5 July

2019

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‘What is at stake?’ Successful participation in road infrastructure projects

A CASE STUDY INTO PARTICIPATORY PROCESSES APPLIED BY ANTEA GROUP DURING THE N35 PROJECT IN THE NETHERLANDS

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Preface (Dutch)

Dit zijn de laatste woorden die ik aan dit rapport toevoeg. De afgelopen tijd heb ik onderzoek gedaan naar participatie in wegenprojecten in Nederland. Dit rapport is daar het resultaat van. Toen we eindelijk aan onze eindopdrachten konden beginnen was ik ontzettend blij. Eindelijk kon ik mijn interesses in enerzijds infrastructuur en anderzijds stakeholder management kwijt, niet ten minste omdat ik de diepgang op dit onderwerp altijd een beetje miste tijdens mijn opleiding. De grote rijkswegen waar zoveel mensen elke dag over heen rijden fascineerden mij als kind al. De mogelijkheid die ik kreeg om al deze interesses te combineren heb ik van harte aangekomen. Dit rapport beslaat één van de meest leuke en leerzame ervaringen van mijn bachelor aan de Universiteit Twente.

Hierbij wil ik alle betrokkenen bij dit onderzoek van harte bedanken voor hun medewerking. De grootse steun kwam van mijn begeleiders, Joanne vanaf de universiteit en Peter in Deventer voor Antea Group. Met de vele feedbackgesprekken, mailtjes en sparsessies hielpen jullie mij om een berg aan informatie gestructureerd in mijn hoofd en in dit rapport te krijgen. Het enthousiasme waarmee Joanne mij begeleid heeft was aanstekelijk. De meer dan uitgebreide feedback en sturing hebben mij ontzettend geholpen om deze opdracht tot een goed einde te brengen. Door mij een groot scala aan literatuur te bieden kon ik op een gestructureerde manier mijn opdracht vormgeven. De steun van Peter binnen de organisatie was fantastisch. Niet alleen wist hij altijd bij wie ik terecht kon of met wie ik eens moest gaan praten, maar de scherpe analyses en leuke verhalen hebben mijn tijd bij Antea Group uiterst plezierig gemaakt.

Antea Group is een fijne organisatie geweest om dit onderzoek voor uit te voeren. Vanaf het eerste gesprek met Jacco en Paul had ik er een goed gevoel over. Op het kantoor in Deventer voelde ik me welkom en dat blijkt wel uit de wederzijdse interesse die er is voor elkaar en elkaars werk. De gesprekken met collega’s hebben mij vaak verder geholpen als ik ergens vast kwam te zitten. Graag wil ik jullie allemaal bedanken voor de gezelligheid, kopjes koffie en voorproefjes van civiel werk in de echte wereld.

Er zijn veel mensen die hun kennis en ervaringen met mij wilden delen. Mijn dank gaat uit naar Eric, Maike, Harm, René en in het bijzonder Paul voor hun tijd en enthousiasme tijdens de interviews. Het was fantastisch om meer kennis op te doen en discussies met jullie te voeren over de onderwerpen van dit onderzoek.

Deze eindopdracht heeft bijgedragen aan mijn motivatie om de komende twee jaar twee masters te doen. Na de zomer zal ik beginnen aan ‘Construction Management and Engineering’ en daar komt over een jaar ‘Public Administration’ hopelijk bij.

Simon Peter Agterhuis,

Enschede, 5 juli 2019

Executive Summary (Dutch)

In grote wegenprojecten in Nederland moet participatie plaatsvinden. De Tracéwetprocedure verplicht dit, maar hoe wordt in het midden gelaten. Met de invoering van de Omgevingswet krijgt participatie een nog grotere rol in ruimtelijke projecten (Informatiepunt Omgevingswet, sd). Tegelijkertijd moet veel infrastructuur in de komende jaren vervangen worden. Urbanisatie en publieke weerstand maken het moeilijk om deze wegenprojecten op tijd en binnen budget af te ronden.

Volgens de Tracéwet moeten belanghebbenden bezwaar kunnen maken tegen de voorgenomen plannen tijdens een groot wegenproject. Tijdens de planuitwerkingsfase is er de mogelijkheid tot het insturen van zienswijzen na de publicatie van het ontwerptracébesluit. Een participatieproces kan als doel hebben om weerstand vanuit de omgeving te verminderen. Derhalve is het interessant om de relatie tussen het participatieproces en de hoeveelheid zienswijzen te evalueren.

Antea Group voert voor Rijkswaterstaat planstudies uit bij Tracéwetprojecten. Het bedrijf is hierbij ook verantwoordelijk voor het participatieproces. Zo ook bij het project N35 Nijverdal – Wierden, waar de rijksweg N35 tussen Nijverdal en Wierden wordt opgewaardeerd naar een stroomweg. Het participatieproces was uitgebreid. Desalniettemin werden er veel meer zienswijzen ingediend dan verwacht. Eén van de doelen van Antea Group is om een participatieproces succesvol uit te voeren en zo het aantal zienswijzen in toekomstige projecten te minimaliseren. Het doel van dit onderzoek is om advies te geven om dit te bewerkstelligen en heeft daarom de hoofdvraag:

'Hoe kan Antea Group zijn participatieprocessen bij grote wegenprojecten verbeteren om het aantal zienswijzen te verminderen?

Met behulp van literatuuronderzoek en een casestudie is deze vraag beantwoord. Het theoretisch kader uit literatuuronderzoek is gebruikt om de casus en het bijbehorende participatieproces te analyseren. De casus naar het project 'N35 Nijverdal – Wierden' is geschikt voor het onderzoeksdoel en is bestudeerd met de analyse van documenten en het houden van interviews. Er zijn ook interviews met interne experts gehouden om de externe validiteit van het onderzoek te verhogen. Deze interviews gingen over de vraag hoe gangbaar de kenmerken van het project zijn,

Uit literatuuronderzoek blijkt dat de Tracéwet een besluitvormingsprocedure is voor rijkswegenprojecten in Nederland. De besluitvormingsprocedure kent een startbeslissing en een verkenning, waaruit een voorkeursalternatief volgt. In de planstudie wordt dit voorkeursalternatief tot een ontwerptracébesluit uitgewerkt. Na het verwerken van de zienswijzen op dit OTB wordt het definitieve Tracébesluit gepresenteerd, waarna bij de Raad van State in beroep kan worden gegaan. Volgens literatuur hebben participatieprocessen verschillende dimensies. Ze hebben doelen, identificatiemethodes, categoriseringsmethodes en participatiestrategieën voor deelnemers en activiteiten. Door het doorlopen van deze dimensies kan men een participatieproces ontwerpen. Zienswijzen kunnen geanalyseerd worden aan de hand van verschillende aspecten gerelateerd aan de identiteit en betrokkenheid van de indieners. Ook de inhoud van de zienswijzen en informatie over de structurering van de 'probleemoplossing' combinatie zijn onderdeel van deze aspecten.

Uit de casestudie blijkt dat Antea Group bij het participatieproces van de N35 veelal focuste op het bereiken van zoveel mogelijk 'waarde', ofwel het ontwerpen van de 'beste' weg. Hiervoor was het belangrijk om zoveel mogelijk relevante informatie te verzamelen, veelal van professionele partijen. Het resultaat zou zoveel mogelijk belangen dienen en zo mogelijk het aantal zienswijzen verminderen. Deelnemers voor activiteiten werden in overeenstemming met Rijkswaterstaat gekozen via een stakeholder analyse. Dit is een zogeheten top-down werkwijze. De georganiseerde activiteiten waren enerzijds KES-gesprekken en anderzijds locatie specifieke bijeenkomsten. Het OTB werd toegelicht aan geïnteresseerden in een informatiebijeenkomst.

Uit een analyse van de zienswijzen blijkt dat de overgrote meerderheid van de zienswijzen wordt ingediend door bewoners. Zij zijn vaak niet betrokken bij participatieactiviteiten en voelen zich niet gehoord. Hun klachten gaan meestal over de onderwerpen geluid, scope en effecten op natuur en milieu. Veelal dienen zij de zienswijze in omdat hun eigen belang wordt geschaad (NIMBY). Ze zijn het niet eens met het gebruik van wettelijke normen voor de 'schadelijkheid' van de gevolgen en doelmatigheid van mitigerende maatregelen. Er bestaat onzekerheid over de effecten van de N35 en de onderzoeksmethodes die gebruikt zijn om die effecten te bepalen. Er bestaat ook onzekerheid over de kosten van alternatieve ontwerpen. Concluderend is de onenigheid over de probleemoplossing combinatie die gepresenteerd wordt in het OTB ongestructureerd.

Uit de interviews blijkt dat het project N35 Nijverdal - Wierden gelijkenissen, maar ook verschillen vertoont met andere Tracéwetprojecten. Het project is onder andere speciaal omdat het tracé gedeeltelijk wordt verlegd door een waterwingebied, de hoofddoelstelling verbetering van de verkeersveiligheid betreft en de nadruk die door Rijkswaterstaat wordt gelegd op het participatieproces. De gelijkenissen bestaan uit het feit dat de weg wordt opgewaardeerd naar een stroomweg en de aanwezigheid van ontwerpobjecten zoals ongelijkvloerse kruisingen en een ecoduct. Ook gaat de KES-werkwijze standaard worden toegepast bij toekomstige Tracéwetprojecten.

De resultaten leiden tot verschillende aanbevelingen aan Antea Group om het participatieproces te verbeteren om het aantal zienswijzen te minimaliseren in toekomstige projecten. Dit onderzoek beveelt aan om:

- *Te evalueren of de focus van een participatieproces moet liggen op het maximaliseren van waarde, omdat dit leidend is bij het ontwerpen van een participatieproces.*

Deze focus leidt er namelijk toe dat de vaak minder professionele mogelijke indieners van zienswijzen niet voldoende worden betrokken en daarom niet in staat zijn hun zorgen uit te spreken.

- *Ook een bottom-up werkwijze toe te passen bij de identificatie van deelnemers voor een deel van de activiteiten zoals de locatie specifieke bijeenkomsten*.

Deze bottom-up werkwijze zorgt ervoor dat stakeholders die hun zorgen willen uiten zich met wellicht nuttige informatie kunnen melden. Het helpt het projectteam om te bepalen welke stakeholders zich betrokken voelen bij het project en mogelijk een zienswijze zullen indienen.

- *Een bijeenkomst tijdens de planstudie te organiseren om de onderzoeksmethodiek en gebruikte wettelijke normen voor effecten, in het specifiek geluid, doelmatigheid van mitigerende maatregelen en financiering van alternatieve ontwerpen toe te lichten aan met name omwonenden, die direct gevolg ondervinden van externe effecten.*

Door het wederzijdse begrip van kennis en normen, wat deze bijeenkomst bewerkstelligd zullen veel indieners geen zienswijze indienen. Ze begrijpen de ontwerpkeuzes beter. Veel zienswijzen werden ingediend vanuit eigen belang (NIMBY). Een meer persoonlijke benadering van deze groep indieners kan voorkomen dat zulke zienswijzen worden ingediend.

Enige nuance is belangrijk bij deze aanbevelingen, omdat het doel van een planstudie niet alleen is om een laag aantal zienswijzen te bereiken. Sterker nog, het maken van een goed OTB is belangrijker. Ook speelt de onzekerheid, onbekendheid en gevoeligheid van informatie rond bijvoorbeeld externe effecten en financiering een rol bij het organiseren van dergelijke bijeenkomsten. Het is niet gezegd dat de aanbevolen bijeenkomst zijn doel bereikt, simpelweg omdat het kennisverschil tussen potentiële indieners en het projectteam mogelijk te groot is. Veel van de verbeteringen kosten de nodige tijd en geld om uit te voeren. Ook al levert een laag aantal zienswijzen een mogelijke tijdsbesparing op tussen het OTB en het TB, dan nog is het de vraag of het doelmatig is om deze aanbevelingen toe te passen.

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		***Dutch Translation**:*
CRM	Customer Requirement Meeting	*Klanteisspecificatie*
DTD	DTD	*Ontwerptracébesluit*
ED	Elementary Design	*Elementair Ontwerp*
EIS	Environmental Impact Statement	*Milieu-effectenrapport*
FD	Fitting Design	*Inpassend Ontwerp*
GIS	Geographic Information System	*Geografisch Informatiesysteem*
IPA	Infrastructure Planning Act	*Tracéwet*
LSM	Location Specific Meeting	*Locatie specifieke bijeenkomst*
MCA	Multi-Criteria Analysis	*Multicriteria Analyse*
MIRT	Multi-Year Program for Infrastructure, Public Space and Transport	*Meerjarenprogramma Infrastructuur Ruimte en Transport*
MIWM	Minister of Infrastructure and Water Management	*Minister van Infrastructuur en Rijkswaterstaat*
NIMBY	Not in My Backyard	*Niet in mijn achtertuin*
N35	N35 Freeway	*Rijksweg N35*
TD	Track Decision	*Tracébesluit*

1 Introduction

Operations in major road, railway and waterway projects in the Netherlands are done in accordance with the Infrastructure Planning Act (IPA, Dutch: Tracéwet). This legal framework ensures that decision making procedures regarding road infrastructure projects are thorough and structured (Gierveld, 2016). Several changes have been made to the framework over the years and as of 2012, the obligation to 'contact the environment' has been implemented into the law. However, it has been customary practice for years, with Rijkswaterstaat researching methods to use interaction with the environment to develop policy as far back as 1997 (Meesters, Enthoven, & Snepvangers, 1998).

The result is a law where participation through 'participatory processes' must occur over the course of road infrastructure projects. The Draft Track Decision (DTD, Dutch: Ontwerp-tracébesluit) and the Track Decision (TD, Dutch: Tracébesluit) are to be made available to the public and every piece of formal written feedback regarding these Decisions, known as 'Views' needs to be addressed. If the initiators are not satisfied with the assessment and handling of their 'Views', they may choose to start a Legal Appeal after the TD has been published. Such an extension of project duration is not desirable, due to the additional resources necessary, both in terms of possible delays and funding.

In 2021 the new Environment and Planning Act will be implemented in the Netherlands. It will replace all current laws on spatial planning and public space including the IPA. Participation will become more important and every governmental body needs to guarantee and elaborate on the use of participation in spatial projects. (Informatiepunt Omgevingswet, sd)

This is the report of research that was conducted for Antea Group. Central to this research was the question on how this company can improve its methods of conducting participatory processes, considering current and past developments in an infrastructure project concerning the widening of the N35 freeway (N35) road in the Netherlands.

