Safeguarding public value with formal agreements

An evaluation of project- and process agreements that safeguard spatial quality towards project realization

Master Thesis by Sander Greter

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Preface

The research and writing of this dissertation is carried out in the 2012/2013-study year and part of the master program System Engineering, Policy Analysis and Management (SEPAM) at Delft University of Technology. The research performed consists of a research follow-up proposed by Rijkswaterstaat, tailored into an individual research project after I was appointing as a graduate intern at the executive management department of the Room for the River program.

I would like to thank Rijkswaterstaat for this opportunity, their assistance during my research and allowing me to participate and learn in their professional organization. Furthermore, I would like to thank my graduation supervisors Ernst ten Heuvelhof, Bertien Broekhans and Leon Hermans from Delft University of Technology, Cor Beekmans and Regina Havinga from Rijkswaterstaat and Jeroen Rijke from UNESCO-IHE for their support, insights provided and valuable comments made towards finalization of my thesis.

Sander Greter

Delft, 3 July 2013

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Executive summary

Guided by the Dutch spatial planning key decision, the Room for the River program emerged as a locally driven program. Consisting of 34 individual projects, the program is set to achieve its dual main objective: enabling a safe discharge of high water levels and ensuring the spatial quality of the riverine landscape to be improved. Lacking the provision of a 'hard' standard for improved riverine spatial, translating improved spatial quality into local reality involves a decision-making process where elements of the original policy narrative are selected and articulated by a competent authority, the project initiator. The articulated riverine spatial quality is negotiated with the project's executor and operationalized by the assigned constructor, emphasizing the input of key stakeholders during the project's decision-making process. As the overall decision-making process on riverine spatial quality proved decisive, the objective of this evaluative research is to highlight the extent by which formal project- and process agreements formulated by the key stakeholders involved safeguard riverine spatial quality.

To safeguarding projects' public value

At program level the spatial planning key decision formulates safeguarding riverine spatial quality as "maintaining the attractiveness and functionality of a project environment which will retain its value in the near and far future" (PDR 2012:7). This formulation indicates that spatial quality entails a relative broad appearance; something one could easily interpret differently. To address the scientific fundament on safeguarding spatial quality in Room for the River projects a more generic description of spatial quality is entailed, supportive of its public character. Balancing multiple scientific illustrations this research argues that spatial quality shares its scientific fundament with the normative concept of a public value. Asserting that spatial quality considers a public value, this research claims that riverine spatial quality entails a value that ought to be safeguarded towards project realization.

Research approach

This research's insights gathered in decision-making on public values are adapted from Veeneman, Dicke & Bruijne (2009), presenting their conceptual framework against the classical model of the political process as defined by Bachrach & Baratz (1972). The conceptual framework highlights that change negotiations are primarily distinguished by the interaction between different types of stakeholders within a governmental process. Veeneman et al (2009) emphasize this process with their illustration of how public value takes shape, defining the following four key processes: articulating public values ('advocacy process'), negotiating public values ('political process'), operationalizing public values ('bureaucratic process') and delivering public values ('provision process'). Following Veeneman et al. (2009), the different stakeholders that are engaged and their key activities tend to characterize each stage of the overall decision-making process on public value. To identify these key stakeholders and evaluate their role within the overall decision-making process, the conceptual framework presented is extended with the insights stipulated by Holmstrom' principal-agent theory (1999). Highlighting the dilemma in stimulating a project agent to act in the best interest of the project principal, instead of its own, Holmstrom (1999) explicitly and implicitly addresses the importance of formulating distinct formal project- and process

agreements. As Holmstrom's (1999) principal-agent theory also enables a basic understanding of a project's underlying stimulus, its context and the guiding principles of agreements made, its combination provides one with a single theoretical framework that is applied to the following three Room for the River projects: 'Overdiepse Polder', 'Tollewaard' and 'Midden-Waal'.

Research conducted

By means of an extensive literature review and conducting multiple personal interviews with key stakeholders involved in the selected Room for the River projects, fundamental insights are obtained in the research's formulated theoretical framework. Highlighting the insights gathered the project's exploration stage forms the basis for generating overall project support, prior to signing the project's actual management agreement. By including projects' management and maintenance towards realization, one is enabled to emphasize the importance of incorporating spatial quality towards the project's final design. Where the selected realization contract ultimately provides the concrete basis for its realization, one distinguishes two separate tracks that can be addressed by the application of either a Design & Construct- (D&C) or Plan, Design & Construct (PDC) contract. The D&C track identifies all prominent objects, interfaces and formulates a relatively detailed specification of project's spatial quality. The PDC track, however, compliments the expertise of the constructor by enabling relatively more contractual 'degrees of freedom', emphasizing the procurement of a relatively abstract project design that requires additional design input from the constructor and other key stakeholders towards project implementation. Using a functional operationalization of the project's most prominent objects in both tracks enables the constructor to consider the impact of their design on the project's overall riverine spatial quality. In both tracks, however, expertise on spatial quality plays an important role, especially whilst safeguarding the project's spatial storyline. In Room for the River project Tollewaard for example, the assigned landscape architect initially served as a designer and was ultimately appointed as a supervisor on riverine spatial quality towards project realization. Emphasizing the possibilities for synthesis between technology, design, cost and its environmental interfaces, the quality-team's consultation formulated the formal requirement of a project's spatial vision.

Research results

Analyzing the formal project- and process agreements made in the individual Room for the River projects, the project's ambition document, criteria for selecting the economically most advantageous tender and the procurement plan play a crucial role in safeguarding project's riverine spatial quality. Towards the project's actual implementation, however, incidental contract amendments might arise that encounter the outline of these formal documents. The project's ambition document therefore proves a worthy addition, holding the outline of the principal's minimal requirements and balancing relatively abstract terms rather than its detailed description. This requires that the project's involved landscape architect, constructor and technicians are familiar with their principal's 'language', enabling to see whether the project's design is translated correctly into a formal demand specification. Besides the ambition document, system-based contract management (SCB) also tends to be decisive when it comes to a correct translation of previously articulated and negotiated riverine spatial

quality. Enabling the constructor to overcome tension towards project realization, SCB holds the constructor's approved processes to mitigate problems and further direct design tasks. The formal relationship towards the landscape architect involved, however, should be formulated clearly. Due to the continuous involvement of the landscape architect, the architect functions as part of the project's memory while changes in project staff proved to be decisive, losing parts of the project's spatial storyline. The position of the respective landscape architect should therefore be formalized adequately, for instance by formally requiring his signed approval on the constructor's design decisions. On the other hand, however, the project's technical manager must be able to 'feel' whether incidental contract amendments might negatively influence the project's riverine spatial quality, emphasizing the need for a project vision and formulated spatial storyline.

Towards project's actual realization, criteria for selecting the economically most advantageous tender also provide a step in the right direction, safeguarding project's riverine spatial quality towards realization. As the quality-team currently has no formal involvement during the project's implementation process, the constructor and their principal solely face forthcoming dilemmas, emphasizing design, cost efficiency and technology in respect to the project's articulated riverine spatial quality. This insight appoints that one should be able to fall back on the project's underlying storyline, providing the outline of reasoning between technical considerations and its original design decisions. Currently, the project teams apply a system based contract management (SCB) approach to find their design solutions, such as enabling expertise. Positioning a spatial designer in the project's construction phase is therefore considered a crucial requirement, especially when balancing the mitigating actions formulated in the SCB approach that is provided by the project constructor.

Conclusions

The 'road-to-success' is that the project's advocacy stage should be able to set the project's tone, subsequently the political stage of the decision-making process negotiates the project's accompanying formal process, design and requirements for management and maintenance of riverine spatial quality. After all, safeguarding riverine spatial quality can only be considered successful if the project's environment approves the projects' decisions made and when it is safeguarded towards its future. This insight emphasizes the need for the early development of drawn-up project ambitions and a system-based contract management approach that is set-up accordingly, addressing the potential impact on riverine spatial quality by project amendments. When the key stakeholders involved fully understand and associate with the project's vision and its underlying spatial storyline, riverine spatial quality will be safeguarded adequately no matter what realization contract is chosen.

Chapter 1. Making more room for Dutch rivers

With a population of over 16,7 million people spread over just 41.528 square kilometers, positioned within a delta that enables three major rivers to flow out to the sea, floods and flood-response mark the cadence of Dutch history (PDR 2012a). The unprecedented riverine near-floods of 1993 and 1995, opened-up a window of opportunity for a "nonstructural river management philosophy, seeking to overcome the limits for dike reinforcement" (Warner and Buuren 2011:780). By allowing water more space, the Dutch government announced their integrated approach to avert future flooding of the riverine areas: Making more room for rivers. Guided by the spatial planning key decision of late 2006 the Dutch government met the approval of the 'Room for the River program', enabling the Rhine and its tributaries to safely dispose a maximum water discharge of 16,000 cubic meters per second to the sea. (Ministry for Public Works and Water Management 2006; PDR 2012a).

1.1 Safeguarding 'soft' values

The Room for the River program is divided into 34 projects, as presented in figure one, with an overall budget of 2.3 billion Euros. The individual projects hold numerous measures, for instance the lowering and broadening of floodplains, creating river diversions and enabling temporary water storage basins (PDR 2012a). In order to realize the series of measures by the end of 2015 program's executive management emphasized the cooperation between provinces, municipalities, water boards and Rijkswaterstaat (PDR 2012a). Where local and regional authorities are competent in identifying and communicating their local and regional requirements, decentralized decision-making is considered to improve the program's support, quality and effectiveness (Roth and Warner 2007). Decentralizing projects' decision-making process is therefore set-up to embrace the local community and considered crucial for their active involvement, especially towards program implementation (Twist et al. 2011). The overall responsibility for the program's realization, however, is borne by the Minister of Infrastructure and the Environment (Boer 2013). To audit the local and regional authorities, the Ministry installed the program's executive management as the initiator of the overall program, so-called 'Programma Directie Ruimte voor de Rivier' (PDR) (Broens 2013). The executive responsibility of the PDR is to enable the completion of the Room for the River program by the end of 2015 within the available budget (Ministry for Public Works and Water Management 2006). This decentralization implies a shift in traditional competencies; where the PDR facilitates the process for coordination and auditing of decentralized authorities, local authorities are vital for their project oriented skills (Dassen 2007).

The Room for the River program is formulated with a dual main objective, primary to enable a safe discharge of high water levels on Dutch major rivers. The secondary main objective is formulated to ensure the simultaneous improvement in spatial quality of the riverine area (Ministry for Public Works and Water Management 2006). The achievement of Room for the River's primary main objective depends on whether measures meet 'hard' statutory water-safety standards – e.g. competent of withstanding high water discharge with a statistical chance of occurring once in every 1250 years (PDR 2012b). For its secondary main objective, however, the spatial planning key decision lacks the provision of a such a 'hard' standard (PDR 2012b). Translating the secondary program objective into local reality

therefore involves a process where elements of the original policy narrative are selected and articulated by the competent authority; project executors such as Rijkswaterstaat, municipalities or the local water board. The integrated project plan is negotiated with the PDR to fit the specific purposes and perspectives of the stakeholders involved (Dijk 2006). Dijk (2006) refers to this process with 'negotiated change shaped through process', subject of preceding interim evaluation in the year 2011. In the light of the impending transition towards project realization, however, stakeholders involved have serious concerns whether the articulated and negotiated level of project's riverine spatial quality is safeguarded accordingly (Albers 2011; Twist et al. 2011).

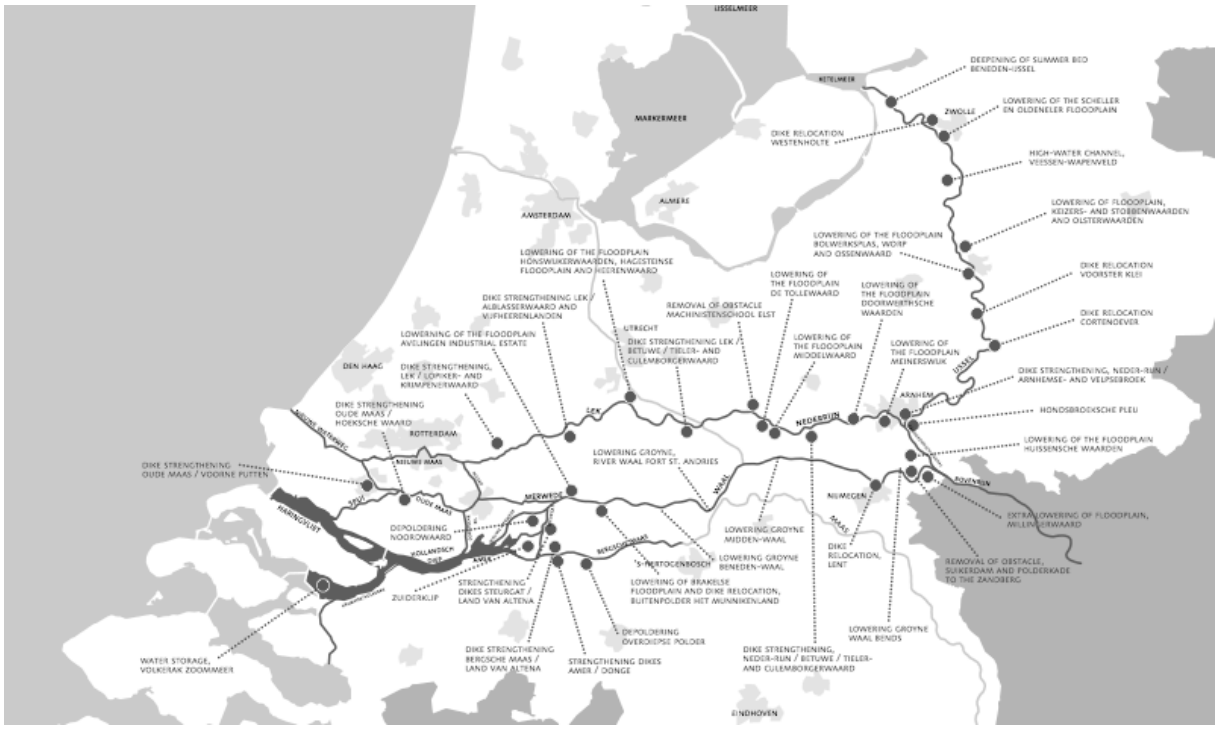

Figure 1: The individual projects of the Room for the River program (PDR 2012:2)

In line with the findings presented by Albers (2011), Dassen (2007) and Rijke et al. (2012), stakeholders' concerns might devise from PDR's abolishment of framework contracts, offering project constructors certain degrees of freedom during project implementation to benefit from their technical expertise and spatial creativity. This insight is formalized with PDR's prerequisite to apply Design & Construct (D&C) contracts for the implementation of individual Room for the River projects. D&C contracts are a relatively new concept in the Dutch water management sector (Warner and Buuren 2011). Noise in communication and dissimilar perceptions between project's executive management and project constructor may therefore lead to other than anticipated outcomes (Albers 2011).

When addressing key project aspects that have 'hard' statutory standards, resolving discussion is considered relatively easy (Boer 2013). Lacking the provision of such a 'hard' standard for project spatial quality, however, discussion on whether the outcome realized by the 'expert' meets the stakeholders' anticipated quality is considered inevitable (Prins 2008). Following Bruijn, Heuvelhof, and Veld (2010) escalation of this discussion can be prevented by applying 'rules of the game': Formal process- and project agreements that intend to

safeguard project riverine spatial quality (PDR 2012b). This insight aligns with the findings presented by Albers (2011) and Rijke et al. (2012), noting that process- and project management plays an important role in safeguarding stakeholders' negotiated input.

Entering the third quarter of the year 2012, the program's twentieth progress report states that in twenty-five of the 34 Room for the River projects a formal project decision has been reached, denoting the formal start of project implementation (PDR 2012b). The objective of this research is to tackle the mix of formal project- and process agreements that safeguard project spatial quality in individual Room for the River projects. In order to address this objective, the research' focus is on the evaluation of formal project- and process agreements between the main parties involved in project realization; the project initiator, executor and constructor.

1.2 Relevance to science and society

According to Twist et al. (2012) and Wit (2010), developing insights in formal project- and process agreements, especially those that intend to safeguard 'soft' project values, can be of particular value for scholarships in public administration, program management and transition management. Herk et al. (2012) recognize this insight by stating that present scientific theory lacks the provision of an insight in how project- and process management styles can be combined and integrated to safeguard 'soft' project values. Concluding upon this discernment, the scientific relevance of this research addresses whether formalization of project- and process agreements are a necessity to adequately safeguard values that lack a 'hard' standardization towards project realization.

The social relevance of this research emerges from the idea that in the Netherlands many integrated water management projects are 'funded' by the Dutch taxpayer. The research's results could therefore support the position of riverine spatial quality in future water management projects and programs, hence, increasing projects' social value. This insight implies that, besides the project initiator and constructor, other parties will also benefit from the improvements in safeguarding riverine spatial quality towards project realization. As the Room for the River program is part of the Dutch Delta program the evaluative insights gathered are potentially useful to other (future) Dutch and international water management projects and programs as well.

1.3 Research questions

In accordance with the problem statement presented in paragraph 1.1, the overall objective of this evaluative research is to evaluate the extent to which riverine spatial quality is safeguarded by formal project- and process agreements between the key stakeholders involved in Room for the River project's decision-making process; emphasizing the position of the project's initiator, executor and constructor. The combination of these insights leads to the formulation of the following main research question:

To what extent do formal project- and process agreements between the project initiator, executor and constructor safeguard riverine spatial quality?

To answer this main research question, multiple important aspects need to be investigated. The first sub-question is therefore aimed at identifying the translation process of riverine spatial quality in selected Room for the River projects. In order to assess this process, one has

to know what theory applies to the overall research, formulating an applicable conceptual framework. The second sub-question is used to identify the formal agreements that are formulated between the main parties involved in the realization of a Room for the River project: the project initiator, executor and constructor. Using the formulated conceptual framework the main parties involved in the project's decision-making process can be positioned. The third sub-question identifies a practical way to assess the formulated formal agreements on safeguarding riverine spatial quality in the selected case studies. Finally, the fourth sub-question aims to formulate conclusions and recommendations based upon the evaluative research conducted. The associated sub-questions can be formulated as follows:

1. How can one evaluate the translation of aspired program ambition into formal agreements on spatial quality in Room for the River projects?
2. What are contemporary formal project- and process agreements between project initiator, executor and constructor on safeguarding spatial quality in Room for the River projects?
3. How did the formal project- and process agreements on safeguarding spatial quality in Room for the River projects come about, what are their (expected) results?
4. What conclusions and recommendations can be formulated based upon the evaluation of formal agreements that intend to safeguard spatial quality?

The approach to answer these research questions follows from the theoretical framework presented in chapter two, identifying this research's underlying scientific fundament and presenting a conceptual framework for further analysis.

1.4 Research demarcation

This research focuses on the evaluation of formal project- and process agreement between the project initiator, executor and constructor on safeguarding project's spatial quality. Various aspects, however, might also influence the process in which they are agreed upon. As the planning-study phase of the Room for the River program has already been subjected to intensive study and evaluation, this research addresses these program elements less in-depth (Albers 2011, Dassen 2007 and Wit 2010). The initial limitations in the scope of this research, listed hierarchically from program- to project level, are therefore considered the following:

1. **Program level:** The background of the Room for the River program and its formulation process holds multiple interesting insights in the articulation of riverine spatial quality, for example why the Room for the River program formulated simultaneous improvement of spatial quality as its secondary main objective. The analysis of the Room for the River program, however, is considered to be less practical compared to the analysis of individual Room for the River projects in terms of relevance to science and society. This insight is reinforced by the fact that comprehensive literature and research documents present a clear focus on the phases that preceded the Room for the River projects' implementation, such as the Room for the River program midterm review conducted by Twist et al. (2012).
2. **Project level**: Room for the River projects are realized in a complex socio-technical environment where a broad range of stakeholders interact at multiple governance levels

(Buuren, Edelenbos, and Klijn 2010). Even if one limits the scope of the research's analysis to the transition process from the inception of the project's formal project decision towards realization, a selection of the most critical stakeholders needs to be made. This research therefore limits its analysis to the identification and evaluation of formal project- and process agreements between the following key stakeholders: the project initiator, executor and constructor. The influence and position of various other stakeholders and stakeholders is considered subordinate, as the main focus is to identify the formal agreements that intend to safeguard spatial quality of Room for the River projects.

1.5 Thesis structure

To address the extent that formulated formal project- and process agreements safeguard riverine spatial quality in Room for the River projects, multiple aspects will need to be investigated. The follow-up chapter therefore covers the scientific background of formal project- and process agreements made, the role and relationships between key stakeholders involved in Room for the River projects' decision-making processes and the conceptual framework adapted for further analysis. Chapter three adapts the conceptual framework to address the role and relationship of the project's initiator, executor and constructor in projects' identified decision-making stages. Focusing on the translation process highlighted by scientific theory towards collecting empiric data and its interpretation, chapter three also introduces the research's underlying qualitative approach, operationalizing the accompanying research variables. The fourth chapter successively elaborates on the content of the Room for the River program and its selected case studies. In addition, the formal organizational structure and position of riverine spatial quality in the Room for the River program is addressed into further detail. Based upon the insights provided, chapter five presents the research's empiric basis, introducing the following Room for the River projects: 'Overdiepse Polder', 'Tollewaard' and 'Midden-Waal'.

Underlining the associated formal project- and process agreements towards realization the selected projects, starting with the evaluation of formal project documentation and followed by the realization milestones, the stakeholders' claims, perceived concerns and issues with safeguarding spatial quality are evaluated. Following the evaluation of the individual projects, the sixth chapter compares the three cases by analyzing their process highlights. Highlighting the formal agreements that intend to safeguard riverine spatial quality in the selected case studies the chapter mainly elaborates on the overall insights gathered by addressing riverine spatial quality as a public value. Chapter seven consequently presents the conclusions and recommendations of the research conducted, discussing the formal agreements that intend to safeguard riverine spatial quality and the formal agreements formulated between the key stakeholders involved in project's decision-making. In line with the conclusions drawn in chapter seven, the research's limitations and evaluation of accompanying research process is presented. Ultimately, chapter eight concludes the overall research process in a theoretical reflection and presenting the personal considerations upon the overall research conducted.

Chapter 2. Safeguarding theory in practice

Addressing the research introduced and delineated in chapter one, this second chapter elaborates the research's theoretical framework. The introductory chapter showed that formal agreements on riverine spatial quality take place in a complex, dynamic and socio-technical system where stakeholder requirements may change and interpretations might conflict whilst design tasks are filed with the constructor during project realization. Summarizing scientific theory, this chapter results in a theoretical framework that can be used for the analysis and evaluation of formal agreements to safeguard an aspired level of spatial quality towards project realization.

2.1 The concept of spatial quality

At project level the Room for the River program lacks the provision of a 'hard' standardized operationalization of riverine spatial quality (Albers 2011; Dijk 2006; Dassen 2007). At program level, however, the spatial planning key decision formulates safeguarding spatial quality as "maintaining the attractiveness and functionality of a project environment which will retain its value in the near and far future" (PDR 2012:7). This formulation indicates that spatial quality entails a relative broad appearance that can be easily interpreted differently (Hooimeijer et al. 2001; Jansen, Klijn, and Opdam 2009; Puylaert and Werksma 2011). This insight is underlined by the spatial planning key decision, stating that the improvement of riverine spatial quality entails the strengthening of riverine economic, ecological and natural values by combining water- and spatial functions of the river (Heuvelhof et al. 2007; Ministry for Public Works and Water Management 2006).

Following Hooimeijer et al. (2001) spatial quality is defined by the combination of three distinct project values, being the project's utility, amenity and future value. The utility value refers to the projects' functional use, such as the possible allocation and availability of space. Amenity refers to its subjective experience and in line with this discernment Hooimeijer et al. (2001) state that both utility and amenity represent the 'here and now', values that are closely linked. The project's future value consequently looks at the valuation of the projects' spatial functions passing through time, presenting conditions for future spatial development and –progress (Ministry for Public Works and Water Management 2006). In scientific discussions and professional debate, however, the definition of spatial quality is often narrowed down to projects' aesthetics, for instance the amount and form of pillars under a bridge, type of trees planted in an excavated floodplain or the materialization of groynes that are being lowered (Albers 2011; Dassen 2007; Dijk 2006). Emphasizing this awareness, Puylaert and Werksma (2011) argue that spatial quality is something that everybody favors, indicating its collective interest. To address the scientific fundament on safeguarding spatial quality in Room for the River projects, a more generic description of spatial quality is entailed that could support its 'public character' as presented in the following paragraph.

2.2 Addressing public values

The concept of public value considers the provision of basic services for society, like flood protection, sustainable use of groundwater and clean surface water. As these basic services have a collective and dynamic interest, one could argue that it fits the preceding description of

spatial quality (Jansen, Klijn and Opdam 2009; Hooimeijer, Kroon, and Luttik 2001; Puylaert and Werksma 2011). According to Broekhans, Kerpershoek, and Romp (2009) public values have four general characteristics; public values are collective, relative, dynamic and conflictive. The collectiveness of a public value is addressed by the indication that public value transcends the interests of individuals. The line between public and private values, however, is not always clearly defined and highly dependent on its circumstances. For example, agriculture within a polder can be defined as a public value, but regionally or at a national level agriculture is considered just one of many interests (Charles et al. 2007). The relativeness of spatial quality makes it a real challenge to come up with a singular operationalization, referring to the gradual elaboration of general values and –objectives into more tangible aspects. For example, the interpretation that environmental quality can be improved through natural riverbanks, that therefore ought to have a specific profile and ecological diversity (Buuren, Edelenbos, and Klijn 2010). As the interpretation and prioritization of spatial quality is considered to be context and time dependent, it aligns with the concept of public value; the character of public value is dynamic and therefore easily affected by incidents (Hooimeijer, Kroon, and Luttik 2001; Jansen, Klijn, and Opdam 2009). Examples of this dynamism can be found in the 1993 and 1995 near-floods and the increased media attention in project environments where certain flora and fauna is threatened with extinction (Roth and Warner 2007). Conflict between spatial quality and other project values is another characteristic that affiliates with the concept of public value, as measures for ecological improvements can negatively affect local agricultural activities and reducing discharge to counter drainage may have implications for safety from flooding during extreme weather conditions (Broekhans, Kerpershoek, and Romp 2009).

The illustrations presented underline that spatial quality shares its scientific fundament with the normative concept of a public value. This research therefore asserts that spatial quality actually entails a public value, a value with public character that ought to be safeguarded towards its realization.

2.2.3 Articulating public values

Balancing the outline of the preceding section riverine spatial quality ought to be considered as a public value. To safeguard public value towards its actual realization, however, further operationalization of its formulation and specification process is required (Bozeman 2007; Bruijn & Dicke 2006; Steenhuisen 2009; Steenhuisen, Dicke & Bruijn 2009).

According to Steenhuisen (2009), the articulation and operationalization of public value considers three characteristics; first, it involves multiple stakeholders that are dependent on each other and need each other's support in effectuating change. The second characteristic addresses the insight that the stakeholders involved negotiate, need each other and vice versa and therefore require a series of meetings. Thirdly, this series of meetings is likely to stretch for a longer period of time as its substantive outcome tends to depend on cognitive activities, such as calculations etcetera (Bruijn, Heuvelhof, and Veld 2010). Bruijn et al. (2010) argue that the complementary decision-making process is even more decisive. Their insight pleas for a process approach that allows negotiation of problems and their potential solutions, especially when articulating a public value such as spatial quality (Bruijn et al 2010). Once the parties involved familiarize with the insight that change can only be effecuated through its

negotiation process agreements can be formulated, refferred to by Bruijn et al (2010) as the 'rules of the game'.

As agreements about rules that parties use to reach a decision often precede the projects' actual negotiation process, Bruijn et al. (2010) conclude that their approach to change implies that a shift from 'the content of change' to 'the way in which content is developed and implemented'. This process requires a prior agreement between the parties involved about the way in which the decision-making process is shaped, highlighting process agreements that offer sufficient opportunity to serve the stakeholders' own interest. According to Bruijn et al. (2010) process agreements are often explicit and fully formalized, down to who sits where at the decision-making table, but its nature may also be informal. Meanwhile rules are often used implicitly, for instance when a project manager implements a relatively minor change, "he follows a kind of process, he consults with persons, follows certain steps, has a back-up strategy for when no consensus can be reached, and so on" (Bruijn et al. 2010:4). The core element of the negotiation process, however, is that parties involved are certain that their core values will not be effected, hence "processes that fail to sufficiently protect the core values of the parties involved tend to have little chance of succes" (Bruijn, et al. 2010:104). The associated risk noted by Bruijn, Heuvelhof, and Veld (2010) is that parties will all too easily refer to these values to protect their own position within the decision-making process.

Pinpointing the need for formal process agreements when articulating public value, the so-called 'rules of the game' should offer sufficient opportunity to serve the involved stakeholders' own interest. Keeping an overall focus on the way in which content is developed and implemented, the nature of these rules might have an informal character and can be adressed implicitly. However, as stakeholders' interest might change, formal rules that safeguard spatial quality should also adress the process its dynamics (Bozeman 2007; Steenhuisen 2009; Steenhuisen, Dicke & Bruijn 2009).

2.2.4 Addressing value dynamics

After the enunciation of rules of the game, formal process agreements are operationalized in policy documents and often institutionalized via democratic means like laws, regulations and objectives for oversight bodies (Assink and Groenendijk 2009). As policy documents imply different regulatory tasks such as specifying norms, applying rules to individual cases require rule compliance and exerting pressure to enforce its compliance. Towards realization of a public value these documents are considered to address different stages of the decision-making process (Bruijn, Heuvelhof, and Veld 2010; Hood, Rothstein & Baldwin 2001).

The crucial stages in decision-making on public values are defined by Veeneman, Dicke & Bruijne (2009) against the classical model of the political process, defined by Bachrach & Baratz (1972). Bachrach and Baratz (1972) state that change negotiations are distinguished by the interaction between different types of stakeholders within a governmental process. Rather than using the word 'phase' in Bachrach and Baratz their classic rational-synoptic representation of policy processes, Veeneman et al. (2009) use the word '(sub)process' or 'stage' to describe the process of translating public value from first inception towards implementation. As many of these processes coexist on a single public value at the same time, using the word 'phase' could have implied "a linear and successive

translation" (Veeneman et al. 2009:213). Hardly ever being a linear and successive process, Veeneman et al. (2009) illustrate their perspective on translating public values by defining the following four key processes: articulating public values ('advocacy process'), negotiating public values ('political process'), operationalizing public values ('bureaucratic process') and delivering public values ('provision process'). Characterized by the different stakeholders that are engaged, Veeneman et al (2009) emphasize each stage by its key activities and the mechanisms literature raises.

Veeneman, Dicke, and Bruijne (2009) conclude that the meaning of public values changes in each of the identified stages of the decision-making process, generally from more abstract notions to more concrete and specific products or goals. At program level spatial quality may therefore be formulated in a more generic way, for instance by addressing the utility, amenity and future value of spatial quality (Hooimeijer, Kroon, and Luttik 2001). Generally formulated in their most attractive and generic way, such as safety of a sluice or efficiency of communication, abstract notions are considered to be "irrefutable and often presented as absolute" as these do not require any further trade-offs (Veeneman et al. 2009:428). Acknowledging Charles et al. (2007), the authors refer to this universalistic approach by 'clouds of goodness', realizing that at this point it is still unclear what the actual implications of safety or efficiency are.

