned by several clients, the importance of area data has been neglected by the political organization for years. Updating area data does not create direct visibility to the users, where for example a new bridge does create this. Therefore, not as much has been invested in updating area data as required for LIM-contracts.

**Lack of possibilities and willingness to understand the client**

A second cause for problems that is mentioned throughout the investigated contracts, is the lack of understanding of the client in the tender phase. Understanding the client means in this case, understanding his problem, desires, wishes, vision, interests, motives, etc. related to the LIM-contract. The contractors from the investigated contracts collectively acknowledge that understanding the client is essential in writing a good EMAT-plan. But, they also state that a good plan could not be written based on only the published documents\(^\text{12}\) that were accessible to the bidders. Bidders needed more than a list of objectives, expectations and award criteria in order to understand what the client wanted to see in the EMAT-plans and in the contract phase. They needed the reasons why for example the award criteria were formulated the way they were. In other words, they needed to know the “questions behind the question”. Because bidders did not fully understand the client solely based on the communicated documents, they needed additional intelligence to reach this full understanding.

Different ways have been used in the investigated tenders, to receive this additional intelligence. Some were initiated by the client, such as individual dialogues, market consultations, plenary meetings and notes of intelligence\(^\text{13}\). Others were initiated by the bidders, such as investigating the type of bid evaluators, reading policy documents, talking to the client outside the official meetings and using experiences with the client. Regardless of these different methods of receiving intelligence, bidders still sometimes lack the intelligence to fully understand the client and to add value in the EMAT-plans. The tender of Kop van Noord-Holland lacked the understanding of the client by the bidders, which resulted in low EMAT-scoring by almost all bidders. Three out of five bidders could not add any value and only one out of five bidders was able to add value on more than one award criteria, see Appendix 9: Scoring table Kop van Noord-Holland. Even though both the client and contractor made use of some of the earlier mentioned methods to send and receive additional intelligence, still no significant added value could be reached by the bidders. This example illustrates the effect of lack of understanding the client and the importance of proper intelligence in order to understand the client.

The lack of distinctness in the tender documents about what the client was looking for and the lack of opportunities for contractors to receive proper intelligence in order to understand the client, results in insecurity at the bidders about how to write an EMAT-plan that adds value. Nevertheless, the investigated cases proved that different ways have been used by both clients and contractor to send and receive additional intelligence. Despite the use of ways to communicate their objectives and expectations towards the bidders, clients state that the bidders are not willing enough to find the “question behind the question”. According to them, they don’t ask the right questions and they don’t have the tendency to learn from their own mistakes. They don’t make proper use of plenary meetings, individual dialogues and bid evaluations and are not willing to talk openly during these meetings. Bidders are afraid of asking questions in plenary meetings and through notes of intelligence, because of the fear that their competitors will use the answers to their questions as well. As a result, they have the opportunity to receive the intelligence to understand the client, but are not optimally making use of this opportunity.

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\(^{12}\) In Dutch: Selectieleidraad, Inschrijvingsleidraad and Vraagspecificatie

\(^{13}\) In Dutch: Nota van Inlichtingen
8.4.4 Recommendations to clients

From the cross-case matrix, the following recommendations to clients can be deduced:

Organize more contact moments with the contractors

As discussed in the previous paragraph, bidders are having trouble to understand the client purely based on the published documents. Both the client and contractors use different ways to send and receive additional intelligence for a better understanding of what the client is looking for. Nevertheless, contractors recommend clients to have increased opportunities to learn to understand this client. From the cross-case matrix can be deduced that contractors wish to have more contact with the client before and during the tender. Clients are open to this recommendation and most clients also recommend this to other clients as well. Most contractors prefer the individual dialogue, because this gives them the opportunity to talk in private with the client without having the competition to be taken into account. Nevertheless, contractors also recommend to clients to use contact moments where all bidders are involved, such as plenary meetings where the client can explain the project and his objectives and expectations to the bidders. Market consultations prior to the tender phase are also recommended by both clients and contractors, because this gives both the client the opportunity to consult the market about potential LIM-contracts and it gives the bidders the opportunity to learn to understand the client prior to the tender. It is also recommended to look for opportunities to walk along with each other, to understand the other’s organization and interests. This can be done by for instance job rotation at each other, but an easier way is to organize role playing days at an external location. For a further explanation about the possible contact moments with the contractor, see Appendix 7: Elaboration on contact moments with contractors.

A final recommendation for clients concerning contact moment, is to organize contact moments with fellow municipalities and provinces about LIM as well. This way, clients are not independently looking for their own solutions to their problems, but make use of each other’s experience with LIM-contracts. Clients can use the positive experiences of other clients and learn lessons from their negative experiences.

Be transparent about the available area data

As discussed in the previous paragraph, the lack of correct and up-to-date area data in both the tender and contract phase, causes problems for the clients and the contractors. All clients of the investigated cases acknowledge this problem, but are limited to the financial budgets to solve this problem. They think that most local, regional and national governments have the same trouble with the area data. And they are aware that area data is not going to update itself as long as there is no money available. Therefore, this problem will keep existing according to them. But, they recommend to other clients to acknowledge the importance of area data and to be aware of the effects of lack of area data. Furthermore, they recommend clients to be transparent to the bidders about the available and unavailable area data during the tender. It can be questioned whether it will help bidders if the complete area data is available during the tender. This could result in an abundance of information to the bidders, resulting that they could lose their overview of the contract during the tender. Therefore, contractors recommend to clients to have at least a certain base level of area data. Strategic decisions should be made what must be included in this base level, based on the risks of absence of certain data.

Strive for staff continuity

Especially the cases where staff discontinuity at the client has caused problems, are recommendations formulated concerning staff continuity. Both the clients and the contractors recommend to clients to strive for staff continuity, but are aware that this is not always possible due to inevitable staff changes. Nevertheless, they recommend clients to have an early involvement of the IPM team already in the tender phase to advise the contract team about the formulation of the contract. This way, they can deliver input that can help them in the contract phase. This overlap between the staff of the tender phase and the contract phase is recommended to make sure that the

14 For example, missing data about the exact technical composition of a lamppost in the area has less risk than missing data about the quantity of bridges in the area.
IPM team understands and agrees with what the tender team has decided. It is inevitable that some staff changes occur during the contract phase. But it is recommended to let these changes happen stepwise and not to change the entire staff all at once. If some members of the clients staff changes, it is recommended to have a certain overlap between the staff members and to avoid changes between critical phases (tender phase–contract phase).

**Strive for alignment**

The two cases of Haarlem and Kop van Noord-Holland have shown the focus on alignment that the clients had, and the effect that this had on the contractors. Both had an intended alignment between the objectives, expectations, etc., but only at the case of Haarlem did this alignment reach the bidders. Clients are recommended to base their award criteria and weighing factors on their objectives and expectations, in such a way that also the bidders understand this alignment. This way, they understand where for example the award criteria come from, which results in better substantiated EMAT-plans. It is recommended to avoid an independency between the objectives, expectations, etc. in order to avoid that bidders skip these aspects and directly look at the requirements. Furthermore, it is recommended to make sure that the alignment, continues in the contract phase in such a way that that the objectives, expectations and especially the award criteria play an active role. After all, the EMAT-plans are written and evaluated around the award criteria and should remain their strength during the contract phase. Otherwise, if the award criteria don’t play much of a role during the contract phase, the arguments of awarding the LIM-contract to a contractor based on his EMAT-plan lose their credibility.

To conclude, it is recommended to keep striving for this alignment, to make sure this alignment reaches the bidders, and to continue the alignment in the contract phase.

**Limit focus on processes**

One of the characteristics of LIM-contracts is that bidders cannot build their plans around one specific asset with one specific type of activities. For the LIM-contract, the contractor has to maintain a large set of assets, for a large area, with different types of activities, for a long period of time. As a result, the EMAT-plans have to be formulated around the contractor’s processes of for example risk management, hindrance, cooperation, etc. These processes are formulated in the EMAT-plans for the tender, and are transferred to the contract phase. During the contract phase, the contractors are supposed to execute the maintenance as they promised in their plans. But due to the large amount of process requirements that the contractor have to abide to, he can put less effort on maintenance outside. This affects the contractor, whose staff spends more time on processes than on maintenance. And this affects the client, who is being addressed by the political organization that doesn’t see any contractors outside executing maintenance. Therefore, both clients and contractors recommend to clients to limit the focus on the processes in the contract phase and to keep focusing on the maintenance.

**8.4.5 Recommendations to contractors**

From the cross-case matrix, the following recommendations to contractors can be deduced:

**Focus on understanding the client**

As discussed earlier, one of the main problems for tenders of LIM-contracts is the lack of understanding of the client by the contractors. Both clients and contractors recommend to future contractors to create more focus on understanding the client, already in the tender phase. One of the main recommendations concerning this, is to look further than the published documents. Clients publish a collection of tender documents during the tender, that all become part of the eventual contract. But, it is recommended not the purely base an EMAT-plan on these documents. For a full understanding of the client, contractors should also focus on the interests, ambitions, values and motives of the client. These cannot be found in the published documents and bidders should invest in retrieving this intelligence. For this, different methods have been recommended. Contractors are for example recommended to create experience with the local area, the local people and the client, by executing other contracts in that area for that specific area. Then, a contractor better understands his
stakeholders and he better understands how the client works. Furthermore, because of earlier contract the client already knows this contractor, which helps to start a successful collaboration after a new tender. And even if the contractor did not have the opportunity the gain experience by doing other contracts in that area, he can still visit the area and the client to create more insight into the project.

Another method to have a better understanding of the client, is to accompany the client in one of his daily tasks for one or more days (outside the tender). This way, the contractor can understand what interests the client has to serve and how he works. This can also happen the other way around, where the client accompanies the contractor for a few days to learn how he works. This creates mutual respect of each other’s interests. Another recommendation that is given to improve the understanding of the client, is to look at other documents than the tender documents. When reading for instance coalition agreements, organization charts and minutes of meetings, the contractor can reach a better understanding how the client is organized and where he will focus on in the future.

Make use of contact moments with client
Earlier have been recommended to clients to organize more contact moments with bidders before and during tenders. But, it has also been recommended to contractors to make better use of these contact moments. If bidders have the opportunity to attend to an individual dialogue, they should ask specific questions that are relevant to ask individually. They should not ask general questions that can also be asked publically and that can therefore be asked through the notes of intelligence. During the individual dialogue, contractors are recommended to also ask questions non-related to the tender. These questions can for example relate to earlier contracts that the clients had tendered or the development of the idea to use LIM-contracts. This way, contractors can better understand the client and they also show their interest in the client outside the project.

If contractors have the opportunity to attend to an bid evaluation with the client, whether they won the tender or not, they are recommended to make us of this. This way, they learn what they did right or wrong in the tender, which they can use for future tenders. The client can also learn from the contractor’s feedback during these evaluations.

As discussed earlier, when contractors are attending at plenary meetings such as market consultations and start-up presentations, they tend to be reluctant to talk openly and to ask specific questions. This reluctance is a result of the fear that their competitions will also use this intelligence. It is recommended to contractors to have more faith in their own strength, by asking plenary questions to the client if anything is unclear or more intelligence is needed. This could increase the quality of the eventual bids, which is beneficial for both the contractor and the client. And even though other contractors could hear answers to these questions too, it is more important to create more clarity than to collectively remain unaware about the clients objectives and expectations. An open attitude of contractors towards the client is recommended, and could result in better bids and better collaboration with the client.

For a further explanation what contact moments are possible to attend to by contractors, see Appendix 7: Elaboration on contact moments with contractors.

Strive for staff continuity
As discussed earlier, most contractors had a clear separation between the tender team and the executing team. Both clients and contractors recommend to future contractors to create more continuity between these both teams. According to them, the tender team does not have to be transferred completely towards the contract phase. This would not always beneficial, because for example a successful tender manager is not necessarily a successful project manager. But they do recommend that the members of the executing team are already involved during the tender, to advice the tender team on how to write a successful bid. This would improve the quality of the bids, because they can use their practical experience in the plan. Furthermore, the executing team is already during the tender informed about what the client is looking for and what promises are made in the EMAT-plan. This will result in a better start of the contract after the tender, since the executing
team does not have to learn the project from the beginning. Furthermore, an increase staff continuity will also help in achieving another recommendation that was given. It has been recommended that contractor have a good consideration when writing an EMAT-plan, about the achievability of the promises made. By including members of the executing the team during the tender, they can safeguard this achievability.

Create alignment in the EMAT-plan

As discussed earlier, in some investigated tenders the lack of alignment between the objectives, expectations, award criteria and weighing factors of the client has caused problems for contractors in understanding the client. Nevertheless, in other investigated tenders the client did put his emphasis on the alignment. And these clients and the contractors recommend to future contractors to focus on this alignment in their EMAT-plans. They should look for links between the objectives, the expectations and the award criteria and include these links in their plans. It is also recommended if a bidders makes a promise that helps reaching a certain objective of the client, to refer to this objective explicitly. This makes it much easier for the client’s bid evaluators to see whether the bidders incorporate the client objectives and expectations in their plans. By looking for alignment and incorporating this alignment in the EMAT-plan, the contractor shows that he understands the client’s reasoning which also increases the quality of his bid.

An additional recommendation to contractors given by clients and contractors, is to create a clear distinction in meeting with requirements and adding value to the client. During tenders of LIM-contracts, the clients sets technical and process requirements to the contractor. For an admissible bid, the contractor should meet with all requirements. Therefore, it is recommended not to incorporate all these requirements in the contractor’s bid, because this won’t add any value. According to some, contractors should shortly describe in their EMAT-plan that they will meet with the requirements and then start describing how they will add value. In the end, the bidders receive their EMAT-scoring based on the added value that they can deliver based on the award criteria and not based on the level to which is met with the requirements.
Part FOUR: ADVICE
9 Conclusion and Recommendations

This chapter will discuss the conclusion and recommendations of this research. In the first paragraph, next to the conclusion, also the answer to the main research question is included. Next, the recommendations to municipalities and provinces and recommendations to contractors will be discussed. Subsequently, the lessons that are learned from the Rijkswaterstaat cases will be discussed.

9.1 Conclusion

This research has focused on improving tenders of LIM-contracts for municipalities and provinces in The Netherlands. The following main research question has been formulated for this research:

Main research question

What are the causes for the difficulties that both clients and contractors are facing in the formation and approach of EMAT tenders for long-term integral maintenance contracts for public space and how can these causes be reduced?

In order to answer this main research question, a set of sub research questions have been formulated. The answers to the sub research questions will be discussed separately.

Answer to sub research questions 1, 2 & 3

By sub research questions 1, 2 and 3 is investigated how the clients’ objectives, expectations, award criteria and weighing factors are formulated and what processes take place in this formulation. Furthermore is investigated how these objectives, expectations, award criteria and weighing factors are perceived by the contractors.

Concerning the investigated municipality and province, the decision to outsource LIM-contracts to the private sector is mostly driven firstly by overdue maintenance and secondly by less available employees and money for management and maintenance. Investigating the possibilities for the use of LIM-contracts is carried out by the administrative organization. This organization formulates the objectives for the LIM-contract, independently from the political organization. These project objectives are based on, or translated from the policy objectives and coalition or board agreements. In case of Rijkswaterstaat, the project objectives are mostly centrally formulated without any involvement of the political or administrative organization. For all investigated clients, the expectations are formulated as a concretization of the objectives. The expectations are often related to how the contractor should behave and collaborate during the contract phase. The award criteria are formulated by the client’s tender team and are based on the objectives and partly on the expectations of the client. Sometimes, an external (political) objective results in an award criterion as well. The weighing factors are based on the prioritization of the award criteria, in which the main focus of the client for the contract is essential.

The objectives and expectations are for contractors during the tender important indication of the desires, visions, ambitions and interests of the client. If they are understood by the contractor, they are actively examined and play an important role in the EMAT-plan. But, if the objectives and expectations are standardized or unclear to the contractor, contractors do not put much effort in understanding them. This results in that these objectives and expectations do not play an active role in the EMAT-plan.

The award criteria are used by the contractors as chapters in their EMAT-plan, and to which the entire plan is built around. The level of understanding the award criteria and where they are based upon, is for contractors essential in the ability to add value in the EMAT-plan. The different weighing factors do not play much of a role for the contractors, since almost equal effort is put into any award criterion. But, the weighing factors do tell the contractors what the client considers as important.

For an elaborate discussion of how these objectives, expectations, award criteria and weighing factors are formulated and perceived by the contractors for each case specifically, see Paragraph 8.3.
Answer to sub research question 4
In sub research question 4 is investigated what role the objectives, expectations, award criteria and weighing factors play during the contract phase of LIM-contracts.