1.1 Background

An extension of road infrastructure project duration is not desirable, due to the additional resources needed, especially to the client Rijkswaterstaat. This problem can be viewed in relation to ongoing societal developments and scientific phenomena. This will be done to further illustrate its relevance to Antea Group.

Antea Group is a Dutch engineering and consultancy firm. First, there will be major investments in infrastructure, which means Antea Group will have opportunities to increase its revenue. Globally, major infrastructure is nearing its end of life and investments of a total of 35 to 40 trillion dollars are needed to improve and replace it (Airoldi, Biscarini, & Saracino, 2010). To combat further traffic congestion the Dutch government intends to invest over 19 billion euros on the improvement of existing and construction of new roads up until 2030 (Rijkswaterstaat, 2019).

At the same time, increasing urbanisation across the globe will put more pressure on existing road infrastructure and has major implications for liveability, for instance through increased risks to health. Between 2005 and 2040 the proportion of the population living in urban areas will increase from 49 to 60 percent, with 81 percent of the population of developed regions living in cities (International Federation of Surveyors, 2010). This urbanisation will increase the number of affected citizens and therefore the amount of interests needed to be considered in projects with high spatial influences, such as major road infrastructure projects. The stakes of decision-making processes will be higher than ever.

Furthermore, a yearly assessment of delays in major road infrastructure projects between 2010 and 2017 found that on average 15 percent of projects is delayed (Groot, 2017). Time overruns or delays

are a known cause for cost overruns and the waste of public resources (Singh, 2009). Causes for these problems are poor management, such as slow decision making, poor planning, including changes to design specifications, rework and poor procedure management (Adam, Lindahl, & Josephson, 2015). While techniques of cost estimation have improved the occurrence of cost overruns has overall not decreased in the last decennia (Cantarelli, Flybjerg, Molin, & van Wee, 2012). It is therefore emphasized that cost overruns are more often caused by physiological and political-economic factors, rather than technical factors. Overrunning of costs occurs less in the Netherlands in comparison to other countries and budget overruns in the Netherlands are rather a planning problem than a management problem (Cantarelli, Flybjerg, Molin, & van Wee, 2012). This means that improving participatory processes, especially in the Netherlands is necessary to prevent budget and time overruns from occurring.

A scientific phenomenon known as public opposition is relevant to road infrastructure projects (Coppens, van Dooren, & Thijssen, 2018). The replacement or expansion of current road infrastructure is often vital to society but also results in severe negative externalities for a specific but small part of the population (Esaiasson, 2014). This causes public opposition or lack of public acceptation (Coppens, van Dooren, & Thijssen, 2018). Public opposition has been defined in a multitude of ways, the first one being the 'Not-In-My-Backyard' (NIMBY) principle. This idea is defined as opposition of citizens to the placement or construction of a public facility for selfish or parochial reasons. This theory has found low empirical support and other theories, which are more favourable, propose that public opposition is due to ideological concerns regarding social justice and ecological sustainability (Esaiasson, 2014).

The urbanisation mentioned also has implications for public opposition. Cities enable for citizens to collaborate and communicate and are therefore a catalyst for successful protests (Glaeser & Steinberg, 2017). A key factor in escalation of public opposition into actual protests or legal appeals against major infrastructure projects is this social interaction.

Participatory processes are defined as 'the interaction of experts such as planners, ecologists, engineers or water managers with lay people throughout a planning procedure with the aim of including the perspectives and views of these lay people to support a decision-making process' (Krywkow, 2009, p. 45). These participatory processes can be designed along numerous dimensions, often including goals, identification and categorisation of participants, strategies and activities. One of the goals of participatory processes is to benefit project implementation and reduce public opposition to road infrastructure projects. An empirical analysis on whether a participatory process design along those dimensions is beneficiary to project implementation is missing in literature.

1.2 Problem Context

Antea Group is an Dutch engineering and consultancy firm and participates as such in major infrastructure projects. These projects are often commissioned by Rijkswaterstaat, the organisation responsible for the construction and maintenance of major infrastructure in the Netherlands. This research will focus on a recent road infrastructure project concerning the widening of the N35 road from 1x1 lanes to 2x2 lanes and raising of the speed limit from 80 to 100 km/h between the towns of Nijverdal and Wierden. In this project Antea Group took care of the Plan Detailing phase, where the results of the Exploratory Phase were used to create detailed designs. Antea Group was not legally mandated to do further participation, but the tender offer for this road infrastructure made it a big scoring aspect. As a result, Antea Group promised Rijkswaterstaat to conduct further participatory process, in which stakeholders' requirements were gathered. This was done to increase the project's 'value' and Antea Group as well as Rijkswaterstaat thought it would therefore also benefit its implementation and limit the amount of public opposition. Even so, after the DTD was made public, 304 Views were handed in. After assessing and responding to these Views the final plans were published in the TD. However, in the end, 21 citizens from Wierden applied for a Legal Appeal at the

Council of State (Cellarius, 2019). How did this occur even when the participatory process' aim was to prevent it? The company has its own vision on how to execute participatory processes, not necessarily based on scientific literature, but rather on experience. Antea Group wants to gain insight into possible errors or opportunities for improvement in their methods for participation, with the aim of reducing Views to the DTD. This will in the end benefit the company's commercial position relative to its competitors. When it can conduct participatory processes more effectively and efficiently than them, Antea Group has more qualifications to win future tenders on.

The *problem statemen*t therefore is as follows:

Antea Group wants to successfully execute participatory processes to benefit the timely implementation of road infrastructure projects. This will result in effective use of financial resources. The participatory process they used in the N35 project resulted in more Views than expected. Scientific literature on participatory processes, and phenomena like Public Opposition and NIMBY might provide explanations for this problem, but a literature gap exists in the application of these theories to road infrastructure projects. Upcoming investments in infrastructure will result in more projects, while urbanisation will further complicate these projects, due to the increase in stakes and stakeholders. All in all, this research will solve a problem highly relevant to both Antea Group, society and science.

2 Research Plan

After the problem context, background and its relevance have been explained the research plan can be elaborated on. This chapter discusses the research objective along with the research questions and the main strategy. Then the key concepts and definitions needed to understand those questions will be given, after which the scope and limitations of the research will be explained.

2.1 Objectives, Research Questions and Strategy

This research assumes that a well-designed, high quality participatory process can contribute to successful project implementation with low public opposition. This would mean that a high-quality participatory process would lead to a minimal amount of Views handed in after the DTD of a road infrastructure project has been published. This claim is not supported by scientific literature, since there is a gap in the literature addressing the link between successful design and successful implementation. Presuming this hypothesis, the problem statement and therefore the objective of this research will be:

To identify possible improvements of the participatory processes used by Antea Group in major road infrastructure projects with the goal of limiting the amount of 'Views'.

To achieve this, it is necessary to define what participatory processes are and how their characteristics can be described, mainly their goals and what makes them a success. Also, it is necessary to elaborate on the legal framework for major road infrastructure projects and specifically the role of participation in that framework. To gain new insights we examine the N35 Nijverdal Wierden road project and its participatory process as a case study. Subsequently it is required to assess whether it was a success and connect the theoretical definition of success with the 'Views' handed in. Afterwards it can be determined which *general* conclusions can be drawn from the results of this single project analysis and how they can be inferred into implications for future projects.

To achieve the research objective the following main research question has been defined:

'How can Antea Group improve its participatory processes in major road infrastructure projects so that the amount of 'Views' can be decreased?'

The following sub-questions are derived from this main question:

1. How is participation embedded in the legal framework for major road infrastructure projects in the Netherlands?
2. How can participatory processes be described according to literature in terms of goals, identification of participants, strategies and activities?
3. What is the relationship between the occurrence of Views and participatory process' success in terms of project implementation?
4. How can the N35 project and the participatory process up from the Decision to Start until the Note of Reply as applied by Antea Group be described?
5. What patterns in terms of participatory process success in the N35 can be drawn from an analysis of the 'Views' handed in after the publication of the DTD?
6. How does the N35 Nijverdal - Wierden Project compare to other IPA Projects Antea Group has experience within terms of the scope and Exploratory Phase, participatory process design, project specific elements and View Patterns?

Question *1, 2* and *3* will be answered using a literature study of both peer reviewed articles from scientific journals and other sources. Question 1,2 and 3 are relevant because they will provide the framework for characterisation and evaluation of the case, used for the other questions. Questions *4*, 5 and 6 will be answered using the N35 Project as a case study, based on document and data analysis. The sixth and last question will be answered using a set of interviews with employees of Antea Group. All these interviewees will be experts with experience in road infrastructure projects, Plan Detailing Phases and participation. The topic of this meeting will be how the N35 project compares to other major infrastructure projects and what implications that notion has for the results of the research in relation to other projects.

2.2 Key Concepts and Definitions

To answer the research questions, key concepts and their definitions need to be defined as to understand 'what' this research will exactly concern.

Participatory Process: 'the interaction of experts such as planners, ecologists, engineers or water managers with lay people throughout a planning procedure with the aim of including the perspectives and views of these lay people to support a decision-making process' (Krywkow, 2009, p. 45).

Infrastructure Planning Act: (Dutch: *Tracéwet*)*:* Most important Dutch act in the field of the planning of new national infrastructure projects. This means it provides a planning framework for projects concerning the construction of new and modification of national motor- rail- and waterways. It incorporates aspects from the Environmental Management Act (Dutch: Wet milieubeheer) and Spatial Planning Act (Dutch: Wet ruimtelijke ordening) (Hobma & Jong, 2016).

Major Road Infrastructure Project: As defined by the IPA, a construction project concerning the modification, upgrading, such as widening or redesigning junctions or construction of a road of national importance, mainly high- or freeways (Hobma & Jong, 2016).

Rijkswaterstaat: 'executive agency of the Ministry of Infrastructure and Water Management, responsible for the Dutch main road network, the main waterway network, the main water systems, and the environment in which they are embedded.' (Rijksoverheid, sd)

*View (*Dutch: *Zienswijze):* A written document containing the opinion or objection of an involved party or 'stakeholder' (legal person or entity) to a DTD, addressed to the governing authority, in this case the Minister of Infrastructure and Water Management.

*Legal Appeal (*Dutch: *bezwaarschrift/beroepsschrift):* A written document in which formal objection is made against a TD addressed to the Administrative Jurisdiction Division of the Council of State. This document is the beginning of a legal procedure, where the Council of State can in the end nullify the decision of the Minister. It is important to note that the decision is judged on its *legal* grounds and not whether it reflects is the 'right' policy.

Stakeholder: A popular definition of this term by Freeman (1984, p. 46) was adapted to fit the scope of this research: '*any group or individual who can affect or is affected by the achievement of the projects' objective*'. 'Stakes' are interests in certain activities, and stakeholders are individuals or groups with said interests, since they are either positively or negatively affected by a project. They have claims, rights and expectations that ought to be honoured (Chinyio & Olomolaiye, 2009).

Public Participation/Stakeholder Engagement: The interaction with lay-people can be generally referred to as stakeholder participation, but when it specifically encompasses the 'meaningful involvement of the relevant members of the target populations in different stages of a policy development process' it is referred to as Public Participation (Hasan, Nahiduzzaman, & Aldosary, 2018). Stakeholder Engagement is the process of identifying and incorporating stakeholder concerns, needs and values in the decision-making process (Cascetta & Pagliara, 2013).

Figure 1 shows the relations between the Key Concepts and their position within the scope of this research.

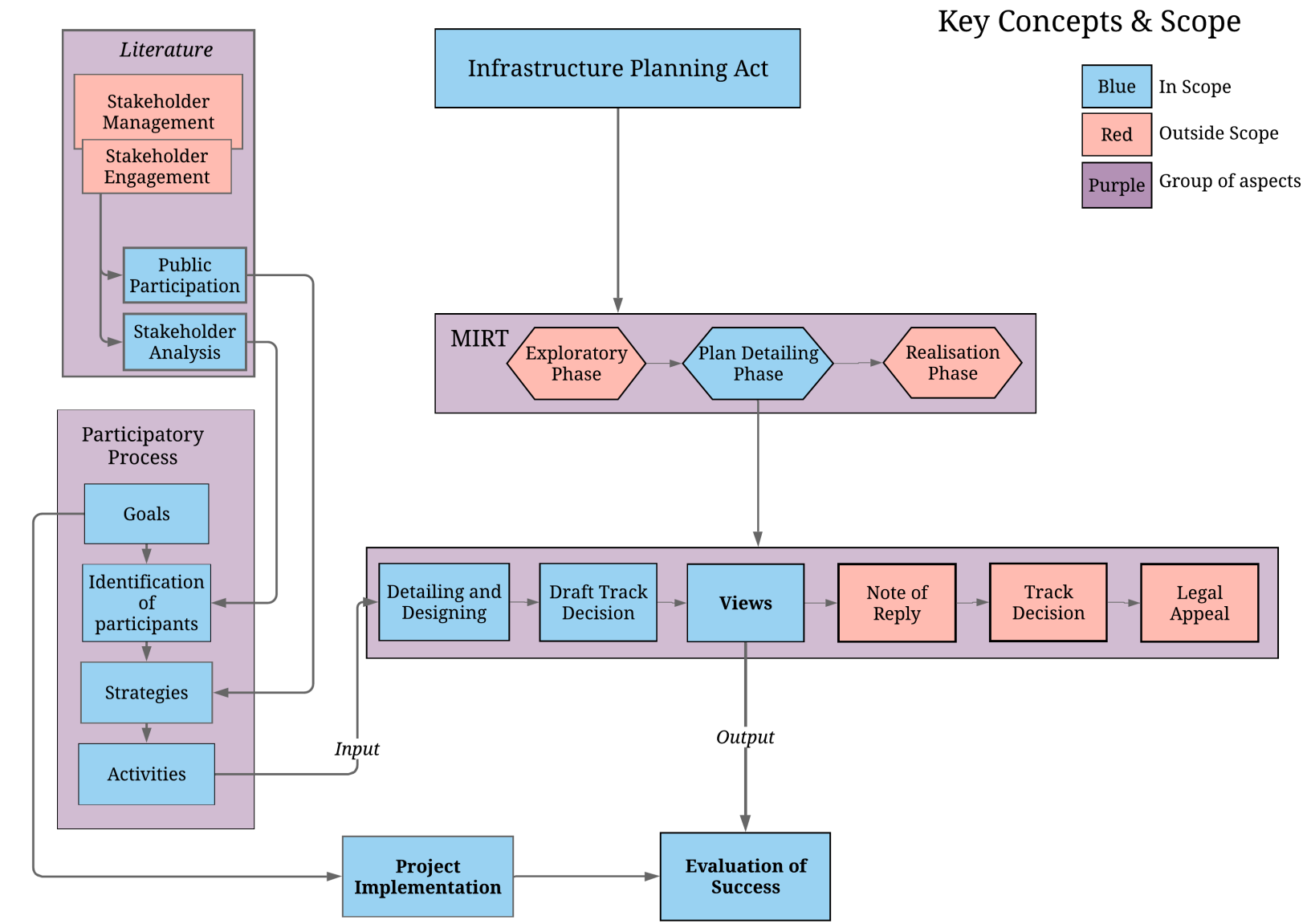

Figure 1: Flow Diagram of Key Concept Relations and Scope

2.3 Scope and Limitations

Below the relevant theories and boundaries of the proposed research will be explained. This is necessary to inform the reader about which principles and parts of the project will be examined and to ensure the scope complies with the completion of the research in a timely manner.