As a public value might enter the advocacy process several times, Veeneman et al (2009:428) argue that clouds of goodness often react to "perceived failure but are rarely seen as interacting values". In the political process, however, public values become more tangible when focused on implementation, allowing a better perspective on its effect on other values. As interventions mature in the bureaucratic process, the end-result is often considered a "faint remnant of the original cloud of goodness" (Veeneman et al. 2009:428). The interventions to secure the public values reach the provision process by the time that the constructor tenders the project work, where all efforts lands in specified work processes, significantly undermining its "pinpointed accuracy" (Veeneman et al. 2009:428). The outline presented by Veeneman et al. (2009) is used as the basis for further analysis of public values' translation process towards realization of selected Room for the River projects.

2.2.5 Addressing conflicting values

Following Bruijn & Dicke (2006), public values are inherently competing and therefore value conflicts are theoretically unavoidable, especially when complex organizations provide for multiple societal values. Whether this is the case in the realization of Room for the River projects is to be addressed. However, balancing spatial quality, cost, time and overall project support already gives some indication that this might be the case (Twist et al. 2011). The theoretical unavoidability of value conflict is acknowledged by Steenhuisen (2009), stating that balancing public values takes place at all stages in the decision-making process. According to Veeneman, Dicke, and Bruijne (2009), however, the conflict between different project values remains intangible until the moment that values are concretized into norms, its operationalization of values is therefore required to understand their potential conflict.

Following Steenhuisen (2009), the advocacy process sets the agenda, where mediagenic values are presented as clouds of goodness: "fuzzy but clearly attractive" (Veeneman et al. 2009:429). The initial formulation of the spatial planning key decision is of

the same order, where water safety and spatial quality address aspects that no one would disagree upon. One might expect the political process to be the ideal location for dealing with explicit trade-offs. Paradoxically, Veeneman, Dicke, and Bruijne (2009) state that in the political process the trade-off between different public values is generally implicit and values are therefore treated sequentially with limited interaction. The explanation of this limited interaction is illustrated by Veeneman et al (2009) who quote Steenhuisen (2009:11), indicating that "the only sensible understanding of priorities among values emerges in concrete choice situations". This is what might happen when a constructor is given contractual freedom to entirely design a project object and wants to limit its budget. The bureaucratic process, however, is considered to provide a backdrop for different trade-offs (Veeneman et al. 2009). This insight is illustrated by the insights presented by Lindblom (1959), indicating that budget negotiations (implicitly) contain trade-offs between interacting values, generally only loosely coupled with the outcome of the political process. The provision process leads to another trade-off between values, conditioned by a hailstorm of regulation, pulling and pushing a project in different directions (Veeneman et al. 2009). Interventions that leave more room for maneuvering and interpretation are displaced; highlighting the conflict between public values that are often competing for the same limited resource, like money, space or time (Veeneman et al. 2009).

Key to the achievement of conflicting and non-conflicting public values in each of the stages in the decision-making process are new and other stakeholders with different strategic orientations (Veeneman et al. 2009; Steenhuisen 2009). The actor's strategic orientation is illustrated by Veeneman et al. (2009) who quote from Parsons (1995:87), stating that "what counts as a problem and how a problem is defined depends upon the way in which policy makers seek to address an issue or an event". Formulating public value in a very general way therefore may increase its attractiveness and suggests a straightforward project intervention, leaving complexities of implementation out of the equation, for instance in the way that the main objectives of the spatial planning key decision are formulated. Veeneman, Dicke, and Bruijne (2009) were among the first to show how issues put forward by specific groups are ignored and not picked up by decision makers. Therefore it is important to have a clear insight in whose values are actually being articulated, for instance whether a bridge is specified according to specification of the municipality or the future residents of the floodplains that were excavated. However, as trade-offs become more explicit and public, this often lead to intense debate and highlights the role of the media in the advocacy stage – values that are not directly addressed in the policy process gets nearly as much attention in subsequent stages (Bachrach and Baratz 1972).

Following Veeneman et al. (2009) all stakeholders have access to the advocacy process, although some stakeholders are better equipped than other to promote their values – referring to the legal system in which stakeholders may be over represented compared to values that concern society at large. In the political process, however, groups "fight to bring public values to the formal public policy making process" (Veeneman et al. 2009:7). This fight is conducted over the representation of interest and characterized by bargaining games between stakeholders involved, like local water boards and residents within a floodplain that needs to be excavated in order to store a specific amount of water. The bureaucratic process is

the next stage of decision-making on public values, involving stakeholders with an information-asymmetry. This awareness is emphasized by Veeneman, Dicke, and Bruijne (2009), showing that it is almost impossible for decision-makers to distinguish between specific groups and target regulations at the right group, dealing with conflicting intervention efforts and interests. For instance, when the interests of local commercial parties differ from the interests of many other parties within the region. The bureaucratic process transforms public values into norms, which is not a ready-made or straightforward process as its discretionary room might alter the meaning of public values (Veeneman et al. 2009).

After norms are set and agreements are made, involved stakeholders take an active interest in the provision process by monitoring and assessing the process and its outcomes. This insight is highlighted when for example a local water board assigns a constructor to design a natural pathway throughout the floodplains and does not recognize that their formulation too abstract for the constructor, the project element will probably result in something that the water board would have wanted differently (Buuren, Edelenbos, and Klijn 2010). The provision process therefore plays a vital role in the assessment of process whether and how public values are eventually achieved (Henriksen et al. 2007). As presented in figure two, stakeholders that were identified in the preceding decision-making processes interpret the provision outcomes, constructing a storyline "that explains what has become of the safeguarding of public values that were once decided in previous processes of the policy cycle" (Veeneman, Dicke, and Bruijne 2009:427).

Figure 2: Visualization of the decision-making process on public values (Veeneman et al. 2009:431)

Balancing these considerations, the decision-making stages identified by Veeneman et al. (2009) provides an adequate framework for identification of relationships between decision-making processes, influential elements and formal underlying agreements. The framework presented by Veeneman et al. (2009) enables one to focus on the actual translation of a project's original cloud of goodness towards realization of a public value. Towards the actual realization of a public value, however, one should be able to consider which of the project's advocacy-, political-, bureaucratic- and provision process address the research' focal point, especially as public value is detailed more and more during every stage in which it is addressed (Steenhuisen 2009). The remainder of this chapter will therefore focus on the decision-making stages that intend to safeguard public value and fall within the research's scope as demarcated in chapter one, identifying its accompanying formal agreements made.

2.3 Safeguarding public values

Now that the previous paragraphs presented a general understanding in how public values are articulated and the processes in which its translation form an original cloud of goodness to its

actual provision is addressed, this paragraph aims to highlight the formal agreements and its underlying performance indicators that intend to safeguard the quality level of a public value.

2.3.1 Formulating formal project- and process agreements

Both project- and process management are considered essential elements in negotiating and formulating public values in complex socio-technical systems (Bruijn et al. 2010). Where process focused management aims to deal with interdependencies and the dynamics of network situations, project management tends to focus on the more classic types of control strategies that remain critical, such as strategies that manage values project budget and timespan (Jønch-Clausen and Fugl 2001).

Charles et al. (2007:7) note that in practice "the fear that public value cannot be maintained in a framework of private ownership often results in the suggestion that values should be safeguarded by clearly defining them and laying them down in unambiguous and enforceable laws and regulations". This insight touches upon the relation between the executor and constructor in Room for the River projects, where the constructor receives a specified list of objects to realize. However, Charles et al. (2007) argue that this reaction is inadequate. Firstly, as hierarchy leads to (unintended) prioritization of values, especially when values are more difficult to specify and therefore receive less attention, leading to skewed trade-offs in the favor of the interests of particular stakeholder groups. Charles et al. (2007:5) note that "safeguarding mechanisms therefore should facilitate the developments of workable trade-offs among the parties involved in the decision making process". Laws, regulations, market mechanisms and network mechanisms play an important role, triggering a societal debate is triggered, influencing the behavior of the agents and his principal, and offers a default-option when trade-offs are deemed to be unacceptable. Contracts and tender procedures offer opportunities to safeguard public values but have comparable limitations to rules and regulations when used to enforce public values in a unilateral way (Charles et al. 2007; Bruijn and Dicke 2006).

Being autonomous but also interdependent, parties involved in realization of projects often operate in a hierarchical setting. As public values will need to be negotiated, quality tends to depend upon the accompanying interaction (Charles et al. 2007). Charles et al. (2007) conclude that there are two approaches to safeguard public values, an internal and external approach. The internal approach safeguards public value by quality checks performed by the client, the principal checks the deliverables of the agent. The external approach, however, stems from the principal's vision and ambition and gives the agent full responsibility for the realized quality of the end product. These approaches consist of both project and process aspects, referred to by Charles et al. (2007) as quality of 'recorded results' and 'process management'. One should at least consider that one of these relations is specified within distinguished Room for the River projects, focused on either project or process aspects.

2.3.2 Formalizing project- and process agreements

Meredith and Mantel (2011) refer to project management as the means, techniques, and concepts used to run a project and achieve its objectives (Meredith and Mantel, 2011). As recognized by (Albers 2011) project management focuses on the substance and therefore a project plan is considered the leading element aimed at the realization of pre-defined project

objectives. According to Mantel (2005), the key element in this traditional project management approach is project organization that handles effective information flows (Mantel 2005; Meredith & Mantel 2011). Secondly, by specifying values at the policy level, the discretionary powers of professionals are reduced, leading to a decreased possibility of effecting workable trade-offs. Third, if public values are considered to be rights, stakeholders have incentives to have recourse to the law in order to secure rights. Charles et al. (2007: 8) note that the according legal procedures are "inevitably tardy, expensive and generally results in suboptimal outcomes for all stakeholders". Following Charles et al. (2007) hierarchy evokes strategic behavior, where operators make different trade-offs than the policy makers might expect. Safeguarding public value should therefore facilitate the development of workable trade-offs among parties involved in decision-making. "Yet the specification of public value is perhaps not the best way to accomplish this" and instead, a mix process and project instruments will be required (Charles et al. 2007:8). A tailor-made process might be required to address both aspects in their most ideal way one, balancing the position of stakeholders involved. As project management focuses at making substantive agreements in projects, gaining support and acceptance for a specific plan or process is considered as important (Charles et al. 2007).

On the other hand, Bruijn et al. (2010) illustrate the need for a process-oriented approach with their description of a project initiator that depends on other parties, who may not be convinced by the initiator's substantive arguments. Other parties are considered to solely support the overall process by the time they are adequately involved, recognizing their own ideas in the problem definition and its solution (Miller and Lessard 2000). For example, when agents sense that their own ideas are insufficiently reflected in the proposed change this can frustrate the project's planning. The perceived feasibility of a plan or project and the accompanying process is therefore considered to be more important than the project's original objective (Bruijn et al. 2010). Process management refers to the conscious directing of dynamics in- and around a project and managing their interaction with stakeholders like water boards, municipalities and local residents. Process management acknowledges that a project manager is not in the position to use hierarchical management tools, being a more interdependent actor within the actual project and thus directly related to decision-making in networked structures (Bruijn and Heuvelhof 2012). Although process is considered a leading element, this does not necessarily imply that process management is forthcoming without certain formulated rules (Bruijn et al. 2010).

2.3.3 Formal agreements for safeguarding spatial quality

Combining the insights in a project's advocacy-, political-, bureaucratic- and provision process, the formulation of formal project- and process agreements are considered a vital element for safeguarding spatial quality in individual Room for the River projects. Towards the formulation of these formal agreements, however, guiding principles should address the set-up of a good process management structure (Bruijn et al. 2010). However, this approach does not address the formal position of stakeholders involved in decision-making and requires a basic understanding of their ongoing dialogue. To adequately address this aspect, especially during projects' advocacy-, political-, bureaucratic- and provision process, additional insights in stakeholders' role and function in the project's decision-making process are required.

2.4 Principal-agent thinking

Highlighting the importance of stakeholders involved, their function and relationships an in-depth analysis of these aspects is considered indispensible (Ison et al. 2011). Following the insights provided by Holmstrom (1999), Laffont and Martimort (2001), Maskin and Tirole (1992) and Steenhuisen (2009), principal-agent thinking concerns these insights and adds the dilemma in stimulating the project agent to act in the best interest of the project principal, instead of its own. In Room for the River projects one could argue that on the one hand this concept considers the relationship between the project initiator and executor, on the other hand it might also involve the relationship between the executor and project constructor, responsible for the actual project implementation. Balancing these insights and the research's focus on improving project spatial quality, making agreements with key stakeholders is critical. Since one can explicitly and implicitly address distinct project and process elements, agreements are formulated accordingly by highlighting formal and informal project- and process agreements.

To understand how formal and informal agreements work, their context and its guiding principles, principal-agent theory enables a basic understanding of the project's underlying stimulus (Holmstrom 1999). In line with this insight Steenhuisen (2009:13) argues that the conflict between the 'agent's objective function' and the 'principal's objective function' is fundamental to principal-agent thinking. Following Steenhuisen (2009), the application of guiding principles can be considered ideal when the incentives for an agent to maximize profits exactly match the principal's main project objective. Balancing this insight requires a basic understanding of their ongoing dialogue. Holmstrom's (1999) principal-agent model provides its basic understanding in the context of negotiated change, referring to the situation in which a principal (client) depends on his agent (constructor) to undertake a task on his behalf (Knaap 1995). This situation is illustrated by Laffont and Martimort (2001), highlighting that when the project principal's main objective is to safeguard public value, one needs to be protected against the agent's private interest, such as maximizing profits et cetera.

The preceding identification of project's advocacy-, political-, bureaucratic- and provision process addresses the formulation of formal project- and process agreements to safeguard riverine spatial quality towards project realization. This insight is illustrated by Steenhuisen (2009:14), stating that to prevent the erosion of public values one should "counterbalance this goal conflict with sufficient incentives". The conclusions drawn by Muller et al. (2005) acknowledge this awareness, stating that the type of contract chosen for a project identifies the framework for setting-up formal principal-agent agreements on how the principal's values are safeguarded during actions performed by their agent. This holds that contractual agreements between the key stakeholders enable safeguarding of riverine spatial quality towards project realization. However, as formal agreements enable multiple interpretations, informal agreements can be considered as decisive (Steenhuisen et al. 2009). In line with these findings, figure three presents the schematic overview of principal-agent relationships present in decision-making on riverine spatial quality. This figure holds arrows that highlight the relationships between key actors, for example when the project principal 'hires' their agent to perform a task whilst balancing their public and private interests.

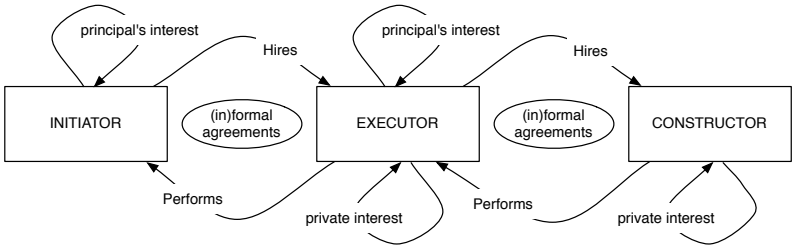

Figure 3: The principal-agent relationship as adapted from Steenhuisen (2009:13)

To address the importance of formal agreements during the project's advocacy-, political-, bureaucratic- and provision process one should be aware of the fact that principal-agent relationships between key stakeholders involved are relatively complex, mainly due to their mutual interdependencies, interests and formal role (Bruijn and Heuvelhof 2012). To identify formal agreements, stakeholders' role and function, principal-agent theory enables contextualization of the trade-offs made during the project's advocacy-, political-, bureaucratic- and provision process. Following this insight one should not expressively disregard their informal agreements, however, the formal agreements are considered to provide its crucial basis and therefore the main objects under discussion in this research. The arrows indicated in figure three are therefore used by means of illustration and not necessarily present in all Room for the River projects.

2.5 Framework for analysis

Balancing the insight that project spatial quality aligns with the concept of public value, the framework formulated by Veeneman, Dicke, and Bruijne (2009) enables one to identify key stages in the overall decision-making process. Principal-agent theory is considered to help address the role of key stakeholders involved and contextualize their trade-offs. By highlighting the underlying formal project- and process agreements, a relatively large part of this contextualization can be assessed. Contrariwise, balancing the insight that informal agreements may have significant influence as well, this research does not expressively disregard the informal agreements made. These concepts are highlighted in figure four, firstly showing the main conceptions of this research, such as the principal's role for the Room for the River executive management who hires a project initiator to articulate the project's spatial quality. As a follow-up of the advocacy process, the project initiator takes on the role of project principal too, balancing their public and private interests and hiring a project executor, addressed as their agent. Before project's spatial quality is actually provided to the public by the project constructor, the project executor first hires them as their agent, the project constructor, indicating yet another principal-agent relationship.

With the presentation of the 'Room for the River' its program management contracted project teams to avert future flooding of the Dutch riverine areas (Boer 2013). Formulated with its dual main objective, spatial quality was articulated as a concept that everybody favored in order to get all stakeholders on board, referring to the advocacy process in which the project teams can be considered the program executive management's agent (Broens 2013). The political process, however, is highlighted by the initial negotiation about the initially articulated project's public value. This negotiation process is completed with the attribution of the project's executor, highlighting another principal-agent relation (Steenhuisen, Dicke, and Bruijn 2009). As spatial quality is ultimately specified into sufficient

detail by the project executor and the project constructor, the bureaucratic process is ran. In line with the 'process of negotiated change', the agent contracted by the executor eventually provides the spatial quality to the public; having realized the project's objects and their functioning as specified together with the project's executor, negotiated between the executor and initiator and initially articulated by the project's initiator and program's executive management (Veeneman, Dicke, and Bruijne 2009).

As project spatial quality might undergo significant changes in 'appearance' during each of the stages of the decision-making process, project- and process agreements intend to safeguard the initially articulated project spatial quality during the decision-making process (Greter 2013). These agreements, however, might not evidently align with the initially articulated public value. By means of illustration, one could argue that the individual norm for spatial quality is provided with the initial articulation the project's spatial quality by the local stakeholders and authorities. The norm for spatial quality could also address the negotiated value formulated in the project's political process or the operationalized value of the project's bureaucratic process (Steenhuisen 2009). During realization the constructor aims to deliver (provide) this level of spatial quality according to the project specification translated by the project executor and the regulation that apply. However, the project's provision process is not subjected to intensive research, as the research cases were not (yet) completed by the time the research input data was gathered. During realization the project's front office checks whether deviations of the initial specification aligns with the negotiated and articulated spatial quality, as recorded in the project decision, and advises program and project management when deviations are considered necessary or should be reconsidered. Ultimately, the bureaucratic process between the project executor and constructor is influenced by the initial formulated project demand specification, an administrative document that holds the initial project's set-up, balancing the contractual degrees of freedom, minimal project characteristics, financial and time aspects and their interfaces. Eventually the project constructor reformulates this document into an approach used for guidance during their provision process.

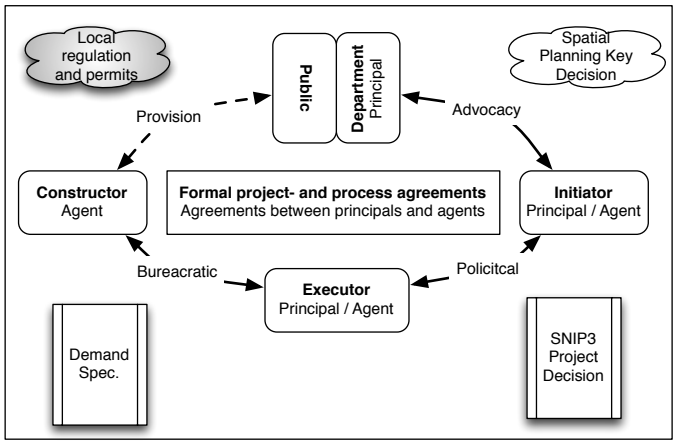

Figure 4: Conceptual framework: Realizing spatial quality in Dutch Room for the River projects

Chapter 3. Research operationalization

Chapter one gave an introduction to the field of research, focusing on the identification of formal agreements that safeguard project's spatial quality in the Room for the River program. In order to address the formal project- and process agreements formulated, the different stages of decision-making should first be highlighted; pinpointing the project's advocacy, political, bureaucratic and provision process. Highlighting the role of the project's initiator, executor and constructor in the identified decision-making stages enables one to determine the project's principal-agent relationship and its contribution to the translation of project spatial quality. Based upon the theoretical insights gathered so far, this chapter introduces the conceptual framework that aligns with safeguarding public value in the realization phase of Room for the River projects. The conceptual framework presented and the design of research to be conducted should enable one to answer the main research questions presented. Focusing on the translation process highlighted by scientific theory, towards collecting empiric data and its interpretation, this chapter introduces the research's underlying qualitative approach.

3.1 Exploratory qualitative approach

In order to acquire an in-depth understanding of the translation process of project's spatial quality and the input of the project's initiator, executor and constructor, one should investigate the questions of *how* and *why* (Flick 2009). Based upon the theoretical insights gathered so far, this paragraph introduces the application of this research' conceptual framework. The conceptual framework presented in chapter two provides one with a scientific profound approach that assists in answering the main research questions, as presented in chapter one. Focusing on the translation process as recognized in scientific theory this paragraph introduces the research's underlying exploratory qualitative approach, a concept that will be addressed in the following sections.

3.1.1 Conducting qualitative research

Following the insights presented by various prominent qualitative scholars, such as Baxter and Jack (2008), Flick (2009) and Merriam (1998), conducting exploratory qualitative research helps one to explore, understand and interpret shared occurrences within their current setting and context. Qualitative research focuses on understanding and interpreting processes, events and specific developments due to its explorative and interpretive paradigm, assuming that cause and effect are interdependent (Baxter and Jack 2008).

Where qualitative research focuses on gathering in-depth information, quantitative research is focused on finding support for formulated hypotheses on identified causal relationships. This research attempts to gather a complete and detailed understanding and image of the various stages of the decision-making process, formulation of formal agreements and the principal-agent relationship between stakeholders involved. Balancing this insight, the application of an exploratory qualitative research approach enables one to gather a rich image of a project's advocacy, political, bureaucratic and provision process, as compared to a quantitative approach that will automatically focuses on finding empirical support for pre-formulated hypotheses. Seeking the answer to how contemporary formal project- and process agreements on safeguarding spatial quality come about in selected Room for the River projects, an exploratory qualitative approach is considered the logical choice.

3.1.2 Exploratory multiple-case study

Addressing formal agreements that highlight the translation process of project spatial quality during decision-making, gathering in-depth understanding of the project's initiator, executor and constructor role and underlying agreements that govern their role is considered imperative (Maskin and Tirole 1992). To address the research' overall objective, conducting qualitative research enables one to adequately balance gathered insights. This holds that a relatively small and focused research sample will already enable the formulation of project and process propositions for improving a project's safeguarding of spatial quality.

Following Flick (2009), conventional qualitative research produces information on the particular cases studied only, therefore one should note that more general conclusions are considered to be merely informed assertions. Identifying the complete and detailed understanding of a decision-making process, its setting and context is considered a time-consuming task and therefore exploratory research often works with a relatively low number of observations or cases (Verschuren 2003). Balancing this insight and in line with the analysis of individual projects, this research will focus on comparative case studies. The decision to select case studies as the basis for this research originates from the insight that a variety of factors may contribute to the project's decision-making process (Corcoran, Walker, and Wals 2004). This holds that this exploratory qualitative case study research considers more than just the investigation of an individual situation and its main stakeholders (Yin 2002). Conducting this research could therefore lead to the development of a relatively rich understanding of a project's decision-making process and its various underlying perceptions of project spatial quality. Within case study research, Yin (2002) distinguishes explanatory, exploratory and descriptive case study research. Besides the initial distinction between the different types of case study research, Yin (2002) also makes the distinction between studying singular and multiple cases. In line with the exploratory qualitative research approach and accompanying selection criteria, the research addresses an exploratory-multiple-case research study that allows one to identify the actual differences between the selected cases.

In line with this reasoning, three of the in total 34 individual Room for the River projects are interrelated, by means of evaluating the formulated formal agreements that intend to safeguard project spatial quality. The following paragraphs will address the overall evaluative approach applied, the research's methodology, selection of individual cases and operationalization of the research' variables.

3.2 Verification and validation of findings

To ensure reliability of the exploratory qualitative multi case study research conducted, one should find adequate support for gathered insights by balancing multiple views on the independently obtained observations (Flick 2009). These views are obtained by either the assessment of existing literature and project documentation or the consultation of program and project experts. Highlighting both assessment methods, the analysis of present documentation and conducting expert interviews is considered a crucial step towards the formulation of informed assertions, balancing theoretical insights with practical expertise (Yin 2002). As theoretical findings originate from acknowledged and scientific sources, this check is done automatically on the behalf of the recognized source. Verifying the interviews

conducted, interviewees are enabled to check the transcription of their interview before insights are used as qualitative input for the overall research. This approach firstly enables the interviewee to check the transcription for errors and irregularities and secondly the verification of the interview transcription will improve the overall quality of the interview conducted, as interviewees are enabled to made additions can be made (Saunders, Lewis, and Thornhill 2009). Reviewing cases from different actor positions leads to the formulation of a significantly richer perspective, as the approach enables one to create a better understanding of the overall project and design choices that are made. To further improve the reliability of the research, peer reviews are considered the follow-up step of the initial verification process (Saunders et al. 2009). This holds that the formulated research insights and informed assertions need to be checked by the research' internal and external supervisors.

To validate the findings of the evaluation, another substantive check has to be performed to assess whether the established contribution formal project- and process agreements in safeguarding riverine spatial quality represents its real life situation. This validation step is performed by comparing the insights gathered with the data collected from the literature study, in collaboration with delegates from the Room for the River program executive management and the independent quality-team. Placing the insights gathered in a broader daylight, a consultative session is organized where managers and designers of various other Dutch Room for the River projects are asked to give their view on the formulated informed assertions and discuss their own findings.

3.3 Research methods applied

This chapter addresses the methods applied in order to gather specific project insights and observations. The methods addressed in this chapter are highlighted as a crucial scientific approach to answer the formulated research questions as presented in chapter one. The first section addresses the methods that will be applied, followed by the data needed to answer the formulated research questions and their discussion towards actual application.

3.3.1 Desk research

The analysis of scientific theory is the first step towards the development of a scientific research context in which formal project- and process agreements between the project initiator, executor and constructor are analyzed (Saunders, Lewis, and Thornhill 2009). The aim of conducting desk research is to gather a theoretical insight in the contribution of formal agreements between stakeholders on safeguarding project's spatial quality in the transition towards realization. In order to address this objective, relevant aspects of project- and process evaluation are highlighted (Yin 2002).

By analyzing distinguished Room for the River projects as case study material enables the researcher to identify key stakeholders, differences, similarities and processes of change in Room for the River projects (Verschuren 2003). Desk research also enables one to identify the driving factors, formal agreements and causal relations between project aspects. The data collected in the desk research is then supplemented by conducting interviews with stakeholders. This enables the researcher to gather a complete and rich picture of the situation.

3.3.2 Participatory observation

After a theoretical insight is gathered of the initial research' cases, conducting an actor analysis is considered to enable one to determine the project's principal and agent (Meer and Edelenbos 2006). As an actor analysis can be conducted for every project, participatory identification of a project's principal and agent enables a charting of the decision-making phases's most prominent stakeholders.

When the most prominent stakeholders in the different decision-making stages of overall Room for the River projects can be divided over two distinct groups, the individual project's organizational structure can be compared more easily (Bruijn and Heuvelhof 2012). Besides the advantage for comparing project's organizational structures, participatory observation enables the identification of the relation between executive management and the stakeholders involved in the actual realization of project spatial quality from various points of view. By balancing the insights gathered, the participatory approach enables one to learn from the daily activities, rituals interaction and events of a project's principal and agent (Jonsson 2005).

3.3.3 Interviewing

Conducting exploratory qualitative research aligns with the set-up of semi-structured interviews, as conducting semi-structured interviews enables one to obtain in-depth understanding of the respondent's story and its context (Suvedi and Morford 2003). The interview's set-up focuses on asking specific questions and obtaining the respondent's additional clarification and presentation of its context, following the interview protocol included in appendix A.

Conducting interviews with key stakeholders involved, the evaluation of projects' advocacy, political- and bureaucratic process can be adequately supported. To obtain an insight in the projects' decision-making process interviews are conducted with a total of twelve respondents at both program- and project level, presented in appendix B. Among the respondents are PDR's program director and deputy program director of the Room for the River program, interviewed to balance a holistic view on the Room for the River projects and position of spatial quality in the overall decision-making process. Addressing the formal agreements made on safeguarding spatial quality at project level, however, three to four representatives from individual projects are interviewed to highlight their role, position and relationship with the project's initiator, executor and constructor. To acquire an in-depth insight in their relationships and decision-making process, the expert representatives of the individual projects' front office are interviewed. As a follow-up, interviewing the technical managers of the project executors completes the required in-depth insights in the projects' political process. Studying the follow-up bureaucratic process, the insights gathered are supplemented with those from the project managers of the respective project constructor, acquiring a relatively rich and complete picture of the projects' decision-making process, key stakeholders involved, their relationships and underlying formal agreements.

To verify the interview's key findings the independent quality-team was consulted, comparing the interview's discoveries with their own experiences in decision-making on the selected Room for the River projects.

3.3.4 Evaluation

To obtain an insight in the contribution of formal project- and process agreements between the project initiator, executor and constructor on safeguarding projects' riverine spatial quality, an evaluation of formal agreements is to be conducted. In line with the research's overall aim to identify the formal agreements that safeguard project spatial quality and the process stages in which these are formulated, Boulmetis and Dutwin (2005) argue that evaluation looks whether this has been successfully achieved. Balancing their insights provided the evaluation of a project's provision process would only provide adequate assertions by the time that the project is fully completed (Boulmetis and Dutwin 2005). In line with the findings presented by Baxter and Jack (2008), however, evaluation of substantive outcomes of a change process should not be considered fully abundant, as the evaluation of preceding process stages is also of great importance. This implies that one's evaluation of preceding advocacy, political and bureaucratic process stages provides worthy insights even when the constructor has not yet fully completed the project.

In line with the insights presented by de Bruijn et al. (2010) and Miller and Lessard (2000), Guba and Lincoln (1989) formulated a corresponding approach for project- and process evaluation; so-called fourth generation evaluation. Following their elaboration, fourth generation evaluation is a form of analysis in which the *claims*, *concerns* and *issues* of stakeholders serve as an organizational focus in determining the need for formal agreements on both substance and process (Guba and Lincoln 1989). With the label 'fourth generation evaluation' Guba and Lincoln convey the notion that their fourth approach incorporates and goes beyond three earlier generations of evaluation models, which they characterize as focusing respectively on objectives, descriptions and judgment. To these three earlier models Guba and Lincoln added intensive participation of stakeholders in the design, conduct, reporting and application of evaluations and also the constructions that different stakeholders bring to bear in judging a project or program (Guba and Lincoln 1989). Placing the evaluators and stakeholders at the center of the inquiry process, employing all of them as the evaluations' human instruments, the focal activity of Guba and Lincoln's fourth generation evaluation is to reveal, collect, analyze and evaluate stakeholders underlying values, beliefs and attitudes (Stufflebeam and Shinkfield 2007).

Balancing the insights provided, stakeholder values are centralized in fourth generation evaluation. Applying this evaluative approach, however, requires to take account of stakeholder's values and to uncover relevant values that may not be absolutely evident. To take account of the varying and often conflicting values of stakeholders, the research will evaluate project's stakeholder claims, concerns and issues as experienced during the identified decision-making stages that precede the project's actual provision stage; focusing on the project's advocacy, political and bureaucratic decision-making stage.