Considering the first question, it can be concluded that the objectives and expectations play an active role in the contract phase. But, most objectives and expectations are formulated in such a general way, that they are considered to be umbrella terms that have not much concrete meaning. Therefore, sometimes are these objectives and expectations concretized or further discussed in the beginning of the contract. Some discrepancy can be found between the province/municipality and Rijkswaterstaat in the role that the award criteria play in the contract phase. For the province and municipality, these play an active role for both the client and contractor and are also evaluated by the client. For Rijkswaterstaat, this role can be considered limited. For all contracts can be concluded that the weighing factors play a very limited role in the contract phase for both the client and the contractor.

Answer to sub research question 5
In sub research question 5 is investigated if the objectives, expectations, award criteria and weighing factors and experiences in the contract phase are well-aligned. Considering this, the following can be concluded.
There are large differences found in alignment between the investigated cases. Some clients consider the alignment between the objectives, expectations, award criteria and weighing factors essential in the formulation of the LIM-contract. They planned this alignment thoroughly and expected to see this in the contractors’ plans as well. For the contractors, this increased the understanding of the client which might have resulted in better EMAT-plans. The alignment can be found in the contract phase as well, in which the objectives, expectations, etc. play an active role. For other clients, there was no focus on alignment in the formulation of the contract. The objectives, expectations, award criteria and weighing factors were not clearly connected to each other. As a result, the contractor could not find the alignment during the tender and had trouble in understanding the client. For these contracts, the role of the award criteria, etc. in the contract phase was also less than for the contracts that did have a high alignment. A low alignment could be the result of an increased use of standardized tender documents, in which the objectives, expectations, award criteria and weighing factors are centrally formulated and uniform for any LIM-contract. Despite the client’s intention for alignment, the result could still be unsuccessful if this alignment does not reach the bidders. Then, the bidders see the objectives, expectations, etc. as independent aspects which not invite for a deeper understanding of the client. As a result, this alignment and understanding of the client could not be properly included in the contractors’ bids and the client could give lower scores to these bids. The lack of alignment is illustrated in Figure 28.

To conclude, a low alignment or an alignment that did not reach the bidders can be considered to be one of the causes of a lack of understanding the client in the tender phases and the limited role of the objectives, expectations, etc. in the contract phase. The use of standardized tender documents can be considered to be one of the reasons for a low alignment. For an elaborate discussion of the alignment of the specific cases, see Paragraphs 8.3 and 8.4.

Answer to sub research questions 6
In sub research question 6 is investigated to what extent the staff (dis)continuity at clients and contractors causes problems during tenders of LIM-contracts. It can be concluded that clients focus more on staff continuity than contractors. They aim at involving members of the IPM-team of the contract phase, already during the tender phase. This way they can deliver input for the tender documents and they learn to understand the contract. Despite their intentions of staff continuity,
Conclusion and Recommendations

clients still change team members on a large scale during the tender and contract phase. Especially if this concerns multiple team changes, without handovers and between two phases, then this causes loss of time and knowledge and discontent at the contractor.

Contractors focus less on staff continuity. Often a clear separation can be found between the team that is involved in the tender phase and the team that is involved in the contract phase. This causes a slow and unprepared start of the contract phase, unawareness about what the client wants to see in the execution of the LIM-contract, discontent at the client and promises of the EMAT-plan that turn out to be unachievable during the contract phase. Staff discontinuity at contractors could be the result of the insecurity about if contracts will be won and if will be continued to the contract phase or not. For an elaborate discussion of the staff continuity of the specific cases, see Paragraphs 8.3 and 8.4. The lack of staff continuity is illustrated in Figure 29.

Additional identified problems
Sub research questions 1 to 6 have partly answered the main research question in discussing two main problems that cause difficulties for clients and contractors during tenders of LIM-contracts: the lack of alignment between objectives, expectations, award criteria and weighing factors and the lack of staff continuity at both the client and contractor. Furthermore, two additional problems have been identified in the case study of this research. The first problem that has been identified is the lack of completeness and correctness of the area data. During the tender phase this caused indistinctness for contractors about the scope of the project, which resulted in difficulties to write a complete EMAT-plan with a conforming calculation. This also caused difficulties for clients to calculate their budget for the contract. During the contract phase, this caused discussions about the allocation of risks and responsibilities for the correctness and completeness of the area data. The lack of complete and correct area data is illustrated in Figure 30.

The second problem that has been identified is the lack of possibilities and willingness to understand the client. Contractors have not enough possibilities to understand the client’s problem, whishes, interests, etc. concerning long-term integral maintenance. They are limited to the documents that the client communicates to them, which is not enough to understand the client. This lack of understanding hinders the contractors to write an EMAT-plan that adds value. For a better understanding of the client, contractors depend on contact moments to start a dialogue with the client and to ask (individual) questions to the client, in order to receive intelligence about the client’s intentions. But, there are limited opportunities for contractors to start this dialogue, resulting in that contractors are forced to interpret and estimate the client’s intentions. The lacking intelligence that contractors receive, lowers the understanding of the client, which result in lower quality bids and less added value to the client.
Nevertheless, clients already make use of contact moments with contractors. But, during these moments the contractors do not show enough willingness to understand the client. They don’t ask the right individual questions, and they do not show the tendency to evaluate their own (un)successful plans. During plenary contact moments, contractors are not willing to talk openly and transparent which reduces their chance to receive intelligence to learn to understand the client. For a further elaboration on the two discussed problems, see Paragraph 8.4.3. The lack of possibilities and willingness to understand the client, is illustrated in Figure 31.

Based on the conclusions as discussed in this paragraph and the answers to the sub research questions, the main research question can be answered as follows:

**Answer to the main research question**
The causes for the difficulties that both clients and contractors are facing in the formation and approach of EMAT tenders for LIM-contracts are: the lack of alignment between the objectives, expectations, award criteria and weighing factors, the lack of staff continuity at both the client and contractor, the lack of completeness and correctness of area data and the lack of possibilities and willingness to understand the client.

The recommendations to reduce the causes of these difficulties, will be discussed in the next paragraph.

### 9.2 Recommendations

The objective of this research is to give recommendations to contractors and clients to improve the formation and approach of EMAT tenders for long-term integral maintenance contracts of public space, by creating insight into the formation of the clients’ objectives, corresponding expectations, award criteria and weighing factors and their appraisal by contractors.

In this paragraph will be discussed what these recommendations are and how they can reduce the causes for difficulties of clients and contractors that are discussed in the previous paragraph. As discussed earlier, the recommendations to clients only focus on municipalities and provinces. The cases of Rijkswaterstaat have been used as a reference to these clients. Therefore, the lessons that are learned from Rijkswaterstaat, will be discussed in the third paragraph.

#### 9.2.1 Recommendations to municipalities and provinces

**Organize more contact moments with the bidders**

In order to create a better understanding of the client of the LIM-contract by the contractors, more contact moments should be organized. These contact moments should be aiming at retrieving additional intelligence by the contractors about the client’s problem, interests, wishes, etc. This way, the contractors will have a better understanding of the client, resulting in better EMAT-plans that add value to the client, and probably a better execution of the LIM-contract.

Clients can organize two sorts of contact moments with bidders: dependent and independent of the tender. Concerning the first sort, the client can organize four types of contact moments: market consultation, plenary meeting, individual dialogue. Clients should consider organizing a market consultation before they put a LIM-contract out for tender, if they have uncertainty about the content of the contract and the formation of the tender. During the market consultation he can consult one or more contractors for their knowledge and experience. The exact organization of the market consultations depends on the type of client and the scope of the contract. Important for all clients is that a small contract does not necessarily mean a low complexity. Clients that outsource a LIM-contract for the first time could
experience a high complexity, despite the low complexity of the actual maintenance. Therefore, clients should not underestimate the value of consulting contractors before putting a LIM contract out for tender.

At the start of the tender, the client should always organize at least one plenary meeting with all bidders, preferably one at the start and one halfway. This plenary meeting should aim at explaining the client’s problem, wishes, etc., but should also aim at starting a dialogue between the client and all contractors. The client should organize the meeting in such a way that interaction is created and that bidders are rewarded if they show the willingness to collaborate and think along with the client. For example, they can be rewarded in the EMAT-assessment based on their behavior during these plenary meetings. The client should not focus on solely sending information during the meeting, but should focus on collectively talking about the client’s problem.

During the tender, the client is recommended to organize multiple individual dialogues. One at the start, to further discuss the client’s objective of the contract, and one near the end to test whether the client is understood and value can be added. Clients should behave openly to the opportunity for bidders to interact privately with the client, so that they can ask specific questions and build a relationship. Clients should understand the value of the individual dialogue. It increases the bidder’s understanding and therefore the quality of the bid, whilst remaining the opportunity to add value in relation to their competitors.

Lastly, the client should always organize an evaluation after the tender. He should include this into the contract, to force bidders to appear for an individual evaluative dialogue. This can help both the client and the contractor to improve themselves for future tenders. Therefore, clients should also stay open to the idea of receiving criticism from the bidders and use this criticism for a certain amount of self-reflection.

Independent of tenders, clients should increase the amount of contact moments with contractors as well. A possibility is to invite contractors for a presentation about the future policy and heading for LIM, so that are already being triggered to think about this. Clients should also organize informal talk with contractors, or be open to the idea of being invited by contractors, to discuss recent developments and experiences at both parties. Lastly, if clients are considering the use LIM-contracts, they should always get in touch with fellow municipalities and provinces to discuss their experiences with such contracts. This way, the wheel is not reinvented for the second or third time and negative experiences can be learned from.

For a further explanation about the possible contact moments with the contractor, see Appendix 7: Elaboration on contact moments with contractors.

**Be transparent about the available area data**

Clients should be open and transparent to the bidders about the available area data for the LIM-contract. Once clients acknowledge that the area data lack completeness and correctness, they should communicate this to the bidders and formulate what data is available and what is not. This way, contractors are aware of what data they have and not have, and can adjust their EMAT-plan and calculations to this. Clients should at least strive for a base level of area data, based on the risk level of the assets and should avoid to create an abundance of irrelevant area data. Collecting all area data is too costly and could result in a loss of overview by bidders. By being transparent about the available area data, discussions about the allocation of risks and responsibilities for the correctness and completeness of the area data can be avoided. Client can for example publish a (digital) list as part of the tender documents, that includes all assets within the scope. Then, for each asset can be appointed what data is available and present,
available and not present, and not available and not present. This way, bidders can anticipate on the possible blind spots of the area data and include this in their plan and calculations. Furthermore, bidders should have the opportunity to ask for clarification about the area data in specific contact moments. For example, notes of intelligence specifically for clarification about the area data. This way, complete focus is on this topic and other tender related questions are not contaminated with the abundance of questions about the area data.

**Strive for staff continuity**

Clients should strive for staff continuity between the different phases of the LIM-contract, by maintaining the staff members in their positions as much as possible. This creates a better input for the contract, a better understanding of the contract, an improved relation with the contractor and less time loss due to staff changes. Nevertheless, staff discontinuity is inevitable and it can be questioned whether a complete staff continuity is achievable and recommended. A good tender advisor is not necessarily a good project manager, and therefore team changes can give a project a positive stimulation. If staff members happen to change, it is recommended to avoid these changes in the transition between the contract phase and tender phase. Furthermore it is recommended to create enough overlap in the transition between two staff members and to avoid entire team changes at the same time. Lastly, clients should remain including IPM-team members already during the tender phase as most clients are already doing.

Clients can strive for staff continuity by setting up tender and project teams as early as possible. Once has been decided to tender a LIM-contract, both teams should be appointed and it has to be decided which members will be involved in which phase. By making this team planning, a clear overview can be created if optimal staff continuity is reached. Furthermore, a procedure should be set up that describes how team changes must occur and how knowledge and information loss is minimized. In this procedure should also be included that team members are expected to remain their position for a certain amount of years, instead of months. Lastly, the team that formulates the contract and that is not included in the evaluation of the bids, should extensively brief the evaluation team on the exact meaning and idea of the contract. This way the idea behind the contract is safeguarded in the bid evaluation as well, which could reduce the personal or biased aspect of a bid evaluation. Clients can safeguard the staff continuity at the contractor as well, by for example formulating a contract requirement that the contractor is required to have at least a staff continuity of X% in the next Y years.

**Strive for alignment**

Even though the investigated cases of the municipality and province already had a medium to high alignment, it is recommended to future municipalities and provinces as well to strive for this alignment. Based on the investigated cases can be deduced that the contract with a high alignment, has a positive result on the understanding of the client and continuous role of the objectives, expectations, etc. in the contract phase. Therefore, it is recommended to keep striving for this alignment, to make sure this alignment reaches the bidders, and to continue the alignment in the contract phase. In asset management, this alignment is also known as the line of sight.

Clients should strive for alignment by starting off with collectively determining objectives first. From this, concretized expectations should be formulated, that describe what is expected of the contractor
in the contract phase. Next, the award criteria should be formulated, that have links to the objectives and expectations. If an award criterion is used that is independent of these aspects, it should be communicated to bidders where this criterion is based upon. Subsequently, the weighing factors must be appointed to the award criteria with a clear motivation towards the bidders where the factors came from. Nevertheless, some room for interpretations must be remained in order to create opportunities for distinctive bids for bidders. Bidders should not read literally in the tender documents why choices are made, but the choices that are made should be made traceable somehow. The alignment can be completed, by remaining the active role of the objectives, expectations and award criteria in the contract phase. The client should include these aspects and the contractor’s EMAT-promises on these aspects in systems engineering software. This way, both the client and contractor can audit whether the contractor complies to the client’s objectives and expectations and the contractor’s promises. This way, the foundation of the contract and the line of sight is safeguarded.

Clients are also recommended to keep on challenging bidders during LIM-tenders, by avoiding the use of always the same objectives, expectations and award criteria which are often set aside by the bidders during the tender. By changing for example the objectives or making them more area specific, bidders are challenged and activated to think further why exactly these objectives are applicable for this specific contract. Furthermore, during the contract phase, both client and contractor should always consider the opportunity to change or further specify an objective or expectation, which requires a flexible mindset.

*Limit focus on processes*

Despite that the recommendations of this research focus on the tender phase, an additional recommendation can be given to clients for the contract phase. It is recommended to clients to limit the focus on processes during the contract phase. The effect of using LIM-contracts for large areas and long periods, is that much process requirements are formulated in the tender. Despite these requirements, the clients should prevent that during the contract phase the contractor spends the majority of his time and budget on meeting with these process requirements. The focus should be on the maintenance outside and not on the processes inside, which is also more visible and valuable to external stakeholders. Clients are for example recommended to consider the scope and complexity of the LIM-contract, before deciding to include a large set of process requirements that can be found in other, maybe larger, LIM-contracts. It is also recommended that client and contractor work in a shared office, so that not every process requirement has to be verified and validated by both, but can simply be discussed together. Furthermore, if certain process requirements turn out to be irrelevant or are always met, the client is recommended to have the flexibility to change, reduce or annul these requirements.

### 9.2.2 Recommendations to contractors

*Focus on understanding the client*

Contractors are recommended to focus on the understanding of the client’s problem, wishes, interests, etc. They can to this by looking further than the published tender documents. They should focus on retrieving additional intelligence in order to create a better understanding of the client, which could result in better EMAT-plans and higher scores. They can retrieve this additional intelligence by for example reading policy documents, attending at political meetings, meeting with the client outside the tender, gaining experience in the area by retrieving small contracts, etc.

![Focus on Understanding Client](image-url)
Once contractors receive information that a LIM-contract will be tendered, they should start off by reading documents that help them understand the type of client they are dealing with. For example, reading a coalition agreement will help them understand what political heading the client has and what policy objectives have been formulated for the next years. These documents can help the contractor understand the reasons for the information that is formulated in the tender documents. Furthermore, it is advisable to at least visit the area with the tender team, to see with own eyes what area and stakeholders he is dealing with. Subsequently, the contractor should read the published tender documents and compare them to the outcomes of his analysis of the client. The aspects that contradict in the understanding of the client, should be asked questions about to the client. Furthermore, by asking specific questions about topics that have been read in for example policy documents, the contractor shows his willingness to the client to understand him. Independent of a tender, contractors are recommended to keep an eye on developments at municipalities and provinces in their new directions concerning LIM. Especially after elections, new policy headings are common and can be used by contractors to prepare for future tenders.