Participatory Processes and Stakeholder Management

Participatory processes are a part of Stakeholder Engagement, a phase in the much broader term Stakeholder Management. Since this research is of a more inductive nature, it does not require a full explanation of participatory processes in relation to Stakeholder Management. For this research it is assumed that even though the participatory process had a scope much wider, the Views are predominantly sent in by affected citizens. This means that the description of participatory processes in this research paper is related more to 'Public Participation' or 'Citizen Participation'. Relevant aspects of this participatory process are goals, identification of participants, strategies, activities and success evaluation.

Analysis of Views

The Views will be analysed in a brief way, meaning the topics of interests will be the involvement of initiators, their identities, the complaint categories, the occurrence of NIMBY-ism within the Views and the assessment of problem types. In short, this research will not be about which party was 'right'. The issue at hand is why this discussion 'escalated' into a View.

Available Time

Most of the limitations to this research are a result of the limited amount of time available. The research needs to be conducted in 10 weeks, with a 40-hour workweek. Ideally, this research would encompass multiple finished road infrastructure projects, selected on the basis of similar physical characteristics. This would ensure that the conclusions drawn are thorough and generalizable. This time limit means research methodology and scope had to be adjusted to make for a practically viable research plan and therefore that the description above is only carried out for one project.

Project Specific Limitations

The project at hand is in its final phase before realisation can commence. The TD with final set of designed measures has been approved and signed for by the Minister. As mentioned in the introduction, the legal appeals are under review by the Council of State at the time of writing this research. The response to and assessment of Legal Appeals is also part of a participatory process, but this part cannot be reviewed because the procedure is ongoing.

At the same time this project's route between Nijverdal and Wierden has location specific issues. The general description of those issues applies to other road infrastructure projects as well, but the Views handed in will most likely concern highly specific sections of the road or intersections. This limits the generalisability of the conclusions drawn.

The IPA prescribes two possible procedures with their own demands for participation for major road infrastructure projects. Though these procedures do not differ too much, it inherently means the conclusions drawn from these results will apply less to projects executed according to the other procedure. The 'major' procedure in this case has one more legal requirement for participation than the 'regular' one used during the N35 project.

Methodology

The methodology has limitations too, since by only conducting a literature study into participatory processes and a document analysis of Views a possibility for clarification of written information is lost. An interview with for instance initiators of Views would solve this issue but the available time for this research renders that impractical.

The single case study to be explained comes with limitations to the generalisability of the results and the risk of 'putting all the eggs in one basket'. This is simply due to the reason that Antea Group as of now has no access to other historical IPA road infrastructure projects in which they organised the participatory process in the Plan Detailing Phase.

The only way to map and evaluate the participatory process and its results is through the documents available on the internal server of Antea Group. This limits the research to the documenting of the process done by Antea Group. Since participatory processes are inherently of an iterative nature, this complicates and possibly limits the mapping of the process to internal methods, which cannot be evaluated.

The interviews have the limitation that all participants will be internal employees of Antea Group. It would have been interesting to inquire several involved stakeholders with experience in road infrastructure projects, such as the client Rijkswaterstaat or involved municipalities on how 'common' or 'normal' they perceive the N35 project to be in relation to other projects. This limitation means that the validation of the results of the set of interviews will be limited. Confidentiality will be maintained by not publishing a list of participants of this meeting and anonymising any information used in the final report.

3 Literature Study

This chapter defines a theoretical framework through the execution of a literature study. The legal framework for projects concerning national road infrastructure projects is elaborated upon. Multiple aspects of participatory processes will be explained to help classify currently applied strategies as well as a definition for 'successful' participatory processes.

3.1 Methodology and Sources

The sources used to define the legal framework for road infrastructure projects were gathered using the search engine of Google, using the Dutch keywords: 'Tracéwet', 'Tracéwetprocedure', 'Participatie', 'Zienswijzen','Infrastructuurprojecten' and 'N35'. A book by F. A. M. Hobma and P. Jong called '*Planning and Development Law in the Netherlands*' was used as well.

Possible sources of information had to adhere to the following criteria:

- May not be older than 10 years
- Published by government entities, advisory bodies or experts, meaning information from blogs or other websites is not included

For the part concerning dimensions of participatory processes the search engine of Google Scholar, and ScienceDirect by Elsevier were used. These databases were used to gather information related to participatory processes, stakeholder management and their relation to construction and infrastructure projects. For this the following search key words were used in various combinations: 'infrastructure projects', 'construction', 'road', 'highway', 'public participation', 'citizen participation', 'stakeholder', 'engagement', 'identification', 'mapping', 'management', 'project management', 'stakeholder power', 'NIMBY', 'protest', 'reason', 'motivation', 'resistance' and 'public opposition'.

- Scientific articles need to be peer-reviewed and have been published in respected scientific journals

- Can be of both a qualitative and quantitative nature
- Need to discuss above mentioned terms in relation to, preferably, but not limited to road construction projects
- Preference for articles researching or evaluating projects in the Western world or internationally
- Preference for articles written after 2000, since articles older (than 2000) are often included in literature review articles published more recently (after 2000) and the possible invalidation and correction of those theories is considered

3.2 Road Infrastructure in the Netherlands

The legal framework for major road infrastructure projects in the Netherlands is defined as said before by the so-called IPA. In its first article it states the types of infrastructure it applies to. A 'major road' is described as a 'highway or freeway of national importance' and the law applies to a modification or construction of such a road. The current version has been enacted as of the 1st of May 2017 (Kennis- en Exploitaticentrum Officiële Overheidspublicaties, 2019).

The law prescribes two procedures: an extensive one in case a new major road is constructed or a road is widened with more than two lanes and a regular procedure if otherwise. The regular procedure will be explained based on information of Rijkswaterstaat (2019). In each phase the possibility of participation will be evaluated. Generally speaking there are two formal and legal feedback moments during the regular procedure.

1 Decision to start (Dutch: Startbeslissing)

The decision to do an Exploratory Phase into an existing or future problem is taken by the Minister of Infrastructure and Water Management (MIWM). The MIWM involves all concerned governmental bodies. This decision determines the area on which the Exploratory Phase will be conducted, as well as the problem and relevant spatial developments to assess. The decision should include a description of the methods to include public, public organisations and governmental bodies as well as the duration of the exploratory phase.

2 Exploratory Phase (Dutch: Verkenning)

During this phase information is gathered concerning the problem, the relevant spatial developments and possible solutions. During this phase public parties are involved in information sessions. This is a first legal mandate for participation, although no further specifications as to the design of this participatory process is given in the law itself.

In the Multi-Year Program for Infrastructure, Public Space and Transport (Dutch: 'MIRT'), which contains the current status and financing of national spatial projects and programs, the initial decision and exploratory phase are referred to as 'MIRT Exploratory Phase' (Ministerie van Infrastructuur en Milieu, 2016).

3 Preferred Decision (Dutch: Voorkeursbeslissing)

After the exploratory phase has been completed the MIWM states a preference for a certain solution or no solution at all. In the *extensive* procedure the results of the previous phase and this preference would be combined into a Draft Structure Vision Dutch: Ontwerpstructuurvisie). This report, together with an Environmental Impact Statement (EIS, Dutch: Milieu-effectenrapport) would be available for feedback to the public for a period of six weeks. This is not the case in the *regular* procedure. In the *regular* procedure, the results of the exploratory phase and MIWM preference are processed into the next phase, in which it is also determined whether an EIS is needed.

4 Draft Track Decision (Dutch: Ontwerptracébesluit)

The results of the exploratory phase and the MIWM preferred decision are further expanded and detailed during this phase. This phase, along with the next, is referred to as the 'MIRT Plan Detailing', the focus of this research. The result of this phase is the DTD, which is made public, available for inspection, together with the EIS. This DTD contains an overview of the future measures and the methods to meet any legal norms, as well as the integration with surrounding environment (Rijkswaterstaat, 2015). The publication is done at public libraries, town halls of the involved municipalities and an online participation platform called 'Platform Participation'. During a six-week period, all involved can respond to the DTD with a 'View'. This view can concern subjects of interest, alternative solutions or factual inaccuracies in the DTD. Most of the time the Commission EIS will also evaluate the EIS and issue an advisory report.

5 Track Decision (Dutch: Tracébesluit)

After the six-week period all Views are assessed by the project team responsible for this phase and a 'Note of Reply' is issued. The issues raised are evaluated and changes to the DTD are made, after which it is finalised in the final TD. This TD is accepted and signed by the MIWM. The TD, together with the Note of Reply, again is available for public inspection for another six weeks. It is only possible for stakeholders to respond to changes made to the original DTD or to the handling of their original View. They can issue this response via a Legal Appeal to the Council of State. The Council of State will assess the appeals and give a verdict. If the TD is verified, it is irrevocable and local legislators must adapt spatial plans and issue necessary permits.

As stated, the scope of this research concerns the Plan Detailing Phase, which according to this definition contains '4 DTD' and 5 'TD'. As explained in section 2.3 Scope and Limitations this research only involved section '4 DTD', since phase 5 is still ongoing.

After the 5 phases of the formal legal procedure above have ended, Rijkswaterstaat identifies two further phases of concerned projects (Rijkswaterstaat, 2019).

6 Realisation

A TD has been made in which the measures to be taken, activities and the means to finance them are warranted. The realisation of the said measures can commence.

7 Monitoring and Completion Test (Dutch: Opleveringstoets en monitoring)

The TD also states when monitoring of environmental impacts will take place. This way, it can be judged whether estimations in the EIS are correct. If not, appropriate measures can be taken. A final Completion Test will determine if the completed project adheres to legal norms on environmental matters, noise levels, air pollution levels and effects to nature.

Synthesis: The legal framework for road infrastructure projects and participation in the Netherlands

The IPA provides a legal framework where participation has been implemented into the decision-making process. The regular procedure issues a demand for participation in the Exploratory Phase and the Plan Detailing Phase before the DTD. The framework does allow full freedom in the design of the participatory process. After the DTD is finished the Views can be handed in during a six-week period after which all of them are assessed and a response is issued in the form of the Note of Reply.

3.3 Dimensions of Participatory Processes

Below a theoretical framework for the dimensions of participatory processes is given. Identified aspects of interest include goals, identification and categorisation of participants, strategies and activities.

Goals

When defining the goals of a participatory process it is important to state no uniform definition of such goals exists, since they differ depending on the used perspective. Effectiveness is defined as 'the degree to which something is successful in producing a desired result' (Hasan, Nahiduzzaman, & Aldosary, 2018). According to this definition 'success' and 'effectiveness' are the same. The nature of the 'desired' results differs with the perspective you use. The following perspectives can be distinguished.

1. *The desirable result is to achieve **democracy/empowerment** in the process*

'Public participation … shall enable those that are affected by a decision to influence that decision' (Glucker, Driessen, Kolhoff, & Runhaar, 2013, p. 106). It will empower marginalised individuals and groups. This goes back to the well-known and influential goal definition by Arnstein stating participatory processes are 'the redistribution of power that enables the have-not citizens, presently excluded from the political and economic processes, to be deliberately included in the future' (Arnstein, 1969, p. 216).

2. *The desirable result is to achieve **maximum value** in the product*

Infrastructure projects are a product of value creation between a client and supplier. But 'due to their public nature, additional value expectations are set on infrastructure projects by the public sector actors and the general public' (Vuorinen & Martinsuo, 2018, p. 750). Since value is a multi-dimensional concept and subjective in nature there is a need to incorporate different stakeholders' viewpoints to understand project value well. Necessary to this goal of achieving a 'better' solution is the exchange or inclusion of experimental and value-based information including input from those affected, so that the decision-maker can make the most informed and well-considered decision (Glucker, Driessen, Kolhoff, & Runhaar, 2013).

3. *The desirable result is to achieve **consensus** amongst the stakeholders, to **legitimise** the decisions made and to therefore benefit the project **implementation***

Public participation shall legitimise the decision-making process and thus provide legitimacy to authorities. 'It is essential to enhance the (perceived) legitimacy of the decision-making process because … governments … depend on the support of the electorate' (Glucker, Driessen, Kolhoff, & Runhaar, 2013, p. 108). In this definition of legitimacy, it means the same as consensus or stakeholder support since it is about the perceptions of stakeholders. Public participation shall contribute to the identification and resolution of conflict before final decisions are made. Both facts facilitate project implementation. (Glucker, Driessen, Kolhoff, & Runhaar, 2013).

4. *The desirable result is for the process to be (**cost**)-**effective** and **proportional** to the project's size*

From this economic perspective the participatory process should be cost-effective (Hasan, Nahiduzzaman, & Aldosary, 2018). This means that time and financial resources spent on the participatory process must be relevant and proportional to the project's size and scope.

Since Antea Group is a commercial party, their main interest is to maximise revenue, minimise costs and consequently maximise profit. Therefore, their main goal of a participatory process is to achieve goal 3 without compromising goal 4. A client such as Rijkswaterstaat, being a semi-public organisation might be more concerned with goal 1. Antea Group indicated that stakeholders are meant to add value to the end-product as to achieve goal 2. This would according to them accommodate the interests the most and therefore benefit project implementation. This would automatically mean that the amount of Views should be minimal.

Identification of Participants

After the goals of the participatory process have been defined by a company such as Antea Group the design of the process can start by identifying *participants*. It is important to first identify and assess the relevance of all stakeholders to determine which stakeholders will *participate* in participatory activities. Several methods for that exist in literature.

There are multiple methods for identifying stakeholders from which participants can be chosen depending on the goals of the process. These types of stakeholders, be it the organisations or individuals can and are usually involved in an infrastructure project are: institutions/authorities, users, transport operators, business and unions, local communities, media and financial institutions (Cascetta & Pagliara, 2013).