3.4 Case study selection

The initial research design and its evaluative character address a case-study approach. The initial literature review to be conducted, contributes to a selection of cases that nowadays face their transition from project decision towards actual realization. Based upon consultation with Rijkswaterstaat's coordinator for river branch managers, specific cases are selected upon the following criteria:

- **In transition**: Cases that face or faced the transition from project decision towards project realization and minimally passed the initial project phases of exploration and project planning-study. This holds that initial contractual agreements are made on how spatial quality is safeguarded, in line with the dual main program objective.
- **Concerns spatial quality:** In consultation with program managers Room for the River projects are highlighted where the safeguarding of spatial quality towards realization is subject of discussion. The fact that such discussion exists makes it interesting to address and investigate what formal project- and process agreements on safeguarding spatial quality stand at the basis of this discussion.

The follow-up step includes another round of consultation with the coordinator of Rijkswaterstaat's river branch managers, addressing the cases that would potentially fit the formulated research objective. In table one the Room for the River projects that meet the first two main criteria are presented. The second round of consultation lead to the selection of six individual Room for the River projects that are included in table one. Out of these six projects, the most interesting cases are highlighted with a grey fill; 'Overdiepse Polder', 'Tollewaard' and 'Midden-Waal'. According to the coordinator of Rijkswaterstaat's river branch managers, the selected cases are considered to have the most interesting relationship towards the presented research objective and not (yet) been subject of intensive evaluation in regard of safeguarding riverine spatial quality.

Tollewaard is selected as it recently passed the project decision and faces the realization of an immense physical bridge that will run over land and therefore will have a relatively large impact on the local landscape. The second Room for the River project that will be studied in this research is de Overdiepse Polder, due to the lowering of the dike river water is allowed to flow into the polder in the case of increased river discharges. On average this will be a once in twenty-five year event. Along the old Meuse, new dikes are created and the farms that remain in the polder are rebuilt on mounds. As this project is considered to have a relatively large impact on the 'original' landscape, it is interesting to evaluate the contribution of present formal project- and process agreements on how spatial quality of the local area is safeguarded. The last Room for the River project addressed in this research is the lowering of groynes in the river Waal. This Room for the River project addresses a phased realization, each offering different degrees of freedom in terms of design to the assigned project constructor. As this could lead to very different results, analyzing the project's underlying various formal project- and process agreements might lead to very interesting results.

Table 1: Room for the River projects concerning spatial quality in transition towards realization

Project	In transition towards realization	Concern for spatial quality
Midden-Waal	✔	✔
Tollewaard	✔	✔
Doorwerthse Waarden	✔	✔
Middelwaard	✔	✔
Noordwaard	✔	✔
Overdiepse polder	✔	✔

3.5 Operationalization of research variables

This paragraph provides characteristics of the key-concepts introduced in chapter two, to be investigated in the selected case studies. The identified key-concepts are operationalized as specific indicators are addressed in the remainder of this section.

3.5.1 Spatial quality as a public value

In line with the insights presented in chapter two, spatial quality entails a rather broad concept that is being articulated, negotiated and operationalized towards its provision, emphasizing the project's advocacy, political, bureaucratic and provision process. Starting from the Spatial Planning Key Decision, the project's initial cloud of goodness formulates spatial quality in relatively broad terms, highlighting the utility, amenity and future value of the project riverine area. The initial operationalization of spatial quality towards its realization addresses the combination of these three project values, presented in table two. Following the identified decision-making stages, utility can be addressed by identifying the project's accessibility, ecological structure and diversity (Assink and Groenendijk 2009). The operationalization of amenity addresses the overall appearance of the project's riverine area by means of openness, attractiveness, contrast and zoning (Ministry for Public Works and Water Management 2006). Balancing the operationalization of the project's future value the project's sustainability, heritage and culture are emphasized (Ministry for Public Works and Water Management 2006).

Table 2: Operationalization of indicators to address agreements on project spatial quality

	Utility value	Amenity value	Future value
Indicators	• Accessibility • Ecological structure • Ecological diversity	• Openness • Attractiveness • Contrast • Zoning	• Safety • Sustainability • Heritage • Culture

3.5.2 Agreements to safeguard public value

Agreements formulated between the project principal and their agent that intend to safeguard public value can be identified by the formal and informal influence on actual project operations. Formal agreements that safeguard public value, however, are distinct by means of project milestones, contracts, project procurement documentation and guidelines (Boer 2013). The informal agreements are less distinct and address the role, functioning and involvement of project designers, quality-team and project management (Broens 2013). Based upon this insight, the main focus of this research is on the formal agreements formulated to safeguard project's public value, identifying agreements that relate to the indicators present in the previous paragraph. Based upon these indicators the agreements on public value in the project milestones, contract and guidelines, the formal project- and process agreements can be operationalized (Hooimeijer, Kroon, and Luttik 2001). The informal agreements, however, are investigated less in-depth and therefore address whether and when the designer, quality-team and project management is involved. An operationalization of distinct formal agreements made in the different stages of decision-making process is presented in table three.

Table 3: Operationalization of distinct formal agreements that safeguard project spatial quality

Formal agreements made	• Involvement of the quality-team • Involvement of a landscape architect • Active stakeholder participation • Appointment of a project supervisor on spatial quality • Development of a project vision • Project procurement type • Contract type applied • Formulation of EMVI criteria to select the Economically Most Advantageous Tender • Application of system-based contract management (SCB) • Functional specification of spatial quality • Keeping a change log of project amendments made

3.6 Towards conducting case-studies

Conducting multiple case studies with a qualitative research approach, one does not solely aim to recognize and articulate the project's spatial quality (Yin 2002; Veeneman, Dicke, and Bruijne 2009). This research, however, aims to evaluate the internal approach in articulating, specifying and negotiating spatial quality, respectively the project's advocacy-, political- and bureaucratic process. The formal agreements formulated to safeguard riverine spatial quality towards project realization are evaluated upon their organizational structure, highlighting the role of the project principal and agent. Assessing the position of the project's principal, agent and key stakeholders involved one is enabled to gather specific insights in their claims, concerns and issues on both substance and process (Guba and Lincoln 1989).

Claims generally assess a state of mind developed by stakeholders when deciding upon project elements that influence the representation of actual project spatial quality (Barnes et al. 2007). An example of stakeholders' claims could therefore address their interpretation of contractual degrees of freedom, for instance when excavating a floodplain or designing a 'light' bridge. Secondly, concerns address the elements that are still developing and therefore no specific awareness exists whether the outcome of this development will hamper the realization of spatial quality (Jønch-Clausen and Fugl 2001). A constructor's concern during realization of a bridge might for instance be that his sub-constructor faces financial deficiencies. The last evaluative element, addressing issues, focus on project elements that are expected to negatively influence the overall quality of the project. For instance when project managers decide to abandon their project before completion (Pahl-Wostl 2009).

Balancing key stakeholders' project claims, concerns and issues, a relatively clear insight can be presented whether project spatial quality is safeguarded adequately. Claims, concerns and issues will therefore be considered related with each other. This insight can be highlighted by the assessment of projects' key stakeholders who claim that spatial quality is safeguarded successfully and do not perceive issues concerning spatial quality towards project realization. However, when stakeholders argue that they are concerned whether spatial quality is safeguarded adequately, the underlying formal agreements can be identified and assessed accordingly.

Chapter 4. Programmed spatial quality

Where the previous chapters introduced the research's methodology and operationalization of its research variables through a theoretical exploration, this chapter elaborates on the content of the Room for the River program and its projects. Highlighting the program's overall approach in theory and practice, the formal organizational structure of the Room for the River program is addressed into detail and the accompanying decision-making process is emphasized.

4.1 Innovative approach for enabling water safety

The starting point for enabling the Dutch rivers more space initially followed the unprecedented high water levels of 1993 and 1995. The formulation of the Room for the River program highlighted the Dutch innovative approach for improving national water safety level (Akamani and Wilson 2011). The Spatial Planning Key Decision Room for the River defined the spatial layout of the Dutch riverine planning area at national level, specifying locations for the implementation of measures, actions and the change in corresponding spatial functions when implemented. The formulation of the Spatial Planning Key Decision eventually resulted in a coherent package of measures that complies with Dutch statutory levels of water safety by 2015 (Ministry for Public Works and Water Management 2006).

4.1.1 Program integration

The implementation of the Room for the River program and its double objective is assigned to the Dutch provinces, municipalities, water boards and Rijkswaterstaat (Ministry for Public Works and Water Management 2006). As the current Minister of Infrastructure and the Environment bears the program's overall responsibility, the program's executive management (PDR) addresses 'the market' for the program's realization. PDR's approach highlights the added value of the market's program realization, emphasizing that a market approach could only negligibly add value to projects, as the project realization will need to be addressed internally (Ministry for Public Works and Water Management 2006).

The added value of a market approach originates from PDR's insight that one does not have the same level of expertise as the market does, mainly due to Rijkswaterstaat's organizational distance towards the individual projects. In order to optimally benefit from the market's expertise, PDR added the need for innovative integrated realization contracts (Boer 2013). These integrated contracts are derived from Rijkswaterstaat's infrastructure projects, ultimately resulting in the selection of Design & Construct (D&C) realization contracts for the individual Room for the River projects. The integrated D&C contracts tend to replace the more traditional contracts used in the Dutch water management sector, highlighting the addition of contractual degrees of freedom that consist of additional design tasks and the constructor's required detailing of abstractly formulated project plans. The constructor's final project design is detailed in consultation with local stakeholders and ultimately approved by the PDR. After PDR's approval of the constructor's final design, the design forms a formal part of the project specification for realization (Broens 2013). Compared to the more traditional framework (RAW) and Engineering & Construct (E&C) contracts where the project constructor only provides the project principal with a description of their technical improvements, the agent's contribution to the principal's design is no longer limited to

suggesting improvements in materialization. Besides the detailing aspect, the 'innovative' feature of the integrated D&C contract is that, as the project constructor is held responsible for the project's actual realization, the project agent determines how PDR's desired result is realized. Balancing this insight, the project constructor formulates their own approach to check and balance the quality of products and processes; so-called external quality assurance (Buuren, Edelenbos, and Klijn 2010). By making use of external quality assurance, the PDR highlights that a project principal should always manage their agent by a so-called system-based contract management (SCB) approach (Boer 2013). This approach starts with the identification of the project's main risks that are turned into a balanced list of key checks and balances that addresses the quality of system, its underlying process and key products. In addition to the principal's checks and balances, the project principal also determines whether a remote principal role should be applied, with minimal interference between the completion of the project and the quality delivered by the constructor, is appropriate (Hector 2013).

The application of a principal's remote role is established by the agent's risk-based mix of system-, process- and product- checks that balance the requirements of the D&C contract. The system's test checks the operation of the constructor's project quality management system through audits, focusing on the agent's compliance and external quality assurance system (Hector 2013). Following the system checks, process checks are formulated to supervise the constructor's design and implementation processes. Following the process test, the principal's product tests highlights whether the constructor's realized product complies with the principal's specification in terms of performance and reliability, according to their field inspection and verification of results (Rijkswaterstaat 2005). Towards the actual realization of the individual Room for the River projects, test insights are combined and the PDR signs for the milestone's formal approval. The underlying approach by which PDR signs the formal approval of their agent's deliverables is highlighted in the following section.

4.1.2 Programmed realization

To address the projects' content and processes towards realization, decisions on project financing, implementation and realization are taken in accordance with the Rules for Wet Infrastructure Projects (SNIP) (Rijkswaterstaat 2005). The SNIP internal management approach is applied within the Ministry of Infrastructure and the Environment, this holds that each project management milestone of a Room for the River project is closely related to the start and finishing of an individual SNIP-phase (Rijkswaterstaat 2005). Following this insight, formal milestones highlight the projects' initiation and completion highlighted in table four. Here the formulation of the project intake decision marks the project's starting phase, addressing the project's administrative project assignment for the planning-study phase (Rijkswaterstaat 2005). Three months after signing the intake decision the project action plan is to be submitted with the PDR. The choices between various alternatives developed consequently lead to the selection of a preferred alternative that is addressed and developed into further detail. In the project's follow-up phase the preferred alternative is formed into a final project design that is presented to the regional competent authorities (Rijkswaterstaat 2005). Towards the actual project completion, the SNIP4 and SNIP5 project phase determine the overall project decision and provide a basis for a formal 'Go' for the project's actual implementation. The SNIP 4 and 5 phases, however, are practically combined to a single

project decision. In line with the overview of the different SNIP phases, the formal project decision is approved and the project realization phase starts. The actual project decision therefore marks an important moment towards the transition between the project's planning-study phase and realization(Albers 2011; Hector 2013; Rijkswaterstaat 2005).

Table 4: Summary of project SNIP phases, adapted from Rijkswaterstaat (2005)

Project phase	Planning-Study			Realization		
Project decision points	• Intake decision • Project action plan	• Variant selection	• Project decision	• Project preparation decision	• Implementation decision	• Completion decision
No.	PVA	SNIP 2A	SNIP 3	SNIP 4	SNIP 5	SNIP 6

In conceptual terms, aligning the conceptual framework presented in chapter two of this research, the process towards the formulation of the intake decision and project action plan highlights the project's advocacy process. Followed-up by the political process, the project alternatives are formulated and eventually a preferred alternative is selected for procurement. SNIP 4 and SNIP 5 note the project's bureaucratic process, leading to the provision process where eventually the decision on project completion is made. Balancing position of the PDR towards project realization, they have distinguished steering-, accountability- and control activities that are guided through a series of realization milestones, as each phase within the realization process of a Room for the River project is 'completed' with the formal approval of a project milestone (Rijkswaterstaat 2005). The executive director of the Room for the River program eventually decides whether a milestone is achieved and if it is befitting to proceed to the next milestone (PDR 2012b). In addition to the formal milestones where the decision of the executive director is necessary, additional milestones can be added to the overall realization of a Room for the River project.

Initial run-throughs learned that in practice there is a need for scheduling additional milestones that enable formal decision-making (Boer 2013). For instance, addressing the formulation of the project procurement plan, the procurement strategy for the project executor and the project plan for realization describes the approach and processes necessary for guiding the project executor from the moment of contract award to its completion (PDR 2012b). The milestones can be considered as formal decision moments of the project's realization phase, where the project executor can be held accountable towards the PDR on the milestone related products. Here the project executor indicates the PDR whether the milestone has been achieved within the agreed terms. If both parties reach an agreement, one can continue to the next phase (PDR 2012b). An overview of the formal milestones is presented in figure five.

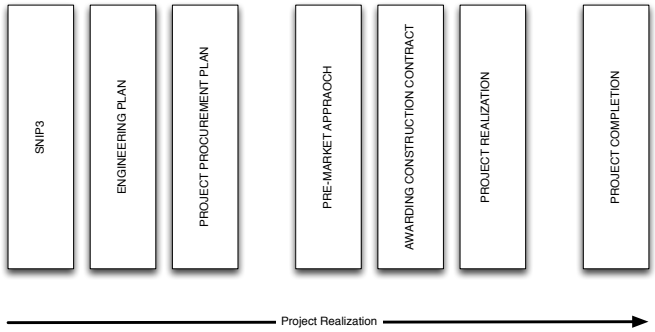

Figure 5: Schematic overview of project realization milestones towards completion

4.2 Planning spatial quality

To improve the project spatial quality the Spatial Planning Key Decision states that at program level the spatial diversity between individual river branches should be improved, maintaining and strengthening the open character of Dutch rivers and their characteristic waterfronts. On the other hand the preservation and development of the landscape's ecological, geological and cultural values is considered essential (Broens 2013). By enhancing the river's utility function as a main waterway for professional and recreational navigation, the Spatial Planning Key Decision argues that all core spatial qualities of the Dutch river branches are safeguarded adequately (Ministry for Public Works and Water Management 2006). Room for the River's executive management devises multiple possibilities to integrally tackle these individual project values, addressed in the following paragraphs.

4.2.1 Safeguarding spatial quality at program level

At program level spatial quality is safeguarded from a management point of view, highlighting the organizational anchoring of spatial quality in the Room for the River program (Boer 2013). Balancing the organization and management of spatial quality in the individual case studies, an important role is awarded to the Dutch Ministries of Infrastructure and the Environment, Economic Affairs and Agriculture and Innovation, commissioning the actual Room for the River is a program (Boer 2013). The program's executive management, the PDR, executes the overall program in collaboration with five provinces, being Noord Brabant, Gelderland, Utrecht, Overijssel and Zuid-Holland. In addition, local organizations such as water boards and municipalities are involved as well (Boer 2013).

Room for the River program's executive management is responsible for the actual realization of the program and links the Dutch national government with the program's local operation. By overseeing the program as a whole, the PDR monitors the program's consistency, facilitates the overall implementation and realization processes and encourages the exchange of insights and knowledge gathered between individual projects (Twist et al. 2011). Consisting of several departments, including the department of 'knowledge', the PDR incorporates expert insights (Broens 2013). PDR's knowledge department consists of the following five clusters; soil, water safety, integrated design, legal and spatial quality (Broens 2013). At the program's regional and local operations, the province, municipalities and water boards assist the PDR with the development of project plans, as the region is considered an expert within their region (Broens 2013). These regional parties are therefore also addressed as the program's project initiators towards implementation of individual project planning-

studies. During a project's planning study PDR's spatial quality cluster gives guidance for the articulation and operationalization of individual project spatial quality (Broens 2013). Besides testing the project documentation on formal project milestones, the spatial quality cluster also facilitates the planning study for phase towards the initiators (PDR, 2009a).

4.2.2 Safeguarding spatial quality at project level

Balancing PDR's ambitions for the individual Room for the River projects, project's actual implementation phase requires supplementary operational expertise compared to its planning-study phase, such as a steering- and advisory committee, realization- and project teams and designers (Broens 2013).

The project executor has a central and coordinating role during the realization process at project level. In line with this insight, the executor is ultimately responsible for the daily progress and actions within the project and therefore aligns with Rijkswaterstaat's standard model of Integrated Project Management (IPM) (Rijkswaterstaat 2005). IPM holds that standardization in management, organization and staffing of projects is entailed, highlighting the roles of project manager, project control, project environment manager, technical manager, and contract manager. The project manager ensures the project's broad management in terms of scope, time, budget et cetera, while the project's technical manager is responsible for gathering the substantive technical input for the overall project, starting from its preparation phase towards realization (Hector 2013). The technical manager works closely with the contract management and environmental management. The contract manager is responsible for managing the contract preparation and its implementation. The environment manager, however, is primarily concerned with the alignment of stakeholders' interests and their environment, balancing the insights and interests of the government, inhabitants of the project area, users et cetera. These five distinct project roles contribute to a uniform set-up in the planning-study phase of the project and its realization (Boer 2013). However, the interpretation of the roles may differ, for instance when roles are fulfilled by other people during the project's planning-study phase and its actual realization (Hector 2013).

Highlighting project spatial quality, local and regional parties are assisted by PDR's spatial quality cluster towards projects' planning-study and implementation by the assigned constructor, as presented in figure six. PDR's spatial quality cluster is complemented by an external quality-team that focuses on improving spatial quality in project plans (Broens 2013). The quality-team consists of five independent experts that give solicited and unsolicited advice on safeguarding project spatial quality, balancing their expertise in ecology, landscape architecture, physical geography, urban planning and river management (Sijmons et al. 2012). As the quality-team assists project initiator with the development of their project plan, their main concern is to preserve and enhance project spatial quality in an integrated way; balancing project water safety, design, feasibility, sustainability and innovative project aspects (Sijmons and Feddes 2012). Their input is issued during three formal visits during the project's planning-study phase and realization. These visits are concluded by the quality-team's final assessment, as included in the project decision that is ultimately approved by the Secretary of State (Rijkswaterstaat 2005).

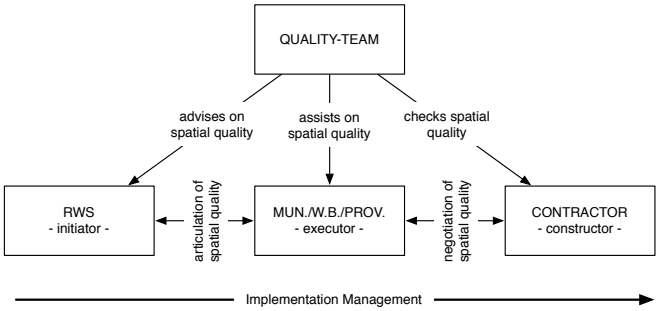

Figure 6: Management of project spatial quality towards realization

4.3 Safeguarding spatial quality in practice

Balancing the program's content and objectives, especially regarding project spatial quality, the Room for the River program has formulated a theoretically sound organizational structure to adequately articulate, negotiate and operationalize spatial quality towards its realization.

Following the outline of the innovative realization contracts used in the Room for the River program, a prominent role is awarded to both the projects' executor and constructor (Hector 2013). The formal structure and the position of expertise, regarding spatial quality in the Room for the River program highlights the importance of the external quality-team and their position. By advising, assisting and balancing the initial project spatial quality plans, the quality-team tends to safeguard project spatial quality by assessing the formal project- and process agreements formulated by the project initiator, executor and constructor (Broens 2013). Following the discernments provided in chapter three, conducting interviews with the respective stakeholders enables one to gather the necessary insights in the decision-making process of individual Room for the River projects. Following the research's demarcation interviews conducted are focused on how riverine spatial quality is safeguarded towards project realization. Whether the accompanying formal agreements adequately enable safeguarding of project spatial quality towards its realization is addressed in the following chapter, chapter five.

Chapter 5. Studying three Room for the River projects

Following the selection projects as provided in chapter three, this chapter reflects on the formal agreements that safeguard spatial quality towards project realization, answering the second research sub-question: What are contemporary formal project- and process agreements between project initiator, executor and constructor on safeguarding spatial quality in Room for the River projects? Illustrating the key stages of decision-making processes in Room for the River projects 'Overdiepse Polder', 'Tollewaard' and 'Midden-Waal' as presented in figure seven respectively, each case study is introduced by a brief overview of the projects' characteristics and the main stakeholders involved. Secondly the project planning-study phase is highlighted, familiarizing the transition towards project realization by emphasizing key project objects and processes. Underlining the associated formal project- and process agreements in the projects' realization phase, formal project documentation is evaluated according to the milestones presented in chapter four. The highlights of the project decision-making stages summarize the identified stakeholders' claims, perceived concerns and issues, appraised and related to the case study conducted.

Figure 7: Positioning of Overdiepse Polder, Tollewaard and Midden-Waal (Sijmons et al. 2012)

5.1 Project Overdiepse Polder

Room for the River front-runner project 'Overdiepse Polder' covers an area of circa 650 hectares and is situated near the city Breda in the south west of the Netherlands (Provincie Noord-Brabant 2008). By lowering the existing primary dike and excavation of the floodplain the project enables an estimate reduction of 27 centimeters in increased discharge on the river 'Bergsche Maas', a river Meuse tributary (Arcadis 2010a). Besides the PDR the main parties involved in the project's decision-making process are the province Noord Brabant, local water board Brabantse Delta and the assigned constructor Hollandse Waard (Hakstege 2013; Houwing 2013; Uden 2013; Verbart 2013). The remainder of this section presents a detailed description of the project's key stakeholders, their relationships in the specific stages of the project and the formal agreements that intend to safeguard the project's spatial quality by following the timeline presented in figure eight.

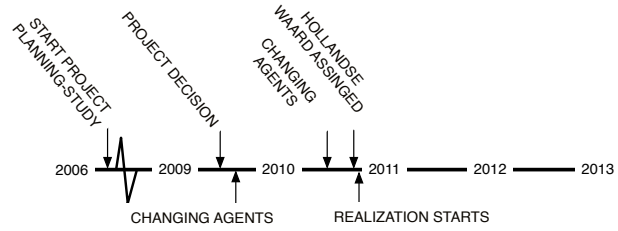

Figure 8: Timeline highlights of Room for the River project Overdiepse Polder

5.1.1 Planning Overdiepse Polder

In late 2004 the PDR signed a management agreement with the province Noord Brabant for the planning-study stage of the Overdiepse Polder (Brabantse Delta 2013). Signing the management agreement formalized their principal-agent relation, the PDR representing the Secretary of Public Works and Water Management and the province Noord Brabant being their agent (Hakstege 2013). Positioned at the right hierarchical level, the province prepared the initial project plan for Overdiepse Polder, being familiar with the project area and their inhabitants. In line with this insight, the PDR assigned their agent to develop a project plan that aligned with the program's dual main objective; keeping Overdiepse Polder livable and making it a more attractive environment (Houwing 2013).

Formulation of the project plan

In early 2005 the province presented their project plan, based upon a proposition by the local residents and farmers, to build mounds within the floodplain to accommodate the existing farmers (Verbart 2013). The presentation of the project plan marks the start of the project planning-study phase. The survey that followed in mid 2005 provided the province with an insight in how local farmers saw their future within Overdiepse Polder; did they plan on staying or was it likely that they would leave? The results of this survey enabled the province to make an initial selection of the so-called 'stayers', and the ones that would not, the 'movers'. Eventually the province identified ten stayers that agreed to proceed with the development of the project planning process. For the implementation of the project planning-phase, the Dutch province signed an administrative document in early 2006 for initiation of the project planning process, assisted by the relevant ministries, local municipalities Geertruidenberg and Waalwijk, water board Brabantse Delta and representatives of the residents and entrepreneurs within the polder (PDR 2012b).

To perform the (field) research and the preparation of plans, the province formed a consortium with representative Dutch consultancy firms, including Witteveen + Bos, and Tauw BV (Sijmons et al. 2012). In order to adequately address the program's secondary objective, the consortium contracted renowned Dutch landscape architect Bosch&Slabbers for the concretization of the project plan. Following the outline of Bosch&Slabbers their stakeholder consultation a detailed landscaping plan and a concretized planning document was formulated, describing the set-up of the project area to safeguard its spatial quality (Sijmons et al. 2012; Provincie Noord-Brabant 2008).

Developing the project's landscaping plan

The province's design-reference for Overdiepse Polder enabled a quality design of the mounds and its redesign in terms of materialization and positioning of small and larger vegetation (Loon 2008; Sijmons et al. 2012). Focusing on the concretization of the crucial details of the project's initial plan, Bosch&Slabbers emphasized the position of the mounds, were these would connect to the new dike and planting of vegetation. To set-up the mounds accordingly the province organized a design competition, gathering additional inspiration for the realization of beautiful and contemporary mounds.

Over the year 2007 the consortium focused on detailing the specification of the most prominent project objects. In terms of specification, the province Noord Brabant already

formulated clear details during the presentation of the initial project plan for the individual project objects (Sijmons et al. 2012). According to the insights presented by the interviewees the concretization of the Overdiepse Polder's dike, mounds and ecological connection zone had a significant impact on the project's overall spatial quality.

Articulating spatial quality of the new dike

The consortium formulated a number of considerations to safeguard Overdiepse Polder's spatial quality (Verbart 2013). The first consideration addresses the alignment of the new dike, its flowing lines, minimization of sharps bends and following the routing of the existing dike along the river Bergsche Maas (Uden 2013). Another consideration presented by the province addressed the ability to increase the height of the new dike in the near and far future, maintaining the recreational aspects of the area and minimizing the loss of precious farmland (Uden 2013; Verbart 2013). Bosch&Slabbers their combination of the consortium's considerations ultimately resulted in the technical drawing presented in figure nine.

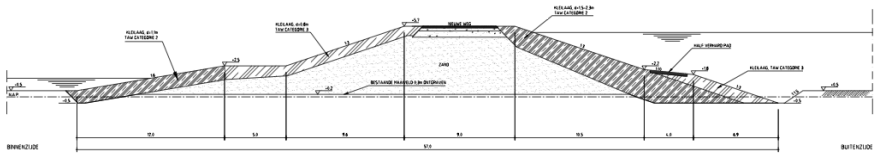

Figure 9: Combining considerations for the new dike in Overdiepse Polder (Loon 2008:9)

Articulating spatial quality of the mounds

The second project object addressed by the consortium considers the new mounds along the new dike in the floodplain of the Overdiepse Polder (Houwing 2013). The decision to align the mounds with the new dike was based on the consortium's following three criteria; the need for a sheltered area during the hoard of increased river discharge, the formation of a uniform series and thirdly, the desire to position the mounds close to the farmers' original farmland. Anticipating the occurrence of higher water levels in the far future, the mounds are built higher than the new dike (Sijmons et al. 2012). Besides the constructive specification, Bosch&Slabbers underlined that all planting on the mounds should reinforce its functional aspect in providing shelter. Forming independent elements within the polder along the new dike, shape, size and spacing between the individual mounds are articulated more or less equal, enabling the uniform image presented in figure ten (Uden 2013).

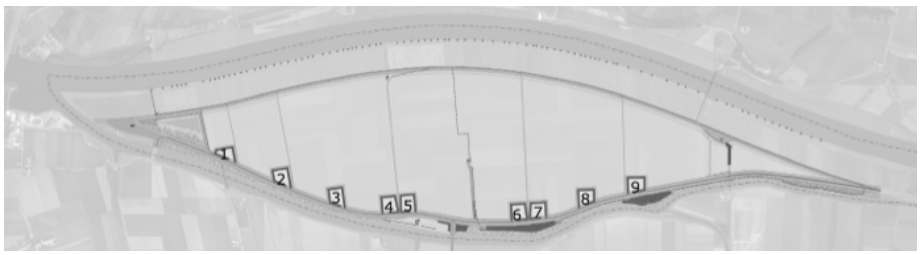

Figure 10: Positioning of the mounds in Overdiepse Polder (Loon 2008:20)

Articulating spatial quality of the ecological connection zone

To safeguard the spatial quality of the project's landscape, the ecological connection zone intends to emphasize the local continuation of the Biesbosch (Provincie Noord-Brabant 2008). This objective is formulated by the province's consortium, articulating a continuous ecological zone on corridors outside the planning area by highlighting its open landscape and

occasional rising natural vegetation and quays that are to be preserved (Sijmons et al. 2012).

Outline of Overdiepse Polder's advocacy process

In the planning-study phase of the front-runner project Overdiepse Polder PDR's agent, the province Noord Brabant played a major role. Forming a consortium with renowned Dutch consultancy firms and initiating the articulation process on spatial quality with local stakeholders. Balancing the outline of the spatial planning key decision, PDR's assisting quality-team argued that the involvement of a landscape architect would be a worthy addition, integrating the insights gathered during the province's stakeholder consultation. The province's interpretation of safeguarding spatial quality in Overdiepse Polder focused on the preservation of existing historical and natural project details; the profile of the new dike, the design and alignment of the mounds and the addition of an ecological connection zone. The accompanying process- and project agreements follow the spatial planning key decision's (PKB) detailed orientation; its 'clouds of goodness' in terms of utility, amenity and future value. Landscape architect Bosch&Slabbers combined the consortium's insights, leading to a relatively detailed articulation of Overdiepse Polder's spatial quality. A schematic representation of the project's advocacy process and its underlying formal agreements is presented in figure eleven.