Make use of contact moments with client
Clients already organize opportunities for contractors to have contact with the client. Contractors are recommended to make proper use of any contact moments that the client organizes. For example, if contractors have the opportunity for an individual dialogue, they should always make use of this opportunity. But, during this dialogue must be prevented that general questions are asked that can be answered generally. Contractors should prepare the individual dialogue in such a way, that only individual questions are asked that could harm their commercial interest. Furthermore, they can also make use of the opportunity to ask questions about other projects to identify what the client cares about and to show him the contractor’s willingness to understand him. Furthermore, during plenary meetings contractors are recommended to actively participate in creating an interactive dialogue. By openly asking questions and by thinking along with the client, the contractor can how his willingness to understand the client. Also evaluations should always be attended to by contractors. Independent of the result of the tender, the contractor should always attend to the evaluation to improve himself for future tenders and to give recommendations to the client for future tenders. It should be avoided that the contractor uses the evaluation to ventilate any grudge against the client. It should be used to learn lessons for both the client and the contractor.

Lastly, contractors are recommended to also look pro-actively for opportunities to get in contact with clients outside a tender. For example, by inviting the client for a knowledge exchange about LIM, the contractor and client can exchange experiences and build on their relationship. For a further explanation what contact moments are possible to attend to by contractors, see Appendix 7: Elaboration on contact moments with contractors.
Create alignment in the EMAT-plan
Clients can be aiming at creating alignment between the objectives, expectations, award criteria and weighing factors. Contractors are recommended to look for this alignment in the tender documents and to include this alignment in their EMAT-plans as well. If they make promises that they could meet with certain objectives or expectations, they should mention this explicitly in their EMAT-plan. This way, they show to the client that they have understood their line of reasoning and the client does not have to search for or interpret the alignment in the contractor’s EMAT-plan. Furthermore, it is recommended to create a clear distinction in the EMAT-plan in meeting with requirements and adding value. Contractors should not reply requirements of the client in their EMAT-plans. By mentioning that the client’s requirements will be met, the contractors is left with more space and time to discuss the actual value that he will add with his EMAT-plan. Lastly, during the contract phase, the contractor is recommended to be flexible in adapting or further specifying the objectives and expectations. This way he will be kept challenged and activated to think about what the client is looking for in the execution of the contract.

Strive for staff continuity
Contractors should strive to have a continuity in their staff between the contract phase and tender phase. A tender should be started by making a personnel planning for both the tender and contract phase. This way, the level of staff continuity can be determined and possibly increased. It is also recommended to include some members of the future executing team during the tender phase, so that they can deliver input to the EMAT-plan and to avoid the risk of writing down unachievable promises. Furthermore, then the executing team (partly) understands the contract and the client at the start of the contract phase. It will also improve the relation with the client if he sees some of the same people in the tender and contract phase. Nevertheless, staff changes are inevitable but contractors are recommended to avoid changes in the transition between the tender phase and the contract phase. Therefore, the contractor should write a mobilization plan in which he describes how the tender team will continue after the awarding of the contract and to set up the project with the execution team. After the mobilization, the tender team will be partly relieved by the execution team. For this, the contractor is recommended to create overlaps in the transition of staff member and to avoid entire team changes at the same time. It is recommended to contractors to create internal commitment to have a high staff continuity and to remain the same teams as long as possible. This improves the internal collaboration and the external collaboration with the client. Contractors can extend this commitment by mentioning in the EMAT-plan on the award criterion for collaboration, that not more than X% of the staff changes before the year Y.

A complete overview of the conclusions and recommendations of this research is displayed in Figure 38 on the next page.
CONCLUSIONS

- Lack of Staff Continuity
- Lack of Alignment
- Lack of Understanding
- Lack of Area Data

RECOMMENDATIONS TO CLIENTS

- Strive for Staff Continuity
- Organize Contact Moments
- Strive for Alignment
- Transparency about Area Data

RECOMMENDATIONS TO CONTRACTORS

- Create Alignment in EMAT-plan
- Strive for Staff Continuity
- Make use of Contact Moments
- Focus on Understanding Client

Figure 38: Illustrative overview of conclusion and recommendations of this research
9.3 Lessons learned from Rijkswaterstaat

The recommendations of this research focus on municipalities and provinces that tender LIM-contracts. In Paragraph 6.1 has been described that very limited cases are available of municipalities and provinces that have tendered LIM-contracts. Despite the limitation in available cases of these clients, Rijkswaterstaat does have much experience in LIM-contracts. That is why has been decided to use two Rijkswaterstaat LIM-contracts, that could act as a reference to the other two investigated contracts. From this, the following lessons can be learned from the experience of Rijkswaterstaat, that can be used for municipalities and provinces.

Standardization of tender documents

Earlier has been discussed that Rijkswaterstaat has incorporated much standardization in their tender documents. For all LIM-contracts, RWS has a set of standard model documents that are used by the contract team in setting up the tender. The model documents are for example the basic agreement, terms of agreement, annexes, selection document and the bid and evaluation document. According to Rijkswaterstaat, they use these standard tender and contract documents for the following reason: “it is not only efficient for Rijkswaterstaat, but also for the contractors. They learn to know the standard contracts of Rijkswaterstaat better and can better anticipate better on these” (Rijkswaterstaat, 2016)

According to the respondents of Rijkswaterstaat, the contract team only has to fill in the blanks to complete these model documents. In the BVP-tender of the case Project A, also the expectations, award criteria and weighing factors were standardized. This saved much team for the contract team. In the newest version of these model documents, also the objectives are standardized for all LIM-contracts (Rijkswaterstaat, 2013, p. 7). And, as of 2018 all LIM-contract will be tendered by using the Best Value Procurement methodology, which results in that for all contracts the objectives, expectations, award criteria and weighing factors are standardized (Rijkswaterstaat, 2015c).

By using this standardization, clients can save much time in formulating e.g. the objectives and award criteria. This is illustrated by the differences between the two RWS contracts: the contract where the award criteria and weighing factors are predetermined was less time required for the contract formulation in comparison to the contract where these aspects did have to be formulated prior to the tender. Additionally, for both contracts the objectives were specifically determined which also cost much time according to the respondents (see Appendix 8: Interviews 3.2 and 4.2). From this can be deduced that clients can make use of standardization of tender documents, by using the RWS method as an example, in order to save much time in formulating the tender documents. This will also increase the uniformity between the tender documents, as one of the contractors already recommended. And as Rijkswaterstaat states, this enables contractors to anticipate better on the contracts and learn to know them better.

Despite the advantageous experience that Rijkswaterstaat has with standardization of tender documents, it could also result in a downside. This downside has been discussed earlier: the decrease of alignment. When everything is standardized, then the bidders are not triggered to look for the “question behind the question”. This has already been proven by one of the RWS contracts, where both client and one of the bidders did not paid much attention to the objectives and expectations because they were standardized. As a result, the alignment in the bids and bid evaluation decreased and the role of the objectives and expectations during the tender and contract phase was limited.

To conclude, the experience of Rijkswaterstaat concerning standardization of tender documents can be used for LIM-contract by municipalities and province, but the possible decrease of alignment should be taken into account by these clients.

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15 In Dutch respectively: basisovereenkomst, vraagspecificatie, annexen, selectiedocument en inschrijvings- en beoordeelingsdocument
Use of contact moments with contractors

Earlier has been discussed that clients are recommended to use more contact moments with the contractors during before, during and after the tender phase. Possibilities for these contact moments that were mentioned were market consultations, individual dialogue, plenary meetings and evaluations.

Most of these contact moments are standard for the investigated Rijkswaterstaat cases. By both the client and the contractors has been acknowledged that these contact moments added value to both and they are also recommended to other clients as well. Rijkswaterstaat has the experience with these contact moments and uses them for other types of contracts as well. The market consultation has not been held for the investigated RWS contracts, but has been frequently used for other contracts. Rijkswaterstaat can be considered to be very experienced with market consultations, since they have been organizing them for at least ten years (Rijkswaterstaat, 2006). To conclude, Rijkswaterstaat can be considered an example to the municipalities and provinces concerning their experience in using different contact moments with contractors, which have proven to add value to both the client and contractors.

Role of Best Value Procurement

For this research, four LIM-contracts have been investigated. Of these contracts, one contract have been tendered through the Best Value Procurement methodology: Rijkswaterstaat, Project A. This RWS contract was one of the first three LIM-contracts that was tendered through BVP. The studying of this BVP-contract, gave me the opportunity to compare the results of the “traditional” tender method and the BVP method. Even though, this research did not focus primarily on BVP, still some conclusions could be raised.

According to the contractor’s respondent of Appendix 8: Interviews 3.5, BVP resulted in high level of transparency between the client and the contractor, leading to a more open and honest way of communicating to each other. It helps to build a relation and to act according mutual trust. BVP was recommended in comparison to traditional methods, since it increases the mutual understanding and the insight in each other’s processes. This could result in less fighting in the contract phase and an increased intention for collaboration. This contractor would recommend BVP for LIM-contracts of other clients as well. The client of Appendix 8: Interviews 3.2 and 3.3 acknowledge these recommendations, and also state that the contractor receives the role of an expert who has to be trusted on his expertise. This results in a more equal level between the client and contractor. The use of BVP is recommended to other clients as well, but this requires a client’s team who believes that BVP could add value and that has the BVP mindset. As an example, in the investigated case that used BVP, the start of the contract did not go as planned due to the lacking BVP mindset. The client thought that having a contractor as expert, meant that no communication was required anymore. This mindset had to be changed in order to start communicating again. This lesson can be used as a recommendation to future clients as well. When comparing the BVP contract and the non-BVP contract of RWS with each other, an important difference between both can be found from my personal perspective. While both contracts were not successful for the (same) contractor, at the BVP contract the atmosphere internally and externally with the client was much better than for the non-BVP contract. At the BVP contract, the contractor was aiming at a collaborative atmosphere with the client, while for the other contract a more “hostile” atmosphere could be felt. Even though this is an personal interpretation, this would confirm one of the positive aspects of using a BVP contract.

Besides this research, also RWS has conducted a research that evaluated the role of BVP for the LIM-contracts (one of these contracts was also Project A). The main conclusion of this research was that BVP is suitable for LIM-contracts, but still requires improvements in order to be used according to full potential. According to them, all involved actors were satisfied about BVP and valued its role distribution. It increased the value in the contract phase, and could result in a lower effort of the client (Rijkswaterstaat, 2015d, p. 9). As a result of the successful use of BVP for LIM-contracts, Rijkswaterstaat will use BVP for all his LIM-contracts as of 2018 (Rijkswaterstaat, 2015c). From both this research and the research that RWS has conducted can be concluded that the use of BVP for LIM-contracts adds value to both the client and contractor. Municipalities and provinces could make use of this positive experience and could also consider the use of BVP for their LIM-contracts.
10 Discussion
In this chapter, the results of this research will be discussed. First, a reflection on the literature study will be given. Then, recommendations for further research will be discussed. Next, the applicability of the research will be discussed, followed by the limitations of the research and a reflection on the research.

10.1 Reflection on the literature study
In Part Two of this research, a literature study has been conducted. In this paragraph, this literature study will be reflected based on the outcomes of the case study. The goal of the literature study was to give a theoretical introduction to the subject of this research, which have been discussed in Chapters 2 and 3 and Appendices 2, 3 and 4. These chapters have laid a theoretical background and base of knowledge for the subsequent documentation analysis and to conduct the interviews. In the second part of the literature study, the development of LIM-contracts and the theoretical and practical applications of LIM-contracts have been discussed in Chapters 4 and 0.

When comparing the retrieved intelligence from scientific literature of the literature study to the outcomes of the case study, the following conclusions can be raised. In the scientific literature, the user of public space takes a central role in describing the implications for outsourcing management and maintenance to the private sector. In the tender documents and during the interviews with clients, this central role of the user could not be found as such. Much more focus of the client is laid on the collaboration between the contractor and client and the allocation of the risks. Although, the use of the terms hindrance and disturbance are used often, but are in my opinion more related to the political and economic sensitivity of creating hindrance instead of hindrance to the user itself. Furthermore, as described in Paragraph 4.1, the creating of (economical) competing atmosphere or to remain an area’s identity could not be retrieved as an important motive for governments to outsource their management and maintenance.

The retreating role of the central governments and the independency of local governments that are discussed in the literature in Paragraph 4.2, are clearly illustrated in the cases. All investigated clients created their own ways of organizing their LIM-contracts and are not directed by any other government. For example, the municipality decided independently of the province or the central government to integrally outsource management and maintenance to the private sector. Nevertheless, this development of as in the literature study described “retreating role of the central government”, might have resulted in a too much opportunistic independency of local governments. Their independency could result, as earlier discussed in this chapter, in not making use of experience and knowledge of fellow governments concerning LIM.

The literature of Paragraph 4.3 has described how the reduced budgets and shifted focus towards new construction projects, resulted in a shortage of money and focus on management and maintenance. The implications of this development can be substantiated by the respondents of the interviews who state that governments lack funds and interests to solve the described problems of incomplete and incorrect area data.

The principal-agent theory as discussed in Paragraph 5.1, described the conflicting interests and objectives of the client and contracts as a result of the delegation of works. This situation could not be identified for the investigated cases. This is probably the result of the fact that most LIM-contracts are set for multiple years with possible extension based on a successful collaboration. This stimulates the contractor to respect and work according to the client’s interests as much as possible.
Both the cases of Haarlem and Kop van Noord-Holland are related to the directing governments, as discussed in the literature of Paragraph 5.2. The two pitfalls that are discussed in the literature, are the directing government that thinks he is relieved of all of its tasks and the directing government that remains a manager instead of a director. Both pitfalls have been mentioned as problems that have occurred in the investigated cases. As a result, a clear link could be found between the theory of directing governments and the governments that have become directing governments. Furthermore, the philosophy behind New Public Management (see Paragraph 5.3), in which governments were minimized and downsized, could be found in the investigated cases of Haarlem and Kop van Noord-Holland as well. At both cases, the main motive for using LIM-contracts was the reduction of employees. NPM stimulates the separation of setting goals and realizing goals between the client and contractor, which can also be found in the philosophy of the clients of the investigated cases.

10.2 Recommendations for further research
As any graduation research, this research was conducted with limited available sources and time. Therefore, additional research could complete or improve the formulated conclusions and recommendations and could create a higher generalizability of the this research.

Expand the geographical and client scope
For this research, three types of clients have been investigated: municipalities, provinces and Rijkswaterstaat. The municipality of Haarlem and the province of Noord-Holland are positioned in the same area in The Netherlands. Their reason to choose for LIM-contracts and their application, are probably not completely independent of each other for both clients. In order to create conclusions that have a higher validity for municipalities and provinces in general, research have to be conducted in other area’s than the area of Noord-Holland. This way can also be investigated what differences there can be found in the expectations of clients between for example a more urban and a more rural area. By increasing the geographical scope, the generalization of the conclusions and recommendation will probably have a higher validity.

Furthermore, in this research have been made us of the experience of Rijkswaterstaat as reference to municipalities and provinces. But, Rijkswaterstaat is not the only client with experience in LIM-contracts. Other public and private contracting authorities have years of experience with long-term integral maintenance as well. Examples of these contracting authorities are ProRail, Schiphol Airport, Port of Rotterdam and the industrial area of Chemelot. Nevertheless, these clients are more or less on the interface between public space and non-public space, resulting in other applicable stakeholders as well. But, their experience with tendering of LIM-contracts could result in new insights and improved recommendations to municipalities and provinces.

Reevaluate long-term experience
The two contracts of Haarlem and Kop van Noord-Holland are both only 1,5 years old. Both contracts have finished their transition phase and recently have started to perform the actual management and maintenance. Therefore, the effects of the management and maintenance are not yet visible to the client, the inhabitants, the users and the political organization. In order to determine the experiences of these stakeholders and the level of success in for example collaboration between client and contractor, an evaluative research can be conducted once these contracts are a few years along. Only then can be concluded if these LIM-contracts are successful and if the contractors fulfill the objectives and experiences that the client has formulated in the tender phase. This could result in interesting intelligence for future clients in their contemplation to decide to outsource LIM-contracts to the private sector. It could also result in interesting intelligence for future contractors, in possible alternate ways to write their EMAT-plans and to perform management and maintenance.
Investigate possibilities for use of BVP for LIM-contracts
As earlier discussed, Rijkswaterstaat has gained experience with the use of BVP for LIM-contracts and will implement this for all of their LIM-contracts in 2018. The success of the use of BVP, could also be used by municipalities and provinces. But, as mentioned, these organizations should have the BVP mindset first before this can be implemented. Therefore it is recommended to conduct a research into what extent municipalities and provinces are open to the idea of BVP and how they should change their organization for a successful use of BVP. Furthermore, this research has shown that BVP might become the future method for tenders of LIM-contracts. Therefore, also contractors should be prepared for this new development. Most contractors already have some experience with BVP for construction projects, but not for LIM-contracts yet. Therefore, an additional research should be conducted in what the difference is between the approach of BVP for construction- and for LIM-tenders. Then, recommendations should be formulated how contractors could prepare themselves for the LIM-contracts that will be tendered through BVP.