The methods for identifying these stakeholders are:

- Stakeholder meeting: This technique comprises of meetings between a growing group of stakeholders, which share information and opinions. This way the project team can determine which stakeholders should be present at subsequent meetings and can include them. (Bryson, 2004)
- Semi-structured interviews to obtain expert opinions with experts and stakeholders themselves (Reed, et al., 2009)
- Snow-ball sampling: asking identified stakeholders to identify further stakeholders, for instance for mapping relevant local affected stakeholders (Reed, et al., 2009)
- Document search (Krywkow, 2009)

It is important to both include top-down and bottom-up identification methods to prevent biases from the team leading the identification. The purpose of the stakeholder analysis determines 'who is included, and who is omitted' (Reed, et al., 2009). However, 'stakeholders are often identified and selected on an ad hoc basis and this has the potential to marginalise important groups, bias results and jeopardise long-term viability and support for the process '(Reed, et al., 2009, p. 1933). It is however not possible to include all stakeholders and a line must be drawn based on well-founded criteria, such as geographical boundaries.

Positions in stakeholder analysis change throughout the project and should be monitored (Manowong & Ogunlana, 2009). This means that the type of participation per stakeholder may change during a project. A case study into stakeholder influence during construction projects in Sweden found that the influence of residents changed through different stages. Especially in the stages of legal appeals, they had gained substantial amounts of power over the project, strengthened by media attention and public opinion (Olander & Landin, 2005).

Categorisation of Participants

After a set of stakeholders and *possible* participants has been found using the above-mentioned methods, it is necessary to categorise which stakeholders should participate on which level, depending on the chosen participatory goal. However, literature is not conclusive and lacking in its matching of stakeholders to participatory goals.

For instance, 'in general, people should be involved if they have information that cannot be gained otherwise, or if their participation is necessary to assure successful implementation of initiatives built on the analyses' (Bryson, 2004, p. 27). This can be identified as useful for a process with the *value* goal but also the *implementation/consensus* goal. For the *democracy* goal it seems reasonable to assume every entity with democratic rights, as many as possible. gets to play a role in the participatory process. The maximum amount of resources should be devoted to this.

In the end literature provides methods for categorising stakeholders with the means of assigning participatory strategies to those categories. These strategies will determine in which activities the stakeholders will participate.

The first *categorisatio*n considers 'social entities' and categorises them as 'the public', 'stakeholders', 'responsible authorities' and 'experts' (Krywkow, 2009). It should be noted that this categorisation is made for the field of water resource management, but it is assumed that these also apply to the scope of this research. Krywkow (2009) notes that there is no hard distinction between stakeholders and the public and that actors from both categories might shift throughout the project.

Other techniques for conducting the *categorisation* focus on all identified stakeholders to improve the stakeholder analysis. Examples of analytical categorisations (Reed, et al., 2009) include those using levels of

- Interest and Influence
- Cooperation and Competition
- Cooperation and Threat
- Urgency, Legitimacy, and Influence

Of these techniques for conducting categorisation 'Interest and Influence' is used by a method called the 'Power/Interest' or 'Influence/Interest' matrix categorising stakeholders as 'Key Players', 'Context setters', 'Subjects' and 'Crowd'. It can be further improved by adding other attributes to the matrix in a visual way, for instance to show level of support (Reed, et al., 2009). The popularity of this method results in the risk of only identifying the 'usual suspects' and the under-representation of marginalised or powerless groups (Reed, et al., 2009).

When categorising stakeholders, it is important again to determine whether it should be of a top-down nature, where the project team uses above mentioned (theoretical) techniques or of a bottom-up nature, involving the stakeholders themselves in a more empirical analysis. Such bottom-up techniques include:

- Card-sorting method: each stakeholder can sort the stakeholders based on their own criteria.
- Q Methodology: stakeholders are grouped based on perceived commonalities.

Strategies/Levels of Participation

Several authors have defined participatory strategies following the identification and categorisation of participants in the previous section. Mostert (2003a) identified 6 possible strategies or levels of public participation. These strategies only concern 'the public', or citizens: information, consultation, discussion, co-designing, co-deciding and deciding.

Krywkow (2009) notes that when *democracy* is the only goal of a participatory process, the framework by Mostert (2003a), as well as the Ladder of Participation by Arnstein (1969) are sufficient. He mentions that other types of effectiveness might not be achieved with the highest levels of participation from their frameworks, since the 'public' does not have sufficient expertise to fully control and make decisions.

Bryson formulates 5 possible strategies to include certain *stakeholders* in the participatory process. Each of these strategies resembles a different level of participation and comes with a promise to the stakeholders representing that level (Bryson, 2004):

- *Inform:* We will keep you informed.
- *Consult:* We will keep you informed, listen to you, and provide feedback on how your input influenced the decision.

- *Involve*: We will work with you to ensure your concerns are considered and reflected in the alternatives considered and provide feedback on how your input influenced the decision.
- *Collaborate*: We will incorporate your advice and recommendations to the maximum extent possible.
- *Empower*: We will implement what you decide

Since Bryson's strategies are, in contrast to the frameworks by Mostert and Arnstein, applicable to every stakeholder and not strictly connected to the goal of democratisation. This framework will be used to assess the strategies or level of participation per stakeholder as done by Antea Group in the N35 project.

Activities

After the participatory strategies for each stakeholder have been defined, the *classes of participatory methods* can be connected to them. This term is defined as 'groups of methods with similar functions, methodology and requirements for expertise and skills' (Krywkow, 2009, p. 46) and summarises methods that may be applied for the achievement of the same goals of a participatory process. They are shown in Table 1.

Table 1: Classification of activities (Krywkow, 2009)

Class	*Description*	*Activities*
Public Information Provision	Allows a planner to communicate information about a plan or project to a wide group of people.	Websites, flyer, poster, advertisements, media
Education	Allows a planner to teach involved individuals the planning and maintenance of a project site	Course work, lectures, workshops, projects
Interviews	Allow the planner to elicit knowledge	(semi)structured interviews, card-sorting method, cognitive mapping
Surveys	Allow the planner to elicit opinions and data from a large group of individuals	Postal surveys, online surveys, focus groups, mapping, photo survey, Delphi method;
Events	Allow a planner to set up one-off group events that can draw in a wide range of people to share information about a project in an entertaining or educational manner.	Open days, school visit, road show, field trip, ideas competition;
Popular Involvement Campaigns	encourage the participation of the public at an individual level in activities that can support the planning process.	Tree partnerships, river sponsorship, garden surveys.
Fora	Allow planners and managers to set up an area for open discussion in which groups of people, over a long period of time, can voice their opinions about project issues and respond to others' viewpoints.	Online fora, newsletters, television/Radio fora
Meetings	Allow the planner to set up and run moderated large group meetings in order to gather a range of feedback, from many people in a relatively short space of time.	Large group response meetings, open public meetings
Workshops	Allow the planner to set up and run a moderated workshop with a small number of participants which will provide specific information about a project or even develop plans.	role playing games, scenario building, (computer) simulation, multi-criteria analysis (MCA), citizen juries.

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Synthesis: A description of participatory processes according to literature

Four *goals* of participatory processes have been identified through literature. Success is a term that can be defined as 'effective in reaching its desired results'. Those desired results are maximum value, project implementation (maximum consensus), democracy and cost-effectiveness.

The *participants* of participatory processes are identified using techniques following the stakeholder analysis. Several top-down and bottom-up identification methods exist to map stakeholders on a variety of aspects, such as influence, interest, and urgency. The link between successful achieving participatory goals and the identification of participants is lacking in literature. This identification leads to several categorisations of stakeholders for participation, where a strategy determines how involved a stakeholder will be. The ladder of participation and the strategies of Mostert (2003a) do not suffice because they only regard participation as a means to achieve democracy. Bryson's framework will be used, because it regards all stakeholders for participation, and not only citizens. Several classes of activities have been identified covering a wide array of methods. The literature is not conclusive in its description of the relation between goals, participant and their strategies and activities. The system of Krywkow (2009) will be used to assess the activities of Antea Group.

3.4 Assessment of Views and Participatory Success

The assumption for the context of this research is made that if the process was effective in achieving all goals mentioned in section 3.3 Dimensions of Participatory Processes the process is a full, 100 percent success. This means that the process achieved maximum democracy, maximised smooth project implementation, is cost effective and made the product with the highest value. For a commercial party such as Antea Group, when working for a client as Rijkswaterstaat it however is most important to achieve goal 3, *consensus and thus fast project implementation*. This also means that Antea Group should not infringe on the fourth goal, *cost-effectiveness*, which means cost and time expenses are in line with original estimations.

Because of the relevance to Antea Group, this research addresses success as achieving the goal of smooth project implementation. Views show disagreement regarding the proposed designs in the DTD or the way these designs were made. Therefore, each View submitted decrease the achievement of participatory success. These Views can be handed in by several actors, possibly speaking for a larger group. They might or might not have been involved in participatory activities. The Views might concern specific aspects or effects of the proposed design or the way in which it was achieved. They can be of a more general or NIMBY nature.

One could view the occurrence of Views to a DTD as the result of different perceptions of a 'problem-solution' combination. The N35 Nijverdal Wierden project is a process of solving a 'problem' with the existing reality. This problem is a difference between a factual current situation from reality and the desired situation (Hommes, 2008). Problems are highly subjective social constructs and based on actor's perceptions of the existing situations, their causes and consequences, their future developments and potential solutions (de Kruijf, 2007). This means that a problem-solution combination has these three elements (de Kruijf, 2007):

1. A description of present and future situation including a causal structure.
2. Definition of criteria, constraints and values to aim at and to sacrifice.
3. Definition of which direction(s) for solutions to consider and which not.

Since problems are highly subjective the problem formulation along the three elements above can differ. The proposed DTD can be viewed as a 'problem-solution combination' and the Views of stakeholders can be viewed as disagreements with this problem-solution combination.

It therefore makes sense to analyse the Views to the DTD as a problem, which is classified along two dimensions: 'consensus/disagreement', based on values and norms and 'certainty' based on

knowledge. This means that an Initiator of a View can disagree with a normative element or with a cognitive element of the problem-solution combination.

From an analysis along these two dimensions four types of problems could become apparent, shown in Table 2. This classification comes with strategies for policy processes. These strategies pose for advice to Antea Group to prevent this difference in problem formulation from occurring in future projects. By considering the different perceptions of stakeholders regarding the problem-solution combination better.

Table 2: Problem Types, (adapted from Hommes 2008)

Knowledge Base → Values and norms ↓	Certain	Uncertain
Consensus	1. Well structured	2. Moderately Structured
Disagreement (Lack of consensus)	3. Moderately Structured	4. Unstructured

The consensus or disagreement regarding value and norms in road infrastructure projects comes from different perceptions of stakeholders and the fact that they primarily serve their own interests. For example, two farmers could both want the road to stay off over their land, which means one of them will never be satisfied. What might be added 'value' for Rijkswaterstaat might be a negative externality for a local resident. This is a disagreement over what is 'important', 'fair' or 'worth it'.

Knowledge uncertainty regarding the designs and their effects, between stakeholders and project team may exist as well, due to it simply being unknown to both, a lack of research or because of a knowledge asymmetry. When a View is submitted there is a difference between the factual current DTD and the desired problem-solution combination of the initiator.

Therefore, the following premise is made:

A disagreement on norms/values (normative element) or an uncertainty of knowledge (cognitive element) area potential reasons for stakeholders to hand in 'Views' during an infrastructure project.

For each View it is possible to assess what type of problem it described, by determining its position in the two dimensions. Also, the aspects of infrastructure projects are of interest. These are mainly but not limited to all to effects caused by proposed measures and their locations or the procedure through which these measures were designed. These so-called 'complaint categories' were deductively derived and inductively completed while conducting the case study. Separately it was also addressed whether the Views is of a general or NIMBY nature. This is a separate assessment of the 'complaint category', since it is for instance possible to complain about noise nuisance from a general or NIMBY point of view.

The complaint categories that Views can describe are given in Table 3, along with a description.

Table 3: Categorisation of View topics (deductively derived and inductively completed)

Complaint Categories	*Examples*
Economic Effects	Views concerning the loss of revenue of businesses or the value depreciation of their properties.
Traffic	Any View concerning the effect of the project on traffic flow across the project area as well as the surrounding towns.
Environmental Effects	Any View concerning the effects done to flora and fauna inside of the project area or any damage done to nature reserves, as well as air pollution and the emission of greenhouse gasses and nitrogen.
Social/Cultural Effects	Any View concerning the possible cultural or social effects in terms of separating or unjustly benefitting certain groups of actors over the other.
Procedural Concerns	Any View questioning either the legality or the moral correctness about how the DTD came about.
Realisation	Any nuisance or danger that might be caused by the realisation of the to be taken measures and construction of project elements.
Aesthetics	Views that concern mainly the aesthetic looks of any design objects
Scope	Views that concern alternatives completely different from the DTD track design and might rival its ideas fundamentally. For instance, a completely different design choice falls into this category.
Sound	Views that concern the levels of sound or the increase in levels on sound in any location that is influenced by the project
Safety	Views that concern an adjustment of the social safety as a result of new design elements, which increase for instance criminal activity

Of the Views several relevant aspects can thus be identified, such as the type of stakeholder, whether they participated in the participatory process, the category of their complaint and what type of problem the View can be seen as.

I now have established the legal framework for participation in national road infrastructure programs. Also, we have defined the dimensions along which participatory processes can be characterised. Finally, a definition for the assessment of success in terms of effectiveness regarding project implementation has been made. This theoretical framework is needed for the research methodology as proposed in the next section.

Synthesis: the relation between participatory process success and Views

If a participatory process is one hundred percent effective, maximum value, consensus, democracy and cost-effectiveness are reached. However, most of the time a trade-off is made to achieve one goal, which will inherently be able to achieve the other goals to some extent.

The Views can be seen as a lack of consensus over the DTD, or in other words, a threat to project implementation over the DTD measures, so that goal has not been reached by the participatory process. When a View is seen as a problem as defined by Hommes (2008) valuable insights can be gained into the types of problem that arise the most and whether those problems are characterised by consensus on values/norms or lack thereof. At the same time, they are also defined by the (un)certainty of knowledge. If a type of stakeholder is overly present as the initiators of Views improvements could be made in the participatory strategies of these stakeholders and the type and how many activities they joined. If the initiators did not yet participate, improvements could be made to the identification methods. The analysis of complaint categories as well as the occurrence of NIMBY might lead to valuable topics of interest during participatory activities.

4 Methodology

This chapter explains the research methodology. It elaborates on aspects of the case study design such as case selection and data collection.