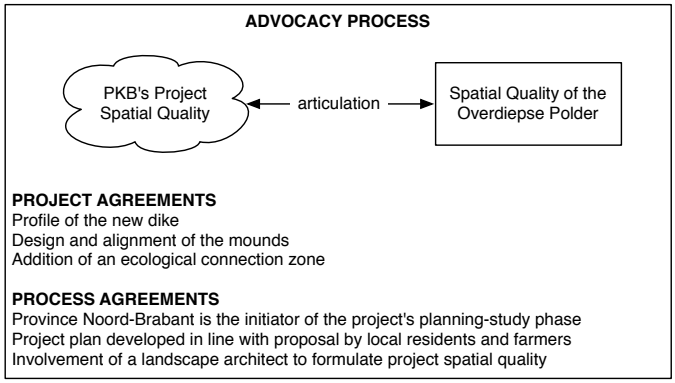

Figure 11: Overdiepse Polder's advocacy process and its underlying project- and process agreements

5.1.2 Towards realization of Overdiepse Polder

The Minister of Public Works and Water Management officially signed Overdiepse Polder's project decision on the 20th of May of 2009 (PDR 2009). In terms of process this implied that the province Noord Brabant would lead the project's realization phase. The project decision's crucial project agreement stated that the formulated landscaping- and project plan functions as the blueprint for the development of Overdiepse Polder's spatial quality (Loon 2008; PDR 2009; Provincie Noord-Brabant 2008; Sijmons et al. 2012). Following the project decision and ensuing the milestones for project realization, the province presented their final version of Overdiepse Polder's project development plan in June 2009 (Provincie Noord-Brabant 2009). Identifying the project's prominent objects, functions and scope, the project development plan highlighted the (negotiated) formal decisions that intend to safeguard project spatial quality are addressed in the following sections.

Formal agreements for realization of the new dike

Following the outline of the consortium's project development plan, the profile of the new dike is to be built-up as the old primary dike; consisting of a sand core, grass covered clay lining, slope of 1:3 and a public road on its crest (Provincie Noord-Brabant 2009; Uden 2013). Where the local water board is currently responsible for the management and maintenance of the 'old' dike, Brabantse Delta will include the new dike in their maintenance schedule by a tenancy free approach, stretching their operations of the old primary dike (Provincie Noord-Brabant 2009; Verbart 2013). To acquire the land necessary for the realization of the new dike, a transfer of ownership was negotiated on amicable basis as relatively little local resistance was to be expected, mainly due to the plan proposition by local stakeholders (Verbart 2013). In order to prevent the project area from flooding during realization, the water board included the formal process agreement that the old dike would only be excavated when the new dike was completed (Provincie Noord-Brabant 2009; Uden 2013).

Formal agreements for realization of the mounds

To align the project development plan with the signed project decision, effectuation of the size and shape of the planned plots was considered a necessity (PDR 2009). To top off the underlying land exchange plan the province acknowledged the stakeholders' requirements for the filling of ditches and unlocking of the building plots towards project realization (Provincie Noord-Brabant 2009; Verbart 2013). In terms of project agreements the ownership of the mounds located outside the new primary dike is laid down with the future inhabitants whilst held responsible for removing debris and large vegetation from their mounds' slopes (PDR 2009). As inundation of Overdiepse Polder could cause damages to the riverine area, the inhabitants negotiated that cost to repair the mounds and buildings are reimbursed by the state (PDR 2009; Verbart 2013). Additionally the farmers (and their successors) negotiated the option to sell their mounds and businesses to the Dutch government for a land-based purchasing value.

Formal agreements for realization of the ecological connection zone

In terms of project agreements, the consortium formalized that native vegetation is scattered along Overdiepse Polder's watercourse, such as the marsh area on the south bank of the Old Muse (PDR 2009; Uden 2013). Process agreements are formulated to address ownership of the ecological connection zone, negotiated with the current owner of the land, Brabantse Delta. The water board offered to include its management and maintenance. In line with this insight the allocation of costs is not yet specified, stating that this will be done in due time by the relevant authority (PDR 2009).

Outline of Overdiepse Polder's political process

The key actors that initially negotiated the formal agreements towards realization of Overdiepse Polder are the PDR and their agent, the province's consortium. During these negotiations, however, Brabantse Delta took a relatively prominent role, balancing their core responsibilities in local water management whilst treating the project's crucial objects with limited interaction. Emphasizing the water board's agent role towards the formulation of the project's development plan a political process was trailed, arising the discussion who should direct the rest of the project; province Noord Brabant or the water board (Hakstege 2013 and

Houwing 2013). Using the relatively detailed spatial plan as a blueprint for the development of Overdiepse Polder's spatial quality and zoning the remaining milestones focused on detailing the water management related project aspects, emphasizing object's capacity, profile, size and shape. Acknowledging the input of province PDR ultimately appointed Brabantse Delta as their agent for project implementation, being the current and future operator of the Overdiepse Polder. To counterbalance the province's loss of their 'baby', the PDR agreed upon an advisory role for their former agent and continued their close collaboration (Hakstege 2013; Houwing 2013; Verbart 2013). Negotiating the project's design and its corresponding narrative, the political process and its main underlying project- and process agreements are summarized in figure twelve.

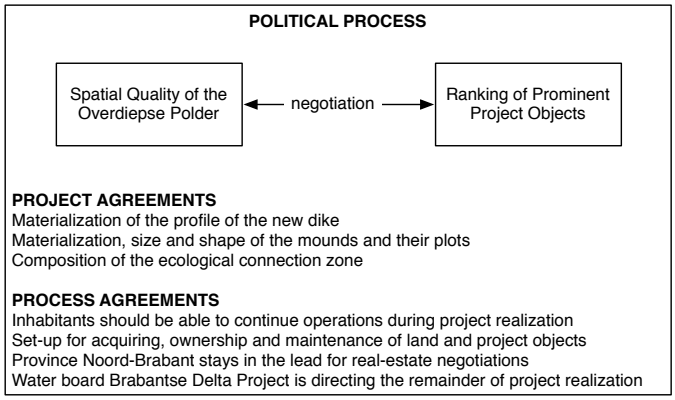

Figure 12: Overdiepse Polder's political process and underlying project- and process agreements

5.1.3 Realizing Overdiepse Polder

To highlight the integrated character of the Room for the River program the PDR argued that the project's construction contract should be set-up accordingly (Houwing 2013). This held that the project procurement plan should frame the responsibilities of the constructor according to the project's initial specification and its complementary design tasks, arising during project realization. This set-up was filled-in by the PDR, requiring a Design & Construct (D&C) contract that would streamline the decision-making processes during project realization, formalized in February 2010 (Arcadis 2010a; Houwing 2013).

Formulating the project procurement plan

Requiring a relatively less detailed project specification compared to the water board's 'standard' framework contracts, Brabantse Delta offered the future constructor relatively more degrees of freedom in terms of design and engineering (Uden 2013; Verbart 2013). To align their design with the overall objective of the project plan, the phased operationalization and additional specification of individual project objects were specified in the project's development plan (Arcadis 2010a; Verbart 2013).

Detailing the new dike

For the specification of the dike, process agreements were specified that hold the constructor responsible for the realization of the new dike. In terms of project agreements this the dike should follow its specified routing, location, materialization and dimensions, with the addition of a minimal lifecycle of 50 years (Arcadis 2010a).

Detailing the mounds

In relation to the nine individual mounds, the procurement document stated that these were to be constructed starting from the flow-restricted zone next to the new dike (Arcadis 2010a). With the appearance of 'green islands', built up from sand and clay the procurement even stated the type and weight specification of the grass that would cover the outer slopes of the mounds (Arcadis 2010a; Uden 2013; Verbart 2013).

Detailing the ecological connection zone

No additional specification for the ecological connection zone were included in the procurement plan other than; to be appointed according to the specification formulated in the project plan (Arcadis 2010a; Uden 2013; Verbart 2013).

The pre-market approach

Brabantse Delta put the contract for Overdiepse polder on the market in early 2010, including contract award criteria (Verbart 2013); the basis for the selection of the economically most advantageous tender and a testing plan for the constructor's design and construction (Hakstege 2013). The included award criteria imply that the D&C contract offers the constructor space, so-called degrees of freedom, to identify and mitigate risks that might occur during project realization. The outline of the testing plan should therefore convince the project principal that their future agent is adequately equipped to address the project's objectives in terms of design, construction, landscaping and mitigation of potential risks (Arcadis 2010a; Houwing 2013; Uden 2013; Verbart 2013).

Awarding the construction contract

Balancing the outline of the consortium's project development plan, the water board's procurement plan included a relatively detailed blueprint for the design of the project's most prominent objects. This held that the impending constructors were left with little degrees of freedom for differentiation. Selecting the economical most advantageous tender, awarding spatial quality with a relatively large weight factor of 70 per cent, ultimately focused on selecting the lowest tender price (Arcadis 2010a; Uden 2013; Verbart 2013). In mid 2010 the D&C contract is awarded to the 'Hollandse Waard', highlighting their proposed project communication manager who grew up within Overdiepse Polder, formalizing their principal-agent relationship with Brabantse Delta (Arcadis 2010b).

Improving the principal-agent relationship

During the project start-up Hollandse Waard's project manager stated to take the project from here and deliver the completed project to their principal by the end of 2015, considering that a D&C project yields by a more distant relationship between the project principal and agent (Arcadis 2010b; Steenhuisen et al. 2009; Uden 2013; Verbart 2013).

Both being relatively unfamiliar with working with each other and the inflictions of a D&C contract, the principal and agent pinpointed their process- and project agreements as contracted and deteriorated their collaborative relationship (Uden 2013; Verbart 2013). To overcome this setback both parties participated in Bouwend Nederland's process management course. Emphasizing the necessity for a constructive principal-agent relationship to safeguard and improve their project in terms of both cost and quality, the project principal and agent

realized that their project objectives, set aside commercial gain, were identical (Uden 2013; Verbart 2013). Instead of following the 'hard' project development plan's specification, both parties agreed to organize structural informal meetings prior to their formal project consultation. As their principal-agent relationship improved, both parties regained confidence in each other and therefore the structural aspect of their prior agreement could be abolished (Uden 2013; Verbart 2013).

Streamlining project implementation

Hollandse Waard started their project implementation in late 2010 whilst the province did not yet complete the necessary expropriation procedures (Provincie Noord-Brabant 2009). Falling outside the scope of the agreements between the PDR and the Brabantse Delta, the water board anticipated to potential delays in their implementation process (Verbart 2013). To streamline the project's implementation they made additional arrangements with the local residents and farmers, consisting of additional excavation of the floodplain to meet their agent's demand in terms of ground (Uden 2013; Verbart 2013). Besides financial compensation of the landowners, the principal and agent agreed upon filling the excavations with material from the old dike when the new one is finished (Uden 2013).

Realizing the new dike

In Overdiepse Polder many of the current farms are situated in routing of the new dike, pre-defined in its x-, y- and z-direction (Provincie Noord-Brabant 2009). In addition to this insight, the water board's agent noted that the dike's bents needed reinforcement to withstand the increased traffic. Addressing both aspects, the province's expropriation procedure needed facilitation whilst the constructor faced additional expenses that were eventually compensated by the water board. Brabantse Delta holds Hollandse Waard accountable for keeping up with the initial planning of their realization contract (Arcadis 2010b; Uden 2013).

Realizing the mounds

Towards implementation of the nine mounds one of the identified stayers discontinued their operations, leading to the detachment of their mound from the initial project (Verbart 2013). The discussion that followed focused on whether the exclusion of the mound, representing the icon of the redesigned polder, would negatively affect project's spatial quality (Uden 2013; Verbart 2013). Brabantse Delta argued that this was not the case and subsequently the PDR agreed that its exclusion did not harm the mounds' overall uniformity (Uden 2013). Addressing the forthcoming material of abolished mound, the constructor could use it for realization of the new dike. By firstly realizing just the mounds' building plots, completing them after realization of the new dike, allowed an increased reuse of excavated material and accompanying minimization of implementation cost (Uden 2013; Arcadis 2010b).

Realizing the ecological connection zone

When Hollandse Waard excavated the initial connection of the new dike with the river Meuse they stumbled on contaminated soil (Arcadis 2010; Uden 2013). As further excavation of Overdiepse Polder's floodplain could arise significant additional costs, the constructor proposed a contact amendment to mitigate the contamination whilst maintaining the

ecological zone (Uden 2013). Balancing the opinion of the project team and front office involved, PDR's early explorations proved their expectations, leaving the contamination untouched as the only viable option (Hakstege 2013; Houwing 2013). To check whether this project amendment would harm the project's spatial quality PDR consulted the independent quality team. The experts required a natural cover layer with vegetation to conceal the local contamination, avoiding the application of alienate species (Uden 2013).

Outline of Overdiepse Polder's bureaucratic process

Towards project realization, spatial quality is given a relatively prominent position and a concrete basis for the development of project objects was provided. The follow-up bureaucratic process concretized the design of Overdiepse Polder, presenting the constructor with a relatively extensive specification of the previously articulated and negotiated project objects that ruled out the project design objective for the constructor, enabling the tender price to be ultimately decisive. Emphasizing that the project development plan provided sufficient detail for the adequate realization of project spatial quality, the principal did not require the involvement of a landscape architect during project realization. Ultimately appointing the project constructor Hollandse Waard, both parties were relatively unfamiliar with the implications of the Design & Construct contract. As the principal-agent relationship between the water board and their constructor deteriorated the contractual set-up created frustration, leaving relatively limited degrees of freedom for the constructor in terms of zoning, presentation of their expertise in terms of project design and arousing discussions on how their public and private interests were safeguarded. To overcome these discussions both parties participated in Bouwend Nederland's mediation sessions, significantly improving their relationship by pinpointing their common interests.

During the remainder of the project's realization process the detailed project plan provided the blueprint for the development of the project's spatial quality. Due to the detailed design of the mounds the local residents and farmers perceived that they could not furnish their own mound in the way they wanted, here the initially common interest of the grouped residents and farmers shifted to a differentiation of individual private interests. This set-up aligned with the initial concern of the future manager of the project area, to safeguard the underlying 'spatial' storyline and the basis for the initial design decisions in terms of the project's hydraulic functions and spatial zoning. Now the relatively detailed and elaborated project design enabled local support but also blinded the initial elements that were still to be designed, such as the connections between the mounds and the new dike. This example from the realization of Overdiepse Polder indicates that local conditions that deviated, just like the contaminated soil in Overdiepse Polder's floodplain, gave birth to significant contractual amendments. Summarizing these findings, a schematic overview is presented in figure thirteen.

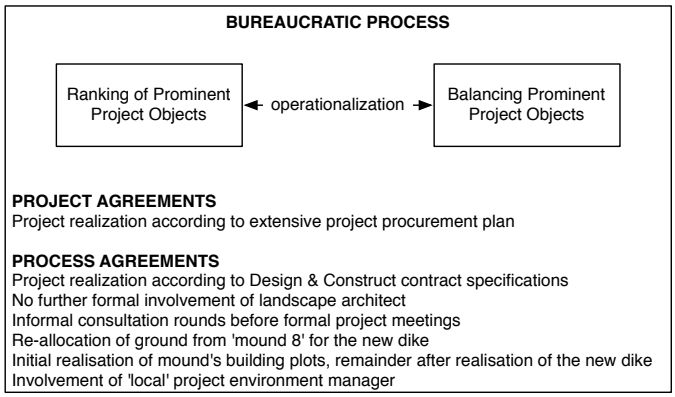

Figure 13: Overdiepse Polder's bureaucratic process and underlying project- and process agreements

5.1.4 Highlights from Overdiepse Polder

The Spatial Planning Key Decision provided the initial basis for articulation of Overdiepse Polder's spatial quality, therefore considered the original cloud of goodness for project spatial quality. Balancing utility, amenity and future values together with the local residents and farmers, the province Noord Brabant's focused on the preservation of existing historical and natural project details. This focus enabled project support from the direct environment, balancing water safety with improved accessibility, economic aspects and agricultural operations. Combining the insights gathered, project initiator's landscape architect Bosch&Slabbers formulated the blueprint for developing Overdiepse Polder's spatial quality.
The province Noord-Brabant formed a consortium with renowned Dutch consultancy firms and initiated the follow-up negotiation process on alternatives together with local stakeholders. Acknowledging the input of the province PDR ultimately assigned the water board for implementation of the project plan, balancing their experience in project implementation and public interest in regional water safety. Brabantse Delta assigned a 'farmer friendly' constructor, Hollandse Waard, balancing their extensive framework of articulated and negotiated project objects whilst ultimately price was decisive. Aligning with the initial conclusions drawn by the quality-team the improved relationship between the constructor and the principal enabled a discussion on how to balance public and private interests. The process agreements that form the basis of this process, however, were initially insufficiently clear to both the project principal and their agent towards project realization.

In terms of valuation, the formal agreements within Overdiepse Polder are project-focused and therefore should have addressed the importance of a harmonious relationship within a project, especially when both parties involved are not completely familiar with the concept of a D&C contract and its implications in terms of cooperation and process. Nowadays Hollandse Waard is still implementing the project's specified blue print for spatial quality, therefore no actual provision process of project spatial quality has (yet) been initiated. Summarizing the insights gathered, figure fourteen highlights the identified process stages, key stakeholders involved and influential documents that hold the process' underlying formal project- and process agreements.

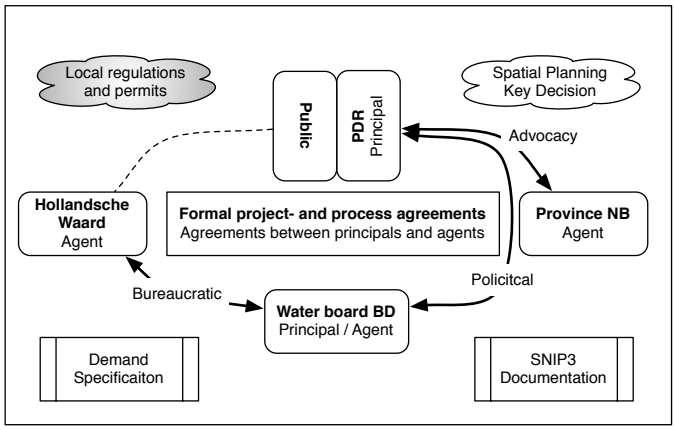

Figure 14: Schematized overview of decision-making in spatial quality in Overdiepse Polder

5.2 Project Tollewaard

To eliminate backwater during increased river discharges, partial excavation of the floodplains along the river Rhine tributaries is adopted in the Room for the River program (Luiten 2013). Project 'Tollewaard' is one of the program's four projects along the river Nederrijn, covering an area of circa 90 hectares on its south embankment opposite of the city Rhenen (Luiten 2013; Zwemmer 2013). To allow the continuation of operations within Tollewaard whilst enabling an estimate reduction in increased discharge of circa 3 centimeters, access to the floodplain's mounds is the project's key challenge (Luiten 2013; Zwemmer 2013). Being the project principal Rijkswaterstaat plays a central role towards the realization of Tollewaard (Luiten 2013). Besides project initiator Rijkswaterstaat also fulfills the role of project executor (Wouters 2013; Zwemmer 2013). This implies that Rijkswaterstaat's project involvement in Tollewaard is considered relatively large, followed-up by the involvement of their agent, project constructor 'Boskalis' (Wouters 2013; Zwemmer 2013). Following the timeline presented in figure fifteen, the remainder of this section describes the stakeholders' relation in the identified stages of decision-making processes, their position within the project and formulated project- and process agreements that intend to safeguard Tollewaard's spatial quality.

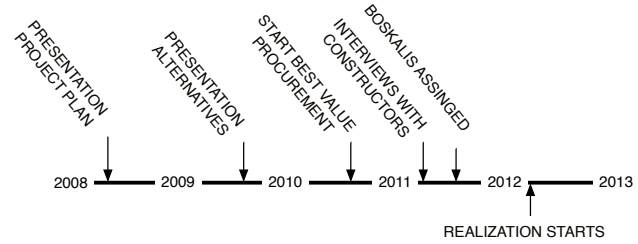

Figure 15: Timeline highlights of Room for the River project Tollewaard

5.2.1 Planning Tollewaard

In late 2007 Rijkswaterstaat started with Tollewaard's planning-study phase, presenting the project's action plan in January 2008 (Bree and Doree 2012a; Ministry for Public Works and Water Management 2006). Together with landscape architect Abe Veenstra an initial landscape analysis was conducted, highlighting the 'core values' of the project area based upon the insights presented in the spatial planning key decision (Bree and Doree 2012a). Stating that Tollewaard's primary function will consider nature rather than agriculture and

should combine the preservation of its archaeological and cultural-historical values, the spatial planning key decision directed the project's early development (Ministry for Public Works and Water Management 2006; Hulsker et al. 2011).

Tollewaard's spatial analysis

Towards the formulation of Tollewaard's project plan an experimental design process is addressed where different project alternatives are developed to improve the project's water safety and spatial quality (Sijmons et al. 2012). In line with this insight, the spatial planning key decision highlighted the intensification of spatial diversity between the individual river branches of the river Rhine, emphasizing their individual scenic, ecological, geographical, cultural and historical characterizing values (Ministry for Public Works and Water Management 2006).

Underlining Nederrijn's characterizing values, Bergen and Nederlanden (2008) noted the river branch's cultural, historical and ecological values that accentuate its gradual changeover of moraine, quays and dikes (Bergen and Nederlanden 2008). In line with this insight, Tollewaard's individual core qualities are articulated to enable their preservation. This articulation process was initiated by Rijkswaterstaat, assisted by landscape architect Abe Veenstra who formulated the following prominent opportunities for Tollewaard's project area (Veenstra 2009);

- Improvement of recreational- and agricultural opportunities, nature and ecological contrasts within Nederrijn's moraine zone, such as high-low, dry-wet, nutrient poor and nutrient rich.
- Strengthening of the open character of Nederrijn's riverine area and cultural-historical elements of the 'Grebbelinie', such as the characteristic local waterfront with an open view on moraines, levees and dikes.

Formulation of the initial project plan

In March 2009 Rijkswaterstaat presented the outcome of Tollewaard's landscape analysis to the assigned Dutch consultancy firms 'Witteveen+Bos', 'HKV' and landscape architect 'Robbert de Koning' (Bree and Doree 2012b; Luiten 2013; Wouters 2013). Assigned to develop multiple project alternatives, stakeholders' requirements and project constraints such as budget and time led to the development of three project variants (Rijkswaterstaat 2010). The project variants were included in the project's secondary advisory note that was officially presented in June 2009, addressing the following 'project alternatives' (Witteveen+Bos, HKV & Koning 2010);

Realization of a small water channel

The first variant restricted the scale of interventions in the project area, preserving the limited dynamics of present vegetation (Wouters 2013). In this variant a short trench around the eastern mound is realized and connected on the downstream side of the river, requiring a new summer quay diagonally across the floodplain. A new bridge is realized to enable access to the eastern mound and an alluvial forests in the lee of both mounds is addressed (Witteveen+Bos, HKV & Koning 2010).

Realization of a larger water channel

The second project variant addresses the elongated natural character of Tollewaard's floodplain. The landscape architect used this feature as a design opportunity, adding a trench between the dike and the mounds that connects to the river downstream of the project area. To access the eastern mound a bridge is positioned towards the western mound, connected via the existing summer quay to the eastern one. The shadow of both mounds is filled with a alluvial forest, combined with widening the existing water trenches within the floodplain and an elongated reed zone (Witteveen+Bos, HKV & Koning 2010).

Realization of a grassy floodplain

The starting point for the development of Tollwaard's third variant is the preservation of its cultural-historical relics and original relief, lowering the existing quays on the up- and downstream side of the mounds. The rubble between the mounds is removed and the existing water trenches are broadened, highlighting the floodplain's reed banks. Besides the creation of some small and shallow ponds, the remainder of the floodplain is grazed (Witteveen+Bos, HKV & Koning 2010).

Balancing project alternatives

Based upon the understanding that removal of obstacles near the city Elst would achieve a higher than expected reduction of Nederrijn's water level during increased discharge, the four measures along the Nederrijn were to be considered in aggregation (Rijkswaterstaat 2010a). Reflecting the additional water level drop in upstream direction, Rijkswaterstaat re-consulted the inhabitants of the project area, combining the crucial details of the alternatives that were developed with their additional insights (Wouters 2013; Zwemmer 2013). The origin for this approach originated with the PDR, adding the requirement that Room for the River project variants should at least have adequate stakeholder support (Luiten 2013). The formal requirement was filed with the addition of a consultative structure that enables stakeholders to participate in early stages of the decision-making process. The accompanying process ultimately led to Rijkswaterstaat's composition of a so-called preferred alternative (Luiten 2013; Wouters 2013; Zwemmer 2013);

The preferred alternative

The preferred alternative aligns with the basic concept of Tollewaard's 'grassy floodplain' alternative, using the characteristic landscape of Tollewaard as the project's starting point in terms of design (Luiten 2013). To accommodate an easy flow of river water into Tollewaard's floodplain the up- and downstream side of the summer quay is lowered and present obstacles within the floodplain are removed. Additionally the longitudinal water trenches in the open field are highlighted, placing single willows elongated reed zones that emphasize the floodplain's water trenches during high water levels within the polder. The new bridge subsequently ensures improved accessibility to the eastern mound, connecting to the western mound via the current road over the summer quay (Witteveen+Bos and Koning 2010).

Witteveen+Bos, HKV and Robbert de Koning analyzed the spatial- and hydraulic effects of the preferred combination, identifying the effects of the variant's crucial details (Rijkswaterstaat 2010a). Along with the composed preferred variant the envisioned future manager of the project area, Geldersch Landschap, agreed upon the project plan

(Rijkswaterstaat 2010a). Witteveen+Bos, HKV and Robbert de Koning detailed the preferred alternative with their indicative drawing as presented in figure sixteen, a technical addendum and its textual follow-up, showing that the preferred alternative would indeed meet the project objectives in terms of water safety and spatial quality (Luiten 2013; Wouters 2013; Zwemmer 2013).

Figure 16: Schematic drawing of the preferred alternative (Witteveen+Bos, HKV, and Koning 2010:29)

Outline of Tollewaard's advocacy process

In line with the program's dual main objective, Rijkswaterstaat acknowledged the importance of project spatial quality, contracting landscape architect Abe Veenstra to conduct Tollewaard's initial landscape analysis (Veenstra 2009). Abe Veenstra's analysis, however, did not stipulate a specific framework for Tollewaard's spatial quality and therefore offered adequate design opportunities (Boer et al. 2012). Rijkswaterstaat provided functional- and relatively abstract project requirements, leaving the constructor relatively free in terms of planning and design for the development of Tollewaard's design alternatives (Sijmons et al. 2012).

Ultimately Witteveen+Bos, HKV and landscape architect Robbert de Koning were contracted to formulate the outline of Tollewaard's preferred alternative, consisting of a and two-dimensional drawing of the project area that highlighted the project's zoning without the profiled consideration of crucial components, such as the new bridge and its landing point towards the dike and on the mound (Luiten 2013; Zwemmer 2013). Besides the need for a preferred alternative, the project initiator also highlighted the need for adequate stakeholder support, emphasizing Tollewaard's accessibility and characteristic elements, such as the summer quay, water trenches and mounds. These project elements were included in a formal textual addendum. A summary of the project's advocacy process and its accompanying formal project- and process agreements is presented in figure seventeen.

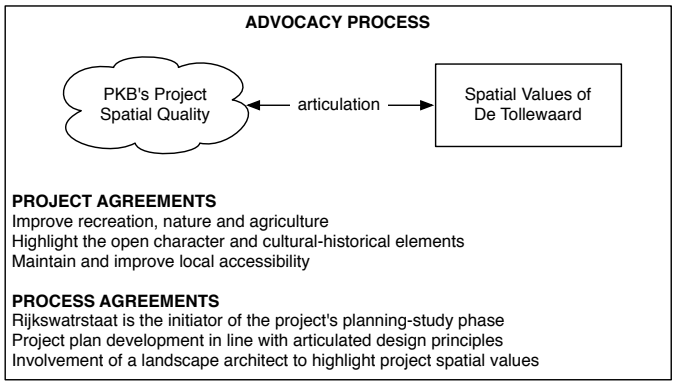

Figure 17: Tollewaard's advocacy process and its underlying project- and process agreements

5.2.2 Towards Tollewaard's realization

The presentation of the preferred project variant in late 2009 marks the somewhat altered end of a traditional project's planning-study phase. This altered end is highlighted by the PDR's decision of 10 November 2009, formalizing their decision to continue the realization of Room for the River project Tollewaard with an accelerated market approach (Wouters 2013). The projects' innovative character was strengthened by PDR's requirement of 'Best Value Procurement' and an innovative project Plan-Design and Construct (PDC) contract (Wouters 2013).

An accelerated market approach

The aggregation of the four Room for the River projects along the Nederrijn was partly based on the PDR's desire to optimally benefit from the market's expertise, providing more space for project innovations (Ministry for Public Works and Water Management 2006). An accelerated market approach is one of these innovations, giving 'experts' the opportunity to implement the initial planning-study phase and be held responsible for its realization (Rijkswaterstaat 2010a).

Balancing cost, time planning et cetera the PDR argued that the project planning for the projects along the Nederrijn were to be tendered under a restricted procedure, using the 'Best Value Procurement' (BVP) method. This enabled Rijkswaterstaat, the project principal, to select the 'best' market party for the job, an expert, by selecting the economic most advantageous tender (Luiten 2013; Rijkswaterstaat 2010a). For the realization of Room for the River project Tollewaard the project principal searched for a competent expert from the market, able to fulfill PDR's project objectives within Rijkswaterstaat their planning and budget. This highlights that BVP focuses on the actual behavior of the project constructor, even after the contract is awarded, putting the expert in a position where he distresses the role of project principal by taking responsibilities and minimizing project risks (Rijkswaterstaat 2010; Wouters 2013; Zwemmer 2013).

The contractual set-up for Tollewaard addresses an integrated PDC contract, based upon the standard contract model applied by Rijkswaterstaat, the so-called UAV-GC 2005 (Luiten 2013; Wouters 2013). The integrated contract dedicates the principal's agent towards project provision to the project's future manager. On the other hand risks that might arise in public, legal and formal decision-making procedures remain the responsibility of the project principal, Rijkswaterstaat (Wouters 2013; Zwemmer 2013). The constructor, however, has a formal obligation towards their principal to mitigate these risks, especially in regard of the

spatial planning procedures (Zwemmer 2013). The agent's obligation towards the Rijkswaterstaat ends when the municipality accepts the agent's spatial proceedings (Zwemmer 2013).

Towards Tollewaard's integrated contract

Tollewaard's initial market consultation took place in May 2010, prior to the project's formal tender procedure (Wouters 2013). In a follow-up plenary session Rijkswaterstaat presented the opportunities offered by the projects' accelerated market approach, introducing the implications of Best Value Procurement (Wouters 2013; Zwemmer 2013). The directions and contract award criteria were put down in a framework, functioning as an overall registration- and assessment document that provided an insight in the evaluation of Tollewaard's economically most advantageous tender. In line with this insight, evaluation of tenders received took place according to the following assessment criteria; estimated reduction of high water level on the Nederrijn, realization time and spatial quality as defined in the preferred project variant's scope. In addition to these assessment criteria, Rijkswaterstaat highlighted two additional objectives (Rijkswaterstaat 2010a);

- Realize the four Room for the River projects along the Nederrijn as quick as possible, well before the contractual deadline for project completion
- Optimize the role of Rijkswaterstaat as network manager, indirectly involved during project implementation

Concretization of Tollewaard's project specification

Following Tollewaard's accelerated market approach, the project's preferred alternative is awarded through a Plan, Design and Construct (PDC) contract, based upon the project's demand specification (Witteveen+Bos and Koning 2010). Rijkswaterstaat considers the project area as a single system, bound by its riparian area, highlighting key features and connecting operational subsystems to complementary whole, presented in figure eighteen.