Investigate the requirements of LIM-contracts
This research has focused solely on the objectives, expectations, award criteria and weighing factors of the client. From this research was concluded that these aspects play an important role in the formulation of the tender documents of the client and the approach for the formulation of the contractor’s EMAT-plan. But there is a fifth aspect that has not been actively taken into account in this research: the requirements. The requirements are the key aspects of the terms of reference (in Dutch: vraagspecificatie). The terms of reference are important tender documents that consists of the technical and process requirements. In further research should be investigated how these requirements for LIM-contracts are formulated by the client and what role they play in the tender and contract phase for both the client and the contractor. These conclusions could be connected to the conclusions of this research. This way, the results regarding the alignment between the objectives, expectations, award criteria and weighing factors, could be complemented with the results on the alignment of the requirements.

10.3 Applicability of the research
As the research objective already stated, this research was conducted to give recommendations to contractors and clients to improve the formation and approach of EMAT tenders for long-term integral maintenance contracts of public space. These recommendations are based on the four cases that are investigated. The recommendations are partly a reflection on these cases and could be used as such, but the recommendations can also be used for future tenders of LIM-contracts. These recommendations could be used by municipalities and provinces that are contemplating to use LIM-contracts to outsource their management and maintenance of public space. But these recommendations could also be used by contractors who are planning to tender for LIM-contracts and don’t have the experience yet to write a successful bid. These future clients and contractors could use his research, its conclusions and its recommendations as a guide for a successful tender. They can learn from the positive and negative aspects of each of the investigated cases. Not one of the investigated contracts went completely right or wrong. It is therefore up to future clients and contractors to make use of the positive experiences and to learn from the negative experiences of the investigated contracts. This research can also act as a reflection to the investigated clients and contractors, to help them for current and future improvements for tenders of LIM-contracts. Lastly, even though this research did not give recommendations to Rijkswaterstaat, still some conclusions and recommendations are applicable to Rijkswaterstaat as well. As mentioned, no investigated contract went completely right, which was also the case for the Rijkswaterstaat contracts. Therefore they could also make use of the analysis of their contracts, and use the experiences of Haarlem and Kop van Noord-Holland for their future tenders of LIM-contracts.
10.4 Limitations of the research

In this paragraph, the limitations of this research will be discussed, consisting of limitations of the generalizability, the validity of the data, the completeness of the documentation analysis and the presentness of the Rijkswaterstaat cases.

Limitations of the generalizability

As earlier mentioned in the recommendations for further research, the scope of this research is limited to one municipality, one province and two Rijkswaterstaat contracts. This limits the generalizability of the conclusions and recommendations. These are solely based on the four investigated cases, and cannot be one-to-one appointed to other municipalities and provinces as well. For this, the Dutch municipalities and provinces differ to much from each other in order to create statements that are applicable to all. Therefore it has to be concluded that the conclusions and recommendations are applicable to the investigated cases, but are not necessarily applicable to other cases as well.

Limitations of the validity of the data

The conclusions and recommendations of this research are based on an analysis of the retrieved data from the case study. This data is based on statements made by respondents during the conducted interviews. These statements are so called snapshots of what the respondent has in mind at that particular moment. For example, when asking for recommendations to future contractors, the respondent thinks of a few recommendations. But that does not mean that he won’t agree with the recommendations that he does not mention at that moment. This limits the completeness of the retrieved data and therefore limits the validity of the data.

Furthermore, the statements of the respondents are also related to the personal feeling they have with the investigated case. For example, the respondent of the contractor who lost the investigated tender showed more resentment of the client than the respondent of the contractor who won the tender. Another example, the client that has a good relation with the contractor will give more positively formulated recommendations than the contractor who is in a fighting relation with the contractor. This reduces the objectivity of the respondents, which reduces the validity of the retrieved data.

Limitations of the completeness of the documentation analysis

The documentation analysis that was executed in Chapter 7, focused on the tender documents that were published by the client and communicated towards the bidders. From these documents could be retrieved what the client’s objectives, expectations, award criteria and weighing factors were. But, how the bidders responded to these aspects in their bids was not taken into consideration in this research. The main reason for this is that most of these bids were not available, which made an objective comparison not possible. Nevertheless, an analysis of the bids would have increased the completeness of this research. Possibly, this might have answered the question if the client did not communicate the right aspects in his tender document or if the contractor did not included the right aspects in his bids. This might have resulted in more and broader recommendations towards the contractors.

Limitations of the presentness of the Rijkswaterstaat cases

The investigated cases of Rijkswaterstaat were contracts that were tendered in 2011 and 2012. This means that Rijkswaterstaat has gained many years of additional experiences with tenders of LIM-contracts, that were not retrieved in this research. Furthermore, both positive and negative experiences that were retrieved from the investigated cases, could be not relevant and contemporary anymore. Nevertheless, by conducting interviews with both the client and the contractor at present day, some of the changes in gained experiences were still included in this research.
10.5 Reflection on the research

Reflection on qualitative data analysis
In Paragraph 8.2, the decision for a type of qualitative data analysis has been made. This decision was partly based on the experience of a fellow graduate student how had used the network and coding method for his qualitative data analysis. I deliberately chose to use an opposite method by making use of matrices and structured transcriptions. In the end, I think this was the right decision since the analysis and processing of the collected data was structured and cost limited time. Furthermore, the interrelations between the variables was easy to find with this method and the use of matrices has made the analysis more comprehensible for the readers of this report as well. Nevertheless, I do think that the use of predetermined variables has framed and maybe even limited the extent of my conclusions and recommendations. The fact that I predetermined the variables, made me also looking for these variables in the transcriptions. Perhaps, I have missed some variables that I did not investigated but that might have contributed to raising more extensive conclusions and recommendations. Furthermore, by using a scientific method I was most of the time focusing on the verifiability of the outcomes of my research. Perhaps this has caused that I did not notice or did not pay attention to outcomes that I could not direct prove or verify. Possibly if I have done this research for a company with less pressure to verify all outcomes, the outcomes of my research might have become more daring or out of the box.

Reflection on cause of the research
This research has been introduced with the description of two tenders of LIM-contracts that took place. One of the contractors, Van Hattum en Blankevoort, has tendered for both of these contracts. One contract was won, while the other contract was lost, despite similarities of content and approach. The question that can be raised after this research, if the outcomes of this research can explain why one of the contracts was won while the other one was lost? The answer to this is that this research can help understanding why things happened the way they did, but cannot explain everything. This research can explain why many of the bidders of the Kop van Noord-Holland did not understand what the client was looking for and why only one bidder scored high for this tender. This had to do with the alignment that did not reach the bidders and the “gamble” of the winning contractor to use a Best Value style in his bid. But this research is not the answer to VHB or any other contractor how to win a future LIM-tender. If tenders were that easy to win, then the foundation of tendering was simply not right. This research does give recommendations to contractors that can help them in their consideration when tendering for LIM-contracts. Some recommendations are already (partly) applied, while others might give contractors a small push forwards in the future that results in a better scoring. The focus on additional variables such as the earlier discussed requirements in further research, might even result in a larger push forwards.

Reflection the point of view in the research
This research has been carried in service of the contractor Van Hattum en Blankevoort. This company has facilitated me with next to an office space, also with documents and contacts. Even though this research has focused on both clients and contractors, the question can be raised whether I have become biased in my research by working at a contractor. Might the outcome of my research have become different if I had been accommodated at a client? Even though I have carried out this research as objectively as possible, still some bias could have developed unintentionally in my research. Most of my time during this research I have spent among people working for a contractor. And their opinion about how clients work might have influenced me more than the opinions about how contractors work, that were given by clients that I have spoken to. Conducting this research completely unbiased is not possible in my opinion. Even though if I had carried out this research at neither a client nor a contractor, still I would have developed an opinion about either one of them and included this into my research. But, it is still important to be aware that even though not intentionally, this research have become biased and that the conclusions and recommendations should be read by keeping this in mind as well.
References


Bergmans, M. F. A. (2010). *Samenwerking bij aanleg en beheer van groene openbare ruimte in de stad.* (Master), Utrecht University, Utrecht.


CROW. (2002). Naar integraal beheer van de openbare ruimte *Visie en onderzoeksrichtingen*. Ede: CROW.


References


De Korte, R. B. G. (2011). De aansprakelijkheid van de wegbeheerder voor gebreken aan de weg. In
Stadsbeheer (Ed.), Leidraad voor de praktijk: Gemeente Alphen aan den Rijn.


notes CT5981. Delft: Delft University of Technology, Department of Civil Engineering and
Geosciences.

Deakin, S., & Michie, J. (1997). The Theory and Practice of Contracting Contracts, Co-operation and

6–17): HKV Lijn in Water.


VROM, RGD. Bilthoven.

Dreschler, M. (2009). Fair competition How to apply the ‘Economically Most Advantageous Tender’
(EMAT) award mechanism in the Dutch construction industry. Delft: Sieca Repro.

(Ed.), Eindrapport. Rotterdam.

Hardeman, & M. H. Vrolijk (Eds.), Markt, rolverdeling en werkgelegenheid. Amsterdam: ELB.


T. c. o. t. E. union (Ed.), On the coordination of procedures for the award of public works

Florida, R. (2002). The rise of the creative class: And how it’s transforming work, leisure, community

219-245.

Gemeente Amersfoort.

Amsterdam: Gemeente Amsterdam.,

Gemeente Amsterdam. (N.D.). Geschiedenis over Verkeerslichten. Retrieved from
https://www.amsterdam.nl/parkeren-verkeer/infrastructuur/verkeerslichten/geschiedenis_over/

Den Helder.

Gemeente Haarlem. (2014a). Basisovereenkomst Resultaatgericht Dagelijks beheer en onderhoud:
Domein Kunstenwerken en Oevers Haarlem: Gemeente Haarlem.

Digipanel over bezuiniging op gemeentelijke taken. Haarlem: Gemeente Haarlem.


GOB/2014/266824).

Haarlem.

Gemeente Haarlem. (2014f). Inschrijvingsleidraad Europese niet-openbare aanbesteding
Resultaatgericht Dagelijks beheer en onderhoud Domein Kunstenwerken en Oevers.


Hardeman, S. (2013). EMVI, tenzij... Retrieved from Amsterdam:


Movares. (2013). In de huid van de regisseur kruipt. Quintessens van Movares(23).


Oc, T., & Tiesdell, S. (1999). The fortress, the panoptic, the regulatory and the animated: Planning and urban design approaches to safer city centres. Landscape Research, 24(3), 265-286.


References


References


Part FIVE: APPENDICES
Appendix 1: Definitions

This appendix will discuss the definitions of public space, maintenance and management.

1. Public Space

The term public space is widely used, and can be defined from many perspectives. Brunt and Deben (2001) define public space from a social and physical perspective:

“A space that is freely accessible for everyone and that can be used for numerous purposes. The public space consists of streets, squares, parks, internal terrains, bridges and waterways. Without permission, people can use the public space as passageway, place to abide, meet others, do business, look around.”

Bouwmeester (2005, pp. 4, 5) from the ministry of VROM, the former ministry of Infrastructure and the Environment, defines public space from a functional perspective and doesn’t exactly constrain the physical meaning of public space:

Roads, parks, areas for sports, squares, residential areas, green areas, etc. It functions physically as an access to buildings and facilities, for both people and goods such as water and energy. But it also functions socially, as a place where people can meet and jointly use for different purposes. And, it functions in such a way that it gives an identity to the build environment.

Differently, the municipality of Amsterdam gives a definition fully from the physical perspective (Hoogstad et al., 2012, p. 7):

“All non-built on spaces – and all built on spaces with a non-built on part (such as tunnels and public roofs) –that are publically accessible and that that have a public purpose”.

A comparable, but perhaps more comprehensible definition is given by CROW (2002, p. 12):

“The publically accessible space that is formed by the opposite profile of the built environment with the following boundaries: objects that are placed within the area until the roof gutter (e.g. pavements, green areas, bridges, public lighting) and in the underground until the founding earth layer (e.g. cables and pipes)”

It can be concluded that the public space can be defined from several perspectives. This research will particularly focus on the physical and functional perspective and less on the social perspective of public space. As a result, the following definition will be used for public space in this report:

Definition of Public Space:
All assets that are part of the publically accessible area, both above and underground, that are facilitating transportation of any kind or abiding purposes, such as dry and wet infrastructure, green areas, civil works, public lighting and associated systems.
2. Maintenance
Visser and Visser (2014, p. 81) define maintenance in terms of measures and objects:

“The execution of preventive or corrective measures in order to bring or maintain an object in a good condition.”

The International Commission on Irrigation and Drainage (ICID) defines maintenance in a more scientific way, in terms of systems and its users (ICID, 1989):

“The physical activities required to keep the system functioning to a standard acceptable to the users of the system.”

Schoenmaker defines maintenance in terms of activities and functions. This is interesting, since it focuses on the function of an object instead of the tangible object itself. This relates to the earlier mentioned end of an asset technical life, in which it cannot fulfill its function anymore. Schoenmaker (2011, p. 19) defines maintenance as:

“The overall activities that are needed for maintaining the availability of the required function(s) on the agreed level.”

Stichting PostAcademisch Onderwijs does not focus on the required function of an asset but looks at the asset’s condition, when defining maintenance (PAO, 1999, p. 8):

“The overall activities in which an asset’s condition is restored, or maintained, of the desired condition level.”

In my opinion, maintaining the function of an asset is a trivial motivation to maintain an asset but is not the only motivation. As PAO defines, maintenance also relates to the condition of the asset, which does not have to be related to condition of its functionality. For instance, a concrete structure could have an required condition level related to the esthetics of the structure. If concrete decay occurs, the structure could not meet the esthetic conditions but could still function on its required level. Therefore, both the condition of the asset itself and its functionality are important motives to maintain an asset. Furthermore, these conditions are not always static and can change in time. For example, the condition level of a newly constructed asset can be much stricter than a 30 year old asset. Furthermore, the condition levels can also be depending on the time of year. Due to for instance different weather conditions, the condition levels of an asset can also vary during different seasons (e.g. de-icing or cleaning dead leafs). Therefore, the desired condition level can be perceived as a dynamic level, that varies in times.

The activities that in maintenance take place, do not limit to as Visser & Visser describe “preventive or corrective measures”, but are in my opinion the overall of activities. Next to measures, this also relates to for instance decision making and preparation for maintenance. In consideration of these comments, the following definition will be used for maintenance in this report:

**Definition of Maintenance:**
The overall activities required in order to restore or maintain the dynamic desired condition level of an asset and the availability of its function(s)
3. Management
For management, in the sense of management and maintenance, many definitions can be found in literature.
Visser and Visser (2014, p. 81) define management as:

"Planned and financially responsible execution of measures and activities in order to maintain the function of a system"

Centrum Ondergronds Bouwen (COB) states that maintenance is a component of management. This suggests that when talking about management and maintenance, both are partly a synonym to each other. COB (2000, p. 152) defines management as:

Management embraces maintenance, control, monitoring and inspection in which knowledge, governance and financial resources are applied to assets

PostAcademisch Onderwijs (PAO) also states that maintenance is a component of management, but does not define the exact measures of management (1999, p. 8):

"The overall measures related to improvement and maintenance"

In comparison, Hueber (1994, p. 5) does describe the activities that are related to the execution of management of in this case buildings. Hueber gives a definition that resembles a definition for maintenance, but also includes other aspects in its definition:

"The technical, legal, organizational and financial activities focused on maintaining and improving the maintenance and building quality of a building"

From the previous definitions, can be concluded that there exists a wide perception of the meaning of the term management (in terms of management and maintenance). In consideration of these definitions, the following definition will be used for management in this report:

**Definition of Management:**

*The technical, legal, organizational and financial activities focused on maintaining and improving the functioning of a system of assets*
Appendix 2: Management and maintenance of public space

To understand which type of government manages and maintains what type of assets, the national road law have to be investigated (in Dutch: wegenwet). Even though this law does not cover the entire public space, it can still be used as a useful starting point in identifying the activities of managers and maintainers of public space. Obviously, the road law covers the term roads, but what does term exactly mean? Second, the term public is used for defining public space and public roads, but what is meant by public? After answering these question, this chapter will go deeper into the ownership of the roads and the governments that manage and maintain the roads. This appendix will end with a chapter on the management and maintenance of other assets than roads.