4.1 Case Study Design

The purpose of this research was of a descriptive and exploratory nature. The strategy used was a case study as described by Robert K. Yin (2003) into the N35 project. 'The case study is one of several ways of doing social science research' and 'the preferred strategy when "how" or "why" questions are being posed' (Yin, 2003, p. 1). It is an empirical inquiry that investigates a contemporary phenomenon within its real-life context (Yin, 2003, p. 13). This research into the N35 participatory process was on recently completed and ongoing activities, meaning it is of a contemporary nature. Another reason for this is the fact that the efforts of Antea Group in the past are also part of their current practices. The case study is suitable when the investigator has little or no control over occurring events (Yin, 2003). Other research methods, such as just an archival analysis or survey would not fit the scope of the research. The research method 'conduction of experiments' is also not in line with the scope since control of behaviour events is not relevant. Therefore, a case study with elements from other strategies fits the research objective best. The case study was of a qualitative nature, since the description of a participatory process is inherently qualitative. The analysis of the 'Views' led to results, as in '40 percent of the Views had this characteristic.' However, the research still is of a qualitative nature, since the variables measured cannot be expressed in units.

The case study was conducted on a holistic single case of the N35 project. The reason for selecting this case is the *rationale* that this case meets the requirements to test the relevant theories regarding participation in the IPA. The case is also a '*typical case'* since this is an example of participatory processes as applied by Antea Group. It is an example of the application of methods Antea Group developed, and these methods will also be used in future projects. The unit of analysis for this case was the 'participatory process as used in the Plan Detailing phase'.

Four types of validity need to be maintained by the case study design (Yin, 2003).

1. *Constructional validity*: the opinion of experts regarding the documents analysed will play a major role in this research.
2. *Internal validity*: the analysis of the Views will be done by pattern-matching and leads to explanation building, while also looking for possible counter explanations. Also, by inquiring after the results in interviews with experts, possible counter explanations can be identified.
3. *External validity*: the theoretical framework established along with a specific research question and a set of interviews provided me with enough insight into a wider population of cases and therefore increase the generalisability of the research conclusions.
4. *Reliability*: A detailed prescription for the analysis for documents and proper documentation of any other activities of this case study research will lead to a reliable possibility for assessing and reproducing the results.

The *field procedures* include that I received a company laptop with access to the documents of the N35 project. The office I worked from is situated in Deventer where experts were present for quick consultation. With my own employee e-mail, I could access employees' agendas as well as their contact information. The people I needed to contact directly for help or advice were my university supervisor dr.ir. J. Vinke-de Kruijf, mostly through e-mail and my supervisor from Antea Group P. Brouwer, through mostly face-to-face meetings. Writing instruments included Office 2013 digitally and notebooks physically.

4.2 Data Collection Methods

RQ4: How can the N35 project and the participatory process up from the Decision to Start until the Note of Reply as applied by Antea Group be described?

This question served the purpose of clarifying the case and providing context as to how the project has unfolded, throughout the Exploratory Phase as well as the Plan Detailing Phase. It also described the participatory process throughout this period.

Since this question was of a descriptive nature two sources of evidence are well-suited for the collection of the data needed, namely 'Documentation' and 'Archival Records'. Analysing reports by Rijkswaterstaat, Exploratory Phase results and documentation of the participatory process by Antea Group made it possible to give a brief overview of the project scope, goals, identification of participants, strategies and activities. This is a qualitative description of the process design. Both methods are stable, unobtrusive (not created), exact and detailed. The issue of irretrievability does not apply since most documents are either internally or publicly available. Therefore, issues regarding accessibility (including due to privacy reasons) were not a major threat to this research. A bias in selectivity of documents or reporting was prevented consultation of my company supervisor and involved employees to ask for brief clarification of used texts. The analysis of the documents is shown in Table 4.

Table 4: Analysis of documents for RQ4

Document	*Goal*	*Analysis Method*
Exploratory Phase Report	Determine the problem, scope, and participatory process in exploratory phase	Reading of sections looking for Dutch key words such as: 'probleem', 'doel', 'participatie', omgeving and 'aanleiding'
Stakeholder Analysis	Determine the methods of identification of participations, categorisation, strategies	Reading of the document looking for Dutch keywords such as: 'stakeholder', 'belanghebbende', 'strategieën' and special attention to figures and tables.
Participation Plan	Determine the activities during the plan detailing phase, as well as the participatory process design	Systematic analysis of document looking for Dutch key words and synonyms: 'doel', 'partijen', 'deelnemers', 'betrokkenen', 'bijdragen', 'georganiseerd', 'beslaat'

The description of the participatory process in the documents might not have been in line with the theoretical framework. Therefore, an interview with the 'Participation Manager' of the N35 Project was held to clarify the documents. The Participation Manager was responsible for the correct execution of the participatory process in line with the time and budget scope of this project, making sure goals were reached. The interview was semi-structured and lasted for about an hour. It was held in Dutch, in a quiet and informal setting, in the canteen of the office in Deventer. The interview was not recorded, but notes were taken per question and the interview report was a day after the conduction. The formal objective of the interview was:

'to map the participatory process and differences in design strategies of Antea Group and Rijkswaterstaat as used during the N35', in the context of the theoretical framework concerning goals, identification of participants, strategies and activities.

The interview questions asked were:

1. 'What were the goals of the participatory process during the Plan Detailing Phase?'
    - Why would that be a goal? Who came up with those goals? Would Antea Group have wanted to see anything different?

    - Would you give an explanation about the following mentioned goals?
2. How were participants identified? Were any tools used?
    - Were they prescribed?
    - Does Antea Group think other people should have been involved too?
3. Was there a difference between participants and their power? No strategies?
4. What activities were used? Why were meetings used?
5. (Question came up during interview): Do you think the participatory process was a success? Was the amount of Views as expected with the process design?

RQ5: What patterns in terms of participatory process success in the N35 can be drawn from an analysis of the 'Views' handed in after the Plan Detailing Phase?

The source of evidence 'Archival Studies' was used. An analysis of the 'Views' handed in resulted in patterns. Using SPSS, a database was created in which several relevant aspects were determined for each View. Afterwards, the major findings per aspect were shown in a table. Centre to this analysis will be the aspects given in Table 5 on the next page. The dataset was built with help of internal or public documents from Antea Group. This list was put together after answering RQ4.

1. Presence Files (D3, D4, D5): Used to assess the people present at participatory activities.
2. View Data (D6): Used to assess the view number, names of initiators, potential businesses and co-initiators of Views.
3. Note of Reply (D7): Used to assess the content of the Views and responses of the project team.

Amount of Views

In total 304 Views were handed in of which 192 are identical to View 30. The choice was made to treat this large group as one View. It could be argued that all Views should be included individually based on the goal of this research to decrease the total amount of Views. Media often reports the amount of Views as a measurement of public opposition, which helps such a large group in getting attention. If the initiators had handed in one View as a group, the coverage of their opposition would have been smaller. The *total* amount of Views is the aspect of this project that is shocking, so we should analyse them all. This research however is supposed to give advice to prevent these Views from being handed in. Therefore, a content-based analysis suits the research aim better. An analysis regarding the 192 Views as one would make the implications for improvement more diverse and thorough, since other patterns are not 'overshadowed.' This means the following of the 304 Views were excluded: 39, 49, 91, 216-275 and 280-303. This means that 217 Views will be treated as unique Views and taken into analysis.

Table 5: Framework for the analysis of Views

Aspect of Interest	*Question*	*Answers*
Involvement of Initiators	Was this initiator involved in any participatory activities?	Yes/No
Activity Presence of Involved Initiators	In what participatory activities was the involved initiator participating?	Type of activity organised by Antea Group.
Initiator Categories	Who is the initiator of the View?	Institutions/authorities, Users, transport operators, business and unions, local communities, residents, financial institutions, interest groups (Cascetta & Pagliara, 2013).[1]
Complaint Categorisation	What is the 'complaint' category of the View?	Economic Effects, Traffic, Social/Cultural Effects, Procedural Concerns, Realisation, Aesthetics, Scope, Sound and Safety
Occurrence of NIMBY-ism	Does the View show signs of NIMBY complaints or general concerns?	NIMBY, NIMBY/General, General
Consensus/Disagreement regarding norms and values	Was there consensus or disagreement on values and norms in the View?	Consensus/Disagreement
Certainty of Knowledge Base	Is the base of knowledge between the project team and Initiator certain?	Certain/Uncertain
Problem Solution Type	How can the disagreement over the problem-solution formulation be described?	1 Structured, 2 Moderately Structured, 3 Moderately Structured, 4 Unstructured

[1] 'Resident' was added to the theoretical framework to make a distinction between Views handed in by individual residents and group of citizens that do not meet the professionalism of an interest group.

RQ6: How does the N35 Nijverdal - Wierden Project compare to other IPA Projects Antea Group has experience within terms of the scope and Exploratory Phase, participatory process design, project specific elements and View Patterns?

The answer to this question provides insight into the commonness of the case and therefore into the external validity of the study. It also inquired after possible explanations for the View Patterns found and how they could be explained. The source of evidence suited best was a set of structured interviews with a group of 5 experts from Antea Group. As they all had strict time schedules and work at different Antea Group office locations individual interviews were held. The interviews were either be held and in person at an office location or over skype. The results of the previous interview were used as input for the next one.

The interviewees were read out a set of statements following the answering of RQ4 and RQ5. These statements fell into the categories of:

1. Scope, Problem and Exploratory Phase
2. Participatory Process Design
3. Project Specific Elements
4. View Pattern Analysis

For each of the statements concerning the above-mentioned topics the experts answered the following questions:

1. *Do you think this is common/normal for these types of projects? (Yes/No)*
2. *Why or why not do you think this is the case? Do you have any experiences that might support that opinion?*

Notes of the answers were taken, after which an interview report was drawn up summarising the answers given. No recordings of the interviews were made, since there was no time for a thorough analysis of recordings. Also, some of the experts felt recording the interview would limit my critical attitude and therefore did not want me to record it. This amount of effort fits the scope of the research.

The interviews to last between 45 minutes and an hour. The identification of experts was done through snowball sampling from the office location in Deventer. An expert was identified by my external tutor of Antea Group and with his help and knowledge a list of possible interviewees was made. After identification, Antea Group profile as well as the LinkedIn profile of the potential interviewee were checked to ensure he or she had enough experience in IPA projects. Special attention was paid to individuals with experience in the N35 project. The results of these interviews were gathered and summarised per statement. The statement list is now translated into English but was originally inquired after in Dutch. The statement list was inductively determined after answering RQ4 and RQ5 and is given below.

Interview Questions– [Date] – [Expert]

Objective: To determine how common or normal the N35 project is in all of its aspects in relation to other IPA projects. Central questions are:

1. Is this a common way for things to be done or things to be unfolding?
2. Do you have any experiences that might support that opinion?

Duration: +/- 1 hour

Interviewee characterisation:

Structured Interview: Answer to prepared questions below in five categories.

- *Experience with IPA Proj*ects: question to establish the credibility of the expert as well as to introduce him or her into the topic a bit, while catching on to memories of previous relevant projects.
- *Problem and Exploratory Phase*: statements regarding the problem the N35 has to solve and the most important characteristics of the Exploratory Phase, e.g duration, results.
- *Participatory Process Design*: statements regarding the goals, participants and activities of the N35 participatory process.
- *Project Specific Elements:* statements regarding presumably unique or common object of design or problems during the Plan Detailing Phase, such as the eco-duct, scope changes and other design options
- *View Patterns*: Statements regarding the found patterns in the View of the N35 project, such as the identity of the initiators, their complaint category and the occurrence of NIMBY-ism.

As one could probably tell, the statements were formed after the answering of RQ4 and RQ5. This means they are not given here but in chapter 6.3

An anonymised list of interviewees for the entire case study is given in Table 6. Interview 1 and 2 were held with the same expert, but the topic of the interview was different. Therefore, they are mentioned and referred to separately.

Table 6: List of conducted interviews for case study

Interview Number	*Date*	*RQ*	*Function*	*Projects Experience*	*Relevance*
1	08/05/2019	4	Participation Manager/ Project Manager	N35	Has the most knowledge of participatory process and N35 Case in particular
2	12/06/2019	6			
3	13/06/2019		Project Manager	A74	Has a lot of experience in IPA Projects, for instance Participation Manager in the A74 Project
4	14/06/2019		Contract Manager/Project Manager	N35, A74, N33, N18, A44	Has been involved in all IPA projects of Antea Group as project manager.
5	18/06/2019		Technical Manager	A4, A7, A2	Project leader on several IPA projects for Arcadis and Antea Group. Has lost the tender of the N35 to Antea Group
6	18/06/2019		Senior Advisor	N18, A4, A44, A27	Plan Detailing Manager, responsible for effect studies. Involved in the N35 project up until the Note of Reply

5 Results

This chapter gives the results of both the document analysis of internal documents, View Analysis and interviews with experts. First the N35 Project and its participatory process will be explained, after which the patterns arising from the Views will be given. Finally, the results of the interviews will be given. While conducting the case study a lot of internal documents were used. A reference list of these is included at the end of this report. Throughout the results section, whenever a reference is made to an internal document or an interview the references (D1, D2, D3) and (I1, I2, I3) respectively will be used.

5.1 N35 Nijverdal - Wierden

Using internal and public documents on the N35 project along with the interview with the Participation Manager, a clear and brief overview of the N35 project and its participatory processes up until and during the DTD will be given.

Exploratory Phase

The Exploratory Phase into the N35 Nijverdal Wierden project was started in March of 2011. From the Exploratory Phase Report (Arcadis, 2014) follows that 20.000 vehicles travel across the N35 in both directions each day. The current road design results in risks to safety. It has a lot of intersections, lack of barriers to separate lanes and a maximum speed of 80 km/h. The national government, province of Overijssel and municipalities of Hellendoorn (Nijverdal) and Wierden want to upgrade the section of this road between marking 34.8-42.6 kilometre to a 2x2 lane freeway with a maximum speed of 100 km/h. The scope of this 'route' is shown in Figure 2.

Figure 2: Scope of N35 Project - Route between Nijverdal and Wierden (Rijksoverheid, sd)

The Exploratory Phase aims to provide a justification for the choice to further detail a preferred decision in the next phase. Two possible track layouts, called 'North' and 'South' were evaluated, both with one-grade intersections and grade-separated intersections in the town of Nijverdal. In the 'North' option the N35 would follow the already existing railroad, while in the 'South' option route of the N35 would stay the same. Both options were evaluated using a multi criteria analysis in terms of technical- and financial feasibility and impact in terms of additional land acquisition needed. After the multi criteria analysis the South variant was deemed more suitable by a core group of representatives from the involved authorities. Throughout the Exploratory Phase other track layouts were brought up, of which an adjusted North option presented by a citizen-interest organisation Wierden in January 2013 was most successful. The core group added the adjusted North option to further research and therefore chose to present two possible routes to the Minister at the end of this phase, one being the South option and the other the 'adjusted' North option.