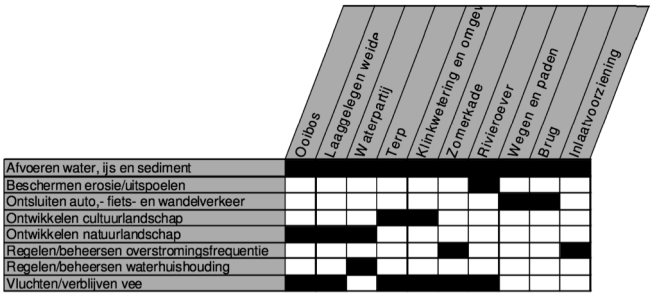

Figure 18: Subsystems and their function within Tollewaard (Witteveen+Bos and Koning 2010:7)

Project visions for Tollewaard

The articulation of Tollewaard's crucial details is used as a guideline for project design and specification (Luiten 2013). To ensure the development of the project's preferred alternative according to Rijkswaterstaat's ambition, the principal included a so-called 'project vision' in its procurement plan (Wouters 2013). This vision does not include a comprehensive list of formulated requirements and conditions, providing a framework in which specific object requirements and functionalities are listed. This insight holds that the presented image reflects

the principal's basic rationale for redeveloping Tollewaard's floodplain; presenting the constructor with underlying reasoning for certain design choices (Bree and Doree 2012b);

- Formulation of Tollewaard's preferred alternative, depicting the spatial and functional outline of the overall project
- Identification of the project's prominent objects that are highlighted on a fixed scale drawing, bounded to indicate their spatial coherence
- A bird's eye view of the project's spatial image with a distinct position of the crucial project objects, presenting the constructor with an abstract reference for objects that need additional specification

Specification of prominent project objects

Tollewaard is largely formed by river processes, distinguishing the characteristics of existing watercourses, relief, roads and trails (Witteveen+Bos, HKV, and Koning 2010). In line with this insight PDR argued that the addition of dissonant 'new' objects should be prevented and therefore no large water trenches should be dug, nor should the height of the summer quay on the up- and downstream side of the mounds be reduced (Rijkswaterstaat 2010a). However, addressing mound's accessibility, the addition of a bridge seemed unavoidable (Wouters 2013; Zwemmer 2013). Where the mounds are positioned like small river islands, additional streamlining was necessary to facilitate an optimized water flow through the floodplain. Following this insight, Tollewaard's alluvial forest is positioned solely in the shadow of both mounds, towards the low-lying meadow as presented in figure nineteen (Witteveen+Bos and Koning 2010).

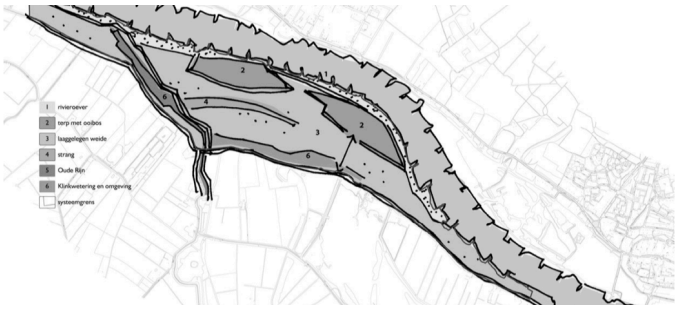

Figure 19: Tollewaard's spatial zoning plan (Witteveen+Bos and Koning 2010:22)

Besides safeguarding spatial quality, improving project accessibility is marked as another important project aspect. The associated project 'networks' consist of roads and trails for the inhabitants of Tollewaard and its surrounding areas, as presented in figure twenty (Witteveen+Bos and Koning 2010). The underlying reasoning behind this networked set-up is the floodplain's large number of motorized traffic movements, especially towards the eastern mound. These networks also intend to ensure that conflicts between recreational and utilitarian movements are minimized (Witteveen+Bos and Koning 2010).

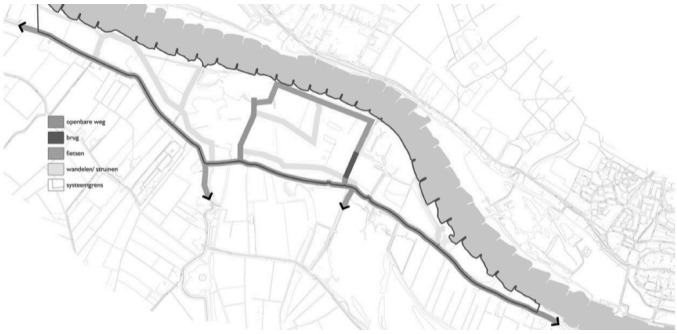

Figure 20: Accessibility networks within Tollewaard (Witteveen+Bos and Koning 2010:25)

In general the accessibility of the floodplain will be reinforced by the construction and renovation of paths and roads, including those used by the companies on the eastern and western mound (Witteveen+Bos and Koning 2010). The current path to the western mound will therefore be increased to target the potential increased water level within the floodplain. The access road towards eastern mound, however, will be improved by connecting a bridge to the winter dike (Witteveen+Bos and Koning 2010).

Supervisor for spatial quality

The project demand specification highlights the concretization of relatively prominent objects and their functionality within the overall project area, formulating the project's functional requirements, external and internal interface requirements and object requirements. The identified aspect requirements elaborate the system's specific properties that do not necessarily contribute to their own primary function. In line with this insight, a formal process agreement is filed that states that a designated 'supervisor' should assess whether object's underlying requirements and interfaces relate to the project's overall spatial quality.

Outline of Tollewaard's political process

Rijkswaterstaat's reasoned that Tollewaard's landscape analysis was a decent basis for the development of the preferred alternative. Negotiating Tollewaard's variants, ultimately they were combined into a so-called preferred variant and concretized by the identification and functional operationalization of the project's most prominent objects (Wouters 2013). The preferred alternative consists of several interventions in the project area, which are reflected on by means of operational requirements. In an accelerated market approach, the preferred alternative is operationalized in text and image and presented to a selection of market parties (Wouters 2013; Zwemmer 2013).

In terms of functionality, the key function of the floodplains within Tollewaard shifts from agriculture to nature. The accompanying functional description of the project's most prominent subsystems therefore play an important role towards the formulation of process agreements, emphasized by the requirement of a Plan, Design and Construct (PDC) contract. Claiming that spatial quality and price therefore were not the major stimulus for the selection of a constructor, Rijkswaterstaat noted that their innovative approach would enable a swift overall project implementation (Wouters 2013). Highlighting Rijkswaterstaat's claims, realization speed and overall project support were formulated as the most influential procurement criteria (Luiten 2013).

The PDC contract enabled the constructor to combine their expertise with the initial

project agreements that follow from the functional description of the preferred variant and the project's existing infrastructure. The formal requirement for a supervisor on project spatial quality emphasized the assessment of the constructor's design, following the project's demand specification. The outline of the accompanying political process and its underlying project- and process agreements is summarized in figure twenty-one.

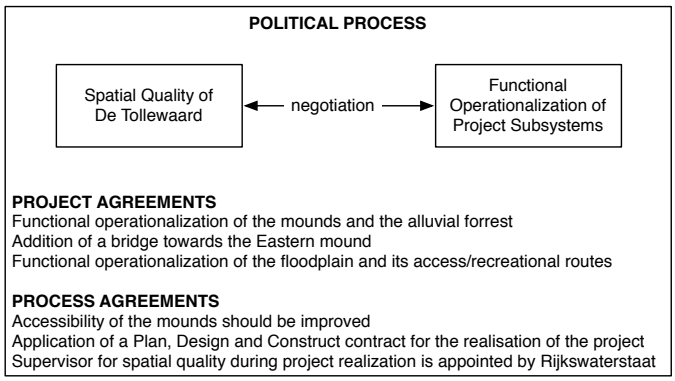

Figure 21: Tollewaard's political process and its underlying project- and process agreements

5.2.3 Realizing Tollewaard

Tollewaard's development plan provided a functional specification of the project's most prominent objects (Zwemmer 2013). This approach is considered to be relatively special, as the constructor is entrusted to also provide the overall project design. With the provision the project's underlying information in a so-called data-room, Rijkswaterstaat offered tendering parties the basic information for development of their tender (Wouters 2013; Zwemmer 2013). The naming and connotation of the project's 'preferred' variant did not provide any significant stimulus for designing a completely different project approach or plan. On the other hand one could assume that it provided sufficient security in terms of administrative support, especially towards project realization (Wouters 2013). Based upon the follow-up interviews with the tendering constructors, Rijkswaterstaat awarded Boskalis the project's planning, design and construction in May 2011 (Zwemmer 2013).

The preferred variant as starting point

In line with the implications of a PDC contract, one selects a constructor to formulate the project's design. Therefore one should not give too many design requirements and conditions, to have the constructor take the project's design objective seriously. In Tollewaard, however, Boskalis claims that the outline of the preferred alternative was the starting point for their development of the remainder of the project (Zwemmer 2013). To accommodate additional input from the local stakeholders involved, the constructor welcomed contributions from interested competent authorities, inhabitants and local interest groups that ultimately resulted in the formulation of a preliminary design. In line with Rijkswaterstaat's additional objectives, Boskalis proposed multiple alterations to ensure the project's timely implementation, consisting of the following adaptations (Zwemmer 2013);

- Relocation of the bridge to sufficiently decrease the floodplain's water level and gather sufficient support from the inhabitants of the polder. The span of the bridge would, however, need to be extended from 190 meters to 223 meters and connected to the western mound instead of the eastern one.

- Aligning the inflow of the floodplain with the design of the preferred alternative and moving the floodplain's outflow parallel to the summer dike, shortening the embankment towards the west of the project area.
- The supplemented slope of the eastern mound will be grazed, instead of planting the alluvial forest.
- To accommodate the existing water trench under the relocated bridge, the existing pond is slightly shifted south.

Boskalis' final project design presents a clear image of the spatial alterations versus the Tollewaard's preferred alternative but, however, aligns with the project's additional objectives. Boskalis submitted their project plan for review by their project principal in early 2012 (Luiten 2013).

Final project design

Boskalis presented their final design for Tollewaard in early 2012 (Zwemmer 2013). Reviewing their proposed project alterations, the project principal, quality team and project front office formulated a so-called 'bevindingennota', summarizing their findings, judgments and opinions (Boer et al. 2012). Focusing on the findings relevant for decision-making on spatial quality, the review document holds important insights in what to adapt before Boskalis could start with their project implementation (Boer et al. 2012). Following Wouters (2013) and Zwemmer (2013), the key focus of assessing Boskalis' final design was on Tollewaard's objectives; improving project support and spatial quality. The outline of the assessment is presented in the remainder of this section.

Assessment of spatial quality design

Addressing Rijkswaterstaat's preferred alternative, Boskalis claimed that relocation of the new bridge would not harm Tollewaard's overall spatial quality, balancing quality and cost, whilst further improving the mounds' accessibility (Zwemmer 2013). The quality-team, however, argued that the proposed relocation of the bridge would strengthen the division of the floodplain, where the preferred alternative's design aimed to unite the landscape (Luiten 2013). Balancing the overall improvement in spatial quality, considering all four projects along the Nederrijn, PDR argued that the projects' project spatial quality would generally improve (Boer et al. 2012). This understanding pinpointed the reasoning behind PDR's approval for the bridge's relocation whilst the quality-team still argued that it formed a disproportionate object within Tollewaard (Luiten 2013; Sijmons et al. 2012; Wouters 2013; Zwemmer 2013).

Assessment of project support

When Rijkswaterstaat presented their preferred alternative, stakeholders' reactions were generally unenthusiastic, especially in regard to the disclosure of the mounds, the alluvial forest and the increased recreational aspects of the preferred alternative (Luiten 2013 and Wouters 2013). In Boskalis' follow-up process a solution was sought that could count on adequate support within the project area (Zwemmer 2013). In consultation with Tollewaard's key stakeholders the project design was re-developed during three informal meetings

(Zwemmer 2013). The re-developed design was officially presented to Boskalis' principal that considered their design during an executive council meeting in late 2011, ultimately approving their elaboration in early 2012 (Luiten 2013).

Supervising project spatial quality

As agreed by Rijkswaterstaat and Boskalis, the input of a supervisor on spatial quality would be included when balancing amendments in Tollewaard's spatial design (Witteveen+Bos and Koning 2010). However, the actual influence of the assigned supervisor is considered relatively limited (Boer et al. 2012; Zwemmer 2013). Contractually the supervisor's formal position is defined by the existing possibility to obtain guidance, emphasizing that the supervisor's formal position is not that robust (Sijmons et al. 2012). Balancing the supervisor's involvement, Abe Veenstra was limited to discussions with Boskalis' landscape architect on staff, providing feedback on minor designs elements, such as trees, fencing, paths, et cetera. The position of the assigned supervisor on spatial quality, however, was not well structured in Boskalis' PDC contract (Wouters 2013). Limiting the supervisor's opinion on Boskalis' design to 'the opportunity to seek advice' resulted into something very different, compared to the intended 'need for the supervisor's formal approval on spatial design'. Following Zwemmer (2013) the formal position would have made a huge difference, especially when balancing the supervisor's insights during design consultation. The altered design presented by Boskalis therefore did not change after review in Rijkswaterstaat's executive council meeting (Zwemmer 2013).

Outline of Tollewaard's bureaucratic process

Based upon the developed design principles, the design of the preferred alternative was further optimized by the project's agent Boskalis. The bureaucratic process, in which the functional project elements of the final design were specified into further detail, concluded Tollewaard's final design within the constraints presented by the inhabitants of Tollewaard. The underlying issue proved to be how Rijkswaterstaat and Boskalis interpreted the definition of Tollewaard's project's environment, aiming at the people from the immediate vicinity of the project area that might address a public value rather than a combination of private values and interests. Although PDR argued that the formal design would therefore require some additional finishing touches, inconsistencies between Rijkswaterstaat's preferred alternative and stakeholders' insights were considered relatively small (Sijmons et al. 2012).

Balancing the position of the appointed supervisor on spatial quality, the quality-team claims that due to the application of Best Value Procurement and the innovative PDC contract the project's emphasis on spatial quality was somewhat loosened. Therefore mainly the degree of discretion of a supervisor proved critical, limited by the assigned advisory functions and formal status of the advice presented (Boer et al. 2012). This insight holds that as long the project's design aligns with the formulated demand specification, discussion goes down to the line of formalized agreements and the supervisors' advice is not included (Wouters 2013). The quality-team therefore claims that a more anchored role of the project's supervisor on spatial quality and clearly formatted demands on expertise in terms of landscape architecture with the constructor is prerequisite to Best Value Procurement and its accompanying PDC contract (Boer et al. 2012). In the follow-up assessment of Boskalis' design, PDR and the

quality-team addressed special attention to the relocation of the bridge and the alluvial forest between the two mounds, reviewed in Tollewaard's co-called 'bevindingennota' (Boer et al. 2012). The formulated insights presented a clear view on Boskalis' proposed project alterations. The necessary processing of these comments, applicable when a PDC contract is applied, held that Boskalis' final design remained unchanged and was submitted for acceptance and ultimately approved in early 2012 (Zwemmer 2013). The bureaucratic process, in which spatial quality of Tollewaard is operationalized and its underlying project- and process agreements are formulated, is summarized figure twentytwo.

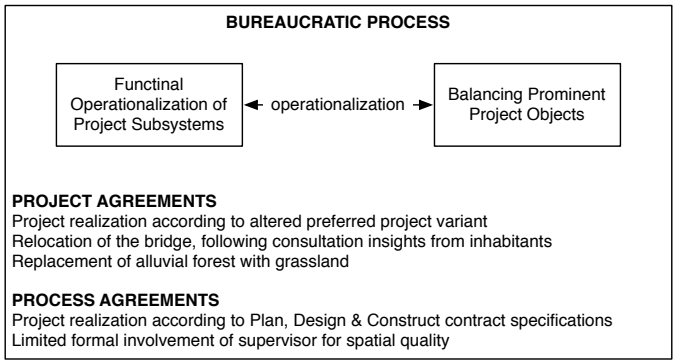

Figure 22: Tollewaard's bureaucratic process and its underlying project- and process agreements

5.2.4 Highlights from Tollewaard

In line with Overdiepse Polder, the Spatial Planning Key Decision is also considered Tollewaard's initial cloud of goodness, especially towards articulation of project spatial quality. Balancing this discernment, the project's advocacy process poises the project's objectives for spatial quality, improving nature and accessibility in the floodplain (Boer et al. 2012). Rijkswaterstaat was nominated by the PDR as their agent and intended project initiator and manager of its follow-up planning-study phase. Contracting landscape architect Abe Veenstra in line with the formal requirement of developing a preferred project plan, however, Rijkswaterstaat assigned Witteveen+Bos and HKV for the elaboration of Tollewaard's alternative designs (Sijmons et al. 2012). Their functional operationalization of project spatial quality, however, did not relieve Rijkswaterstaat of their responsibility to very carefully formulate what one did and did not want to see realized within the project area (Boer et al. 2012).

Highlighting Tollewaard's political process, Rijkswaterstaat innovatively tendered the four projects along the Nederrijn all together by a Plan, Design & Construct contract to benefit from the market's expertise (Sijmons et al. 2012). The functional outline of the formulated preferred variant therefore limited the tendering constructors. This relatively new approach towards project realization gathered a lot of interest from the PDR, Rijkswaterstaat's project principal (Wouters 2013). Towards Tollewaard's procurement Rijkswaterstaat's addressed the concept of Best Value Procurement, balancing multiple tendering constructors after a pre-selection. Ultimately Boskalis was appointed for realization of Tollewaard, following their nomination as Rijkswaterstaat's agent towards project implementation (Zwemmer 2013).

Formulating their action plan in consultation with Tollewaard's local residents, Boskalis' principal appointed a supervisor to safeguard the adequate development of project

spatial quality. Balancing the notion of keeping record of the project's spatial quality storyline, the landscape architect involved should have been able to adequately influence the design challenges faced, for instance by adding milestone where the supervisor needs to give his formal approval. The supervisory position was not assigned with sufficient formal status to actually make a difference towards Tollewaard's implementation (Zwemmer 2013). Nowadays project Tollewaard is still under construction. Aligned with Overdiepse Polder this implies that no actual provision process of project spatial quality has (yet) been initiated. To emphasize Tollewaard's overall findings, figure twenty-three summarized the highlights of the project's key process stages' and underlying formal agreements.

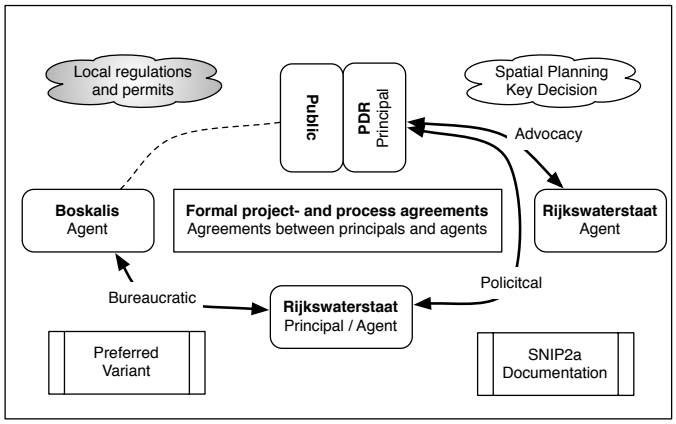

Figure 23: Schematized overview of decision-making in spatial quality in Tollewaard

5.3 Project Midden-Waal

The short dams that are positioned within the riverbed of Dutch major rivers ensure their navigability, preventing the formation of sandbanks and encounter the river's downstream meandering (Ministry for Public Works and Water Management 2006). Besides their functional impact, groynes are also considered to form prominent elements within the riverbed, complementing the Dutch riverine area (Sijmons et al. 2012). Criticasters, however, also consider groynes an unnecessary obstruction to drainage of increased river water discharges (Sijmons and Feddes 2012). In line with this insight, lowering the groynes on the Waal's embankments between Nijmegen and Tiel could enable an estimate reduction of six to twelve centimeters in increased river water discharge (DHV 2009).

Lowering the groynes along the river Waal is divided into three consecutive phases, partitioned due to PDR's monitoring program on progress and ability to gather new insights in its morphological imoact (Sterk 2013). Rijkswaterstaat initiated the project's pilot phase (P1) in 2009, shadowed by two follow-up phases (P2&P3) to lower the remaining circa 775 groynes. Being the owner and executive manager of the Dutch rivers, Rijkswaterstaat got assigned by the PDR as both project initiator and executor, highlighting their principal role towards the selected project constructor 'Paans van Oord' (Slagboom 2013). The remainder of this section emphasizes the stakeholders' relationships during the project's advocacy-, political- and bureaucratic process, identifying the formulated project- and process agreements that safeguard spatial quality by following the timeline presented in figure twenty-four.

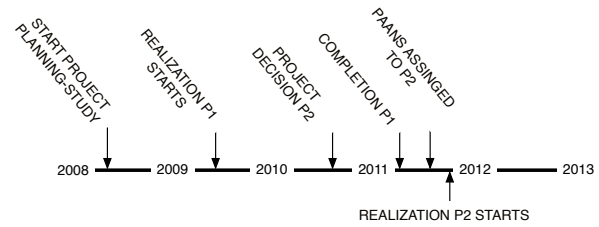

Figure 24: Timeline overview of Room for the River project 'Midden-Waal'

5.3.1 Planning 'Midden-Waal'

In late 2007 the PDR formally assigned Midden-Waal's planning-study to Rijkswaterstaat, being the owner and executive manager of the Dutch river (Directeur-Generaal Water 2007). Balancing the outline of PDR's project assignment Rijkswaterstaat was ultimately appointed as the project's initiator and executor, focusing the forthcoming project decision on the large number of groynes that needed to be lowered and relatively limited timeframe available (Hector 2013). In line with Midden-Waal's 'learning' objective, Rijkswaterstaat tried to enable an optimization in terms of design during the project's follow-up phases, stipulating the gain in experience and focus on project's preparation and anticipated hydraulic- and morphological operation (Sterk 2013). In line with this insight, the project assignment emphasized that the need for developing multiple project variants was excluded (Directeur-Generaal Water 2007).

Towards formulation of Midden-Waal's project plan

With the program's deadline for completion in the year 2015 the project's pilot phase enabled the identification of opportunities for project acceleration, innovations and safeguarding project spatial quality (DHV 2009). River Waal's physical routing between Nijmegen and Winssen was assigned as the starting point for implementation of the project's pilot phase due to its proper navigable depth and relatively little bends (Directeur-Generaal Water 2007).

The pilot project's follow-up phase is highlighted by improved insights in the impact of lowered groynes, however, PDR's initial project decision was scheduled on the basis of their approval of the overall project plan for phased project assignment (Rijkswaterstaat 2011). This set-up held that PDR agreed upon the pilot phase's project decision and would address the project decision for the follow-up phases.

Midden-Waal's objectives

The pilot project's initial focus was to analyze the water drop that ultimately occurred after lowering the first 100 groynes (Sterk 2013). Stating that it is expected that more riverine dynamics, such as calving and the formation of sandbanks will occur, PDR stated that its impact should be monitored and reflected upon accordingly (DHV 2009). The key objective for the project's second phase, however, addresses its contribution to the overall spatial quality of the river Waal.

Besides the groynes' functional position in the Waal's riverine area, PDR also stated that the small dams entail the synthesis of the river's amenity- and future value (DHV 2009). In the project assignment these aspects are addressed by the insight that Midden-Waal's lowered groynes stand out the about 100 days, versus the 250 days in the current situation (Sterk 2013). This awareness emphasizes that by lowering the Waal's groynes the river will

actually become wider to the eye, improving the groynes' amenity value in terms of the river's wideness. Highlighting their contribution to the project's future value, the lowered groynes will approximately entail their 'historical' form of about 100 years before (Hector 2013; Sterk 2013).

Implementation of the pilot's planning-study

Starting from the program's dual main objective, Rijkswaterstaat consulted the Dutch consultancy firm DHV for assistance towards the initiation of the pilot's planning-study phase. To address project's spatial quality DHV conducted an analysis of the Waal's groynes, providing a valuation their physical appearance and the following guiding principles (DHV 2009);

- Safeguarding uniformity by reducing diversity of the overall project objects
- Safeguarding the groynes continuity by enabling operation during project realization
- Maintaining and strengthening the overall river Waal's character by highlighting its economical and normalized function
- Safeguarding the groynes' sleek and technical appearance

DHV ultimately combined their guiding principles into a spatial recommendation, showing how the groynes could be designed in order to contribute to the overall spatial quality of the river Waal (DHV 2009 and Hector 2013).

Spatial exploration and design recommendations

DHV's spatial guideline played a prominent role towards the spatial design of the Midden-Waal's groynes, highlighting the individual and historical features of the river Waal. In the pilot phase of the project, however, DHV's spatial explorations were solely used to identify distinguishing details, such as the groynes' dimensions, profile, head, continuity and rhythm (DHV 2009). Noting that the overall project objectives in terms of water safety, navigability and technology limited the range of design possibilities and opportunities significantly, DHV also identified a number of 'special' groynes, consisting of historic vantage points, bended groynes and those near contributing channel mouths. According to DHV one should not even consider to lower these groynes as they contribute significantly to the Waal's spatial quality (DHV 2009).

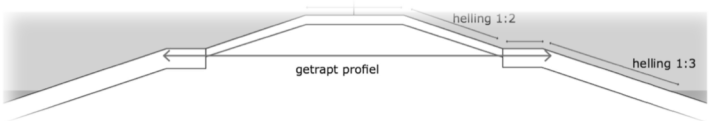

Figure 25: Cross section of the current groynes in the river Waal (DHV 2009:26)

Balancing the crucial details of present Waal's groynes as shown in figure twenty-five, DHV formulated the basic design for the lowered groynes as presented in figure 26. Summarizing these adjustments in a technical overview DHV indicated that Waal's groynes could be lowered by circa 0.5 to 2 meters (DHV 2009). To match the lowered groynes with their current appearance DHV argued that a rubble cover was required, merging the non-suspended part of the lowered groyne with a slope of 1:4. DHV concluded their guideline with the notion that design possibilities might differ per groyne, therefore individual design modifications might be required during actual implementation (DHV 2009).

Figure 26: Cross section of the lowered pilot groynes in the river Waal (DHV 2009:26)

Spatial effects of the pilot project

DHV's basic design 'shaves-off' the groynes' top layer, widening the crown of the short dam and making it appear flatter. Besides the removal of vegetation on the groynes' top layer, the groynes will color due to the removal of timber resources and their more frequent flooding (Sterk 2013). As not all Waal's groynes are lowered, the graphic lines enable a different rhythm, presenting a widened appearance that lasts relatively longer during high water (Hector 2013; Sijmons et al. 2012).

Outline of Midden-Waal's advocacy process

In early 2008 PDR appointed Rijkswaterstaat as their agent for lowering the groynes in the river Waal. To gather experience that would enable one to speed up the follow-up phases of the project's pilot phase, Rijkswaterstaat's follow-up operations based their design requirements on the DHV's spatial analysis of the river Waal (Hector 2013). Lowering the pilot's groynes proved its technical concept, requiring attention to be paid to its relationship with riverine spatial quality rather than a single focus on the groynes' hydraulics. Midden-Waal therefore monitored the pilot's riverine spatial quality from the very beginning of the project, highlighting its outcome in the project's advocacy process.

Balancing DHV's spatial explorations Midden-Waal's advocacy process consisted of a clearly listed overview of project- and process agreements that highlight the importance of the Waal groynes' uniformity, sleek appearance and normalized character. The quality-team required Midden-Waal's spatial objective to be articulated from three perspectives; from the water, the floodplain and from the dike towards its opposite embankment. These perspectives enabled a very modest application of 'decoration', balancing the lowered groynes' robust and functional position in the Waal.

In terms of process agreements, PDR's role towards Rijkswaterstaat is indicated by a principal-agent relationship where Rijkswaterstaat is appointed as the initiator and executor of the project's planning-study phase. Combining the project's phased implementation, the groynes proved indispensable elements within the Waal's riverine area and a precondition for its navigation. Enabling the groynes' operation during project implementation an important process agreement. Figure 27 summarizes the outline of Midden-Waal's articulation process, highlighting the formal project- and process agreements that intend to safeguard project spatial quality.

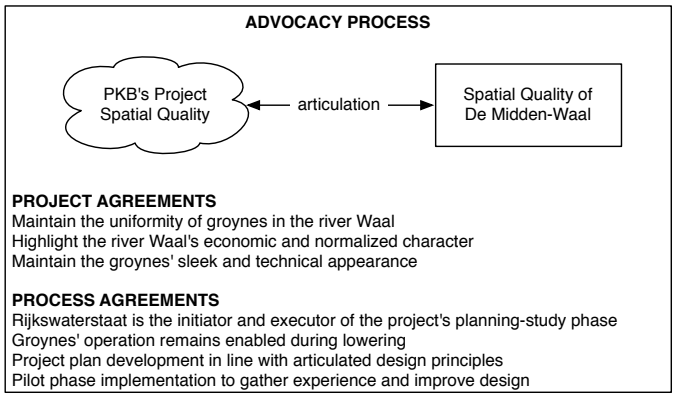

Figure 27: Overview of Midden-Waal's advocacy process and its underlying agreements

5.3.2 Towards Midden-Waal's realization

PDR's formal project decision of late 2010 marks the start of the pilot project's follow-up stage, addresses another 121 groynes. The formal project decision is trailed by Rijkswaterstaat's formulation Midden-Waal's demand specification and DHV's ambition document for Waal's spatial quality (Rijkswaterstaat 2010b). Underlining that Rijkswaterstaat would lead the pilot's follow-up phase, their negotiations on the project's demand specification and accompanying project- and process agreements are addressed in the remainder of this section.

Towards an integrated contract specification

To accommodate the necessary 6 to 12 centimeter decrease on the river Waal during increased discharges, Rijkswaterstaat claimed groynes on both embankments of the river would need to be lowered by circa one meter, confirming DHV's initial expectations (Hector 2013). Addressing spatial quality of the pilot's lowered groynes, however, Rijkswaterstaat's monitoring program showed that the pilot project's spatial quality did not meet PDR's expectations (Hector 2013 and Sterk 2013). Arguing that Midden-Waal's spatial quality should either be specified into more detail or positioned as a challenge for the market, PDR's executive management chose the latter option. Their selection implied that safeguarding project spatial quality would not be included as a formal project requirement, rather a criteria for balancing the economically most advantageous tender (Hector 2013).

Midden-Waal's objectives

Addressing the remaining 30 groynes of the project's pilot and 121 groynes of its follow-up, the second project phase consists of circa 150 groynes (Slagboom 2013). The project development plan refers to the fact that not all 150 groynes need to be lowered, as the following groynes that are exempted before hand;

- Groynes that enable secondary important functionalities such as spring pavements, harbor entrances and the like, representing around 2- 3% of the remaining groynes.
- Innovative groynes near the 'Haaften' and Leeuwen', consisting of four groynes that were previously lowered for the development of management and maintenance schemes.

Besides the exempted groynes Midden-Waal's project development plan states that adequate water safety should be ensured, requiring a maximum reduction of 12 centimeters water

during increased discharges on the Waal (Rijkswaterstaat 2011). Highlighting the opportunity to accelerate Midden-Waal's implementation, PDR pinpointed that the pilot's inventories could be used as these already provided an overview of the groynes that could be lowered. PDR underlined this notion whilst emphasizing that their agent could speed-up their decision-making process, offering the market more degrees of freedom in terms of design to optimally benefit from the market's design expertise (Sterk 2013).