1. “Roads” according to the road law

Roads play a large part in the public space, and the meaning of the term road is therefore useful in understanding the perception of public space. The articles from the road law will be perceived as leading in generalizing the perception of the road. According to Article 1 (Rijksoverheid, 1930, art. 1):

2. Onder wegen worden in deze wet mede verstaan:
   I. voetpaden, rijwielpaden, jaagpaden, dreven, molenwegen, kerkwegen en andere verkeersbanen voor beperkt gebruik;
   II. bruggen.

From this article can be concluded that also bridges are perceived as roads. Furthermore, bridges is a broad definition that can also involve for instance a viaduct. The road law dates back to 1930, and has not been adapted considerably since (Ministerie V&W, 2007a). The first Dutch tunnel for cars dates back to 1942 (Sprangers, 2012), and is probably therefore not included in the road law. It can be assumed that since bridges are included into the definition of roads, tunnels can also be added to the definition. The same can possibly be assumed for installations related to the roads such as public lighting and traffic regulation systems, which frequent use also started after 1930 (Gemeente Amsterdam, N.D.).

Furthermore, Article 15 describes for maintaining the road (Rijksoverheid, 1930, art. 15 - rule 3):

3. Tot het onderhoud van een weg als in het eerste en het tweede lid bedoeld, behoort mede het onderhoud van een tot dien weg behorenden berm of een tot dien weg behorende bermsloot, echter slechts voor zoover het onderhoud van den berm of de bermsloot dient ten behoeve van de instandhouding en de bruikbaarheid van den weg en voor zoover het onderhoud niet, uit welken hoofde ook, tot de verplichting van anderen behoort.

From this article can be deduced, that maintaining the road also involves maintaining the banks and ditches next to the road. Therefore, the definition of the road is not limited by the pavements of the road but involves also the neighboring area. This makes the definition of roads according to the road law a broad definition that has resemblance with the meaning of public space (excluding parks, waterways, sewer systems, etc.)

While road the law acts as the national legislation related to road, municipalities also have their own local legislation laid down in the bye-law (in Dutch: algemene plaatselijke verordening or APV). Each municipality’s council develops decrees in the bye-law that are considered as important for the municipality and that are only valid in the pertaining municipality (Rijksoverheid, 1992, art. 149).
Concerning the term road, the municipalities can have another or broader definition of roads than the national road law. For example, the municipality of Amsterdam defines roads as (Gemeente Amsterdam, 2015, art. 9):

9. Weg
   a. de voor het openbaar verkeer openstaande wegen of paden, met inbegrip van de
daarin liggende bruggen en duikers en de tot die wegen behorende paden en
bermen of zijkanten, alsmede de -al dan niet met enige beperking- voor publiek
toegankelijke parkeerterreinen en parkeergebouwen;
   b. de -al dan niet met enige beperking- voor publiek toegankelijke stegen, pleinen,
open plaatsen, parken, plantsoenen, speelweiden, bossen en andere
natuurerreinen, ijsvlakten, veerponten en aanlegplaatsen voor vaartuigen;
   c. de voor het publiek toegankelijke stoepen, trappen, portieken, gangen, passages en
galerijen die uitsluitend tot voor bewoning in gebruik zijnde ruimten toegang geven
en niet afsluitbaar zijn;
   d. andere voor het publiek toegankelijke -al dan niet afsluitbare- stoepen, trappen,
portieken, gangen, passages en galerijen; de afsluitbare alleen gedurende de
tijd dat zij niet door of vanwege degene die daartoe naar burgerlijk recht is bevoegd zijn
afgesloten;

This article from the bye-law of the municipality of Amsterdam illustrates how wide the definition of road can be perceived. Next to the assets mentioned in the road law that fall under the definition of road, also parks, playgrounds, forests, alleys and other areas that publically accessible are included.

2. “Public” according to the road law

The mentioned articles in the previous chapter define according to the road law and the bye-law, how roads should be perceived. It can be concluded that a large part of the earlier described definition for public space, falls under the legal definition of roads according to the road law and the bye-law. An important aspect of these laws, is the use of the term public. This term determines the users and managers of public roads (and indirectly the meaning of public space).

According to Article 4, the meaning of a public road is (Rijksoverheid, 1930, art. 4):

1. Een weg is openbaar:
   I. wanneer hij, na het tijdstip van dertig jaren vóór het in werking treden van deze
wet, gedurende dertig achtereenvolgende jaren voor een ieder toegankelijk is
geweest;
   II. wanneer hij, na het tijdstip van tien jaren vóór het in werking treden van deze wet,
gedurende tien achtereenvolgende jaren voor een ieder toegankelijk is geweest en
tevens gedurende dien tijd is onderhouden door het Rijk, eene provincie, eene
gemeente of een waterschap;
   III. wanneer de rechthebbende daaraan de bestemming van openbare weg heeft
gegeven.
2. Het onder I en II bepaalde lijdt uitzondering wanneer, loopende den termijn van dertig of van
tien jaren, gedurende een tijdvak van ten minste een jaar duidelijk ter plaatse is kenbaar
gemaakt, dat de weg slechts ter bede voor een ieder toegankelijk is.
3. Dit kenbaar maken kan geschieden door het stellen van opschriften als: eigen weg,
particuliere weg, private weg en soortgelijke, of door andere kenteeken.
3. Ownership of Dutch roads

A next question that can be raised, who are the asset-owners of public roads? The road law gives an answer to this question in Article 13 (Rijksoverheid, 1930, art. 13):

1. De eigendom van wegen wordt, zoolang en voor zoover niet het tegendeel blijkt, vermoed te zijn bij de provincie, de gemeente of het waterschap, door welke of door hetwelk de weg wordt onderhouden.

2. Dit vermoeden werkt niet tegen dengene, van wien wel het onderhoud is overgenomen doch niet de eigendom.

This article states that a road can be owned by a province, municipality or waterboard unless proven otherwise. Nevertheless, the Dutch central government is not mentioned in this definition while they do own the Dutch highways (Sweers, 1995, p. 2). Possibly, this has to do with the fact that this law dates back to 1930 while the first highway was opened in 1937 (Unknown, N.D.) and the road law has not been changed since its establishment (Ministerie V&W, 2007a).

4. Management and maintenance of Dutch roads

Until now has been defined what a road means according to the road law and who the asset-owners are. But now we fall back to first elements of this literature study: management and maintenance. Who manages and who maintains the roads in The Netherlands?

4.1 Road management

The public roads in The Netherlands are managed by four types of governmental organizations, that result in a total of 428 road managers (in 2015): 393 municipalities, 12 provinces, 23 water boards and Rijkswaterstaat (Rijkswaterstaat, 2015a). Due to the merging of municipalities, this number reduces every year (Wiebinga, 2015, p. 193).

A clear distinction is made for each type of road in who manages this road (Rijksoverheid, N.D.):

<table>
<thead>
<tr>
<th>Road managers</th>
<th>Type of roads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Boards</td>
<td>Water board roads</td>
</tr>
<tr>
<td>Municipalities</td>
<td>Local roads</td>
</tr>
<tr>
<td>Provinces</td>
<td>Provincal roads</td>
</tr>
<tr>
<td>Rijkswaterstaat</td>
<td>National roads</td>
</tr>
</tbody>
</table>

A short description of the tasks for different governmental road managers will follow:

**Water boards**

The 23 water boards that The Netherlands have, are originally governments that manage the water quantity and quality in the area outside the municipalities. But next to water management, the water boards are also road managers for public roads, adjacent banks, public lighting, civil constructions, etc outside of the built-up area (Waterschap Rivierenland, 2010). Building new roads is normally not a task of the water board, while managing and maintaining existing roads is part of their tasks. A large part of the maintenance is normally outsourced, while inspections are done by the water boards itself. The water board’s policy for road management is dependent on the provincial and municipal policy for road management (Ministerie V&W, 2007b, p. 29).

**Municipalities**

For the 393 municipalities in The Netherlands, roads have most resemblance with public space of all road managers. Most municipal roads are surrounded by sidewalks, public lighting, traffic regulations installations, civil constructions, etc. that are all managed by the road manager. The municipalities set up traffic and transportations plans and management and maintenance plans. Together, these form the long-term management and maintenance policy for roads and public space. Most municipalities outsource most of their maintenance and all building of new roads and public space (Ministerie V&W, 2007b, pp. 30, 31).
Appendix 2: Management and maintenance of public space

Provinces
The 12 provinces in The Netherlands, manage provincial roads, public transport lanes, parallel roads and cycling lanes that are located outside the municipal areas (Provincie Noord-Holland, 2014c, p. 5).

Similar to the municipalities, the Dutch provinces set up traffic and transportation plans and management and maintenance plans. These plans act as a reference point for the long-term management and maintenance policy for public space. Often, also waterways are included in this long-term policy. Some maintenance of roads and most construction of new roads is outsourced by the provinces (Ministerie V&W, 2007b, p. 32).

Rijkswaterstaat
In service of the minister of Infrastructure and the Environment, Rijkswaterstaat manages and maintains the highways, bridges, viaducts, tunnels but also the noise barriers, public lighting and traffic signing. Rijkswaterstaat is also responsible for the construction of new highways, civil construction, etc. (Algemene Rekenkamer, 2014, p. 6).

Since a number of years, Rijkswaterstaat increasingly outsources their maintenance activities of road management. Through performance based contracts, the maintenance to the main road network is outsourced to contractors (EIB, 2012, p. 58).

4.2 Road maintenance
It has been stipulated that maintenance can be perceived as an activity that falls under management. Maintenance is one of the phases or aspects of management, but is often intertwined. The road law determines the following in regard of maintenance of public roads (Rijksoverheid, 1930, art. 15):

1. Het Rijk, de provincie, de gemeente en het waterschap is verplicht een weg te onderhouden, wanneer dat openbare lichaam dien tot openbaren weg heeft bestemd.

According to Article 15 of the road law, the central government, provinces, municipalities and water boards are obligated to maintain a public road. According to Article 6:174 BW of the Civil Code, governments as road managers are legally liable for damages caused by defect of the public road. A defect of the public road is in place when the road does not fulfill the requirements that under those circumstance could be expected and that causes a dangerous situation (De Korte, 2011). Both this civil code and the road law obligate the road manager to inspect the road regularly. They have to preserve the minimum quality level for roads and if required maintain the road. This includes (Visser & Visser, 2014, pp. 14, 15):
- Assurance of the safety on the road
- Protection of the road users
- Preserving the road and assuring it usability
- Assurance of the freedom of traffic as much as possible

When the road manager decides to outsource the road maintenance, the responsibilities according to the road law and civil code are being transferred to the contractor through a contract. If the contractor signals a potential danger to the road, even if this is not included in his contract, he is still obligated to warn the road managers. Still, the road manager is liable and therefore primarily responsible for the quality of the road (Visser & Visser, 2014, p. 15)
5. Waterway management and maintenance

In the previous chapter, road management and maintenance and the implications from the road law have been discussed. From these, the similarities between the definition of the road and public space are significant. Nevertheless, there are still certain differences between these terms that result in additional implications for management and maintenance.

Earlier has been discussed that the national road law dates back to 1930 and that it has not been altered significantly since. This results in that some definitions from this law are outdated and do not cover the current situation anymore. Visser and Visser (2014, p. 15) define the road in a more contemporary fashion when defining the tasks of a road manager. According to them, roads also include road equipment that consists of: public lighting, traffic regulation installations, traffic signs, marker posts, road marking, sewer systems, banks and ditches. This description of a road can now be perceived as the horizontal and vertical area in and around a road. Earlier has been described how the bye-law also includes abiding areas such as parks, playgrounds, forests, etc. This makes the meaning of road comprehensive in such a way, that it almost matches the meaning public space.

Nevertheless, the meaning of public space also involves waterways which is not included in the meaning of road. Therefore, waterways require another approach in defining their management and maintenance. While the roads fall under the legislation of the national road the law and the bye-law, waterways fall under the legislation of the national water law and regional waterway decree (Dutch: vaarwegen verordening).

Similar to roads, the waterways in The Netherlands are managed by four types of governments: water boards, municipalities, provinces and Rijkswaterstaat. Waterway management is defined as ‘the care of the government to facilitate and maintain the possibility for shipping, according to the function of that waterway’ (Ministerie I&M, N.D.).

Waterways can be divided into several objects that can be managed and maintained (Rijkswaterstaat, 2011, p. 157):
- Shores (e.g. stretched shores, harbor shores, groins, training wall, floodplains and saltmarshes)
- Beds (e.g. fairway beds, harbor beds)
- Civil constructions (e.g. locks, scouring and drainage sluices, fixed and movable bridges, barriers and pumping stations)
- Traffic facilities (e.g. traffic supervision, waterway marking)

The different types of governments have the following tasks for waterway management:

**Rijkswaterstaat**

Rijkswaterstaat manages the main waterways in the Netherlands, in service of the ministry of Infrastructure and the Environment. The main waterways consist of the following elements (Rijkswaterstaat, 2015b, p. 8):
- 3.462 km of canals and rivers
- 3.513 km sea entry channels and corridors
- 93 locks
- 325 bridges

The central government determines the user functions of the main waterways in the Nationaal Waterplan and Rijkswaterstaat manages and maintains these functions (Ministerie I&M, N.D.) The main tasks of Rijkswaterstaat related to managing waterways, are legally laid down in the national water law (Waterwet) (Rijkswaterstaat, 2011, p. 155).
Appendix 2: Management and maintenance of public space

Provinces
The provinces determine the user function of the regional waterways in the Regionaal Waterplan. They act as the waterway manager on the regional waterways. Many waterway management tasks are subsequently delegated to the water boards or in some cases the municipality according the decentralizations principle (Ministerie I&M, N.D.). The main tasks of the provinces related to managing waterways, are legally laid down in the waterway decree. In this decree, the province is appointed as the waterway manager (Provincie Zuid-Holland, 2015).

Municipalities
Municipalities manage regional waterways if the province has delegated these tasks (partially). Furthermore, the municipalities are responsible for the management of non-regional waterways inside the municipality borders (Gemeente Vianen, N.D).

Water boards
Water boards manage regional waterways if the province has delegated these tasks (partially). Furthermore, the water boards are responsible for the management of non-regional waterways outside the municipality borders (Gemeente Vianen, N.D).

Similar for roads, maintenance to waterways takes place in order to meet the required minimum quality level. According to Rijkswaterstaat (2011, p. 155), this quality level is related to:
- Reliability: offering a reliable traffic time for the users of the waterway
- Availability: the minimal availability of the waterways is determined by a performance indicator
- Maintainability: already in the design phase, attention have to be paid to executing maintenance
- Safety: the condition of the waterway should meet such a level, that at all time a smooth and safe journey is guaranteed

The management and maintenance of waterways, can partly be related to the management and maintenance of public space. Objects such as shorelines, bridges and floodplains can be considered as public space, since they meet the definition of public space as described earlier. Nevertheless, other object that fall under the definition of waterways, cannot be considered as public space. Locks, fairway beds, drainage sluices, etc., do not meet the definition of public space.

As a result, waterway management and maintenance and it corresponding legislation will be taken into account when further discussing management and maintenance of public space, but will not be considered as leading.
Appendix 3: Types of UAV

In this paragraph, first UAV 2012 that governs the traditional model will be discussed. Subsequently, the UAV-GC 2005 that govern the integrated model will be discussed.

UAV 2012

The UAV 2012 is related to the classical triangle, that illustrates the traditional legal relationship between a contractor and a client. This triangle consists of the client, the architect and or consulting engineer, and the contractor (Chao-Duivis et al., 2013, p. 51), see Figure 39.

Two legal relations can be seen in the classical triangle. A relation between the client and the contractor and a relation between the client and the architect. A project that works according to the traditional model, is initiated by the client. The client commissions an architect or consulting engineer to create a design. This order is governed according to the DNR 2011, or The New Rules 2011 (Chao-Duivis et al., 2013, p. 29). Once the design is finished, the construction works are procured according to the Bid-build procedure. From the design, a tender specification is created, that is provided to the bidding contractors. This tender specification describes the work specifically and describes output performances (De Ridder, 2009, p. 57). A distinction is made in the RAW and STABU tender specification, that are used for respectively civil and building works (Swets et al., 1987, pp. 22, 23). Based on the tender specification, the contractors can submit a bid. Whether this is only a price or EMAT plan, depends on the award mechanism. The contractor who won the bid-build tender, enters into contract with the client, also known as the building contract. This contract is governed by the UAV 2012. In building contracts according the UAV 2012, the contractor is responsible for only the work preparation and execution of the works (CROW, 2005). For other phases, the client has responsibility (see Figure 40). But, the client has the opportunity to (partly) outsource the other phases to an architect or consulting engineer according the DNR 2011.