Preferred Decision

On the 18th of March 2015 the MIWM, in close consultation with involved authorities announced that the 'North' option with a grade-separated intersection in the town of Nijverdal would be advanced to the Plan Detailing Phase (Rijksoverheid, 2015). On the 30th of September 2015 the MIWM also announced an EIS would be issued for the project.

Plan Detailing

In the Plan Detailing phase executed by Antea Group, commissioned by Rijkswaterstaat, the 'North' option with grade-separated intersections was further detailed into a DTD. The goals of this phase were (Rijkswaterstaat, 2017):

1. Specific detailing, integration into the surrounding area and optimisation of designs in line with the Preferred Decision, with for instance cross sections
2. Map specific environmental effects
3. Come up and assess measures to mitigate or compensate possible external effects
4. Provide full detailing of costs

Special attention was paid to the relation of the intended track layout with a water extraction area near Wierden, the further realisation of a cycling highway between Wierden and Nijverdal and possible future upgrading of the existing railroad between the two cities. It was assessed where additional measures, such as the noise barriers along the new road were needed to meet legal norms.

5.2 Participatory Process

After the context and timeline of the case have been elaborated upon the participatory process can be elaborated on.

Exploratory Phase

From the Exploratory Phase Report, it followed an 'extensive participatory process was designed to allow the involved actors to contribute' (Arcadis, 2014, p. 26). The *goals* of this participatory process were to gain support for the chosen preferred decision, as well as the gathering of information for mapping possible alternatives. The first goal is 'achieving legitimacy' and the latter one is 'value' creation.

The *activities* were three workshops, where participants could look at conceptual designs and bring up ideas. One workshop was meant for economic interest groups and the other two for environmental interest groups and citizen interest groups (Arcadis, 2014). The *participants* for these workshops were determined using a bottom up approach. At a public open meeting people present could sign up for either of these workshops. Several other participatory activities were held such a public open meetings and one-on-one interviews with directly affected individuals. More specific goals and methods for identification of participants are not clear for these activities. The one-on-one interviews could be classified as 'achieving democracy' since the project team wanted to hear the concerns and opinions of those affected directly.

Plan Detailing Phase

During the Plan Detailing Antea Group continued and extended the participatory process from the Exploratory Phase. This was done in accordance with Rijkswaterstaat.

Goals

From the document analysis (D1) several goals were identified. They are shown in Table 7, not in order of importance.

Table 7: Characterisation of participatory goals

Goal in Participation Plan	*Goal according to theoretical framework*
Gaining and maintaining support for the project	Legitimacy, Consensus and smooth implementation
Contribute to a good relation between the client and the stakeholders	
To ensure that a coming View period will not bring up any 'new' ideas, for which the design would have to be changed. The DTD would become the TD.	
People should feel their concerns are heard and assessed	Democracy

The interview with the respective Participation Manager of Antea Group narrowed down the goals and saw a clearer distinction between goals of the process into two sub goals, to be achieved by both Antea Group and Rijkswaterstaat (I1).

- Maximisation of value, including local knowledge and knowledge from parties representing citizens
- Maximisation of democracy and in turn (perceived) legitimacy

The interviewee indicated that the design first of all have as much value as possible (I1). Therefore, interests from actors and local information should be taken into account. This way, the road will be the 'best' solution for its surroundings, reducing 'costs and external effects'. This will result in the highest consensus possible (I1). The goals of gaining perceived legitimacy and partially democracy were fulfilled by Antea Group's way of achieving maximisation of value and Rijkswaterstaat agreed to this strategy when letting them win the tender of the Plan Detailing Phase.

There was a disagreement regarding the goal of 'democracy' between Antea Group and Rijkswaterstaat (I1). The first party sees this as a way to maximise value, through the inclusion of a much knowledge as possible. Rijkswaterstaat puts more emphasis on the achievement of democracy itself.

All in all, Antea Group focused its activities on sub goal 3, using the maximisation of value to achieve sub goal 1 and 2, while staying within the scope of the project. The interviewee said that 'contributing to a good relation between the client and stakeholders' was not a leading goal (I1)

Identification of Participants

Antea Group identified the participants in cooperation with the client Rijkswaterstaat through an iterative stakeholder analysis (D2). In this analysis qualitative criteria and the opinion of both Antea Group and Rijkswaterstaat were used. This means no argumentation for the in or exclusion of participants could be found. The interviewee confirmed this was a top-down approach (I1). The stakeholders were defined in a table along several dimensions, where their scores could be 'High', 'Neutral' and 'Low' (D2). These dimensions were: Level of interest, Influence, Trust and Consensus. There was also a category of 'Urgency for management', based on a colour code for the level of support (D2).

Categorisation and Participatory Strategies

Finally based on these dimensions, the stakeholders were put into categories and given strategies (D2). This is given in Table 8, along with examples of the stakeholders and a characterisation of Bryson strategies.

Table 8: Characterisation of participatory strategies (Adapted from D2)

Stakeholder category	*Strategy*	*Involved Stakeholders*	*Bryson' Participatory Strategy*
Initiators	Maintain Support	Ministry of I&M, Rijkswaterstaat, Province of Overijssel, Municipalities	Empower
Stakeholders of adjacent/overlapping projects	Gain Support	Vitens (Drinkwater Company), ProRail (Railway Manager)	Empower
Directly affected surrounding actors	Consult	Citizens and organisations directly affected by specific project objects/intersections	Involve
Other stakeholders	Involve/ Inform	National interest groups, citizens of Nijverdal and Wierden and special stakeholders such as emergency services	Inform

The strategy for the **initiators** can be seen the 'Empower' strategy of Bryson, but it is important to note the differences in power. 'We will implement what you decide' does not necessarily work if these organisations of power do not agree on a decision. If the Minister makes a TD, the municipalities will have to change local spatial plans. The power of the municipalities have is retracting financial support and refusing to maintain new objects or elements. The initiators are all committed to upgrading the current N35, so it is understandable they are all committed to finding consensus.

The strategy for the **stakeholders of adjacent/overlapping projects** is also 'Empower', even though the differentiation between category 1 and 2 does not fit with the theoretical framework since this differentiation is not only based power but also on support. The support of Vitens and ProRail is however essential to the project, since they hold the power to grant permits for working for instance next to a railway track. Not being granted these permits could delay the project.

For the **directly affected surrounding actors** the strategy is line with the 'Involve' of Bryson. This is not the actual 'Consult' strategy of Bryson since the ideas brought forward by directly affected citizens are directly assessed for possible alternatives. If they are not enacted, explanations are given as to why. The 'Consult' strategy by Bryson does not correctly represent this specific assessment of brought up ideas and design visions.

Finally, the strategy for the **other stakeholders** is in line with the 'Inform' strategy of Bryson. The participation manager does not actually call this 'participation' since these stakeholders are only informed and not considered for any possible input. Under this category also special stakeholders such as the emergency services are gathered. This is why the strategy also says 'Involve'.

Activities

The activities were organised as follows. With a meeting the planning was aligned with interests of the most important stakeholders (D1). The Plan Detailing phase specified two products to come to the DTD, an elementary design (ED) and a fitting design (FD). These two products were the framework for participatory activities, which would add further value to the design. Antea Group felt that Customer Requirement Meetings' (CRM's) with important general stakeholders fit the scope best to define general requirements (I1). Such a meeting was held for both the ED and the FD (D1).

In between and after these CRM's there were Location Specific Meetings (LSM's) concerning specific elements that needed further designing, held with for instance such as directly affected citizens and landowners. These elements were the eco-duct, intersections near Nijverdal, Water collection Area and intersection Wierden-West. Feedback on CRM's and LSM's was given digitally after the meetings were held and less relevant stakeholders were informed through public communication means, such as newsletters (I1).

In short per category of stakeholders these activities were held (D1):

Initiators: Planning Session, both CRM's and LSM's

Stakeholders of adjacent/overlapping projects: CRM's and LSM's

Direct actors in affected surrounding environment: LSM's and 1-on-1 meetings with for instance landowners

Other stakeholders: separate contacts with special stakeholders and public communication means.

The activities of the participatory process and participants are documented in Table 9.

Table 9: Characterisation of participatory activities

Phase/Product	***Date***	***Type***	***Topic/Goal***	***Participants***
Planning	19-10-2016	Meeting	Project Planning	Rijkswaterstaat, Province of Overijssel, Municipalities of Hellendoorn, Wierden and Rijssen-Holten, Water board Vechtstromen
Elementary Design	03-11-2016	Customer Requirement Meeting 1	General	Rijkswaterstaat, Province of Overijssel, Municipalities of Hellendoorn, Wierden and Rijssen-Holten, Water board Vechtstromen, Vitens, ProRail
	17-11-2016	Location Specific Meeting 1	Eco-duct and bicycle passage	Rijkswaterstaat (road design and ecologist), Province of Overijssel, Municipalities of Hellendoorn and Wierden, ProRail Environmental/nature organisations: - Landschap Overijssel, - Landgoed Notterveld, - Stichting Natuur & Milieu Wierden, - Katoelenkiekers - Stichting Milieuraad Hellendoorn Cyclists' Union Wandelnet (hiking organisation)
			Intersection Nijverdal	Rijkswaterstaat (road design), Province of Overijssel, Municipality of Hellendoorn, ProRail, Representation of residents, Representation of business park 't Lochter
			Intersection Wierden-West and splitting Water Collection Area	Rijkswaterstaat (road design), Province of Overijssel, Municipality of Wierden, Water board Vechtstromen, Vitens, ProRail Foundation Citizen Interests Wierden, Representation of local residents Cyclists' Union
Fitting Design	16-11-2017	Customer Requirement Meeting 2	Same as CRM 1	Same as CRM 1
	30-03-2017	Location Specific Meeting 2	Same as LSM 1	Same as LSM 1
DTD	13-12-2017	Information Provision Meeting	Any feedback/reaction	Anyone wishing to do so

Draft Track Decision

After the fitting design and the necessary effect investigations had been completed the DTD was signed on the 22th of November 2017 (Rijkswaterstaat, 2017). Views could be handed in during a six-week period starting on the 1st of December 2017 till the 15th of January 2018.

To inform stakeholders about the DTD Rijkswaterstaat organised an Information Provision Meeting. Everybody who felt he had to say something was invited. The session was held on the 13th of December on a location in Wierden. Experts from both Rijkswaterstaat and Antea Group were present to answer any questions. One can see this meeting as a way for Rijkswaterstaat to meet the secondary sub-goal of *democracy* where everybody who did not feel represented by already involved parties could speak his mind. It should be noted that this meeting was a clear Information Provision Meeting and did not necessarily involve any change of plans, since the documents presented were the final DTD documents.

Synthesis: A description of the N35 project and the participatory process up from the Decision to Start until the Note of Reply.

The N35 will be widened between the cities of Nijverdal and Wierden from 1x1 to 2x2 lanes. With a citizen alternative the track was made to go along the already existing railroad and cross through a Water Collection Area. The Exploratory Phase lasted from 2011 till 2015, and the Plan Detailing Phase from the 2015 till 2017, after which the DTD was presented.

Antea Group aimed for the maximisation of Value in their participatory process, to serve the maximal amount of interests possible and therefore reduce the amount of Views submitted after the DTD was published. The participants were identified and categorised using a top down stakeholder analysis, from which participatory strategies were determined. The activities were designed along the elementary and fitting design, with a group of identified stakeholders to be present at CRM's and LSM's. An open public information provision meeting was organised to inform stakeholders about the details of the DTD.

5.3 Analysis of Views

With the analysis of the dataset built to assess the different Views information about the relevant categories will be described in statements below. The relevant categories are the types of initiators,

All statements regarding the assessment of Views along the earlier defined categories are given in Table 10 on the next page. Possible explanations for the findings are given afterwards.

Table 10: Major findings per topic of interest of View Analysis

Aspects of Interest	*Categories*	*Findings*
Identity of Initiators	Resident, Local Community, Businesses and Unions, Interest Groups, Other	88.48 percent of Views was initiated by individual residents and 2.76 percent was initiated by a local community. 3.69 percent came from Businesses and Unions. Finally, 3.23 percent was handed by Interest Groups. Concluding, an overwhelming majority of Views came from residents.
Involvement of Initiators	Yes, No	92.63 percent of the Initiators was not involved in any participatory activities. This means 7.3 was involved in the participatory process.
Presence of Involved Initiators across activities	LSM, Open Meeting, CRM and LSM, LSM and Open Meeting	1 percent of the Initiators was involved only in the Open Meeting. Also, 1 percent was involved in only the LSM. 1 percent was involved in both the CRM and the LSM and 2.96 percent was involved in both the LSM and Open Meeting.
Complaint Topic	Sound, Scope, Environmental Effects, Economic Effects, Other	70 percent of Views had Sound as its main issue, while 12.44 percent of Views was about the scope of the project. 6.45 of them was about Environmental Effects and 4.15 about the Economic Effects.
Occurrence of NIMBY-ism	NIMBY, NIMBY/General, General	67.74 percent of Views shows concerns of NIMBY-ism, while 26.73 percent of Views contained concerns of a General Nature. 5.53 percent showed signs of both.
Values/Norms Assessment	Consensus/Disagreement	In 90.78 percent of Views there was a disagreement on the values and norms, which means in 9.22 percent there was consensus.
Knowledge Base	Certain/Uncertain	In 85.71 percent of Views there was an uncertainty of the knowledge base, which means in 14.29 the base of knowledge was certain.
Problem-Solution Combination Assessment	1 Well Structured 2 Moderately Structured 3 Moderately Structured 4 Unstructured	If every View is a disagreement over the Problem-Solution Combination formulation, 78.8 percent of them is unstructured. Only 2.3 percent is structured. 9.68 percent only has an uncertain knowledge base. The remaining 9.22 percentage only has a disagreement based on values and norms.

Initiator Categories

An overwhelming majority of Views was submitted by residents. This shows that they might be an unobserved group in the participatory process, or the attention given to them is insufficient in preventing them from handing in Views. The Local Community group of course also consists of groups of residents. Several businesses and interest groups also handed in Views, but the amount with which they are is relatively small compared to the residential group.