Balancing design alternatives

Balancing the insights gathered during the pilot phase, Rijkswaterstaat started their search for a lowered design that minimizes the groynes' maintenance efforts. Rijkswaterstaat's quest to overcome the pilot's unsatisfactory design ultimately resulted in the following three design alternatives, formulated in consultation with the quality-team (Rijkswaterstaat 2010b);

- The first design alternative proposed lowered the groynes conform the pilot phase, paying relatively little attention to improvements in the Waal's riverine spatial quality. The hydraulic and morphological effects of the first variant, however, were adequately known and therefore risks that could delay the project's realization were minimized.
- The second project alternative elaborated the pilot's groynes 'streamlined design', enabling a maximal decrease in water drop as a result of a sill-down effect. This morphological effect, however, could not be modeled and therefore its theoretical effectiveness was based upon DHV's expert opinion.
- Midden-Waal's third alternative addressed an even more streamlined design, considering an optimization of the second variant and reducing the groynes' morphological effects even further. The optimized design's hydraulic effect was considered equivalent to the work target and an improvement in the Waal's riverine spatial quality, adding value for shipping, professional fishermen and anglers; highlighting the groynes' utility, amenity and future value.

Asking Deltares for their 'second opinion' on the developed alternatives, they concluded that DHV's predictive statement on the alternatives' hydraulic efficiency was not realistic, nor was their modeling techniques scientifically sound (Sterk 2013). Combining the insights gathered Rijkswaterstaat ultimately selected the first alternative's design, balancing planning, morphology and future management of the lowered groynes despite the impact on the Waal's riverine spatial quality (Hector 2013 and Sterk 2013).

Balancing initial outcomes and project objectives

The formulation of Midden-Waal's project decision needed to be consistent with PDR's required deliverables, emphasizing the pilot's open-ended discussion points (Sterk 2013). In accordance with the pilot's basic design the lowered groynes' hydraulic efficiency needed additional verification, addressing its impact on Waal's riverine spatial quality (Hector 2013; Sterk 2013).

Assessing the actual contribution of the Waal's lowered groynes in decreasing the water level, Waal's water levels were intensively monitored. The assessment of these gathered insights was commissioned by the PDR and executed by Deltares (Sterk 2013). Following Deltares' review the schematized baseline of the lowered groynes required some

minor adjustments, proving its overall functional contribution by meeting PDR's hydraulic project requirements (Slagboom 2013). Highlighting the Waal's dynamic appearance and wideness, the quality-team added that lowering the Waal's groynes addresses one of Room for the River program's most iconic projects. Emphasizing Midden-Waal's amenity value the transition from non-lowered groynes towards those of the pilot phase and Midden-Waal is considered to further accentuate the river's diverse and historic character (Sijmons et al. 2012).

To improve Midden-Waal's design the quality-team and local stakeholders were consulted, processing towards Midden-Waal's integrated design approach. Balancing Rijkswaterstaat's integrated design, the rounded-off groynes' head and its gradual transition towards the riverbanks required additional attention (Rijkswaterstaat 2010b). This insight is emphasized by the quality-team's discernment that the pilot's groynes where too flat, emphasizing their wide crown that did not align with the Waal's riverine spatial quality. The survey conducted by province Gelderland highlighted the recreational aspects of the river (Rijkswaterstaat 2010b). Balancing the gathered insights Rijkswaterstaat concluded that the Waal's physical appearance altered radically as the lowered groynes emphasize the river's dynamics and form a less dominant separation between the river and its embankment (Rijkswaterstaat 2010b).

Towards Midden-Waal's formal project decision Rijkswaterstaat formulated their aesthetical requirements with a functional specification (Sterk 2013). Here the groynes' beaconing was positioned as a relatively defining factor, mainly due to 2011's latest high water where considerably more beacons were damaged and a smoother finish of the groynes crown was considered, improving accessibility for sports fishermen (Hector 2013).

Outline of Midden-Waal's political process

Rijkswaterstaat and PDR considered that a functional specification would be required to capture Midden-Waal's desired system requirements, measured by the system's actual performance (Slagboom 2013). Rijkswaterstaat negotiated and formulated Midden-Waal's functional requirements in such a way that the agent's choices would automatically lead to an adequate design and accompanying acceptable risk in terms of project costs and time planning (Rijkswaterstaat 2010b).

The key characteristic of Midden-Waal's functional specification is that it cuts the system up into a number of levels, balancing the pilot's design, stakeholder's input and the province's guideline for the Waal's riverine spatial quality. Rijkswaterstaat's approach ultimately resulted in the formulation of three design variants for Midden-Waal (Rijkswaterstaat 2011). Based upon the additional insights provided by Deltares and the quality-team a streamlined design for the lowered groynes is derived from the pilot phase. Using a system engineering based approach, the integrated nature of the project's functional specification is guaranteed, awarding particular attention to the groynes' less flat crown, adjustable beaconing and rounded-off head (Sterk 2013). During this political process in which the project's subsystems and their functions are highlighted as project agreements, Rijkswaterstaat and the PDR play a major role. Stating that Midden-Waal's riverine spatial quality would be one of the criteria for selecting the project's economically most advantageous tender, the principal enabled an integrated approach that would combine the

constructor's expertise in linking functional project aspects with a complementary design (Slagboom 2013). The underlying project- and process agreements of Midden-Waal's political process are summarized in figure 28.

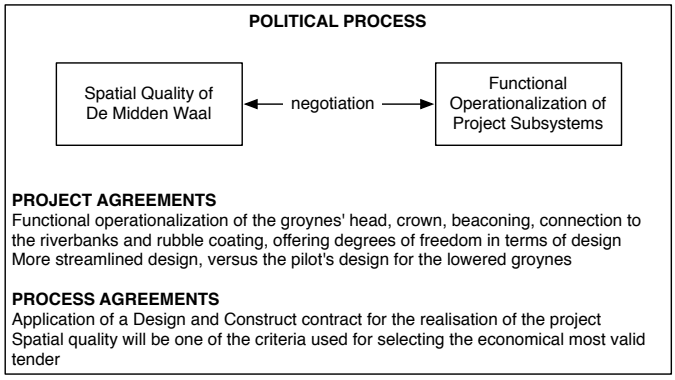

Figure 28: Midden-Waal's political process and underlying project- and process agreements

5.3.3 Realizing Midden-Waal

In the lead for the formulation of Midden-Waal's Design & Construct (DC) contract Rijkswaterstaat based their outline upon the negotiated system engineering approach, contributing to the integrated development and realization of the project (Hector 2013). Providing a guideline for the spatial design and development of quality products, Rijkswaterstaat concentrated their complementary processes on the specification of their 'problem' and purchase of products and services. The application of a D&C contract enables the involvement of stakeholders' input while the constructor bears Midden-Waal's overall responsibility in terms of design and construction (Rijkswaterstaat 2011). Highlighting the importance of process transparency, its customizability and planning, Midden-Waal's system engineering approach is considered to positively contribute to the project's overall innovative and integrated approach for lowering groynes in the river Waal (Rijkswaterstaat 2011).

Specification of the project's spatial quality

Rijkswaterstaat's functional analysis of Midden-Waal defined parent key functions fulfilled by its most prominent objects. Following these functionalities, specified in Midden-Waal's development plan and objectives, Rijkswaterstaat included the following project objectives (Hector 2013);

- Reduce the lowered groynes' hydraulic resistance, enabling an improvement in the river Waal's discharge during high water levels and improved protection against flooding of its riverine area
- Providing a contribution to the improved riverine spatial quality of the river Waal's middle trajectory
- Maintaining the current quality of the river Waal's navigability and overall traffic over its middle trajectory
- Maintaining the main utility functions on and around the groynes in Midden-Waal.

These four main functions are elaborated by a number of underlying sub-functions of the overall system (Slagboom 2013). The sub-functions linked with Midden-Waal's riverine

spatial quality are addressed in the following subsections.

Improving spatial quality functions

To contribute to the improvement of riverine spatial quality, Midden-Waal's procurement plan highlights spatial quality as the interface of project's utility, amenity and future value (Slagboom 2013). In line with this insight, Rijkswaterstaat claimed that Midden-Waal's lowered groynes would enhance its utility and amenity value, aligned with their overall functions in terms of ecology, archeology and recreation (Rijkswaterstaat 2010b).

Set in terms of profiling and appearance, the functional values of the groynes are very broad (DHV 2009). Lowering Midden-Waal's groynes would therefore most likely affect the riverine spatial quality of the Waal. To emphasize the overall improvement of riverine spatial quality the project principal claimed that the current level of Midden-Waal's ecology had to be be maintained, positioning their ecological value as external interface requirements (Slagboom 2013). As vegetation is removed during excavation, mitigation measures should be applied to safeguard the groynes utility value within the system's boundary. Rijkswaterstaat combined these insights by positioning them in an object's matrix, highlighting Midden-Waal's prominent objects and their functional components as presented in figure 29.

Elementen en componenten / Functies	Systeem	Kribben	- Kribkop	- Kriblijf	- Oevertalud krib	- Kribwortel	- Overgangsconstructies	Vaarwegmarkering	- Baak	- Lichtopstand
Realiseren hoogwaterveiligheid en voldoende water	X									
- Water afvoeren	X	X	X	X	X	X	X			
Verbeteren ruimtelijke kwaliteit	X	X		X						
- Handhaven archeologische waarden		X								
Afwikkelen scheepvaartverkeer	X		X					X	X	X

Figure 29: Important project elements of Midden-Waal and their functions (Rijkswaterstaat 2010b)

The outline of the object's matrix presents an abstract picture of Midden-Waal's most prominent aspects, their components within the overall system and their relation with, inter alia, project spatial quality. Figure 30 and 31 present the schematized identification of Midden-Waal's key project elements and follow-up basic design (Rijkswaterstaat 2010b:17).

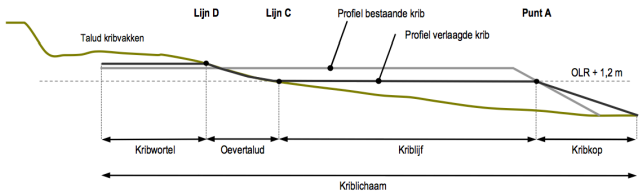

Figure 30: Highlighted elements for lowering groynes in the river Waal Rijkswaterstaat 2010b:17)

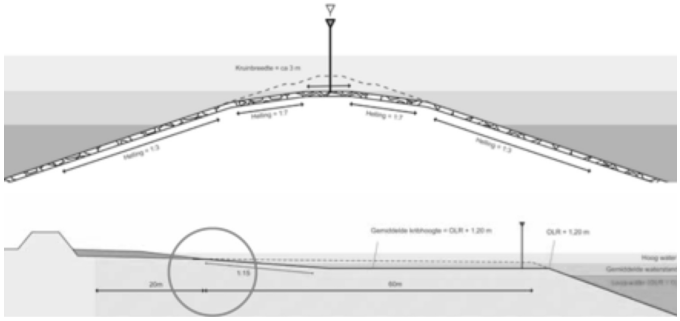

Figure 31: The basic design for the new lowered groynes in the river Waal (Rijkswaterstaat 2010b:17)

Identification of project requirements

Midden-Waal's system scope provided the boundaries in terms of design and the accompanying degrees of freedom offered to the future project constructor (Rijkswaterstaat 2010b). Balancing Midden-Waal's key elements and their impact on spatial quality, Rijkswaterstaat's demand specification identifies the following requirements (Hector 2013);

- The lowered groynes' body highlights a light curb, enabling a continuous radius that connects to the groynes' crown
- The crown of the lowered groynes' body should merge in its center line, emphasizing the cross-profile of the lowered groyne and its, more or less, convex shape
- The groynes' crown connects evenly on the bottom and upstream side of the slope of the groyne towards the connecting embankment
- The groynes' coating connects to the top layer of the embankment's slope, minimizing their difference in height
- The transition structure between the rubble coating and the linings' top layer consists of loose rubble, highlighting a light curb

Balancing these requirements Rijkswaterstaat formulated a follow-up pre-market approach, balancing their lessons learned during the project's pilot phase (Sterk 2013).

Awarding the construction contract

Based upon the lessons learned from the project's pilot Rijkswaterstaat saw no reason to deviate from their public procurement approach (Hector 2013). Awarding Midden-Waal's construction contract, however, addressed a different set of criteria to select the economically most advantageous tender. Tightening the degrees of freedom in terms of design Rijkswaterstaat's selected the tendering constructors mainly upon a ratio of spatial quality and price (Sterk 2013). The constructor's risk management and its verification were included as key criteria, balancing the constructor's capability to 'unburden' their future principal. Including one year of maintenance for the lowered groynes, Midden-Waal's Design & Construct (D&C) contract offered relatively more design space to the market than the pilot project, including a rather schematically sketched design outline versus a detailed design specification (Hector 2013). In line with the functional set-up of Midden-Waal's realization contract, its management is set-up accordingly by application of System Controlled Contract Management (SCB). The PDR and quality-team formulated the follow-up risk assessment plan (Hector 2013; Sterk 2013). Depending on the identified risk per project element a

frequency of checks and balances is subsequently set, forming the basis for the follow-up assessment plan of project amendments that address Midden-Waal's prominent objects (Slagboom 2013).

Starting with the project decision in the late spring of 2010, the commissioning of Midden-Waal's contract is based upon the tenderer that submitted the most economically advantageous valid tender (Rijkswaterstaat 2010b). Receiving five tenders that met Rijkswaterstaat's registration requirements, the Dutch construction company 'L. Paans en Zonen' (Paans) ultimately tendered Midden-Waal's economically most advantageous tender, balancing spatial quality and price (Sterk 2013). The underlying criteria and rationale for selecting Paans were reviewed by the PDR, testing the minimum requirements for project objects and Paans' proposed realization process (Slagboom 2013). Due to Paan's relatively cheap tender PDR required the provision of additional insights in their calculations, emphasizing further project procurement details (Hector 2013; Slagboom 2013). PDR's review pointed out that Paans, well aware of the possible consequences, was willing to take a risk by assuming the processing of excavated material in another project, lowering their tender's price (Hector 2013).

Midden-Waal's final project design

Starting from Midden-Waal's higher-level requirements and working towards a more detailed description of the object's properties, the project's demand specification allowed Paans relatively more degrees of freedom in terms of design (Slagboom 2013). Since the project decision determined Midden-Waal' requirements for Paans' draft contract file, their overall breakdown of the project recovered the most important interface requirements (Slagboom 2013). The original appearance and DHV's design principles for Midden-Waal's groynes proved the starting point of Paans' design, leading to Paans' unique designs per individual groyne (Slagboom 2013).

Assessing groynes' realization

Compared to a more traditional framework contract a Design & Construct contract requires the project agent to continuously monitor the project's construction process. In line with the constructor's responsibility, their principal balances whether one works according to the filed and approved processes (Rijkswaterstaat 2010b).

Paans realization process consists of several steps where firstly one of the circa 150 groynes is selected and its core material is excavated. A filter layer is applied before it is finished with a rubble coating (Slagboom 2013). Where Paans would normally have based their project approach on their legal interpretation of the project plan, the Design & Construct contract enabled a strong focus on project requirements, such as the groynes' connection with the embankment (Slagboom 2013). To ensure that the groynes were resistant to erosion, Paans awarded extra attention to the development of a stable rubble coating and its transition towards the existing groynes. Comared to the pilot's finish, Paans argued that the initially closed of excavated body required a granular filter to prevent the rinse of sand and assure its functionality during even higher water levels (Slagboom 2013).

Assessment of additional insights

Rijkswaterstaat provided the basic ground samples for recycling the groynes' excavated

material. Enabled to assess what kind of ground they would find, it turned out that the presented analysis was not sufficiently indicative and required Paans' additional involvement. Passing this as a constructor's responsibility, the principal and agent escalated the situation towards program management, a standard procedure when dealing with a deadlock between two interpretations of the same image that eventually could lead to a court procedure. The areal data provided by the project principal proved another project complication, especially when Paans experienced that various groynes did not pass through into the river bank as provided (Slagboom 2013). In this second example, however, Paans' risk register did not provide an adequate measure or process to prevent escalation. Deltares and the PDR eventually agreed upon Paans' solution, acknowledging additional rubble supplementations. The accompanying costs were considered reasonable, amending Paans' contract without discussion.

Starting with Rijswaterstaat's insight that Paans made a relatively unrealistic advantageous offer, they ultimately included a larger booking of 'unforeseen' aspects. In line with this insight, the project principal required structural reflection on their agent's construction work to highlight the most costly project alterations. The smooth atmosphere and actor's common interest for success, however, limited this need to about four reflection sessions. Underlining both parties' respect and interest enabled the project principal to balance their legal obligation towards the PDR, emphasizing the overall need for project transparency when assessing project's additional insights and alterations (Hector 2013; Sterk 2013).

Assessing project spatial quality

Highlighting the lowered groynes' indicative shape, Paans' interpretation was very welcomed by project stakeholders such as fisheries, professional navigation the PDR and the quality-team. Approving Paans 'follow-up translation of the lowered groynes' design, the project principal required a sample-check where the project agent should demonstrate compliance with Midden-Waal's demand specification (Hector 2013; Sterk 2013; Slagboom 2013). As Rijkswaterstaat gained significant experience during the realization of the project's pilot phase, spatial quality was not considered one of Midden-Waal's major risks.

Based upon the experiences of the pilot phase, spatial quality of the lowered groynes' is limited to their finish, crown, head and rhythm (Sterk 2013). Positioning the present groynes as an indicative construction, improving project spatial quality is considered far less complex compared to Room for the River projects Overdiepse Polder or Tollewaard (Sterk 2013). Where Midden-Waal's lowered groynes give the river a more robust character, emphasizing its openness when submerged, the river keeps its constricted appearance and prestigious spatial qualities. Due to Midden-Waal's relatively compelled spatial quality discussions on whether Paans' design improved project spatial quality was limited, especially as excavated material was to be reapplied whenever possible (Hector 2013; Sterk 2013).

Outline of Midden-Waal's bureaucratic process

Starting from the project decision, Midden-Waal's preferred alternative would develop into a final project design. Midden-Waal's design alternatives, however, were based upon the experience gathered during the pilot's realization process and insights provided by the

engineering firm Deltares. Identifying the different project products had to be realized, Midden-Waal's future constructor was selected upon their fictive tenders, primarily determined by their score on selected criteria such as spatial quality and system for mitigating project risks. Awarding Paans Midden-Waal's construction contract, the project's execution related permits and applications became the constructor's responsibility. In terms of spatial quality Paans' considered lowering Midden-Waal's groynes a relatively 'technical' intervention, considering the ditto challenge in terms of design and preparation. Given the tight time planning for project realization its initial plan was largely based upon experience gathered during the project's pilot phase and DHV's accompanying morphological research.

Balancing Deltares' and the quality-team's input, Midden-Waal's project plan schematized the individual sleek design for the lowered groynes, realigning them along the river Waal. The groynes' streamlined design, however, was largely based upon the not welcomed design of the project's pilot phase. Reinterpreting the groynes individual design by changing the pilot's flat plain and impassable hump, Paans enabled a more rounded-off and functional form, balancing Rijkswaterstaat's technical preconditions and restrictions. The constructor's perseverance, commitment and ability to improvise showed that Midden-Waal's smooth bureaucratic process enabled a significant improvement in terms of design. The early integration of technical requirements, process management and maintenance enabled Midden-Waal's integrated character, conserving the project's spatial storyline and enabling the development of a quality spatial design. A summary of Midden-Waal's bureaucratic process is schematized figure 32, addressing its underlying process- and project agreements.

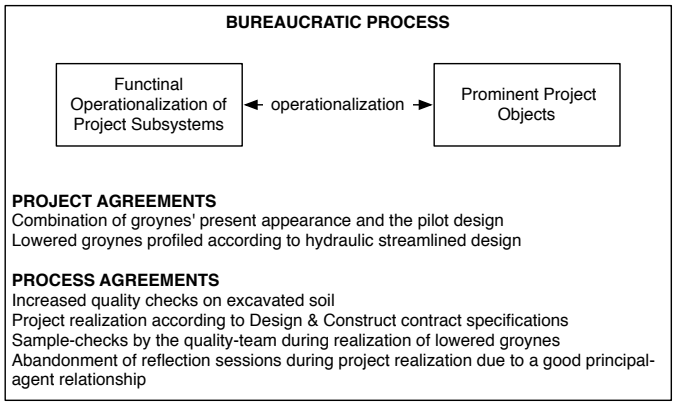

Figure 32: Midden-Waal's bureaucratic process and its underlying project- and process agreements

5.3.4 Highlights from Midden-Waal

In line with the set-up of the project's pilot phase, Rijkswaterstaat was appointed as Midden-Waal's project initiator and executor. Standardizing the basic design for the lowered groynes together with DHV, the project principal balanced the spatial planning key decision's original clouds of goodness. To speed up the project's realization process whilst enabling the implementation of incremental project improvements, Midden-Waal's advocacy process emphasized the articulation of the pilot's follow-up design by highlighting accompanying controls, restraints and spatial adjustments to comply with PDR's spatial project objective.

The project's follow-up political process focused on negotiation of Midden-Waal's technical and hydraulic requirements, integrated approach for realization and prominent objects' relationship with Waal's riverine spatial quality. Subsequently the following three objects were emphasized; the lowered groynes' cross-section, rounded-off head and relatively

gradual connection towards Waal's embankment. This approach enabled a visually streamlined design, combining a rubble coating with a less asymmetrical form. Towards project realization, the project plan was tendered by a Design & Construct contract, balancing different criteria for selecting the project's economically most advantageous tender. Ultimately selecting the project's best tender Rijkswaterstaat applied a ratio of price by riverine spatial quality, giving both an equal position.

Outlining the project's bureaucratic process Midden-Waal's initial sketches were not provided to the selected constructor, averting the possible difference in interpretation on project spatial quality. Paans presented their improved design for the individual lowred groynes, highlighting the connection to the river's embankment as an obligatory requirement. Their interpretation indicated that spatial quality was given a prominent role since their appointment, balancing the quality design of the groynes' crown, rounded-off head and innovative beaconing. Currently Midden-Waal is heading towards its provision process, as the project is almost completed. Aligned with Overdiepse Polder and Tollewaard the actual provision process of Midden-Waal's spatial quality cannot be evaluated yet. The insights that are gathered so far are summarized in figure 33.

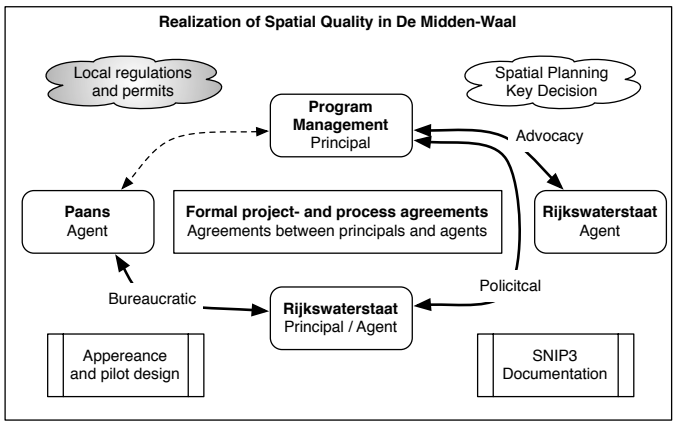

Figure 33: Schematized overview of decision-making in spatial quality in Midden-Waal

Chapter 6. Projects' comparative analysis

Comparing the three case studies conducted this chapter analyzes the highlights in decision-making of Room for the River projects Overdiepse Polder, Tollewaard and Midden-Waal. By emphasizing the formal agreements that intend to safeguard riverine spatial quality, this chapter elaborates on the overall conclusions drawn on the conceptualization of safeguarding riverine spatial quality as a public value.

6.1 Translation of spatial quality

The formal project- and process agreements to safeguard project spatial quality formulated by the project's initiator, executor and constructor are centralized in this research. The theoretical framework provided in chapter two provided the starting-point for the initial evaluation of these formulated formal agreements, positioning project spatial quality as a public value that ought to be safeguarded. Complementary to this insight a comparative analysis of the formal agreements made provides a general understanding on how formal agreements intend to safeguard project's spatial quality. Emphasizing the formulated formal agreements during the articulation, negation and operationalization of spatial quality in the different case studies conducted, the normative understanding of spatial quality as a public value can be assessed.

6.1.1 Articulating project's public value

The concept of public value allows one to position spatial quality as a normative concept, highlighting the need for formulating formal project- and process agreements towards project realization (Veeneman, Dicke, and Bruijne 2009). The identification of the project's most prominent stakeholders during the different stages of the decision-making process, the project's principal and agent, already showed that project's spatial quality can be interpreted and explained in more than just one way. Influenced by the Spatial Planning Key Decision's articulation of project spatial quality, the remainder of this paragraph addresses the project's initial articulation of spatial quality by its competent authority. This research' starting point highlights that spatial quality ought to be considered a public value, integrating the project's utility, amenity and future value. Addressing the utility value of the individual case studies, its public value is differentiated over the project areas' recreational, ecological and agricultural/economic functions. Balancing the amenity value of the project area, the project area's openness, accessibility, wideness, diversity and contrast are the main values that are highlighted by both the project principal and agent during the identified process stages. The future value of the project areas is addressed by emphasizing the water safety of the riverine area, its historical elements, agricultural perspective and heritage. Every individual project balances these values differently; highlighting and subordinating dissimilar project's public value and including management and maintenance of the project area (Hector 2013; Ministry for Public Works and Water Management 2006; Verbart 2013; Wouters 2013).

Addressing the public value of Overdiepse Polder, its spatial quality is originally articulated by the province Noord Brabant (Hakstege 2013; Houwing 2013). Considered an expert in terms of local planning, the PDR considered that the province was positioned at the right hierarchical level to actually do so (Provincie Noord-Brabant 2009). The province identified the riverine area's agricultural and economic functions, highlighting the project's riverine contrast and improved agricultural perspective in terms of the project's future value.

The project's advocacy process, however, provided a detailed basis for balancing the project's values and their actual articulation by balancing the insights of stakeholders involved, such as the local water board et cetera. This detailed basis provided an in-depth specification of the project's most prominent objectives, restraining the project principal's opportunities to actually benefit from the market's expertise in terms of design, specification and to balance the articulated project public value by including the project's future management and maintenance (Verbart 2013). In Room for the River project Tollewaard, the initial articulation of project's spatial quality provided a functional specification of the project's most prominent objects what made articulation of its required management and maintenance relatively easy (Houwing 2013). As Rijkswaterstaat's initial planning study provided a rather abstract, two-dimensional outline of Tollewaard's public value, there were limited handles to balance additional project objectives towards its altered approach for project realization. When the PDR added the project's objectives in terms of support and realization speed, the abstractly articulated project spatial quality of project Tollewaard provided limited in-depth insights in the preferred design's underlying spatial storyline (Hakstege 2013). In line with the insight presented in Overdiepse Polder, however, the river Waal's executive manager initially articulated the public value of the Room for the River project Midden-Waal (Sterk 2013). Balancing a somewhat different approach, learning from the project's pilot phase, the follow-up set an initial focus on designing and safeguarding project spatial quality, including a two-year management and maintenance schedule. Highlighting the openness of the riverine area and the wideness of the river Waal from different perspectives, an emphasis was put on the functional appearance of the project's most prominent objects (Slagboom 2013; Sterk 2013). These objects, such as the lowered groynes' rounded-off head, were initially marked with their relation towards the project's overall public value, highlighting the importance of its spatial design and -function. In line with this insight, the project's principal expressively did not stipulate a detailed profile but presented the lowered groynes' functional requirements in terms of hydraulics and spatial quality. Additionally, the degrees of freedom in terms of design were clearly highlighted, such as the beaconing for the lowered groynes and its connection to the river's embankment (Hector 2013; Sterk 2013). Summarizing these insights, table five provides a more condensed overview that compares the projects' advocacy processes.

Table 5: Comparing the articulation process of projects' riverine spatial quality

	Overdiepse Polder	Tollewaard	Midden-Waal
Articulation	Relatively detailed articulation of spatial quality that emphasizes the project's agricultural and economic functions	Abstract articulation of riverine spatial quality, presenting the project's spatial functions, such as accessibility, on a two-dimensional map	Abstract articulation of project's spatial quality, emphasizing prominent object's functions, such as the groynes' slope towards the river's wildness, addressing three different scale perspectives

Highlighting the importance of articulating spatial quality during the early stages of the project and clearly formulating the project's spatial storyline that lead to the design decisions made, formal project agreements can be considered key. The following paragraph provides additional insights in the project's follow-up phase where the project's principal and agent negotiate about project's public value.

6.1.2 Negotiating project's public value

The previous paragraph described the articulation process of riverine spatial quality in Room for the River projects Overdiepse Polder, Tollewaard and Midden-Waal. On the one hand, the articulation process shows that spatial quality addresses a relatively abstract understanding of a project's unique qualities, in terms of utility, amenity and future value (Sterk 2013; Hakstege 2013; Houwing 2013). For instance, by highlighting the area's notions of contrasts, openness and agricultural perspective. On the other hand, the initial articulation of project's spatial quality addressed a relatively detailed description, highlighting the project's most prominent objects and their functional specification (Sterk 2013). Balancing the project's initially articulated public value the follow-up stage of the project's advocacy process is highlighted by the influence of a more or less concretized project variant. While the project's principal and agent negotiate the position and aspects of spatial quality towards its realization, the articulated and negotiated project spatial quality is seized in plans for project spatial zoning, impact assessments and project milestone (SNIP) documentation (Hector 2013; Verbart 2013; Wouters 2013).

For Overdiepse Polder's political process this implied that, when the local water board Brabantse Delta was eventually assigned as PDR's principal during the project's political process, the project agent was fully aware of the province's underlying spatial storyline and the design decisions made (Houwing 2013). Being intensely involved in the preceding articulation process of the project's spatial quality, the formulation of the preferred project variant focused on further specification of the prominent project objects, such as the zoning of the mounds, alignment of the new dike and planting schemes along the ecological connection zone (Verbart 2013). The negotiation process ultimately resulted in a very detailed final design, highlighting spatial zoning and the specifications and materialization of the project's prominent object. Towards its actual procurement, however, spatial quality was one of the many criteria for selecting the economically most advantageous tender, therefore tender price eventually became a relatively dominant aspect for Rijkswaterstaat's selection of a project constructor (Uden 2013). In Room for the River project Tollewaard, however, the negotiation process trailed by PDR and Rijkswaterstaat resulted in the development of a preferred design with a different level of detail and abstraction (Wouters 2013). By the time that Rijkswaterstaat formulated their preferred design, however, the PDR decided to start the project's procurement with an accelerated market approach. The basis of this distinction lies with the application of a Plan, Design and Construct (PDC) contract, versus the Design & Construct (DC) contract applied in Overdiepse Polder (Uden 2013; Wouters 2013).

Balancing the outline of a PDC contract, the constructor who is ultimately awarded the project is held responsible for its planning-study and realization. For the awarding of the PDC contract, Rijkswaterstaat applied the Best Value Procurement approach. The tenders received, however, did not include tender requirements on spatial quality as this was considered of less importance than limiting the project's realization time and maximizing the project's overall support within its direct environment (Zwemmer 2013). In Room for the River project Midden-Waal, however, Rijkswaterstaat's more traditional approach for project procurement was applied, selecting the economically most advantageous tender upon both price and spatial quality (Slagboom 2013). By highlighting spatial quality as one of the more prominent criteria for selecting the economically most advantageous tender, it becomes a truly integrated aspect

of the project's outline towards formulation of its preferred alternative (Slagboom 2013). The project's preferred alternative held no detailed specification, rather a functional description of the project's most prominent design elements such as the groynes' head and crown. Negotiating further details with their principal, the constructor came up with an improved design for the groynes's connection to the embankment, lowering the connecting area under ground level and creating a more linear slope than Rijkswaterstaat initially required (Hector 2013).