<table>
<thead>
<tr>
<th>Construction Phases</th>
<th>Building Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiative</td>
<td>Responsibility Contractor</td>
</tr>
<tr>
<td>Research</td>
<td></td>
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<tr>
<td>Definition</td>
<td></td>
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<tr>
<td>Design Specifications</td>
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<tr>
<td>Preliminary Design</td>
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<tr>
<td>Definitive Design</td>
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<tr>
<td>Execution Design</td>
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<tr>
<td>Work Preparation</td>
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<tr>
<td>Execution</td>
<td></td>
</tr>
<tr>
<td>Maintenance</td>
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</tr>
</tbody>
</table>

Figure 40: Distribution of responsibilities in Building Contracts, adapted from (CROW, 2005)

There exists no contractual relationship between the contractor and the architect, only a functional relationship

---

16 There exists no contractual relationship between the contractor and the architect, only a functional relationship.
The contract that the client and contract enter into consist of three contractual documents:

**The Building Contract**
This is the contract that the parties enter into, that states what the works involve, who the parties are and the price they have agreed upon. Furthermore, the building contract states that it is subject to the UAV 2012 (Chao-Duvis et al., 2013, p. 52).

**The UAV 2012**
The Uniform Administrative Conditions lay down the terms and conditions under which the parties have entered into the building contract. The UAC 2012 contain only administrative and legal provisions, no technical descriptions or rules (Chao-Duvis et al., 2013, p. 52).

**The Specification**
The specification is a detailed technical description of the works. The UAV 2012 describes in paragraph 1 that this also consists of associated drawings, the summary of additional information and changes, and the report of the pre-tender site inspection (Chao-Duvis et al., 2013, p. 52).

**UAV-GC 2005**
The integrated model implies the integration of both design and execution, into the hands of one single party in relation to the client. This is a result of the consideration of the client to decide to contract only one party for the realization of an object. Nevertheless, an integrated contract is an umbrella term that characterizes a collection of multiple building process functions. It is therefore not necessarily limited to solely design and execution, but could also represent other phases as well (CROW, 2005, p. 6). In comparison to the other contract models, the integrated model represents a situation in which the client plays a far smaller role. The client also attracts less liability, while the contractor bears a much higher liability (Chao-Duvis et al., 2013, p. 26).

In comparison to the traditional model, in the integrated model the responsibility for the design is shifted from the client towards the contractor. As a result, there solely exists a legal relation between the client and the contractor that is governed by the UAV-GC 2005. There exists no longer a legal relation between the client and the architect or consultant. Nevertheless, the contractor can still outsource the design to an architect or consultant, but the contractual relation concerning the design remains between the client and the contractor, governed by the UAV-GC 2005. If the contractor decides to outsource for example the design to an architect (e.g. due to lack of expertise), the contract that is entered into is governed by The New Rules 2011 (DNR 2011). The contractor can also decide to outsource a part of the execution to subcontractors. The contract that is entered into with these subcontractors is governed by the UAV 2012. Nevertheless, outsourcing of these activities does not relieve the contractor of its responsibilities as written down in the integrated contract towards the client (Chao-Duvis et al., 2013, pp. 99, 100). These contractual relations can be found in Figure 41.

**Figure 41**: Relations in the integrated contract, adapted from (Chao-Duvis et al., 2013, p. 99)
As mentioned earlier, the integrated contract is an umbrella term that can consist of multiple phases. The amount of phases, often determine the type of integrated contract that is used. For example the design & construct contract, solely focuses on the design and the execution. While for a DBM contract (Design, Build & Maintain), also maintenance is integrated into this contract next to the design and execution. A variation to these contracts is the Turnkey contract, in which drawing up the design specifications is also responsibility of the contractor (De Greef, 2006, p. 9). To conclude, the integrated contract can bear many phases, depending on the type of contract that is used. But, at least the definitive design, execution design, work preparation and execution must be included to have an integrated contract. This is illustrated in Figure 42.

<table>
<thead>
<tr>
<th>Construction Phases</th>
<th>Integrated Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiative</td>
<td></td>
</tr>
<tr>
<td>Research</td>
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<td>Execution</td>
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<td>Maintenance</td>
<td></td>
</tr>
</tbody>
</table>

Figure 42: Distribution of responsibilities in Integrated Contracts, adapted from (CROW, 2005)

In comparison to building contracts governed by the UAV 2012, integrated contracts governed by the UAV-GC 2005 require more contractual documents:

**The Standard Basic Contract**
The SBC (in Dutch: Model Basisovereenkomst) “provides a model for the contract document in which the client and the contractor jointly specify certain data and choose certain options” (Chao-Duivis et al., 2013, p. 100). The SBC consists of 18 articles, that each require a joint specification of the client and contractor. Examples are (CROW, 2005):
- What the client intends to have built
- What price is to be paid
- Completion date
- What information and goods are provided by the client
- Payment terms
- Etc.

**The Employer’s requirements**
Also called the Terms of Reference (in Dutch: vraagspecificatie). The document that is produced by the client on which the contractor has based the development and submission of his tender (CROW, 2005, Ch.1.1 q). The ToR must at least include the schedule of requirements, but can also include the preliminary design (Chao-Duivis et al., 2013, p. 101)

**The annexes**
The appendices of the contract, with a distinction in required and optional annexes. The required annexes are among others an overview of permits and licenses, design work verification plan, acceptance plan, etc. Optional annexes are among others a timetable, provisional sums, variations in wages and prices, insurance policies, etc (Chao-Duivis et al., 2013, p. 101).
The tender
This is the tender document that the contractor submitted in the tender phase, by which “the contractor states that he intends to carry out the works, and any long-term maintenance, in accordance with the contract provisions in return for payment of the price stated in the standard basic contract” (Chao-Duvis et al., 2013, p. 101).

The UAV-GC 2005
The general terms and conditions under which the parties have entered into the integrated contract. The UAV-GC 2005 contain solely administrative and legal provisions, no technical descriptions or rules (Chao-Duvis et al., 2013, p. 101).
Appendix 4: Procurement and tendering

If a government decides to outsource a maintenance contract, the maintenance is being **procured**. This procurement is carried out by putting the maintenance out for **tender**. In the next paragraphs, both terms are discussed followed by a more thorough description of the tender procedure.

**Procurement**

Earlier has been discussed that a government can decide to outsource its maintenance to a third party, also known as procurement. Gershon (1999) defines procurement as “the whole process of acquisition from third parties (including the logistical aspects) and covers goods, services and construction projects.” This also includes both conventional contracts (e.g. RAW contracts) and innovative contracts (e.g. DBFM). Public procurement is also described as the governmental purchases of goods and services from the private sector. Public procurement has grown substantially in recent decades and is based on a broadly accepted key principle: an open competition with unrestricted access to the procurement market by the private sector. Furthermore, the procurement process is transparent process in which the selection of bidders, tendering procedures, and the award of contracts are publically available (Carayannis & Popescu, 2005, p. 4).

McCrudden (1995) states that procurement has been used by governments to: stimulate economic activity; protect national industry against foreign competition; improve the competitiveness of certain industrial sectors; and remedy regional disparities. In addition, Bolton (2006) states that public procurement is used to achieve social policy objectives such as the creation of jobs or to promote the use of local labor.

A government bases its procurement policy on its general governmental policy. From this procurement policy, the policy objectives for public procurement are derived. Examples of these policy objectives are **procuring at the optimal price quality ratio** and **delivering a continuous positive contribution to the municipal performance level**. Furthermore, a government also has administrative policy objectives for procurement related to for example risk management, sustainability, competition position of small entrepreneurs and cost reduction (Biessels-De Jong, 2013, pp. 4, 5).

**Tendering**

In the previous paragraph has been discussed what procurement of maintenance means. The terms **procurement** and **tendering** are often interchanged, but are not the same according to PIANOo (N.D.-e). Procurement is a process that can be distributed into three phases, of which the tender is one of the phases:

1. Preparation of the procurement order
2. Execution of the tender procedure
3. Execution of the procurement order

The tender belongs to the specific part of procurement that involves specifying, selecting and contracting and is a method of procurement. Earlier has been mentioned that Gershon (1999) defines procurement as “the whole process of acquisition from third parties (including the logistical aspects) and covers goods, services and construction projects”. Thus, the **whole process** can be perceived as the three mentioned phases.

Tendering, as a method of procurement, is described by Brackmann (2005) as the “process of procurement at which the client, in a transparent and objective manner, assigns the order to a contractor that complies to certain demands and that has made the best offer”. From this definition can be concluded, that a tender involves an offering and accepting party: the client and the contractor. The client has demands for the contractor and for its offer. Furthermore, it can be concluded that there exists a transparent and objective process for tenders that has to be followed. Lastly, the order goes to the contractor with the best offer.
Appendix 4: Procurement and tendering

Tender legislation and contracting authorities
The European Union strives for a large free internal market, which results in directives concerning tenders. These directives attend to that public orders are tendered in such a way, that potential contractors have an equal chance of winning a contract. This is called European tendering (Brackmann, 2005, p. 13). The European tender directives are included in Directive 2004/18/EG of the European Parliament and of the Council (European Parliament, 2004). The Dutch government has laid down the European directives in the national tender law or Aanbestedingswet. This tender law implements the directives as laid down in 2004/18/EG (Rijksoverheid, 2012).

In the definition of a tender, the offering party is described as the client. The client is also called the contracting authority if according to the tender law, the client is “either the central government, province, municipality, water board or sectoral organization under public law, or a cooperation of these governments or sectoral organizations under public law” (Rijksoverheid, 2012, Art. 1.1). If the client is in fact a contracting authority, it has to act according to the tender law. A non-contracting authority, such as private parties, do not have to act according to the tender law (Van Alphen, 2013). This research will focus solely on contracting authorities and not on non-contracting authorities.

Award mechanism
Earlier has been discussed that in a tender, the client awards the contract to a contractor that has made the best offer. Awarding this contract is done based on the award mechanism. Brackmann (2005, p. 221) describes the award mechanism as a tool for the contracting authority to assess and rank the tenders, so that a winning tender can be found that complies best with the criteria of the award mechanism. The term award criteria and award mechanism are often interchanged, but have different interpretations. In this research, the award criteria are perceived as the result of the later discussed EMAT mechanism. The Directive 2004/18/EC distinguishes two types of award mechanisms: lowest price and EMAT (European Parliament, 2004, Art.53). Both mechanism will be discussed separately.

Lowest Price
The lowest price mechanism is purely based on the monetary assessment of bids. Contractors submit each a price for which they offer to build the contracting authority’s order. Furthermore, the contractors have to prove that they comply with the Terms of Reference (in Dutch: vraagspecificatie). The awarding of the contract is based on the contractor that submits the lowest bid (Dreschler, 2009, p. 13). The lowest price award mechanism is schematized in Figure 43.

Figure 43: Lowest price award mechanism, adapted from (Dreschler, 2009, p. 13)
Appendix 4: Procurement and tendering

**EMAT**
The EMAT award mechanism is used when ‘any other criteria than solely the price plays a role in the tender’ (Hardeman, 2013, p. 11). EMAT stands for Economically Most Advantageous Tender. The EMAT award mechanism, takes besides price and complying to the Terms of Reference, also other criteria into account. These criteria are the earlier mentioned award criteria. The award criteria are used to determine the partial performance of the bids of the contractors (Dreschler, 2009, p. 14). The Directive 2004/18/EC mentions that criteria can be for example related to “quality, price, technical merit, aesthetic and functional characteristics, environmental characteristics, running costs, cost-effectiveness, after-sales service and technical assistance, delivery date and delivery period or period of completion” (European Parliament, 2004, Art. 53.1). The goal of EMAT is to challenge contractors to show added quality in order to gain the optimal relation between price and quality (Schultz van Haegen, 2015).

This optimal price-quality relation can be reached through different systems, that recalculates the quality aspects with the price. Doornbos (2005) and Hardeman (2013) distinguish four systems and two variations:

**Awarding on value**
The contracting authority assign fictive discounts to the award criteria. These discounts are reduced from the contractors financial bid. The amount of fictive discount the contractor earns, depends on the amount of value the contractor delivers in his EMAT bid. For each criteria, a higher value corresponds with a higher discount. The contractor with the lowest fictive bid (the fictive discount subtracted from the financial bid), is awarded with the contract.

**Relative point system**
Both the quality, based on the award criteria, and the price are expressed in terms of points. The points assigned to the price depends on the prices of the other bidders, which makes this a relative system. The points are added to each other and the contractor with the highest amount of points is awarded with the contract.

**Absolute point system**
Also in this system, the quality and price are expressed in terms of points. But, in this absolute system the points for the price are not related to the other prices. The amount of points for the price depends on a predetermined scale (for instance 10 point for every €100.000).

**Price/quality ratio**
In this system, the quality is expressed in terms of points. Subsequently, the price is divided by the amount of points. This results in a ratio in terms euro’s/point. The contractor with the most advantageous ratio, is awarded with the contract.

Two variations on these systems are:

**EMAT with a limitation bid (in Dutch: plafondbedrag)**
This system can be used for any of the previous systems. It defines a limit to the amount that an order can cost. This limits the financial bid that a contractor can submit.

**Minimal required quality**
In this system, the contracting authority determines a certain minimum quality that contractors have to comply to. All bids that comply to this minimum, are subsequently assessed on the lowest price.

The award criteria that the contracting authority has defined, do not have to have an equal weight when assigning points or fictive discounts. Weighing factors can be appointed to each award criteria, to make a distinction in the importance of the criteria (Brackmann, 2005, p. 67). According to the Directive 2004/18/EC, the contracting authority “shall specify in the contract notice or in the contract documents the relative weighting which it gives to each of the criteria chosen to determine the most economically advantageous tender” (European Parliament, 2004, Art. 53.2). This means that one
award criteria can weigh higher than another. This could result in a higher maximum of points or higher maximum fictive discount for one award criteria in comparison to another.