Involvement of Initiators

The findings indicate that almost all initiators of Views were not identified by the identification methods. This might be due to a strategic choice in categorisation of Antea Group and Rijkswaterstaat or because the identification methods for participants simply do not work. It should be said that this figure does not show how many of 'would-be' Initiators were withheld from submitting a View. To prevent more Views, the identification methods could be improved include more of the Initiators. If an individual does not participate in the process, the chances of them submitting a View are larger.

Activity Presence of Involved Initiators

There is generally speaking no relationship between the participation in a *specific* activity, be it the CRM, LSM or Open Meeting, and the likelihood of that person handing in a View. This means no conclusions can be drawn as to the differences in View initiation as a result of participation in an activity. It could however be argued that the open meeting was most successful, since it had almost three times the attendants of the LSM (I2).

View Content Categorisation and Occurrence of NIMBY-ism

Most of the Views mention sound as the main complaint category. This category is most of the time concerns sound nuisance on individual façades or gardens. The next large complaint concerns are the scope, mostly related to the alternative intersection design and environmental effects, related to effects to recreational areas or unofficial nature reserves. This information, along with the fact that almost 90 percent of Views came from residents, makes it consequential that two-thirds of the Views contains solely NIMBY complaints. Apparently, there is a large group of Residents that submitted a View due to future sound nuisance on the facades of their homes.

Consensus/Disagreement on Values and Norms of 'Problem-Solution' combination

The findings show there is no consensus on norms and values regarding the chosen solution in the DTD. This is mostly related to NIMBY-ism. The initiators see the negative externalities in terms of sound, nuisance, environmental effects and economic effects. The damage done to their own interests is more important as more important than public interest in the added value of the N35. The 'severity' of problems the N35 is intended to solve are far less apparent to the View initiators than the direct effects on their own homes.

This disagreement on values shows in the choice whether mitigating measures for those externalities are taken. A lot of initiators feel that the increase in sound nuisance should be compensated through sound barriers. They use arguments such as the severe loss of 'liveability' and the exceeding of local sound nuisance policy. The project team however uses a national legal criterium to determine those measures 'financially ineffective'. The project team and the initiators have different definitions of what is 'worth it'. The same goes for environmental effects. Most initiators will strongly advocate for preserving and mitigating effects for unofficial nature areas, which have high environmental value to them, but are not legally protected. With the scope complaint Views a disagreement can be seen on how much resources, in terms of time and finances are made available to the project and the design the initiators prefer. Instead of the N-road being raised above the intersecting road, the initiators want the N35 to stay at ground level and the intersecting road being built below it in a tunnel pit. The client and

contributing authorities do not see enough added value in this alternative and therefore do not follow up with more resources.

Certainty of the Knowledge Base

The findings show that the knowledge base between the initiators and project team is not certain. There exists a disagreement concerning knowledge and an asymmetry of information, more so than a lack of information. A main uncertainty of knowledge comes from predictions of sound nuisance in the future situation. The project team uses calculations based on traffic and sound models of Rijkswaterstaat. These models accurately predict the sound levels on specific calculation reference points and are capable of taking into account future situations and mitigating measures. Often Initiators do not understand and trust this method. They say ordinary measurements would show a different value. Most of the time the Initiators will also not understand the 'difficult' language used in the official documents and inquire afterwards or questioning the accurateness of the claims made. More professional parties like an environmental interest group had different measurements of the bat population in neighbouring nature areas. They also did not understand the contents of the environmental effects investigation or at least did not accept the findings. For instance, a topic of debate was whether and if so at what distance the habitation of said bats would be affected by the new road.

All views in the complaint category 'scope' are referring to an alternative intersection design. The knowledge base regarding the financial costs of this alternative intersection design is also uncertain. A professional interest group and a large group of supporters calculated the costs of this project by comparing the design to other seemingly similar designs. At the same time, they think that costs could be lowered if the municipality did the procurement instead of Rijkswaterstaat. The project team uses a Quick Scan into this alternative to deem it financially not viable. As one can see the knowledge base for this complaint is also uncertain.

Assessment of Problem-solution combination type

With the consensus or disagreement on values and norms analysed, as well as the certainty of the knowledge base, it is possible to assess the disagreement over the problem-solution' combination. It shows that the 'problem-solution' combination found in the DTD of the N35 Nijverdal Wierden project can be seen as unstructured. A disagreement with a normative or cognitive element of this problem-solution combination is a reason for stakeholders to submit Views.

Synthesis: Participatory success in the N35 Nijverdal – Wierden project following an analysis of 'Views'

Concluding several clear patterns are becoming apparent in the Views submitted regarding the DTD of the N35. First of all, almost all Views were submitted by residents or local communities who had not been involved in any participatory activities. More than 70 percent of the Views concerned sound. 12 percent of them concerned the scope of the project or the extension of that scope to fit another alternative intersection design and 6 percent was about environmental effects. Smaller groups of economic effects are not that apparent because of the relatively small amount. Realisation nuisance or traffic concerns are surprisingly missing from the results. Two third of the Views concerns a NIMBY reason, which might raise concerns since NIMBY complaints are not often solved by participatory group activities. However, this does indicate that a large group of citizens with the same NIMBY complaint regarding for instance sound could have been consulted separately. A majority of the Views shows the problem solution combination is unstructured and does not have a consensus on values or norms or a certainty of knowledge. The disagreement on values comes from the definitions of what is considered 'worth it'. This is shown in the choice to not carry out mitigating measures for external effects in terms of sound nuisance and environmental effects. The project team uses legal norms to make arguments for their decisions, while the initiators of the Views use their own logic as well as the

current situation as a justification for their concerns. The occurrence of NIMBY-ism shows a disagreement over whether individual interests or public interest should be leading.

The uncertainty of knowledge in these kinds of problems comes from this category of complaint 'sound', but also be seen in 'scope' and 'environmental effects'. Initiators do not trust the Acoustic Investigation and do not regard the prediction of future values by used models as trustworthy as measurements. This is because they are unaware of the amount of time and effort it costs to get a representative meeting, as well as the fact that future situations cannot be predicted by those. The knowledge from a Quick Scan of Antea Group is not in line with research from the initiators with the complaint category 'scope'.

5.4 Generalisability of Results

Below per aspect summary and discussions to the statements from the interviews are given. Each aspect of has been classified as routine, common, uncommon or unique or inconclusive. Again, the aspects fall into the categories.

- Scope, Problem and Exploratory Phase: 1-6
- Participatory Process Design: 7-11
- Project Specific Elements: 12-17
- View Patterns: 18-20

1. *The N35 Nijverdal Wierden project entails a widening of a N-road of national importance from 1x1 to 2x2 lanes and a speed limit increase from 80 to 100 km/h, while also changing the track to fit the existing railway track.*

Common/Uncommon: All five of the experts indicate that the widening of a road is always subject of an IPA project. The speed limit increase is frequent in N-road projects, but not in A-road projects (I6). The experts indicated that (I2, I4, I5, I6) it is not common to also change the route of the track. However, several other IPA projects were mentioned a change of route was part of projects. These projects included the N33 by Sweco and the N18 by Antea Group (I4). The N35 has standard similarities with other IPA projects concerning both A-road and N-roads, but the change of route makes the N35 project exceptional. The difference between current and new situation was much larger than if the N35 project was only widened. This also means a large group of relatively unaffected citizens would be affected by the N35. However, despite the change of route the N35 still connected the towns of Nijverdal and Wierden. For a lot of citizens, the road 'simply' moves from the façade to the back of their houses.

1. *The Exploratory Phase lasted from 2011 till 2015.*

Inconclusive: experts' opinions are not conclusive on this point. Two of them indicated that this amount of time is relatively small (I3, I4). It is quite fast in comparison with the Exploratory Phase duration during the A74 (I3). The Exploratory Phase would usually take up 7 years in a total project time of 14 years. The aim of the advice by the commission Elverding was to half that time. This was 4 years, so it is relatively quick in comparison to old projects (I4). However, the other experts found it either normal (I2, I6) or even slow (I5). It is possible to do an Exploratory Phase much quicker, even in 1.5 years (I5). With the experts divided, it is perhaps a good conclusion to take the time as average.

2. *During the Exploratory Phase an alternative track route was brought up by residents from the area. This alternative became the route for the new N35.*

Common: This is not a unique situation, but is in an example of how they (Directie Participatie of Rijkswaterstaat) would like to see it being done (I2). The second expert agrees and sees it as a manifestation of ultimate participation (I3). The other experts also mentioned that there are always citizen alternatives, but they are often far too expensive or simply 'ridiculous', but some parts of them

are taken into account into the Preferred Decision (I4). With the A7 Project in Groningen, the part concerning a forest was very sensitive and the citizens wanted to tunnel the road underneath it fully. Citizens do however come up with out of the box ideas that are not based on budget and they do find their way into the preferred decision. The fourth expert also gave an example of a provincial road near Hoofddorp of 200 million euros where a citizen alternative also ended up becoming the Preferred Decision. However, the fifth expert added that it does not happen often that a citizen alternative is chosen fully, since the Preferred Decision is just based on a cost-benefit analysis (I6). This interviewee however added as well that it gives the project a lot of support and therefore this person finds it beautiful.

3. *Every day 20.000 vehicles travel across the N35 between Nijverdal and Wierden. Main goal is this case was to improve safety and secondly the traffic flow.*

Uncommon: The amount of traffic is not too high or even low, all experts capable of answering say (I2, I4, I5, I6). With 2x2 you will not reach the full capacity of the road, since that is not a great amount of traffic (I5), especially in comparison to A-highway projects with 200.000 cars per 24 hours (I4). The N35 has a lot of more accidents so the project goals make sense (I5). Safety is more of a topic in N-roads and provincial roads, as in the N279 as part of the A67 project, where we also had to upgrade to establish grade-separated intersections (I5). All of the experts mention however that the traffic flow is in a lot of projects, with all A-roads, the main goal of widening. This means that the N35 is unique in the low amount of traffic for its widening and in the arguments made for the to be taken measures, since most of the time improving traffic flow is the main goal.

4. *Important was the redesign of grade-separated intersections*

Routine: This is normal for these types of IPA projects, where an 'ordinary' road gets upgraded to a 'stroomweg' (I2, I3, I5), in this case with the N18 and N33. This is legally mandated for roads with these speed limits (I6) It is also common for provincial roads, such as the N261 and the N279. With A-roads no grade-separated intersections are in the scope of the projects, since they already have all of those.

5. *The plan detailing phase between the Exploratory Phase and DTD lasted from 2015 to the end of 2017*

Uncommon: The experts indicate it is either common or quick. This is common but an also be considered quick (I2). It is quite fast (I3, I4). This is a common time for a plan study on A-roads and N-roads (I6). It would usually take 14 months for an DTD (I5). It would be due to the little amount of scope changes (I2) and realistic planning the N35 project had (I4). With the A4 there were for instance several scope changes which delayed us (I5).

6. *From the interview with the Participation Manager the goals of the participatory process became clear. Maximise value which will also maximise the amount of interests served, which will in the end reduce the amount of Views to the DTD.*

Inconclusive/Unique: This is not always the case but highly dependent on the requirements made the client (I2, I3, I6). The first interviewee mentions that these are the exact goals of Antea Group too (I2). However other interviewees mentioned that they either find these goals nonsense (I4) or that they do not believe the last goal of reduction of unique Views fits the other goals (I3, I4, I5). One of the interviewees mentioned that in their personal view, the goal should be to listen to wishes and provide feedback on the inclusion of those wishes (I5). Another mentioned that the participatory process should only aim to inform for the sake of inform citizens (I4), while expert 2 said it is always only about what the client wants in their Best Value Criteria (I3).

7. *Antea Group had a participation plan in which they did Customer Requirement Meetings with major stakeholders like province, Rijkswaterstaat and municipalities. Afterwards for specific*

design objects they held Location Specific Meetings with stakeholders more relevant to those elements.

Routine/Uncommon: The CRM's and Open Meetings are all standardized now (I2, I3, I4, I5, I6). You always speak to the professionals first and then to the public (I3). The LSM's though are not very common (I2, I6), since you would also organise these meetings along themes, such as nature (I2). The latter is the case with the A4 (I6). However more often with N-roads and provincial roads the meetings are more focused on public participation in design or value-creation (I5), we have that with the N14 as part of the A4 project. All in all, the CRM's are now routine and the LSM's are uncommon.

8. *To identify the participants for these meetings a stakeholder analysis was done. This top down approach was performed by Rijkswaterstaat and Antea Group.*

Routine: With the N35 it was already done in coherence with the authorities in the Exploratory Phase (I2), so it was highly dependent on that. However, bottom up approaches might work better in the Exploratory Phase, since expertise is not that important yet (I3). During the Plan Study though it also routine to use a top down method, especially in Rijkswaterstaat IPA projects (I4, I5, I6). Antea Group, together with the client have the expertise and can map the interests the best (I4). However, there are also examples of bottom up approach meetings before the CRM during the N18 project (I6) or during the N270 provincial road project. This means a conclusion that although it is common to do a top down approach, examples of bottom up meetings are also there in projects comparable to the N35.

9. *Public Information Methods were used alongside these, through newsletters, a website and an Open Meeting where the DTD was presented.*

Routine: The organisation of public meetings is routine, especially the information evenings in town halls (I4, I5, I6).

10. *Information on sound nuisance as well as the design itself was provided through a house level detailed Geographic Information System (GIS) map.*

Common: It was uncommon for GIS to be used in this way, but will become routine in the future. Before, the DTD documents were the only information published and a way for people to find out the noise levels and they still are (I3). However, these do not include a façade level analysis and therefore GIS makes the effects much clearer (I5). The most notable comparison case the A27 used a different legend for the GIS viewer, but that specific system should only be used when it is a serious argument in favour of the project and in all other cases the system of the N35 will be used (I4), of instance for the A4.

11. *The grade separated intersection is made by constructing the new road at a couple of meters above ground level. Is this common?*

Uncommon: Most of the time you will see that the intersecting road will either go over or underneath the N-road (I3, I6). In the Randstad, in real urbans areas, we prefer to build tunnels over fly overs, but the A-road will most of the time stay at ground level (I5). With the provincial road of the N279 the N279 also went above ground level, except in nature reserves, to mitigate the effects (I5). The N18 also does not go up every time we had a grade-separated intersection (I6). It depends on the choices from the Exploratory Phase and the 'fitting' of the intersection (I6), but the main reason is most of the time that it is cheaper to do a fly-over instead of a tunnel (I5).