In general the project's principal and agent can be considered satisfied with the outcome of the project's political process, highlighting the expert input of the project constructor in Midden-Waal and the hydraulic focus of the water board Brabantse Delta in project Overdiepse Polder (Hakstege 2013; Houwing 2013). In terms of negotiated spatial quality, the quality-team argues that Tollewaard provides a relative unsatisfying image of the negotiation process, balancing the project's integrated PDC approach and absence of spatial quality towards the project's procurement. The insights gathered, however, highlight that the SNIP3 documentation of Midden-Waal provides an adequate translation of the project's public value as articulated during the project's advocacy process. For Overdiepse Polder, the detailed articulation provided a complete image of the project's spatial quality to be realized. This held that its project decision consisted of a detailed list of requirements and therefore spatial quality was given relatively less emphasis than anticipated by the quality-team. These insights are condensed in table six, providing a compressed overview that compares the projects' political process stages.

Table 6: Comparing the negotiaiton process of projects' riverine spatial quality

	Overdiepse Polder	Tollewaard	Midden-Waal
Spatial story	Formulation of a detailed spatial storyline due to the spatial development plan	No formal spatial storyline was pre-formulated due to the Best Value Procurement approach that was applied, awarding the constructor the project's planning-study phase.	The project's spatial storyline is abstractly formulated due to the formulation of a project vision, emphasizing the spatial outline of Waal's future appearance
Management & Maintenance	Management and maintenance of the project's prominent objects is included and approved in negotiation with the future owners and managers of the project area	The initial management and maintenance schedule was set-up by the project's intended manager. Due to financial deviancies their involvement was canceled and addressed by the constructor	Design of the project's procurement plan involved a mandatory two-year management and maintenance program by the constructor.
Contract	Spatial quality was not awarded a prominent role towards the project's procurement of a Design & Construct contract, as relatively many criteria were formulated to select the economically most advantageous tender	Spatial quality was not one of the requirements by which the executor selected the project's economically most advantageous tender for the Plan, Design and Construct contract	Improving riverine spatial quality was included as a prominent requirement for awarding the economically most advantageous tender for the project's Design & Construct contract

Towards the actual provision process of the individual projects, the bureaucratic process highlights the project's follow-up negotiation process between the constructor and their principal. This process is elaborated upon in the following paragraph.

6.1.3 Operationalization of projects' public value

The bureaucratic process enables the concretization of the projects' final design due to its operationalization by the project constructor. In this operationalization process system based contract management (SCB) and the accompanying realization contract play an important role, especially towards operationalization and detailing of the project's prominent objects.

In Room for the River project Overdiepse Polder, the extensive specification of the Design & Construct (D&C) contract and its individual project objects provided a detailed basis for the project's bureaucratic process (Verbart 2013). This basis consisted of a relatively exhaustive operationalization of the project's details and most prominent objects, therefore the water board did not require a landscape architect to be involved with their project constructor. The awarding of the construction contract marks the start of the start of Overdiepse Polders' bureaucratic process. With their selection of the construction consortium Hollandsche Waard the water board selected a 'farmer friendly' project constructor, guided by a project environment manager who grew up within project's riverine area (Verbart 2013). As the project's actual implementation was based upon the initial landscaping plan, the plan ultimately functioned as the blueprint for the development of the project's spatial quality (Uden 2013). Local conditions that deviated, such as contaminated soil, gave birth to contractual adjustments that followed-up a disturbed negotiation process between the project principal and their agent. Both being relatively unfamiliar with the implications of a D&C contract and mainly due to the project's detailed demand specification and absence of a landscape architect that was involved in the preceding stages of the decision-making process, the constructor was relatively unaware of the underlying storyline of the initial design decisions made (Uden 2013). The principal, however, was involved during the preceding advocacy and political process, what gave birth to the initially differentiated interpretation of the project demand specification, balancing the farmer's continuation of operations in the project area, design of the ecological connection zone and excavation of floodplain (Hakstege 2013; Houwing 2013; Uden 2013; Verbart 2013).

Instead of the project decision used in Overdiepse Polder, the basis for Tollewaard's bureaucratic process lies within the SNIP2a documentation: highlighting a more abstractly, two-dimensional preferred design. Towards realization, project agent Boskalis optimized the design of Rijkswaterstaat's preferred alternative by consulting the local residents and formulating their preliminary design by balancing their principal's additional objectives (Luiten 2013; Wouters 2013). Minimizing of the project's realization time and maximizing overall project support, Boskalis concluded that the realization of project's spatial quality was their latter concern, focusing on realization of the key objectives formulated by Rijkswaterstaat (Zwemmer 2013). Balancing the position of the appointed supervisor on project spatial quality, his involvement and influence on spatial quality of Boskalis' final design was limited due to his formal status assigned by Rijkswaterstaat. Boskalis' processing of comments, especially the ones made by the supervisor on spatial quality, was therefore limited to their SCB approach, as their principal did not include the necessity for formal approval of their project design by the appointed supervisor. This insight aligns with the outline of the PDC contract type, highlighting that Boskalis is in the lead of Tollewaard's planning-study and its final implementation (Wouters 2013; Zwemmer 2013).

In line with Tollewaard, the realization process of Midden-Waal started with the functional description of the project's prominent objects and their relation with the overall project objectives was highlighted. The objectives for project Midden-Waal highlighted the need for sufficient support and the development of a quality good design (Slagboom 2013). In terms of spatial quality, Rijkswaterstaat considered the lowering of groynes an apparently 'technical' and yet simple intervention. Towards Paans' realization, however, this proved a major undertaking and ditto challenge in terms of preparation and design; balancing the profiled outline of the lowered groynes of the pilot phase (Slagboom 2013). Paans' project plan schematized individual sleek designs for every single lowered groyne that would realign along the river Waal. Emphasizing Paans' SCB approach, their design ultimately turned towards a more rounded-off lowered groyne with a sleeker profile, balancing Rijkswaterstaat's technical preconditions and restrictions. The perseverance, commitment and ability to improvise shows that projects that have a phased set-up enable a relatively smooth specification process, enabling improvements in design due to the clearly formulated degrees of freedom, minimal functional requirements per project object and ability to learn from preceding project outcomes (Hector 2013; Slagboom 2013). To summarize these insights, table seven presents the condensed overview of key insights to compare the projects' bureaucratic processes. The follow-up paragraph addresses whether the identified formal agreements safeguard riverine spatial quality adequately.

Table 7: Comparing the operationalization process of projects' riverine spatial quality

	Overdiepse Polder	Tollewaard	Midden-Waal
Objectives	Operationalization of spatial quality according to the pre-formulated spatial objectives of the project area, emphasizing the prominent objectives formulated in the project's planning-study phase	Operationalization of spatial quality according to the principal's additional objectives that emphasized the need for project support and minimization of realization time required	Pre-formulated project objectives guided the operationalization of riverine spatial quality, emphasizing the functional design and operationalization of the project's most prominent object elements
Degrees of freedom	Due to the blueprinted spatial development plan the project's Design & Construct contract provided hardly any degrees of freedom for the constructor to distinguish by means of innovative design or spatial planning	Based upon the Plan, Design & Construct set-up of the project's contract, relatively more degrees were offered to the constructor in terms of design and spatial planning	The project's Design & Construct contract offered the constructor the chance to come up with innovative means to serve the project's pre-identified spatial functions
Contract management	Due to the blueprinted set-up for the project's spatial development, no supervision was required by either the principal or agent as their informal consultation proved sufficient	System-based contract management was appointed by the project's principal together with a supervisor on spatial quality to structure the constructor's focus on spatial quality. The supervisor's opinion, however, did not have a formal ground.	System-based contract management proved sufficient to manage the constructor's realization process, emphasizing the implications of the pilot's improved design on the improvements in Waal's riverine spatial quality

6.2 Safeguarding articulated spatial quality

The preceding paragraph highlights the translation process that spatial quality undergoes

towards its actual realization. In general the key stakeholders perceive this translation process of project's articulated level of spatial quality towards formulation of the project's demand specification as adequate (Hector 2013; Houwing 2013; Wouters 2013). Despite the various formal project- and process agreements between the key stakeholders involved, however, the decision-making process from awarding the realization contract towards actual realization is considered critical, emphasizing the influence of system based contract management (SCB) and incorporation of future project management and maintenance.

In line with the importance of the realization contract, the quality-team and commitment of participation ultimately tends to define project's spatial quality and its translation process (Slagboom 2013; Uden 2013; Zwemmer 2013). This awareness holds that the quality-team, designers and landscape architects who initially articulate the project's spatial quality, should remain an integral part of the project. This proves that a careful choice of the designer is essential for ultimately achieving the articulated, negotiated and operationalized spatial quality in practice (Wouters 2013). Summarizing these insights one can argue that the main responsibility of these parties is to articulate and safeguard the spatial storyline of the integrated design, emphasizing the importance of the projects' realization process in which the initial design is realized by the project's constructor. In line with this insight, the involvement of the quality-team, designers and landscape architect can be highlighted in the projects' advocacy, political and bureaucratic process (Hakstege 2013; Hector 2013; Houwing 2013; Wouters 2013). Balancing the insight that the Room for the River projects' implementation provided an opportunity to maintain and improve the ecological, cultural, historical, scenic and recreational values of the Dutch riverine landscape, the quality-team plays an important role in assisting the landscape architects and designers with their initial articulation of project spatial quality. The input of the quality-team mainly focused on the articulation and initial negotiation of project spatial quality during the planning-study phase of the individual projects (Hakstege 2013; Houwing 2013; Luiten 2013; Sterk 2013).

To assess the articulated and negotiated level of spatial quality, the independent quality-team prepares an assessment framework for project's spatial quality, providing criteria to assess the projects' spatial designs. However, as the individual project teams prepare their own projects and accompanying framework for spatial quality, the Spatial Planning Key Decision presents its starting point (Boer 2013). In Overdiepse Polder the projects spatial zoning plan is used as a blue print for project spatial quality, drawn up by the province Noord Brabant in consultation with a landscape architect (Hakstege 2013; Houwing 2013). Formally, the landscape architect is not directly involved towards the project's realization however, due to the close involvement the water board Brabantse Delta still calls upon their services towards the projects realization whenever modifications of the initial plan are inevitable, for instance when their constructor hit contaminated soil when elongating the ecological connection zone. This insight highlights that the province's initial spatial storyline is safeguarded throughout the decision-making process towards the project's actual realization (Uden 2013). In Tollewaard this was not the case, where the landscape architect who articulated the initial spatial quality for the area was not adequately involved towards the formulation and realization of Boskalis' final design (Wouters 2013; Zwemmer 2013). In Room for the River project Midden-Waal, the initially articulated spatial quality was not

safeguarded by the involvement of a landscape architect who was involved in the initial articulation process of project's spatial quality (Slagboom 2013). However, the contract between Rijkswaterstaat and Paans clearly stipulated the importance of project spatial quality and the aligning prominent project objects.

The involvement of the landscape architect and designers is schematically presented in figure 34. This figure clearly stipulates the bandwidth by which spatial quality was articulated in each respective project. By means of indication, the initial bandwidth for articulation of spatial quality in all three Room for the River projects is provided by the Spatial Planning Key Decision (Ministry for Public Works and Water Management 2006). However, for instance balancing the influence spatial quality as one of the project's focal points in Midden-Waal, the project's advocacy process funnels spatial quality's bandwidth much stronger than in Tollewaard (Broens 2013). The 'missing' SNIP3 level of detail in Tollewaard's political process, shows that its bandwidth for the further development of project spatial quality remains relatively large and opens-up relatively strong due to the absence of a potent supervisor on spatial quality towards the formulation of the project's demand specification (Wouters 2013; Zwemmer 2013). In project Overdiepse Polder, however, the project's bandwidth for the specification and operationalization of spatial quality is already severely limited after the project's advocacy process. In the pilot phase of the lowered groynes in the river Waal, however, the position of project spatial quality opens-up during every stage of the decision-making process, however, the improvement of the project's spatial quality is not considered a main objective at the very beginning of the project (Hector 2013)

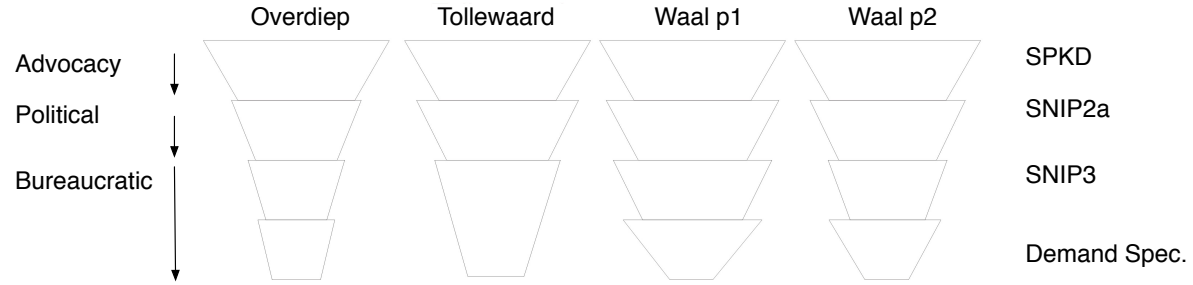

Figure 34: Safeguarding the bandwidth of project's spatial quality towards realization

Figure 34 shows that on the one hand the influence of project- and process agreements limits the overall bandwidth for the specification and operationalization of project spatial quality, the quality-team argues that preservation of the project's storyline is essential, safeguarded by the involvement of the designer and landscape architects that initially articulated the project's spatial quality. On the other hand the degrees of freedom offered to the constructor result in a relatively enlarged bandwidth whenever the project plan, alternatives or preferred alternative is (re)interpreted during the decision-making process towards project realization.

6.3 Inventory of formal agreements made

Emphasizing the conceptual framework applied for the analysis of formal agreements that intend to safeguard project's public value, chapter two provided an insight in its underlying scientific theory. This paragraph concludes the highlights identified, emphasizing the outline of the formal project- and process agreements in the case studies conducted. Summarizing the

insights gathered in Room for the River projects 'Overdiepse Polder, Tollewaard and Midden-Waal, the projects' advocacy, political and bureaucratic process stages award adequate attention to the provision of public value, either by means of participation processes, preparation of spatial plans and the formal SNIP milestone documentation (Boer et al. 2012; Broens 2013). Balancing the key stakeholders' formal agreements made in the respective decision-making process, the individual project teams realized that project spatial quality is a public value that ought to be safeguarded towards projects' realization (Slagboom 2013; Uden 2013; Zwemmer 2013). Concluding this chapter, this paragraph highlights the identified underlying formal project- and process agreements formulated by key stakeholders in the project's advocacy, political and bureaucratic process stages.

6.3.1 Projects' advocacy process

Towards formulation of the initial project plan for Room for the River projects, the PDR addresses the projects' public value in the Spatial Planning Key Decision at a relatively abstract level of detail, highlighting the public value of the riverine project area in terms of utility, amenity and future value (Boer et al. 2012; Broens 2013). This insight holds that, towards the project's planning-study phase, the quality-team's formulation of guidelines for project's riverine public value are relatively abstract, especially in terms of imagery and the formal agreements that emphasize the individual project's substantive components (Hakstege 2013; Houwing 2013; Sterk 2013; Luiten 2013).

The substantive formal components of the project's advocacy process, highlighting the project's spatial characterization and prominent objects, emphasize the contribution of local stakeholders in articulating project's public value. Assisted by the quality-team PDR's agent eventually formulates the initial outline of the project's public value, balancing input from the local stakeholders and landscape architect involved Combining the discernments into an overall project plan, the involvement of a landscape architect enables the translation of insights gathered during stakeholder consultation and articulation of project spatial quality as highlighted in the Spatial Planning Key Decision (Hector 2013; Verbart 2013; Wouters 2013). By formulating the starting-point for the actual project negotiation and its detailed development, the quality-team's guidelines for individual project spatial quality can be considered an important formal project agreements in the project's advocacy process (Verbart 2013). The landscape architects involved in the respective Room for the River projects analyze the riverine project area while balancing their expertise, highlighting the character of the landscape, its prominent objects and their interfacing relationships. Subsequently, an integrated plan is developed in close collaboration with local stakeholders (Wouters 2013). Besides the input of the local stakeholders, the quality-team also assists the individual project teams in the initial articulation of project spatial quality. Emphasizing the task of landscape architects in regard to the initial articulation of projects' public value towards implementation of the principal's actual planning-study phase, accompanying formal project- and process agreements that formalize their role are considered critical.

Summarizing the insights presented, table eight highlights the formal project- and process agreements made between the PDR and their agent to safeguard spatial quality in the project's advocacy process.

Table 8: Formal agreements that safeguard spatial quality in the project's advocacy process

	Project's advocacy Process
Project agreements	• Project's spatial outline is provided by the Spatial Planning Key Decision • PDR's spatial guidelines hold the identification of project's spatial quality
Process agreements	• Application of a local participative approach • Assistance of the quality-team in initial articulation of spatial quality • Involvement of a landscape architect

6.3.2 Projects' political process

Towards the formulation of the project's procurement plan and accompanying design for the actual development of projects' public value, the project's political process involves relatively little interaction with the project's environment (Verbart 2013; Hector 2013). Highlighting the position the principal's agent, the principal might involve a different agent during the project's negotiation process than during the project's advocacy process.

Balancing the individual Room for the River projects, the political process does not address a specific person or team that is positioned to safeguard project's public value during the follow-up negotiation process. Spatial quality, however, is a public value that is initially balanced by the project's technical manager (Verbart 2013; Wouters 2013). Highlighting the formal position of project's technical managers, the quality-team highlights that they are adequately empowered in signaling whether deviations from the project plan influence the initially articulated level of project spatial quality (Twist et al. 2011). This signaling power highlights that the projects' integrated project management team should be able to 'feel' whether a particular contract amendment would affect overall project public value, informing and positioning the necessary expertise (Hector 2013). Where the Design & Construct contracts applied for the procurement of Overdiepse Polder and Midden-Waal provide more relatively more degrees of freedom for the constructor in terms of design, especially when compared with Rijkswaterstaat's traditional framework contracts, the overall responsibility for realization of project public value ultimately lies with the constructor (Uden 2013; Zwemmer 2013). This insight holds that the project's principal loses their primary control over the realization of project's public value and assigns this task to their agent (Boer 2013; Broens 2013). To maintain the outline of the articulated project spatial quality towards the development of the preferred alternative, the project principal enabled the concretization of the project's procurement plan, balancing the insights from the project's contract manager, technical manager and landscape architect (Broens 2013). Matching the implications of the Design & Construct contract, this implies that public value is eventually set-up differently compared with a more traditional framework contract. To ensure the proper translation of project spatial quality when awarding the constructor certain degrees of freedom in terms of design, one should enable the conservation of the project's spatial storyline. In line with this insight, the project's procurement can be based on criteria for selecting the economically most advantageous tender, where the constructor can gather additional points by means of increased public value versus the other tenders received (Broens 2013). Another formal project agreement addresses the implications of a functional specification of the project procurement plan, where the project's overall objectives point out the direction of the constructor's design, identifying its basic characteristics and providing design references.

Comparing the projects' planning-study phase, the involved landscape architects have diverse roles. Balancing this insight, the quality-team now assists the project's principal and agent more closely in their negotiation process on projects' public value. The insights gathered in the case studies' political process are presented in table nine, highlighting the formal project- and process agreements formulated by the PDR and their project executor.

Table 9: Formal agreements that safeguard spatial quality in the project's political process

	Project's political Process
Project agreements	• Project's spatial plan is provided by the project principal
Process agreements	• SNIP-approach for development of project preferred alternative • Application of D&C/PDC contracts and corresponding conditions • Selection of Economically Most Advantageous Tender • Assistance of the quality-team in balancing project spatial quality

6.3.3 Projects' bureaucratic process

Following the discernments highlighted in the previous paragraph, the application of Design & Construct and Plan, Desgin & Construct contracts holds that the project's principal initially evades their primary control over the realization of project's riverine spatial quality (Hector 2013; Verbart 2013; Wouters 2013). Towards the actual realization of projects' public value in the selected Room for the River projects, however, system-based contract management (SCB) enables the principal to continuously safeguard this aspect during the project's actual realization. SCB enables the project principal to formally review underlying realization processes applied by their constructor through formal milestones, balancing the influence of the contractual amendments on seven different criteria, of which spatial quality is only one (Hector 2013; Zwemmer 2013). Eventually, the project management team balances whether SCB provides satisfactory results towards the implementation of the constructor's realization processes (Broens 2013).

When addressing the project's advocacy and political process the quality-team plays a minor role, mainly due to the preceding formal agreements and accompanying integrated contracts that followed from the project's advocacy and political process (Sijmons and Feddes 2012). This insight aligns with the fact that the bureaucratic process is focused on the actual operationalization of the articulated and negotiated project and process agreements, influenced by the project's demand specification (Broens 2013; Zwemmer 2013). Based upon the level of detail in the project's demand specification, the preferred alternative is operationalized by either a functional specification or the project's prominent object's detailed operationalization. This insight holds that the project's IPM team should be aware of the articulated project vision for the development of project's public value, as initially articulated by the PDR and quality-team and scored upon in the SNIP milestone documentation (Hakstege 2013; Houwing 2013; Luiten 2013; Sterk 2013). This insight is acknowledged by the quality-team, advising to formulate a project vision that elaborates its ambitions in terms spatial quality to assist the constructor in the design decisions that address the degrees of freedom presented (Sijmons et al. 2012). In addition, a supervisor could be appointed to advise the constructor on spatial design and the interfaces between project's prominent objects and public value. The position of the supervisor should be identified before the actual implementation of the project's realization process and formalized by means of a required formal approval of a constructors' final spatial project design.

The analysis of selected case studies' political process showed that the quality-team assists the project's principal and agent in their negotiation process on projects' public value (Broens 2013; Sterk 2013). The insight gathered by analyzing the case studies' bureaucratic process, however, showed that the quality-team remains adequately involved. System based contract management is set-up accordingly, highlighting opportunity for the project principal to review contractual amendments and overall realization progress (Hector 2013). A summary of the discernments that safeguard public value identified in this paragraph is presented in table ten, emphasizing the formal position of the identified project- and process agreements formulated by the project executor and their agent.

Table 10: Formal agreements that safeguard spatial quality in the project's bureaucratic process

	Project's political Process
Project agreements	• Demand specification as a basis for project realization • Identification of interfaces between objects and public value • Project vision provides project's spatial storyline and level of ambition
Process agreements	• SCB milestones to review constructor's realization process • Assistance of the quality-team in realization of project spatial quality

Chapter 7. Concluding the overall research

This chapter presents the formulated conclusions and recommendations of the research conducted, discussing the formal agreements that safeguard projects' public value in the selected Room for the River projects. The insights gathered in the individual Room for the River Projects form the basis for answering the research's main question:

To what extent do formal project- and process agreements between the project initiator, executor and constructor safeguard spatial quality in Room for the River projects?

To answer this research question multiple important aspects are investigated, such as the formal agreements formulated between the key stakeholders involved in decision-making and assessing the process stages in which these agreements are formulated. This chapter's subsections address the respective conclusions drawn upon the order of the previously formulated sub-questions:

1. How can one evaluate the translation of aspired program ambition into formal agreements on spatial quality in Room for the River projects?
2. What are contemporary formal project- and process agreements between project initiator, executor and constructor on safeguarding spatial quality in Room for the River projects?
3. How did the formal project- and process agreements on safeguarding spatial quality in Room for the River projects come about, what are their (expected) results?
4. What conclusions and recommendations can be formulated based upon the evaluation of formal agreements that intend to safeguard spatial quality?

7.1 Conclusions drawn

Following the order of formulated sub-questions, this first subsection is aimed at acquiring a conceptual insight in how one can evaluate the translation of aspired program ambition into formal agreements on spatial quality in Room for the River projects.

7.1.1 Application of the conceptual framework

The conceptual approach by Veeneman, Dicke, and Bruijne (2009) is used as the outline of this research's theoretical framework for safeguarding public value. Their conceptual approach offers a framework for the initial identification of the decision-making process' most decisive stages. Besides the framework provided by Veeneman et al. (2009), Holmstrom's (1999) principal-agent theory provides a complementary approach for identifying the key stakeholders engaged in each of the decision-making stages, emphasizing the stage of articulation, negotiation and operationalization of spatial quality. Highlighting the contractual relationship between the project principal and his agent, principal-agent theory provides a better understanding of its underlying concept. Combining the framework provided by Veeneman et al (2009) and Holmstrom's (1999) principal-agent theory enables one to identify the translation process of aspired program ambition into formal agreements, formulated by the key stakeholders involved towards realization of Room for the River projects. Guba and Lincoln's (1989) fourth generation evaluation provides a worthy approach for the identification and analysis of actor's perceived claims, concerns and issues, serving as

an organizational focus in determining the need for formal agreements on both substance and process.

The model-based approach, however, resulted in a single combination of formal agreements, stakeholders, roles and relationships per project. This approach therefore has certain advantages and obviously some disadvantages too. Firstly, the conceptual framework resembles the decision-making process in Room for the River projects quiet well, easily identifying the main stakeholders involved and positioning their relationship. Secondly, the identification formal agreements made by the stakeholders involved on safeguarding project spatial quality resemble their real-life situations. The framework is therefore considered to provide an adequate basis for structuring the decision-making process and identifying its underlying formal agreements that intend to safeguard public value, emphasizing stakeholders' position and their relationships. Identifying the key stakeholders involved in the projects' decision-making process also has some clear disadvantages. The first disadvantage is that the identification of key stakeholders and their underlying formal agreements on safeguarding public value results in a loss of information, as relatively minor attention is paid to the influence that relatively less prominent stakeholders have on the decision-making process. This insight has to be taken into account towards this research's conclusion, as it decreases the validity of the research's overall outcome. The conceptual framework developed should therefore be considered as a tool that fits programs' and projects' decision-making process best when these revolve around the key stakeholders involved, emphasizing their present relationships. However, for the evaluation of decision-making processes in Room for the River projects one should balance that there are many stakeholders involved and that case-specific characteristics influence the available options for the key stakeholders' decision-making process. Summarizing these insights, the overall applicability of the conceptual framework developed is expected to function optimally when applied in clearly delineated programs and projects, involving a relatively limited number of stakeholders involved in decision-making on clearly defined project values.

7.1.2 Empiric research conducted

Addressing the research's second and third sub question combines the preceding discernments by integrating the conceptual framework developed by Veeneman et al. (2009) and Holmstrom's (1999) principal-agent theory. The contemporary formal agreements between project initiator, executor and constructor on safeguarding public value during the respective advocacy, political and bureaucratic process stage.

Articulation of riverine spatial quality

Analyzing the early stages of projects' advocacy process highlights that conducting a landscape analysis is a worthy contribution towards the formulation of a project's spatial outline (Hakstege 2013; Houwing 2013; Luiten 2013). Following this insight, the involvement of a landscape architect provides a fundamental contribution to the initiator's participative articulation of the project's public value, especially when a guiding document points out the riverine area's relatively abstract core qualities and most prominent objects. The landscape architect provides a substantial contribution to the initial articulation of a project's public value, combining the insights provided by local stakeholders and emphasizing

the interfaces between projects' objectives, such as water safety, spatial quality and future management and maintenance of the project's riverine spatial quality. Something that is not emphasized in the respective case studies conducted is whether the addition of multiple experts in this articulation process could provide an even more optimal articulation of the project's public value, balancing distinctive areas of expertise such as economics, civil engineering and hydrology.

Negotiation of riverine spatial quality

The political process stage enables the preliminary negotiation of public value between the project principal and agent towards the formal project decision. In the three case studies conducted PDR is addressed as the project principal and their agent the executor of the planning study phase (Hector 2013; Verbart 2013; Wouters 2013). The interaction of the key stakeholders with the project's environment and stakeholders, however, tends to be decisive. This insight is highlighted by project Overdiepse Polder and Tollewaard, where eventually the local residents and farmers founded the base of the overall project in realization (Uden 2013; Zwemmer 2013). The formulation of formal process agreements therefore is of great importance, especially when it comes to opportunities for negotiation, balancing public value and private interests. The level of abstraction derived from the project's advocacy process is considered predominant in this stage of the decision-making process, highlighting the degrees of freedom offered by the project principal in terms of design, zoning and planning (Uden 2013; Zwemmer 2013). Highlighting the discernment of Tollewaard's construction manager, one ultimately gets what he asks for (Zwemmer 2013). A remark to this statement is that Tollewaard might not involve 'a classic example' of a decision-making process' political stage as identified by Veeneman et al. (2009).

When balancing the altered nature of Tollewaard's Plan, Design & Construct contract, the constructor is involved much earlier than in a Design & Construct contract. This is considered the opposite situation in Room for the River project Overdiepse Polder, where the initial negotiation between the principal and agent tends to be less dominant towards the project's bureaucratic process. When the key stakeholders emphasize their need for increased realization speed, the constructor should balance their objective in order to come up with a design that they would support (Hector 2013; Verbart 2013). Successively the individual (private) interests of local stakeholders tend to be safeguarded towards the project's realization, something that could come at the expense of stakeholder's overall public interest in the riverine area (Broens 2013). This insight highlights that spatial quality at project level should at least be balanced as a public value to overcome that safeguarding spatial quality becomes an individual interest that is best served by the constructor. Balancing this insight, the project's development plan focuses on the formulation of crucial project agreements about the level of abstraction required for the follow-up process stages: identifying the role of the project principal and agent, the project objectives and the required level of abstraction (Hector 2013; Luiten 2013). This discernment highlights that the core values of the project's management agreement emphasize the accompanying level of abstraction of its follow-up negotiation process, hence, the spatial storyline forms the heart of a project towards realization (Broens 2013).

As the project's storyline is important during the project's follow-up elaboration of the

initially articulated public value, negotiated designs are at issue when spatial adjustments are proposed towards project realization. The spatial storyline can therefore be considered a leitmotiv, emphasizing its provision according to the project's image of reference (Boer 2013; Broens 2013). Contractual requirements could significantly influence the level of detail framed in either the project decision or towards the development of project alternatives. This holds that ultimately it comes down to what the principal asks their agent, as what one asks is ultimately what one will get (Zwemmer 2013). This highlights that if the project principal considers the improvement of public value an important project objective, it should at least be included in the principal's project demand specification. By emphasizing the importance of required project objectives the projects enables a focus on the specification and functional operationalization of the projects' most important project objects. Offering degrees of freedom to the constructor on relatively minor project aspects could then further improve the project's overall design, especially in terms of developing and improving projects' riverine spatial quality.

Towards the formulation of criteria for selecting the economically most advantageous tender, the relatively short and unambiguous list of contract-awarding criteria should thus include the improvement of a project's public value. As the contract between the project's constructor and executor is preconditioned, the contractual agreements between the project's principal and agent display various frameworks and degrees of freedom for integrated design solutions (Zwemmer 2013). Despite the position of the formal contract, the informal contact between the parties is considered as decisive. Balancing this insight, additional project goals, such as speeding up overall realization, tend to shift the constructor's focus from the initial project objectives when these are prioritized over the project's focus on improving spatial quality (Verbart 2013; Hector 2013). This holds that a Design & Construct (D&C) contract enables the market party to focus on project's actual content, therefore amplifying the position of clearly formatted process agreements. When applying an integrated D&C contract this focus is ultimately enabled through the project's actual procurement, based upon criteria to select the Economically most Advantageous Tender; enabling market parties to adequately differentiate by means of expertise. However, balancing Best Value Procurement while focusing on improving project's spatial quality, the constructor's expertise on spatial design is to be included (Wouters 2013). This insight holds that scoring the constructor's tender on public value is important when the principal requires the actual improvement of the project aspect.