In Figure 44, the EMAT award mechanism is illustrated:

This research will focus on tenders that involve the EMAT award mechanism and not the lowest price award mechanism. The role that award criteria and weighing factors play in the tender, will become an important part of this research.
Appendix 5: Documentation analysis

The content of the documentation analysis is restricted for public use and is therefore not included in this report.
### Appendix 6: Within-case matrices

#### Municipality of Haarlem

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Objectives</th>
<th>Expectations</th>
<th>Award Criteria</th>
<th>Weighing Factors</th>
<th>Staff Continuity</th>
<th>Communication</th>
<th>Problems</th>
<th>Advice to Client</th>
<th>Advice to Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policymaker</strong></td>
<td><strong>1.1</strong> The objective of the board of M&amp;A was cost savings and working in direction. This was independently translated and shaped, since the administrative organization into LIM-contract and their objectives.</td>
<td>Cost savings and a reduction of employees were the main expectation of the political organization. No specific expectations were expressed concerning the contract.</td>
<td>Not involved in formulating the award criteria.</td>
<td>Not involved in formulating the weighing factors.</td>
<td>Involved in setting up the contract, assisting in the tender phase, and advising in the contract phase. This continuity adds value, since you know how the contract originated.</td>
<td>Two plenary meetings with all contractors, in which expectations for partnership are expressed and contractors could ask questions.</td>
<td>-Large contractors have insufficient local knowledge of the area. -The internal organization lacks the conceptual level of the LIM contracts.</td>
<td>-Make sure you have players internally who can manage and understand these contracts -Appoint potential risks -Assess the possibility for involving large maintenance</td>
<td>No advice given.</td>
</tr>
<tr>
<td><strong>Tender Advisor</strong></td>
<td><strong>1.2</strong> The objectives are based on the responsibilities the contractor receives, when the municipality works in direction. Some objectives are translated from policy objectives.</td>
<td>The expectations are based on their vision how a contractor should behave and collaborate during the contract phase.</td>
<td>The award criteria are translated from the objectives, in such a way that a measurable plan could be written.</td>
<td>The expectations for collaboration and partnership were most important, which was translated to the highest weighing factor.</td>
<td>Involved in setting up the contract, assisting in the tender phase, and advising in the contract phase. Added value, for understanding the intentions. Also added value for continuity at contractors.</td>
<td>1 pre-tender and 1 tender plenary meeting, to explain the contracts and vision. No individual dialogue, due to risk of disturbing level-playing field.</td>
<td>-Lack of available area data in tender phase -Resistance within the organization -Contractors listen poorly to intentions of client</td>
<td>-Create and remain vision to break internal resistance -Don’t expect to solve all problems with LIM-contracts -Be aware of the importance of area data</td>
<td>-Invest in understanding the vision and intentions of the client -Ask plenary questions, without minding your competitors -Create an open and transparent attitude -Invest in this new method</td>
</tr>
<tr>
<td><strong>Contract Manager</strong></td>
<td><strong>1.3</strong> All objectives play an active role in the execution of the contract. Most objectives are audited or evaluated.</td>
<td>Active role for the expectations. The contractors have written their plans based on the expectations, which have become requirements, which will be verified.</td>
<td>Promises in the plan are based on award criteria, which have become requirements, which will be verified.</td>
<td>The criterion collaboration and partnership is essential, and is actively monitored.</td>
<td>Advising in tender phase, assessment of bids, and managing the contract. Continuity added value for understanding the contract. This continuity was not present at contractor, which would have added value.</td>
<td>At start, there was a verification meeting in which some of the expectations were concretised. Not the case for the objectives. Supporter of individual dialogue, to explain plans and expectations. With pre-set questions.</td>
<td>-Lack of available area data, which resulted in large delay of transition period. -Too much focus on processes instead of work outside -Lack of SMARTness in definition and promises</td>
<td>-Create clear image of the area and its data -SMART requirements, but general objectives and expectations -Take time for transition phase -Include large maintenance in LIM-contracts</td>
<td>-Make achievable and SMART promises -Directly link the plan to the questions or requirement of the client -Increase continuity in tender and contract phase -Be aware of implications of promises made in plan</td>
</tr>
<tr>
<td><strong>Tender Manager</strong></td>
<td><strong>1.4</strong> The objectives were clear. But the concern, origin and interest behind the objectives had to be found and included in the plan.</td>
<td>The expectations were linked to the objectives and award criterions and included in the text. Some were vague, but it left opportunities for own interpretation. Story behind expectations was essential.</td>
<td>Clear line between objectives, expectations and award criterions resulting in a clear tender specification and a clear plan, by including objectives, expectations and examples.</td>
<td>Clearly that client was searching for partners and had a high weighing factor. Other weighing factors for criteria were also clear. Not much more effort for higher weighed award criteria: one story.</td>
<td>Involved in tender, three weeks before award and now manager of the team. Project coordinator was involved after awarding: would be better to include in tender phase to earlier understand vision client.</td>
<td>Clear explanation of situation and expectations of client in plenary meetings. Supporter of these meetings, but also individual dialogue to ask more and better questions.</td>
<td>-Internally in the tender team, the urge to understand client’s concern was not there. -Contract team was not used to asset management method and thoughts</td>
<td>-Be open to contractors about your expectations -Don’t let contractors bear all risks during the entire contract length</td>
<td>-Understand your client: look further than published documents -Have personal contact with the client -Identify and take into account stakeholders in the public space -Don’t be afraid to ask questions publicly: have faith in your own plan</td>
</tr>
<tr>
<td><strong>Contract Manager</strong></td>
<td><strong>1.5</strong> Objectives play an (increasingly) important role. After the first year, client focuses on daily maintenance, including objectives. Objectives are translated to contract requirements which are audited on.</td>
<td>Expectations are only recalled when things are not going as planned. Expectations of the client during contract are more important than published expectations. Expectations are vague, but concretized during contract.</td>
<td>Award criteria don’t play much of a role yet. Plan is not looked into often, but should be done more. Plan have become requirements, which is expected to be verified by the client someday.</td>
<td>Clearly that collaboration and partnership is important to client and why it is weighed this high. Other weighing factors play less of a role, similar to the award criteria.</td>
<td>Became involved in contract 6 months after award, with not much preparation. Earlier involvement, preferably already during tender equals a better start and understanding of the client.</td>
<td>Client states clearly what is important and what he finds important. Much talks to create mutual understanding.</td>
<td>-Area data did not match what was found in the area: much time spent on discussion and completing data -Too much process requirements, resulting in less money for maintenance works</td>
<td>-Be transparent in your expectations to the contractors -Put not too much focus on processes -Don’t give construction requirements for maintenance -Give opportunities for contractors to better understand the client</td>
<td>-Understand how the contract is built up and how it works -Seize opportunities to better understand each other e.g. through individual dialogue during tender</td>
</tr>
</tbody>
</table>
### Appendix 6: Within-case matrices

#### Kop van Noord-Holland

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Objectives</th>
<th>Expectations</th>
<th>Award Criteria</th>
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<th>Advice to Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policymaker 2.1</td>
<td>Policy objectives are translated from current and new policy from GS, approved by PS. Objectives are translated by the managing organization to project specific requirements.</td>
<td>The managing organization determines requirements and conditions, which is translated to the tender specification by the project organization, which is the same for all contracts.</td>
<td>Not involved in formulating the award criteria.</td>
<td>Not involved in formulating the weighing factors.</td>
<td>For all area contracts, the same team formulates the contract. Later during the tender, the IPM team is involved who also does the bid assessment. This team continues in the contract phase. Continuity adds value, because then IPM understands choices made.</td>
<td>Market consultations were held to explore each other's interests. Important for successful cooperation. Proprietor of individual dialogue to get to know each other and understanding each other's goals and published documents.</td>
<td>Focus on cooperation in a cooperation, including subcontracting occurs traditionally on price. Subcontractors are not chosen on their plans for cooperation but on lowest price.</td>
<td>- When contracting on cooperation, include subcontracting on cooperation as well. - When working in direction and cooperation with contractor, the organization must change to avoid resistance. - Use market consultations to better understand contractors.</td>
<td>- Look for civil servants to absorb their knowledge and to better understand client. - Understand how the client's organization works by e.g. reading policy documents. - Use market consultations to better understand clients.</td>
</tr>
<tr>
<td>Tender Advisor 2.2</td>
<td>The administrative organization has formulated the project objectives, based on the policy objectives and coalition agreement and the objectives of managing organization. In the bid, the contractor had to describe how he would meet with objectives.</td>
<td>Expectations are elaboration of objectives, that are concretized by administrative organization based on expectations of several parties. Some return in the EMAT, others are just found important. Plans are written around expectations.</td>
<td>Award criteria are based on objectives and expectations, to enable bidders to write a good plan around them. Bids had to have this concrete link to the objectives and expectations.</td>
<td>IPM roles have changed. Preferably, entire IPM team shifts from tender to contract phase, so that they understand contract and what choices are made. Writing the contract can be other team. Changes can happen stepwise after transition phase.</td>
<td>Client is open to individual dialogue and open to discussion. Market consultations were held, but contractors were reluctant to talk openly. Also important to consult fellow governments.</td>
<td>- Contract had wide interpretation for contractors, but no questions were asked about this, only detailed questions. The mindset was not there yet. - Contractors repeated content of contract in their plans, resulting in low scores.</td>
<td>- Be transparent about what area data you have, and what not. - Explain your objectives and expectations to the contractors plenary. Evaluate the bid assessment with bidders: include internal organization in process of formulation LIM contract. - Don't repeat the contract in plans, write about your added value. - Dare to ask questions, be open to client, in order to improve own bid. - Ask feedback after awarding, to improve next bid. - Read more than published documents.</td>
<td>- Discuss the meaning of definitions, to avoid misinterpretation.</td>
<td></td>
</tr>
<tr>
<td>Contract Manager 2.3</td>
<td>The objectives play a continuous role in the execution. Objectives are on high level described by the client, contractor has to demonstrate how it will meet with them.</td>
<td>The contractor is continuously addressed about expectations.</td>
<td>Plans are written around EMAT. The plans should be continuously looked at during execution. These plans are requirements, that they have to abide to. If not, address to them.</td>
<td>No specific answer given</td>
<td>Same answer as above</td>
<td>Same answer as above</td>
<td>- Area data was not up to date and many drawings were thrown away. - Definitions and interpretation of things causes some discussion with the contractor.</td>
<td>- Don't put risks that you are not aware of at contractor, without having the budget to pay for this risk. - Consult fellow governments about their experience with LIM. - Discuss the meaning of definitions, to avoid misinterpretation.</td>
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</tr>
<tr>
<td>Tender Manager 2.4</td>
<td>Objectives were clear, but non-measurable and rather vague. In plan was a clear link with objectives, but was hard due to vagueness.</td>
<td>General and rather vague expectations, that leaves much room for interpretation. Expectations were used as framework in plan. Did not understand client, due to no contact within Province.</td>
<td>Could not add much value based on the award criteria. Did not completely understand where award criteria came from. Business case helps to concretize your plan. No clear link between objectives and award criteria.</td>
<td>Tender manager originated after pre-selection, and since tender was won, team would continue in mobilization. Otherwise, loss of knowledge. Continuity adds value, better relation with client.</td>
<td>One individual dialogue was held, during which only contract changes were discussed. No chance to get to know client's whishes. During plenary meetings, contractors did not want to talk openly.</td>
<td>- Unclear what client wanted, how he formulated things and why choices were made. - Transfer of area data was not organized well. - Unclear use of BVP during tender.</td>
<td>- Make clear in documents what you want to have - Have a clear organization of area data - Make proper use of individual dialogue. - BVP is better to add value, but use is it fully. - Let bidders explain their plans.</td>
<td>Make sure you have knowledge of the local area and people. Get to know your client by doing also small jobs there.</td>
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</tr>
<tr>
<td>Contractor 2.1</td>
<td>Objectives play active role part of EMAT plan which has become contract and is audited. Objectives are concretized in plans and made measurable, on which is steered on during execution.</td>
<td>Same active role as objectives: part of EMAT plan as promises and part of contract. Client addresses expectations to contractors. No personal expectations: strictly following contract.</td>
<td>EMAT plan written around criteria: criteria are assessed for tender, no role in execution. Now, the EMAT-plan is part of contract and audited on. All promises of interview are literally part of contract.</td>
<td>All criteria have the same weight in contract. Weighing factors only played role during tender. More promises for criterion, requires more effort of contractor despite low weighing factors.</td>
<td>Involved during tender as key executive. Rest tender team stopped after award. IPM team determined after award. Continuity added value for quick start, better preparation and better relation with client</td>
<td>No specific answer given</td>
<td>- Long transition phase due to lack of area data - Unclear if client expects a service provider or an asset manager - Unclear for contractors in tender when client wanted from contractors - RAW culture still present at client and contractor in execution contract.</td>
<td>- Create first internal uniformity in contracts and requirements - Explain desires to contractors: involve them in expectations - Keep valuing added value in EMAT plans: do not frame everything. - Create internal uniformity in processes and keep optimizing. Invest once in process and do not redo it for every client again. - Create pro-active attitude, loose RAW culture.</td>
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</table>
### Rijkswaterstaat: Project A

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Objectives</th>
<th>Expectations</th>
<th>Award Criteria</th>
<th>Weighing Factors</th>
<th>Staff Continuity</th>
<th>Communication</th>
<th>Problems</th>
<th>Advice to Client</th>
<th>Advice to Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policymaker 3.1</strong></td>
<td>Policy objectives are formulated by RWS, based on agreements with ministry and their approval. Policy objectives are standard for all contracts and based on functional description, without involvement ministry.</td>
<td>Expectations are the more soft side of the cooperation with contractors. These expectations are formulated to offer a helping hand to the contractor to explain the focus on cooperation. Award criteria are ideally linked to the top 5 risks of that region. Each region has its own interpretation of what nationally is determined. No direct link between objectives and expectations. No political role.</td>
<td>The region determines what is in the scope. From risk sessions, the top 5 risks is determined resulting in award criteria and corresponding weighing factors. No political role.</td>
<td>Team who does risk session and determines the award criteria, also evaluates bids. This way they have a good preparation on choices made and how to evaluate. This results in biases, therefore extensive reasoning.</td>
<td>Legally obligated to give individual feedback on bids. This way, contractor can improve. From Marknisse, need for improvement dialogue to improve all parties and better understanding.</td>
<td>Proponent of individual dialogue.</td>
<td>- User doesn’t play a central role yet in determining objectives and expectations. - EMAT losses leverage and differentiation between bidders decrease. - Mutual negative views about contractors and clients.</td>
<td>- Make use of BVP to increase strength EMAT. - Less required personnel is an advantage of UIM, but should not be the reason to outsource. Make use of knowledge of contractors and other clients through (market) consultations.</td>
<td>- When in an individual dialogue, don’t ask general questions but also ask questions outside the project to get to know the client. - Seize the opportunity to walk along with the client in a job rotation.</td>
</tr>
<tr>
<td><strong>Tender Advisor 3.2</strong></td>
<td>Whishes customer and client are discussed with project team and advisor BVP. Objectives are SMART formulated and prioritized specifically for each project. Feedback with client, resulting in compromises. Bids should be linked to objectives.</td>
<td>Expectations are centrally determined by BVP core team from GPO. Expectations are uniform between areas and within RWS. Expectations are aiming at relieving the client, how contractor will act during maintenance. Award criteria for BVP are always the same and formulated and managed by central BVP core team. Standardized text, which saves time. In bid evaluation are the objectives and expectations included.</td>
<td>Fixed percentages of the ceiling price are predetermined, which result in the weighing factors. After determining ceiling price, weighing factors can be quickly determined.</td>
<td>Involved in tender, not part of bid evaluation, which is an independent team which is not involved in tender set-up. IPM roles are included in tender and continue after award: adds value for knowing origin of the contract and BVP idea.</td>
<td>Individual dialogues held of 1.5 hours each for 19 bidders: all try to hear what client wants, but no response given by client. Proponent of individual dialogues: chance for bidder to be distinctive, talk more openly and understanding each other.</td>
<td>- Room for individual dialogue, but not all contractors use this resulting in missteps and not used by clients in traditional contracts. - Discontinuity at client, resulting in loss of BVP base and time loss in investing relation. - Area data up to date.</td>
<td>- Use BVP, as long as mindset in present in entire team and it adds value: dare to let it go. - Use individual dialogue to create distinctive bids. - Use plenary meetings to explain the client’s application of BVP.</td>
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<tr>
<td><strong>Contract Manager 3.3</strong></td>
<td>Most project objectives play a continuous role. Some leave room for interpretation and discussion between IPM, manager and contractor. Others are specified in requirements.</td>
<td>Expectations are related to the role that is expected of contractor in the area. Much room for interpretation, which requires discussion about meaning. Because this is a BVP, very important to agree on mutual expectations on beforehand. Collective risk dossier still plays a role, leaving risk management at contractor. Others were paid little attention to. Interview has become requirements, but are not audited by client. Almost no role for award criteria.</td>
<td>No role for weighing factors in execution. Started 3 years after award with contract team: resulting in re-reading into project and learning contractor: continuity is important or at least proper handover. Former IPM involved in tender, adds value: learning essence contract.</td>
<td>Before start, crucial to discuss expectations and how contractor thinks about deals and with deals it creates cooperation and you can fall back on this. Important: what’s in contract, what wants district, what does contractor.</td>
<td>- Discontent at contractor about discontinuity IPM team at client: same discussion over again. - EMAT plays no role in execution. - At first: idea of BVP at client that contractor is expert, no effort and communication needed of client. - Area data is not up-to-date. - Contract: 3 years too long.</td>
<td>- Strive for continuity and good handovers: staff changes are possible and can be advantageous. - Make good consideration about length contract: good contract 3 years too short, bad contract 10 years too long.</td>
<td>- Make use of individual dialogue, to take advantage and discover the space that the client gives you. - Understand and respect each other’s interests and how the client works and is organized: walk along with the other for a day.</td>
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<td><strong>Tender Manager 3.4</strong></td>
<td>No data available</td>
<td>No data available</td>
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<td><strong>Contract Manager 3.5</strong></td>
<td>Objectives play a role: are used in communicating arguments to client, gives contractor stronger position in discussion. Also internal objectives formulated and additional more focused objectives determined with the client.</td>
<td>Some expectations are included in organizational processes. Others are made explicit during mobilization. Once you know the background and idea behind them, you don’t have to fall back to them continuously. Interview doesn’t play a role. Chance dossier is used in mobilization, and when all chances discussed, no role anymore. Risk dossier still plays active role. Criteria from BVP more active role than criteria of traditional tender.</td>
<td>No real distinction between weighing factors in execution.</td>
<td>Involved in contract 9 months after award, without handover to choose new course. Involved in tender would have been better. Now advisor in new tender: adds value to have a better start after award.</td>
<td>At first, client thought for tendering BVP, they didn’t have to communicate: now communication is better. Almost everything was linked to “ultimate effort contractor”: client learnt that this is not the right way. - Area data is not up-to-date at client -Discontinuity at client: IPM team replaced - Differences between RWS contracts: every time learning client again -Bad start due to unawareness about maintenance and client’s objectives.</td>
<td>- If possible, use BVP: it increases mutual understanding and has intention to collaboration. - When using BVP, focus on transparency to each other. Learn from each other’s mistakes and use these lessons in new contracts.</td>
<td>- Get involved during the tender, to get a flying start during execution and to be aware of the situation before start. - Built on the relationship with each other: the more transparent, the better understanding and mutual trust.</td>
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13 This tender manager was not available for an interview
<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Policymaker</strong>&lt;sup&gt;18&lt;/sup&gt; 4.1</td>
<td>Policy objectives are formulated by RWS, based on agreements with ministry and their approval. Project objectives are standard for all contracts and based on functional description, without involvement ministry.</td>
<td>Expectations are the more soft side of the cooperation with contractors. These expectations are formulated to offer a helping hand to the contractors to explain the focus on cooperation.</td>
<td>Award criteria are ideally linked to the top 5 risks of that region. Each region has its own interpretation of what nationally is determined. No direct link between objectives and expectations. No political role.</td>
<td>The region determines what is in the scope. From risk session, the top 5 risks is determined resulting in award criteria and corresponding weighing factors. No political role.</td>
<td>Team who does risk session and determines the award criteria, also evaluates bids. This way they have a good preparation on choices made and how to evaluate. This results in biases, therefore extensive reasoning.</td>
<td>Legally obligated to give individual feedback on bids. This way, contractor can improve. From Marktwise, need for improvement dialogue to improve all parties and better understanding. Proponent of individual dialogue.</td>
<td>- User doesn’t play a central role yet in determining objectives and expectations. - EMAT losses strength and differentiation between bidders decrease. - Mutual negative views about contractors and clients</td>
<td>- Make use of BVP to increase strength EMAT - Less required personnel is an advantage of UMP, but should not be the reason to outsource - Make use of knowledge of contractors and other clients through (market) consultations</td>
<td>- When in an individual dialogue, don’t ask general questions but also ask questions outside the project to get to know the client - Seize the opportunity to walk along with the client in a job rotation</td>
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</table>