Operationalization of riverine spatial quality

Successively, the project's bureaucratic process stage is focused on the operationalization of the articulated and negotiated project agreements (Veeneman, Dicke, and Bruijne 2009). The project's bureaucratic process forms the basis of the project's process agreements that eventually land in the project's demand specification. This holds that the project principal should 'name-and-frame' the project's degrees of freedom for their agents' design. Setting-up formal requirements to these degrees of freedom is considered crucial, as the project's formalized demand specifications tend to set a blue print for the project's actual construction, despite a clearly formatted project outline formulated during the project's political process

(Hector 2013; Luiten 2013).

One can distinguish two separate tracks towards the formulation and realization of the preferred level of project's spatial quality. The first track identifies all prominent objects, interfaces and successively formulates a relatively detailed specification of its public value in the project's demand specification. The other track, however, compliments the expertise of the constructor by enabling more contractual degrees of freedom in terms of design and therefore a functional description of the project's most crucial details is considered to adequately safeguard project's public value, as long as spatial quality is expressively highlighted towards project's procurement (Boer 2013; Broens 2013). Balancing this insight, a functional operationalization of the project's degrees of freedom that interface with the project public value should balance an image of reference. These designs enable the agent to adequately balance abstractly formatted reference designs by their added images and textual considerations. On the other hand, a detailed identification of the project's crucial details and specification of its riverine spatial quality could also enable the adequate safeguarding of project's public value. An advantage of including reference designs and their textual consideration, however, is that it enables the conservation of the project's underlying decision-making process, a so-called 'spatial storyline' (Broens 2013). The identification of this spatial storyline enables the project principal to reflect on design decisions made by the constructor. To balance whether these decisions align with the initially articulated level of project's public value, the quality-team's guidelines for spatial development and the development of a project's vision enable an adequate interpretation of the riverine public value and its interfaces with the project's most prominent objects (Luiten 2013; Sterk 2013). In both tracks, however, the project's expert on spatial quality plays an important role in safeguarding its spatial storyline. For example, in Room for the River project Tollewaard, the landscape architect initially served as a designer and later appointed as the project's supervisor on spatial quality in its realization phase. The initial consultation with the quality-team is stimulating herein, emphasizing the possibilities for synthesis between technology, design, cost and its interfaces with the environment, leading to the formulation of the project's vision.

Analyzing the formal project- and process agreements made in the individual Room for the River projects, the project's ambition document, criteria for selecting the economically most advantageous tender and the procurement plan play a crucial role in safeguarding spatial quality. However, towards the project's implementation, the technical project manger might face certain inconsistencies when incidental contractual amendments arise, as he will ultimately be held responsible for the formulation of the project's demand specification (Hector 2013; Verbart 2013). The project's ambition document proves a worthy addition, holding the outline of what the principal wants realized, balancing abstract terms rather than a detailed description. It is important for the constructor and the technicians involved to learn the 'language' of the landscape architect involved. This will enable them to see whether the project's design is actually translated correctly into the project's demand specification (Wouters 2013).

SCB enables the principal to adequately review underlying realization processes applied by their constructor. However, balancing the influence of the contractual amendments on Rijkswaterstaat's seven impact criteria does not provide an adequate hold for balancing the

impact on project's public value, as it largely ignores the interfaces of a public value. Public value is therefore realized by its participation (Hector 2013). Designers are the basis of ideas and therefore these should be accompanied with a spatial storyline and even images that could be used as a design reference. This approach enables each involved actor to share the underlying spatial story and balance it when making choices in the project's implementation process (Broens 2013). The addition of a landscape architect during project realization is considered crucial, especially when the project constructor is allowed certain degrees of freedom in terms of design, the role of the architect and his/her function should be formalized (Luiten 2013). This formalization also highlights that the role of a project landscape architect should be specified and formalized before awarding the construction contract to the project constructor to balance their input during actual project construction and contributing to safeguarding project's public value.

Summarizing the preceding discernments, safeguarding a public value towards realization is enabled in its articulation, negotiation and operationalization. The following paragraph highlights a number of recommendations to improve the safeguarding of project's public value.

7.2 Distinguished recommendations

The previous paragraph presented the conclusions drawn and showed that multiple formal agreements enable the safeguarding of project's public value towards realization. Taking a closer look at these formal agreements and the accompanying claims, concerns and issues perceived by the project's key stakeholders one can distinguish several courses for additional recommendations. Highlighting the different stages of the overall decision-making process on project's public value, this paragraph distinguishes the following recommendations that improve safeguarding of project's public value towards realization:

7.2.1 Recommendations for articulating public value

Improving spatial quality is one of the program's main dual objectives and therefore at the basis of the overall development of individual projects. Highlighting this insight, the project management team should be familiar with the project's spatial storyline, in both image and textual consideration. This familiarity will enable the project team to adequately safeguard project spatial quality towards its realization, as it is (un)consciously used as the project's overall leitmotiv. Towards the provision of a public value, stakeholders involved will all have their own interpretation of the project's spatial quality, the provision of a project's management and maintenance schedule that addresses its riverine spatial quality could therefore shed a decent light on the discussion.

During the project's advocacy process, the project's approach towards its procurement and implementation of accompanying contractual degrees of freedom can be decisive. When offering relatively more degrees of freedom, one should emphasize the functional specification and operationalization of the project's objects. One should take advantage of the broad conceptualization of public value to make project's spatial quality a key success factor for realization of the overall project. By highlighting the interfaces of spatial quality with elements of the project's riverine area and its water safety, this approach leads to an increase in overall project support in both the project's direct environment and its administrative level.

7.2.2 Recommendations for negotiating public value

Balancing the recommendations made that address the project's advocacy process the project's political process should involve the landscape architect of the project's planning-study phase towards the project's actual implementation. Enabling the initial safeguarding of the project's spatial storyline, the involvement of the landscape architect should, however, balance clear working arrangements, functional roles, responsibilities and formal positioning within the overall project.

By including an ambition document or project vision, however, these documentations can be used as a basis for the project's actual procurement. A spatial plan is to be included whenever permits for construction works are to be granted. Ultimately, both documents should at least be aligned with one another. This highlights that the project's track for spatial planning, focused on project zoning and permits, and the project's procurement dossier should balance spatial quality evenly. The landscape architect involved in articulating project's spatial quality should enable a clear specification of the project's public value towards its procurement, formulating spatial quality and its interfaces together with the authors of the project's technical requirements for water safety. This holds that one is enabled to distinguish crucial details and details with a relatively minor spatial impact.

If the project's realization contract offers degrees of freedom in terms of design, spatial quality should be one of the project contract's award-criteria for selecting the economically most advantageous tender. The landscape architect of the project's planning-study phase and adequate and appropriate regional experts should balance and evaluate the spatial design of the tenders received.

7.2.3 Recommendations for operationalizing public value

Towards the actual realization of project's public value, the project's bureaucratic process should require the constructor to ultimately justify their design choices made towards the actual realization of project's spatial quality, balancing the principal's interest and that of the other project stakeholders. This memorandum should align with the project's spatial storyline, used by the quality-team to check whether the project constructor adequately balanced spatial quality towards their actual implementation. The spatial storyline therefore enables the constructor to consider his design decisions in an integrated context and balance whether crucial amendments require new design solutions.

Before the actual selection of a project constructor, one should require them to establish a spatial project vision before their actual project realization. The constructor can highlight their identified risks for project spatial quality towards its realization, provide adequate mitigating measures and safeguard the public value in line with the insights provided by the project's stakeholders.

7.2.4 Recommendations for additional scientific research

For further scientific research, two aspects of the developed conceptual framework are considered interesting to look into. The first aspect addresses the interaction between the various stakeholders in the identified stages of the decision-making process and the second aspect involves the key stakeholders' motivation to balance public value in a particular way. Addressing the aspect of actor interaction, the conceptual framework provides adequate opportunities to balance the position of the key stakeholders involved in the project's

decision-making processes. However, as the conceptual framework incorporates the project's multiple stages of the decision-making process, this would require an adjustment to the conceptual framework, in order to obtain an insight in the other stakeholders that influence the overall stages of the decision-making process. This fine-tuning is considered to involve the following two enhancements: Firstly, the conceptual model should incorporate an extension where stakeholders that influence specific stages of the decision-making process can actually be positioned. Highlighting the particular process stage that they (could) influence, the relationship between the key stakeholders involved and this add-on should highlight the underlying formal agreements made. Secondly, one should be enabled to highlight the stakeholder's actual influence on the decision-making process compared to other influential stakeholders and the key stakeholders involved in the specific stage of the decision-making process, for instance by indicating a relatively long connection for stakeholders that have relatively little influence and a relatively short connection for the stakeholders have more significant influence on specific stage of the decision-making process.

The second aspect that is considered worthy of for further scientific research addresses the key stakeholders' motivation for balancing public value in their particular way. In line with the insights provided by the conceptual framework that stipulates stakeholders' relationships and their underlying formal agreements that safeguard public value, identification of their motivation for balancing public value could provide an additional insight in how they would react on particular dynamics. On the one hand, this additional insight allows one to come up with a more appropriate valuation of the actor's interests and those assigned by their principal. On the other hand, identification of the actor's underlying motivation would present a more detailed and real-life representation of the project's decision-making process stages. The conceptual model, however, would provide a valuable insight in the effect of formal agreements on safeguarding public value.

Overall, this research only addresses the first three stages of the decision-making process in Room for the River projects. However, it is considered worthwhile to analyze and evaluate the project's actual provision process stage by the time the constructors of the selected case studies have completed their project's provision process. The evaluation of a project's provision process, however, is a time-consuming process that requires specific information of both the project principal and agent. Therefore the analysis of the project's provision process would require the consultation of both the public and the constructor, in order to adequately analyze whether the constructor actually improved the project's public value by its overall realization.

7.2.5 Answering the main research question

The preceding paragraphs held that a specific and more delineated articulation, negotiation and operationalization process is a prerequisite for adequately safeguarding project's public value. The conclusions drawn and recommendations distinguished suggest that there are various broad and specifically aimed measures and approached for safeguarding project's public value. Summarizing the insights gathered, the following recommendations to improve safeguarding of project's public value can be formulated:

- Involve a landscape architect from the very first inception of the project and enable his

involvement throughout the overall decision-making process and project's actual realization phase. Subsequently, the landscape architect should have adequate influence on the decision-making process and a prominent mandate.

- Safeguard project's public value by including images of reference and a textual consideration of the design decisions at hand to enable the project's initiator, executor and constructor to formulate a richer interpretation of the project's public value.
- If the realization and improvement of spatial quality is considered an important project objective, the project principal should address this aspect in the project's procurement plan, valuating spatial quality by means of criteria to select the economically most advantageous tender when applying a Design and Construct contract. When applying Best Value Procurement in a Plan, Design and Construct contract the constructor's expertise on spatial quality should be addressed accordingly.
- Increasing the degrees of freedom in terms of design for the project constructor enables one to benefit from the market parties' expertise. These degrees of freedom should be appointed and accompanied by reference designs and their contextual consideration, becoming more important versus an approach where the constructor's bandwidth for design is relatively limited.
- When balancing a Plan, Design and Construct contract, the political process should provide sufficient process agreements in order to safeguard the project's public value, such as the continuous involvement of a landscape architect that balances the position of public value versus the individual (private) interests of the project's stakeholders.

Summarizing these recommendations, formal project- and process agreements safeguard project's spatial quality for relatively large extent. However, by increasing the project team's understanding and awareness of the project's underlying spatial storyline, a leitmotiv can be developed that would further improve the safeguarding of public value towards project's realization. The improved understanding of dynamics and interaction during the project's stages of decision-making enable an improved understanding of the different principal and agent perspectives in the decision-making process in Room for the River projects. The findings gathered in the multiple case studies conducted, however, could also be used in practical applications and other projects and programs that intend to adequately safeguard public value. However, emphasizing the study of informal agreements made and acquiring of in-depth understanding of the influence of other stakeholders in respective stages of the decision-making process would be recommended in a follow-up research study, as these can be considered underexposed in this research project that focused on the formal agreements made between the key stakeholders involved.

Chapter 8. Research reflections

This final chapter presents the authors reflection on the research conducted, highlighting the overall research process and respective insights gained. The chapter firstly reflects on the formulation of the research's scope, approach, methods applied and eventually the results acquired. The chapter is finalized by highlighting the researcher's personal reflection of the overall research conducted.

8.1 Reflecting on the research conducted

The first step towards this research project was made in early September of the year 2012 when I applied for a graduate internship at Rijkswaterstaat, the Dutch Directorate-General of Public Works and Water Management. In just a few days I got their positive response and within the weeks that followed I formulated the initial scope of my research project, together with my external supervisor Cor Beekmans and additional supervisor Jeroen Rijke. After the formulation of my initial research scope I identified the accompanying research questions, approach and methodology. The formulation of the research's scientific framework proved more difficult then I first expected. However, with the help and insights provided by Ernst ten Heuvelhof, Bertien Broekhans and Leon Hermans, an appropriate framework was established and the actual research could be started. The application of the conceptual framework enabled the formulation of the preceding research results, conclusions and recommendations. In line with these findings, the following paragraphs reflect on the appointed research stages.

8.1.1 Formulating the research's initial scope

Starting my Master thesis research project at Rijkswaterstaat, the first consultations with my external and additional supervisors proved that the research' initial scope covered was relatively broad for a Master Thesis. Initially, my research's scope aimed at obtaining an in-depth insight in the position of spatial quality in the Dutch Room for the River program, focusing on the translation processes of spatial quality. To gather these insights I wanted to develop a conceptual framework that would help identifying the translation processes, the agreements made and assess the actual output of these agreements. However, the initial complexities faced in gathering underlying scientific literature that addressed these topics already proved to be a real challenge. Secondly, focusing my research on the entire Room for the River program, proved to cover too much ground. Balancing the insight that many different factors eventually might influence a decision-making process, such as actor's formal position, individual interests, political interests and formal agreements made, we narrowed-down my initial research scope.

Refocusing my research by limiting myself to the analysis and evaluation of formal agreements made between the key stakeholders involved, the project's initiator, executor and constructor, the overall research got more concrete. As the Room for the River program is organized by the PDR at a national level, we considered it feasible to keep the research focused at the program's level of abstraction.

8.1.2 Identifying the research's approach

To gather the necessary insights in the formal agreements that are made between the project's initiator, executor and constructor, initial data collection was considered crucial. The

proposition was made to combine a literature study with the conduction of interviews with renowned experts in selected Room for the River projects. The initial literature review exposed that the decision-making process in Room for the River projects was subject of preceding evaluation that highlighted the need for evaluation of project's safeguarding of spatial quality towards project realization. Successively, conducting interviews with renowned expert of specific Room for the River projects would enable the identification of key stakeholders involved, the stakeholders' role and relationship and the underlying formal agreements that intend to safeguard project's spatial quality. However, as scientific literature did not provide a framework for the analysis of these combined aspects, the level of abstraction for identifying project's spatial quality was broadened to identifying project's public value.

Where the initial research focused on the analysis of frameworks that safeguard public value, additional literature study and interviews helped me to define a proper conceptual framework for the initial analysis of the decision-making process in the Room for the River program. Combining this framework with the insights provided by Principal-agent theory, key stakeholders could be identified per stage of the overall decision-making process. In order to validate our initial findings, consultation with project managers of individual projects helped me with the initial validation of the adapted framework, using their common sense, expertise and in-depth knowledge about the Room for the River program. The interviews proved to be a valuable contribution in finding out whether the framework aligned with the real-life projects. Highlighting the formal position and actor's role in the decision-making process, their relationship was emphasized and an initial direction was presented of the most important underlying formal agreements made. Besides these insights gathered, the interviews also showed that it is difficult to address formal agreements to a subject as broad as project's public value in terms of spatial quality. However, the interviews did offer the opportunity to highlight that clearly formulated formal actor positions and their underlying formal agreements support the actual decision-making process. Case-specific characteristics turned out to be essential in the analyzed decision-making process of individual projects. Therefore we made the decision to focus on the individual project's formal agreements, versus those that address the position and safeguarding of public value in terms of spatial quality in the overall program.

8.1.3 Conducting the actual research

Taking a closer look at the methods applied in this research project, one notes that two methods are actually interlinked. First of all, the identification of multiple stages in the project's actual decision-making process enables one to pinpoint the key stakeholders per process stage. Secondly, principal-agent theory is applied to identify the project key stakeholders's relationships, emphasizing the formal agreements made that intend to safeguard project's public value.

However, the methods applied divided the project's decision-making process into four stages of which only three have been made subject of this research. These initial three stages allowed the identification of the project's initiator, executor and constructor. The respective stakeholders are contacted and enquired for a personal interview. Finding the necessary contact data was relatively easy, however, pinpointing an actual day and time proved very

difficult. Ultimately, all interviews with the respective key stakeholders were conducted and recorded. To enable the verification of these interviews all interviews are transcribed. This ultimately resulted in a documentation that covers over one hundred pages in total and a lot of effort invested. Due to the enormous amount of time invested in the transcription of the interviews conducted, one automatically wonders whether the actual outcomes balance the effort invested. Ultimately, I think this is in fact the case as noting just the interview's highlights does not allow one to recap the full statement made and the interviewee's context. However, as the interviews are conducted in the respondent's native language, Dutch, a translation step is required before one can actually use the findings in the research' project documentation. Here I realized that the Dutch and English language are not the best friend, as I experienced it very difficult to link Dutch words and sentences to the adequate English translation, without sacrificing some of its actual content.

8.1.4 Gathering research results

Towards the finalization of the overall research some interesting insights in the decision-making process of individual Room for the River projects is acquired. First of all, the research showed that the formal set-up of the Spatial Planning Key Decision provided all stakeholders involved a clear sense of urgency. The program's SNIP approach provided a clear set of 'rules-of-the-game', highlighting the project's milestones towards realization. However, addressing project's public value in terms of spatial quality I wondered whether the initial articulation of project's spatial quality actually provides a solid base for its consecutive negotiation and operationalization. In line with this insight, I provided several recommendations to improve the position of project's public value in terms of spatial quality throughout the overall project and towards its realization. On the other hand, the project's hydraulic objective seemed to be successfully embedded in the Room for the River's decision-making process stages. I did not find an exact explanation why the hydraulic objective is embedded so well compared to the programs other main objective. Balancing the outline of most interviews, the interviewees agreed that spatial quality in fact unites the different views one can have on the overall realization of a project, highlighting the opportunity to actually get something out of the decision-making process rather than only sacrificing their space for the additional safety from flooding. In line with this insight, all stakeholders acknowledge the importance of safeguarding project's spatial quality, however, only few pinpointed the project's opportunities for improving the projects public value.

When validating the initial insights of the overall research, these proved to be rather abstract and stakeholders involved found it hard to adequately empathize with the initial research findings. The review of the conducted interviews provided the required additional level of detailing and emphasized supplementary details of the respective stages of the project's decision-making process. This new information confirmed the research's initial findings, for instance that the project's political process does not sufficiently safeguard the project's spatial storyline as provided by the landscape architect involved in the project's planning-study phase.

Overall, the outcomes of the research conducted provide an relatively complete and colorful image of the decision-making process in Room for the River projects, highlighting the key stakeholders involved, their role and relationship and the underlying formal

agreements that intend to safeguard project's public value. As the research is focused on the project's advocacy, political and bureaucratic process, it does not reveal insights on the constructor's provision process. This process stage holds the most important knowledge gap in the research conducted, indicating opportunities for additional scientific research by the time the identified projects are completed.

8.1.5 Scientific and social relevance

Balancing the outcomes presented, one should consider that formal project- and process agreements are indeed essential to safeguard 'soft' values towards their realization. A manager's awareness of options to adequately safeguard riverine spatial quality towards project realization, however, might be this research's most profound result. Where the outline of a project's realization contract proves to direct the 'bandwidth' for developing riverine spatial quality, accompanying formal agreements tend to be even more decisive. As preceding scientific theory lacked about the provision of these formal agreements that safeguard 'soft' public values, my research concludes upon this discernment by pinpointing the need for formalized project- and process agreements to adequately safeguard public value without their 'hard' standardization towards project realization.

Emphasizing the social relevance of my research, improved safeguarding of riverine spatial quality tends to adequately improve the overall integration of water management projects. The improved riverine spatial quality consequently gives all the people of The Netherlands something beautiful in return for the sacrifice a few people made to acquire the aspired national level of safety from flooding, offering their privacy, land and sometimes even their house. Balancing the generalized outcome of my research, its evaluative insights are considered applicable to the Dutch Delta Program and respective international water management projects and programs as well.

8.1.6 Research's limitations

Limiting my evaluative research to the formal project- and process agreement between the project initiator, executor and constructor on safeguarding project's spatial quality provided me with a clear focus. However, this focus also tended to blind me for various other influential aspects. My research therefore does not necessarily present a holistic insight in all the formal and informal agreements present to safeguard riverine spatial quality of the respective case studies conducted. The fact that I initially passed on the evaluation of the projects' respective planning-study phase proved my first miss. Although subjected to preceding intensive study and evaluation, my research proved that interaction and overlap of many decision-making stages towards project realization are found during their planning-study phase. My research therefore had to addresses the projects' accompanying advocacy stage although the time I reserved for this was somewhat limited.

Where this research addresses three individual Room for the River projects of a total number of 34 projects included in the Room for the River program, the insights gathered in the respective decision-making processes do not necessarily provide one with a complete rich picture of decision-making in the entire Room for the River program. In line with this insight, none of the selected Room for the River projects is fully completed and therefore evaluation of the projects' provision stage was not yet possible. In line with this insight I made the decision to focus on the preceding stages accordingly, focusing on the decision-making

process towards project realization. This decision, however, relatively limited my conclusions drawn on projects' management and maintenance, stakeholders' experiences with system-based contract management (SCB) and the provision of riverine spatial quality to the local stakeholders. Following this research limitation, not all the respective stakeholders of the selected projects are interviewed. Where I decided to give priority to the identified key stakeholders involved in the project's decision-making process, other key stakeholders like interest groups and environmental organizations were abusively left out on the equation. Interviewing these parties, however, could have shed a decent light on their experience of the projects' decision-making process, stakeholder management and the ultimately improving my insight in the acquired level of riverine spatial quality towards project realization, enriching my overall conclusions drawn.

Partly due to my underestimation of writing, the periodic feedback moments proved a welcome contribution to my work. These moments enabled me to keep directing my own course whilst providing me with worthy adjustments to balance the actual direction of my research process. The next section will address my personal reflection of this approach and shed a more personal light on the research conducted.

8.2 Personal reflection

According to my mother my fascination for water all started with the first bath I had. As I cannot really recall this incident, the first memories that come to my mind are probably the high water levels of 1993 and 1995, growing up on a houseboat on the river Rhine near Arnhem. Reflecting upon the research conducted, I never thought that simple fascination could bring one this far.

8.2.1 A hurdles race

Assigned by Rijkswaterstaat as a graduate intern at the executive department of the Room for the River program I was proposed a research follow-up that I could tailor into an individual research project. Where my first try-outs proved too broad for a six-month scientific research, my initial research proposal required further delineation that proved a first set of hurdles.

With the help of my supervisors Ernst, Bertien, Leon, Cor and Jeroen we ultimately formulated a proper research scope within reasonable time, balancing the projects' focus and its evaluative limitations. The follow-up formulation of an accompanying scientifically sound conceptual framework, however, proved another hurdle. Consuming way more time than I originally anticipated, the formulation and detailing of my research's theoretical framework took me well over two months. On the one hand, reflecting upon the current theoretical framework as is, I think that I could have done this significantly faster. On the other hand though, the hurdles I took made me well aware of my own deficiencies and how to overcome them. Balancing this insight, I cannot say that my original planning came out just fine. Along some other hurdles I had to overcome, a stronger focus on the start of my literature research could have provided some additional speed during its analysis.

Due to the delay during my theoretical set-up of my research my enthusiasm and optimism cooled down and I consequently tended to role the empirical part forward as well. My supervisors tried to warn me, although my 'stubbornness' eventually made me experience this all this on my own. Eventually planning the interviews made me regain some speed

towards my planned mid-term meeting. While conducted more than the originally anticipated number of interviews I also felt that I regained my original drive for a quality result. Setting a hard deadline together with my supervisors for the interview transcriptions proved key, as these proved more hurdles to take. As transcribing the interviews took me quiet some time, I was pleased when receiving many positive reactions from the actual interviewees. Towards the green-light meeting, plenary sessions with designers, managers and representatives from various project executors of almost all Room for the River projects in The Netherlands made me realize that my conclusions drawn upon the interviews conducted did adequately address their perceived difficulties in safeguarding spatial quality towards project realization. Writing down the last chapters of my thesis therefore was way less laborious then I originally would have anticipated. As my supervisors helped me to maintain a relatively strong focus when writing my thesis, my original doubts were put aside. Towards the final version of my thesis, however, I moved and trimmed a lot of my original text. Trimming down the process descriptions of the case studies conducted was a lot harder than I thought, balancing the time and effort that I put in the months before.

Besides the sense of a quality outcome of my research conducted, finishing my thesis within about nine months, however, also came with some limitations. Making particular choices on scope, research demarcation and the research approach, I think that when I could have extended my research with another six months, some more of the projects' provision process could have been evaluated. Besides additional insights in the selected case studies, a fourth or maybe fifth case study could have been added as well, awarding the overall conclusions and recommendations drawn. Another side step that would have been possible with an extension of my research addresses the application of survey, balancing a more quantitative approach in gathering additional insights from residents within the project area.

8.2.2 Some final thoughts

Awarded a supervisory role during my internship in the official evaluative board of the Room for the River program allowed me to meet a lot of interesting people, experience new things and especially learn a lot about myself. Looking through the result of about nine months work I hope you have enjoyed reading my graduation thesis. Balancing the positive and helpful feedback I received to improve my work, I do not think that I could have done it without the unconditional support from my supervisors, my friends and of course my family.

Sander Greter

Delft, 3 July 2013

References

This chapter presents a full insight in this research's bibliography, presenting the original sources that were investigated and references of the interviews that are conducted in early 2013. In the follow-up subsections the list of figures and tables is addressed, presenting their full overview and accompanying page numbers.

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Appendices

Appendix A. Interview protocol

To collect the qualitative data necessary for this research, an interview protocol has been set-up according to the insights presented by Saunders, Lewis, and Thornhill (2009) and Yin (2002). This protocol is used for conducting interviews in the context of Sander Greter's thesis project.

This research project is aimed at evaluating the contribution of 'hard' formal agreements on safeguarding 'soft' project values. In order to get a sense of the contribution of formal project- and process agreements on safeguarding spatial quality, project initiators, executors and constructors in distinguished Room for the River projects are interviewed. The selection of these stakeholders is based upon their experience, knowledge, function and availability.

Interview objective

The primary objective of conducting interviews is to collect empirical data that contributes to answering the main research question. The main research question is divided over multiple sub-questions, aimed at identifying the contribution of formal project- and process agreements between project initiator, executor and constructor on safeguarding spatial quality.

By answering the research questions formulated in chapter one, the interviews that are conducted contribute to the overall scientific- and practical insight on how soft project values are safeguarded by formal project- and process agreements.

Results

The interview is set-up in such a way that it enables the interviewer to collect information about the interviewee and his or her perception about the following aspects:

- Formal project- and process agreements that play an important role in safeguarding spatial quality in Room for the River projects,
- The process that led to the formulation of these formal agreements,
- An indication of the factors that determine whether spatial quality in Room for the River projects is successfully safeguarded or not,
- An overview of the trade-offs made when the interviewee perceived that spatial quality was insufficiently safeguarded with formal project- and process agreements

Conducting interviews

At first the individuals that are to be interviewed are contacted via email. This email starts with an explanation of the context of the interview. If the interviewee responds positively to this email, a date for conducting the interview is scheduled. If the interviewee does not respond within two days after the email sent, the respondent will be contacted via phone whether he or she is interested in contributing to a Master thesis research. If the response is negative, there will be no further follow-up. The respondents that do want to cooperate, receive a short overview of the main points that

will be addressed during the interview a week before the actual interview takes place.

Description of the interview

Before the interview takes place, the respondent receive a short overview of the interview's context and multiple other important aspects, namely:

- The interview will be semi-structured, therefore interview questions are introduced by theme and specific project situations
- The interview addresses the interviewee's personal view, perception and consideration within a specific Room for the River project and therefore does not necessary needs to follow an organizational formal position
- Interview data will be used for research purposes only and will not be used in any other context than the Master thesis project by Sander Greter
- The interview itself will not use more than one hour
- The concept transcription of the interview will be sent to the interviewee
- The interview consists of four parts, an introduction (circa 5 minutes), questions related to specific situations within the project (circa 30 minutes), general questions on safeguarding of spatial quality with hard agreements (20 minutes), closing of the interview (circa 5 minutes).

Recording of the interview

All interviews are recorded on an audio carrier. These recordings are transcribed to an interview report. A draft version of this report is sent to the interviewee. In this report a note is included that states that the interviewee is allowed to make any adjust to the transcription as long as its fits within a reasonable time frame.

Introduction of the interview

A proper introduction is considered important in order to ensure mutual understanding between the interviewer and the interviewee. The following aspects are can be seen as a checklist:

- Introduction of the interviewer
- Tribute to the cooperation of the interviewee and why this important for the completion of the research
- Explain the background of the interview and check whether there are things that are unclear.
- Check if an audio recording is allowed
- Ask the interviewee to introduce him or herself in terms of current position within the project, experience and background.

Content of the interview

The starting point of the interview is to ask the interviewee about formal project- and process agreements that they experience as the most important to safeguard project's spatial quality. Secondly, some questions asked should also relate to the context of the formal agreements. Relevant questions are therefore considered to be the following:

- Can you name one or two formal project- and process agreements that you experience

crucial to safeguarding project's spatial quality?
- To whom are these formal agreements directed?
- Who do you consider responsible for safeguarding spatial quality in Room for the River projects?
- What role do other parties have, for example PDR, Rijkswaterstaat, municipalities, province or the water boards?
- How do you safeguard project spatial quality from project decision to project realization?
- How do you ensure its implementation?
- How is this action formalized?

In the light of the projects context, the following interview questions are formulated:
- Why do you think that it was necessary to make these agreements on spatial quality in this specific project?
- Would these aspects also be as critical in other Room for the River projects?
- Looking back on how spatial quality of this project is safeguarded, what should have been agreed upon differently from the start of the project?
- What do you think that the impact of this 'action' would be on the project outcome?
- What is the relation of this aspect to other challenges concerning spatial quality in this specific project?

Concluding the interview, the following questions are addressed:
- How would you measure whether project spatial quality is successfully safeguarded?
- If you could change one thing concerning the safeguarding of project spatial quality in Room for the River projects, what would this be?

Appendix B. Overview of interviewees

Interviews conducted at program level

Company	Function	Name
PDR	Program director	I. de Boer
PDR	Deputy program director / Director 'Kennis'	B. Broens

Interviews conducted at Overdiepse Polder

Company	Function	Name
Rijkswaterstaat	Front office expert 'Kennis'	P. Hakstege E. Houwing
Waterboard Brabantse Delta	Technical manager	K. Verbart
Hollandse Waard	Project manager	J. van Uden

Interviews conducted at Tollewaard

Company	Function	Name
Rijkswaterstaat	Front office expert 'Kennis'	H. Luiten
Rijkwaterstaat	Technical Manager	K. Wouters
Boskalis	Project manager	D. Zwemmer

Interviews conducted at Midden-Waal

Company	Function	Name
Rijkswaterstaat	Front office expert 'Kennis'	H. Luiten
Rijkwaterstaat	Technical Manager	H. Hector
Paans	Project manager	M. Slagboom