**Client**

| Tender Advisor 4.2 | Project objectives are partially result of the definition of area in order. Others are district specifically determined. Objectives concretized for each project. In the EMAT evaluation is also looked at objectives. | Expectations are standardized for each project and centrally formulated for the model contract. Fixed from the corporate identity. Plays almost no role in tender because of time pressure and because they are always the same. It gives framework to bidders. | During a set of sessions the award criteria determined. Centrally approval is required. For every criterion is determined if added value can be reached, otherwise it will become a requirement. Link with objectives. | Weighing factors are determined in the team. Current trends or policy objectives are often attached to the weights. No central approval required. | Always same tender advisor who also does bid evaluation. After award he stops and is taken over by contract manager. No continuity due to tension between both about own interests. Need for more continuity, to align thoughts. | There was a plenary meeting with all bidders, where they could ask questions. This way you can see and understand each other. Better than the current way through TenderNet. Proponent of individual dialogue, but no general questions. | - Not enough available area data, reduces the credibility of the client. - Idea behind the contract stops after awarding the contract and the contract manager takes over - Bidders are reluctant to talk openly in plenary dialogues | - Make sure you have a certain base level of area data in the contract. - Start dialogue with the bidders during tender - Use market consultations and competitive dialogue; learn to understand each other, use each other’s knowledge | - Act pro-actively already during the tender. By e.g. visiting the project and the client, to show your interest. Show that you want to know the situation |

**Contract Manager**<sup>19</sup> 4.3

| No data available | No data available | No data available | No data available | No data available | No data available | No data available | No data available | No data available | No data available |

**Contractor**

| Tender Manager 4.4 | Project objectives played no role in tender and are quickly skipped to look at tender specification, because they were always the same. Objectives are not region specific and are centrally formulated. | Expectations were same as any other tender, therefore not much attention paid to. It gives you a framework to attach the EMAT criteria to. Expectations were own interpretation, not naturally same as client. | Individual dialogues were used to understand award criteria. More important to know how the evaluator thinks and scores, than the exact meaning of the criteria. Some links between criteria and objectives. | Origin of weighing factors became clear from individual dialogue. Equal time is spend on each criterion, but the higher weights are put some extra focus because this was most important to client. | Involved from start tender, and then one year as contract manager. Continuity adds value, at least overlap between roles. Also continuity at client present, which added value. | Individual dialogues to explain objectives and award criteria. Need for more dialogue, to learn to know client’s wishes, to make better plans. During plenary meetings, everyone keeps his mouth shut. | - Standard expectations /objectives didn’t trigger contractor to think further. - Not enough chance to learn client’s wishes for long-term contract - Too much space for own interpretation in documents | - Make sure you understand your client, otherwise depending on vague objectives and expectations - Write your plans more SMART: measurable and verifiable so that the client understands your plan | - Make sure you understand your client, otherwise depending on vague objectives and expectations |

| Contract Manager 4.5 | Project objectives are formulated generally and are after PPV more specified with client, to add more focus on interest of both client and contractor. Objectives are applied in context of execution. | Expectations give directions to contractor, but are non-SMART umbrella terms that can be linked to anything. They should not become requirements of the client. | Not aware of the content of the award criteria. EMAT plan is transferred to requirements, which are verified but are not part of daily work. These requirements are audited by client and contractor. | No extra attention to higher weighted criteria by contractor and client. | Started more than a year after start contract. Not involved during tender. Continuity adds value, but not people but continuity in knowledge. Good handovers enables changes during and between phases. | Client’s contract team is clear in how they act and how they can help, but do not manage the budget. This goes through RWS manager, which is a black box, that makes decisions. | - Area data is not good and not up to date - Bid of contract was lower than own budget, resulting in fighting to benefit from contract and a worse relation between contractor and client | - Improve the basic area data. Use tools for this to create uniformity between contracts. - Client requires more and more detail info about verifiability, resulting in more inside than outside employees. prevent this | - In plan is everything concretized: makes it difficult to verify - Make distinction between meeting with requirements and adding requirements. - Creating better plans, results in higher bids with higher margins |

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<sup>18</sup> These answers are the same as for the case Rijkswaterstaat: Project A, since one policymaker of Rijkswaterstaat has been interviewed for a homogeneous answer

<sup>19</sup> No permission was given by the contractor to interview this contract manager of the client
Appendix 7: Elaboration on contact moments with contractors

In Paragraph 8.4.4, the recommendations to clients have been discussed. One of these recommendations was to organize more contact moments with the bidders. Considering the contact moments, there are differences in the legal opportunities for clients to have contact with contractors. According to Chao-Duivis (2008, p. 20), the European tender directives do not include detailed dictates or prohibitions related to contact moments. But, in the Directive 2004/18/EC is made clear that if there is contact between the client and contractor, the equality principle has to be safeguarded (European Parliament, 2004, Dir. 2). This is one of the key principles related to tendering and gives procedurally speaking any bidder an equal chance to be awarded with the contract (PIANOo, N.D.-a).

The possible contact moments can be divided into two types: contact moments related to the contract and contact moments independent of the contract. Both types will be discussed separately.

Contact moments related to the contract

In case of a contract that is being tendered by a contracting authority, a few ways for contact between the client and the contractor(s) are possible. A distinction can be made between contact moments before, during and after a tender. A shortlist of possible contact moments have already been pointed out: market consultation, plenary meeting, individual dialogue, and evaluation. Each of these will be discussed separately.

Market Consultation

The market consultation is one of the opportunities for clients to have contact with contractors, before the tender. The market consultation takes place long before the tender starts, often months. According to PIANOo (2011, p. 3), a market consultation is “a by the contracting authority/client organized intelligence exchange with stakeholders about an intended tender, on the basis of which the contracting authority determines the achievability and conditions of the assignment. But, a market consultation can also be used to gain insight on potential solutions to a certain problem, by retrieving ideas from the private sector.” The consultation takes place before the tender, which enables the client to use the contractor’s feedback for decision-making, determining the tender documents, and the tender strategy.

Reasons for clients to organize a market consultation are for example to determine the feasibility of the assignment, to check the interest of the private sector, to look for (alternative) solutions to a problem, to check whether contractors can comply to the determined requirements or to look for the best procurement strategy. The client is freely able to determine how to organize the market consultation and how he will interact with the private sector (PIANOo, 2011, p. 7). He can interact one-sided by only collecting intelligence from the private sector, but he can also interact two-sided by letting formulated ideas being verified by the private sector (PIANOo, 2011, p. 3). The Directive 2004/18/EC does not formulate any requirements to the market consultation, but has stated the following: “Before launching a procedure for the award of a contract, contracting authorities may, using a technical dialogue, seek or accept advice which may be used in the preparation of the specifications provided, however, that such advice does not have the effect of precluding competition” (European Parliament, 2004, Dir. 8). The effect of precluding competition means that one competitor has such a head start, that other competitors no longer can be considered to be awarded with the contract. This means that all collected intelligence during the market consultation related to the formulated assignment, is required to be made anonymously available to all bidders. This way, any head start is being avoided and the level playing field to all bidders is maintained (PIANOo, 2011, p. 8).

Plenary Meeting

The plenary meeting is a contact moment between the client and all bidders, during the tender. This plenary meeting is often called in Dutch the inlichtingenbijeenkomst or informatiebijeenkomst. During this meeting, the client can communicate his objectives and expectations of the project towards the bidders. The plenary meeting has to take place maximum six days before the delivering of the bids (Rijksoverheid, 2012, Art. 2.54). The bidders can also verbally ask questions during the plenary
meeting. According to the ARW 2012\textsuperscript{20}, the client has to include these questions in the notes of intelligence (Rijksoverheid, 2013, Art. 3.16.2). This way, all bidders receive the same intelligence about questions of bidders and their answers by the client. Furthermore, no rights can be derived from the verbal answers to the questions and therefore need to be confirmed in written through the notes of intelligence. In order to remain the level playing field, the client should be aware not to talk separately with bidders after the plenary meeting (PIANOo, 2016b).

**Individual dialogue**

According to the *Aanbestedingswet 2012*, “a bidder can request for intelligence about a specific tender. The contracting authority answers the questions in a note of intelligence, which is sent to all bidders” (Rijksoverheid, 2012, Art. 2.53.1/2). But, according to the same article, “the bidder can request the contracting authority not to include certain intelligence in the notes of intelligence, if publicizing of this intelligence would harm the justified economical interest of the bidder” (Rijksoverheid, 2012, Art. 2.53.3).

The bidder can ask for this individual intelligence in both a verbal and written way. According to the ARW (2013), there are two procedures in which bidders can individually ask for intelligence at the contracting authority: the restricted procedure and the competitive dialogue (in Dutch respectively: niet-openbare aanbesteding and concurrentiegerichte dialoog).

Considering the restricted procedure, the verbal intelligence will be received during an individual dialogue. The individual dialogue is in comparison to the plenary meeting, a meeting in which the client meets with only one of the bidders. The ARW 2012 adds to the articles of the *Aanbestedingswet*, that “the client can only supply intelligence if these serve to clarify the requirements that the client has formulated in the tender documents” (Rijksoverheid, 2013, Art.3.17.1 ). In the same article is stated that “providing of such intelligence, cannot result in discrimination of other bidders or potential bidders”. This is related to the earlier discussed equality principle, in which the level playing field has to be safeguarded.

Differences can be found in the level to which the individual dialogues are structured for the bidders. The level of structure differs between dialogues where bidders can openly ask questions that are openly answered by the client in a conversation, and dialogues where bidders have to pre-send questions which are point-wise prepared and answered as such by the client. No legal requirements are formulated concerning this structure of the individual dialogue and is left up to the client to organize.

Considering the second procedure to receive individual intelligence, the competitive dialogue, the following is stated in the Directives 2004/18/EC: “the competitive dialogue is a procedure in which any economic operator may request to participate and whereby the contracting authority conducts a dialogue with the candidates admitted to that procedure, with the aim of developing one or more suitable alternatives capable of meeting its requirements, and on the basis of which the candidates chosen are invited to tender” (European Parliament, 2004). The competitive dialogues gives the bidders, in comparison to the individual dialogue, a more extensive opportunity to start a dialogue with the contracting authority. These dialogues often take days, instead of a few hours. Nevertheless, due to the high transaction costs, this procedure could be considered too costly to be applied for LIM-contracts. Moreover, the competitive dialogue used to be only applicable for considerable complex projects of which the contracting authority is not capable of determining the technical means or the legal or financial conditions of the project (Nagelkerke, Oehler, Muntz-Beekhuis, & Staay, 2009).

Nevertheless, with the new national tender law (*Aanbestedingswet*), it will be possible for less complex projects to tender according the competitive dialogue as well (Ergün, 2015). This might facilitate the use of this procedure for LIM-contracts as well, but the high transaction costs still need to be taken into account in the consideration.

\textsuperscript{20} In Dutch: *Aanbestedingsreglement Werken 2012*
Evaluation
Neither the ARW 2012, the Aanbestedingswet 2012, nor the Directives 2004/18/EC mention anything about evaluating the tender bids by the clients with the bidders. But, since these evaluations take place after the tender and the contract is already awarded, the equality principle is no longer at stake. This leaves the clients free to organize the evaluation as he finds suitable. According to PIANoo (2016a), “it is advisable to evaluate the procedure after the tender. This could result in conclusions and learning point that can be used for following tender”. Bidders can learn during these evaluations how their plans are assessed and how they can improve themselves for future tenders. Also the contracting authority can learn lessons from these evaluations, since they can discuss with the bidders whether the tendered contract was understood and added value could be delivered. Also considering the tender procedure, the evaluation could provide valuable lessons to the contracting authority.

Contact moments independent of the contract
In the previous paragraph, the contact moments related to the contract have been discussed. The ARW 2012, the Aanbestedingswet 2012, and the Directives 2004/18/EC pay much attention to this type of contact between the contracting authority and bidders, in order to safeguard the earlier mentioned equality principle. This equality principle is not at stake if contracting authority and contractors meet with each other independent of a tender. Therefore, no specific conditions have been formulated for this type of contact and the exchange of intelligence is much less complex than around a tender. Therefore, this leaves both contracting authorities and clients freely to determine how they can have contact with each other. Two possibilities for contract-independent contact moments will be discussed.

Shadow days/role-playing days
Clients and contractors can look for opportunities to discover how their counterpart (client/contractor) works and thinks. This mutual understanding could be benefited from during tenders. A possibility to better understand each other in general, is to organize shadow days or role-playing days.
During shadow days, employees of a contractor can walk along with the client for a day or more (or the other way around). This way, he can see how the client works and experience his interests. Nevertheless, due to the fear that contractors receive more information than other contractors, clients are hesitant to cater for these shadow days. A light-version of a shadow day, is the role-playing day. During this day, employees of one client and one contractor can meet at an external location. At this location they swap roles, and work on a fictive case in their new roles. This way, both the client and contractor can experience how it feels to be “on the other side of the table”. This could increase the understanding of each other’s interest.

Informal knowledge exchange
As mentioned, clients and contractors are allowed to freely meet with each other as long as this happens outside a tender and the level playing field for potential future tenders is safeguarded. Therefore a contractor can initiate a meeting with a client to informally talk with each other about new developments and past experiences. This “stopping by for coffee” can improve the mutual relationship between client and contractor and increase the knowledge level of both parties. This informal contact moment can be extended by for example organizing a plenary knowledge exchange, in which multiple clients and contractors come together to talk about specific topics, problems or developments. This corresponds to recently published Marktvisie, in which clients and contractors of infrastructural and building sectors collectively determined and signed their vision for the future in order to solve current problems. An important aspect of the Marktvisie is to focus on the dialogue between clients and contractors and to timely cater for this dialogue to discuss risks, need for intelligence and dilemma’s (Marktvisie, 2016).
Appendix 8: Interviews

*For privacy reasons, the content of the interviews is not made publically accessible.*
Appendix 9: Scoring table Kop van Noord-Holland

The content of the scoring table is restricted for public use and is therefore not included in this report.