12. *One of the specific design elements is an eco-duct*

Routine: This is nothing special (I2, I3, I4, I5, I6). The A74 had the largest ecoduct in the Netherlands (I3) and with the A4 there is also several, as well as three on the provincial N279 project (I5)

13. *A situation where ProRail (Railway track Zwolle-Almelo) and Vitens (Drinkwater Collection Area) were important stakeholders.*

Common/Uncommon: the situation where ProRail is a stakeholder is common (I2, I4, I5, I6). Water Collection Areas and the accompanying actor Vitens are not common. It is not possible to pass such an area, unless you find compensation points, which would have taken far too long. The North variant of the N35 was not considered in the early stages because it had to cross such an area (I2). With the help of the environment this was made possible which makes it unique (I4, I5, I6). The experts do note that they are comparable to nature reserves and that every project has these kinds of issues (I3), as well as the fact that these Water Collection Area are comparable to the Groundwater Protection Areas Antea Group encountered in the N18 and A27 (I6).

14. *An incredibly detailed alternative design of the Baron van Sternelaan was handed in by a citizen initiative*

Common: The first interviewee, participation manager of the N35 had never seen such a detailed professional one before, although acknowledging that there are always professional initiatives (I2). The other experts however named a few projects in which there also these kinds of detailed designs (I3, I4, I5, I6). These examples include the N211 provincial road (I3), the A4 Stichting Batavier and Stichting Hoevelaken Bereikbaar (I4) and the N18 (I6). Most of the time the alternatives will concern the specific design of an intersection (I6)

15. *The municipality of Hellendoorn ended up agreeing with the proposed alternative and wanted to widen the scope in an advanced stage. They submitted a View for this.*

Common: This happens more often. One of the interviewees correctly noted that the municipality did not change its mind but wanted this from the start. They kept complaining to make sure that if any extra funds become available, they would get them (I4). With the N18 the mayor of Haaksbergen did the same successfully (I4). Another interviewee mentioned the A7 project, where the municipality of Groningen and Haren both handed in Views concerning realisation nuisance (I5).

In principle the municipalities should act like one unified body of government. If this happens, no Views from either of them are needed. However, I do remember also receiving Views from the municipality and water board with the A27 highway.

16. *The scope was not changed to make this alternative possible in terms of financial and time resources.*

Inconclusive: The interviewees say that the main goal of the scope is to keep the project steady and stable (I3). Since Rijkswaterstaat is the leading client they will not often go for a change of budget and planning, because of interconnectedness with other projects (I4) and because they do not want to have a precedent for actors to use against them in the future (I2). Other interests are also leading, with the A74 an international event happening in one of the towns (I3). Legally Rijkswaterstaat was not required to change to scope to fund extra measures, because everything we planned was legally possible. One of the interviewees notes that it is interesting that 70 percent of the project was financed by authorities but that Rijkswaterstaat still had the main decision-making power in this instance (I4). All interviewees however agree that project scope changes are most of time inevitable because of new information.

17. *Local policies regarding for instance sound nuisance were dwarfed by the national norms and laws the N35 had to adhere to.*

Routine: All interviewees indicated that these types of projects are subject to national law and therefore local policy or ‘wishes’ are not taken into account. They are not aware of any sort of compromise that has ever occurred in that sense.

18. *90 percent of Views was initiated by Residents*

Common: The interviewees indicate that this is either common (I3, I4, I6), logically sound (I5) or that they lack the knowledge to answer the question (I2)

19. *Over 70 percent of Views was about sound, 20 concerned the project scope and 6 percent was about environmental effects.*

Common: The interviewees mention that these are common issues for these IPA projects (I2), but that they are most of the time more evenly distributed (I4), especially in terms of sound and environmental effects. Sound is always a main issue (I5, I6).

20. *Over 65 percent of the Views was about NIMBY.*

Common: This seems either logically sound or common according to all of the interviewees.

Synthesis: The generalisability of the N35 Nijverdal Wierden case study.

In terms of '**Scope, Problem and Exploratory Phase'** the N35 shows a lot of commonalities with other IPA projects, but is also specific is some areas. For one, the N35 is widened which happens in all IPA projects. The speed limit increase does not occur in A-highway projects, and the change of track is highly unusual but comparable to several other projects concerning N-roads and provincial N-roads. The design of grade-separated intersections is commonly part of N-road projects. Each IPA project knows citizens' alternatives, but these are not often fully accepted as the Preferred Decision. The problem the project intended to solve was special in comparison to A-road projects, but not N-roads and provincial roads, since safety is often prioritised there too. No conclusions could be drawn as to the commonness of the duration of the Exploratory Phase.

In terms of '**Participatory Process Design'** and the plan detailing phase the N35 project is uncommon. This was because the client Rijkswaterstaat specifically asked the company for a set of goals. The experts think the tender-criteria are leading in these goals and that Antea Group does not have its own vision on this. The majority of the interviewees questioned the goals as formulated in the participation plan. The participants of the activities were identified using a top down approach, which is routine. The CRM's are now part of a blueprint and Open Information meetings are routine too. The LSM's are uncommon though, as well as this use of a GIS Viewer. However, the way the GIS Viewer for sound nuisance was used in this project will be standardised in IPA projects.

The **Project Specific Elements** shed more light on some common and unique situations. The construction of an eco-duct, not taking into account local sound policy, the fact that ProRail was a stakeholder because of the railroad and the submission of a View by a municipality are highly common. The occurrence of highly detailed alternative designs is also common. However, the scope was not changed to include this more costly alternative, which is uncommon in general, but can be considered logical in the sense that the N35 Nijverdal Wierden is part of a larger project. Also, the construction of the N-road above ground level is not common and has severe implications for sound production. The same goes for the fact that the road, with help from the environment crossed through a Drinkwater collection area, which is unique.

The **View Patterns** are common according to the experts, which means that implications for improvements will be applicable to more projects. Residents submitting views from a NIMBY perspective concerning the increase sound nuisance is a group of initiators apparently common in other projects.

6 Discussion

This chapter reflects on the credibility and the ability to generalise the results of this research. It elaborates on the theoretical framework and the validity of the case study design.

6.1 Reflection on theoretical framework

The theoretical framework was made using a variety of literary sources. The methodology to find these sources is well documented and structured. The legal framework, dimensions of participatory process and assessment of Views for participatory success were all used in the case study. However, it also has liabilities.

Firstly, the legal framework for road infrastructure projects was designed to 'fit' the case, in the sense that it only describes the 'regular' IPA procedure (Rijkswaterstaat, 2019). Therefore, is not applicable to all road infrastructure projects.

Secondly, it was assumed that the design of a participatory process can be defined as a step-down process from goals to identification methods, followed by categorisations of stakeholders, determination of participatory strategies and activities. The used literature often only reflects on one of the dimensions, and not on a complete framework. This means the link between those dimensions is not as straight forward as assumed. For instance, literature does not show that a choice for one participatory goal leads to a need for specific participants or activities.

Also, the differentiation between different goals is not clear, since they do not exclude each other. The definitions of those goals in terms of 'value', 'consensus', 'legitimacy' etc. sometimes overlap in literature. As a result the grouping of definitions made in this framework lacks support from literature.

The definition of success in the theoretical framework only regarded the achievement of smooth project implementation as participatory success. The definition did not include any measurement for the other goals. Therefore it is a limited definition of participatory process. The same goes for the categorisation of complaints, which was done with an deductively derived categorisation and also lacks support from literature. This however also improved the external validity of the case study, since this framework can also be used to assess participatory processes in general. The literature used follows from fields of water engineering management (Krywkow, 2009) and environmental impact assessment projects (Hasan, Nahiduzzaman, & Aldosary, 2018).

All in all, the theoretical framework was defined using a correct methodology, but it is not applicable to all IPA projects and not fully able to correctly map participatory processes. The definition of success used is limited, but suitable for the goal of this research. Whether it should be used in the same form in other case studies assessing participatory success is up for debate.

6.2 Reflection on case study design

The case study regarding the N35 project was designed in line with the research objective. Several aspects of this case study design increase the reliability and validity of this research while several improvements can still be made.

Reliability and Internal Validity

Reliability concerns the replicability of research findings in another study, using the same or similar methods' (Lewis & Ritchie, 2003). In qualitative research authors also use terms such as 'trustworthiness' or 'consistency' of these findings. This depends highly on the recurrence of the original data and its interpretation.

Firstly the data used in this research was gathered through document analysis and archival records analysis. The research analysis was done as systematic, transparent and comprehensive as possible, but used research methods lack in that aspect. The search for keywords does not guarantee that other researches will interpret the data in the same way. Possible improvements would be to peer review for instance an assessment of a View or the participation plan. Even though the results were discussed briefly, the assessment of an individual view was not thoroughly discussed. This was not done due to the limited time scope.

The use of triangulation of sources through an interview method contributes to the reliability. This method however is not stable and has risks for biases in interpretation. To combat this, the notes during the interviews were taken in accordance with the interviewees. Also, the interview reports were sent to the interviewees to make sure their opinions were captured correctly. Possible improvements would be to have a second interviewer present or to discuss the interview results with the interviewees a few days after the interview. This would stop possible misinterpretations, since the interviewees of course did not go through the entire interview reports by themselves. The fact that I was the one conducting this research however makes the first part impractical.

Internal validity in qualitative research shows similarities to reliability. It concerns whether the phenomena under study are accurately reflected. The choice for the case in this research has been justified with several reasons and therefore has little bias. The capture of the case was done sufficiently through triangulation. The theoretical framework used provided a sufficient method for the identification of the studied phenomena. The explanations for the interpretations are clear and detailed. The methodology was documented in a transparent way and therefore allows others to see the analytic constructions that led to the views. All of the above shows this research is internally valid to a certain extent.

However, as illustrated above the theoretical framework used has its flaws, as well as the data collection methods. Since this is a single case study no internal validation methods, such as ‘constant comparative analysis’ or ‘deviant case analysis’ (Lewis & Ritchie, 2003) were used to further show this.

External Validity

External Validity concerns to what extent the ideas generated are applicable to other cases, contexts and settings (Lewis & Ritchie, 2003). It has a lot of similarity with generalisation of research findings.

The methodology was designed to make the study as externally valid as possible within the given time scope. Through triangulation by sources, e.g. the comparison of expert opinions in interview, regarding the commonness of the studied case an assessment of the external validity can be made. The case study only considered one case however, making the research findings less externally valid. A cross case comparison would improve the external validity. The same goes for other methods such as the triangulation of multiple analysis. It would benefit the external validity if other analysists other than myself also analysed the internal documents (D1, D2) and made assessment of the Views. However since I was the one conducting the research, this was not possible.

The N35 Nijverdal Wierden case shows similarities to other IPA projects, specifically projects concerning national N-roads. These similarities are found in terms of problem, scope, project specific elements and view patterns for the research findings to substantiate general advice for improvement in future projects. However several annotations can also be made regarding the external validity of the case. Firstly, the N35 case does not compare to a bulk of A-road projects. Provincial roads projects are conducted through a different legal framework, so the findings also do not apply to those projects. In a more general sense the findings are also applicable to spatial projects in general, since environmental effects and sound nuisance are often a result of spatial projects, for instance railroads or urban planning. Those projects also have participatory processes that can be designed along the dimensions

from the theoretical framework. Thus, conclusions drawn regarding those dimensions can also be of use to other fields where participatory processes are used.

During the N35 project the emphasis Rijkswaterstaat put on the participatory process is uncommon. Participation was a large scoring criterium on the tender offer. This emphasis and therefore design of the N35 participatory process will not be seen that often across other IPA projects. The interviews showed that participatory process designs differ across projects (I6). Also, companies like Antea Group have vastly different visions and philosophies on how to structure participatory processes as well. This means the findings of this research are mostly only applicable to Antea Group's practices.

7 Conclusion and Recommendations

This chapter contains a brief overview of findings of this research as well as the answer to the main research question. It also gives recommendations to Antea Group and recommendations for further research are also included.

7.1 Conclusion

The main research question of the research was:

How can Antea Group improve its participatory processes in major road infrastructure projects so that the amount of 'Views' can be decreased?'

The participatory process during the N35 Nijverdal Wierden project was extensive, both through the Exploratory Phase and Plan Detailing Phase. Antea Group mainly focused on the participatory goal of 'maximisation of value'. It was assumed that achieving these other participatory goals such as 'democracy' or 'smooth project implementation' would also be used. A top down approach was used to identify participants for CRM's and LSM's to achieve this goal. However, the choices Antea Group made during the Plan Detailing Phase have led to an unexpected high amount of Views.

From the Views follows that a large group of Initiators show similarities. An overwhelming majority of them is a local resident, who was not involved in any participatory activities. This shows that the current design aimed at the maximisation of value was not successful in making Initiators feel heard. Several improvements to the design could be made, such as a brief continuation of Exploratory Phase activities, with the same participants or through an open meeting.

However, the used activities would have been more successful in preventing more Views if a bottom-up approach was used to identify participants too, since actors with relevant knowledge, residents with concerns, or involved individuals might want to be involved.

The research shows the formulation of the problem-solution combination in the DTD presented by Antea Group and Rijkswaterstaat is unstructured. Initiators and project team differ in their opinions on norms and values and the knowledge base between them is uncertain. Initiators do not agree or understand the knowledge acquiring methods used by the project team. This knowledge and norm gap are focused on the most important complaint topics. These topics are an increase in sound nuisance, scope and environmental effects. The notion of sound being an important reason for the submission of a View can be combined with the notion that a majority of Views shows signs of NIMBY-ism. This means that the knowledge uncertainty and disagreement on values could be addressed in a meeting with individually affected citizens. In general, such a meeting would contribute to a mutual understanding of used norms, research methods and knowledge. Antea Group is capable of identifying initiators with NIMBY complaints about sound nuisance. To prevent the submission of Views Antea Group could reach out to residents directly affected by an increase in sound nuisance.

7.2 Recommendations to Antea Group

The findings suggest several improvements for the participatory process design. All in all, the advice I would give Antea Group for future projects is to:

1. *Re-evaluate the goals of participatory processes and see if the maximisation of value contributes to a minimalization of Views submitted after the publication of the DTD,*

Because the maximalisation of value might have resulted in the specific planning of activities with only professional parties, which in turn meant a large group of initiators did not participate. These initiators submitted Views because they felt their concerns were not heard.

2. *Improve current participatory activities by using a bottom-up approach to identify possible participants for a part of the activities.*

Initiators felt left out of the participatory process and submitted Views because of it. A bottom up approach would allow Antea Group and Rijkswaterstaat to identify stakeholders wanting to voice their concerns. Unidentified stakeholders with new and relevant information might also turn up as a result of the bottom up approach. This does not mean that all of the participants identified through this method should be included, but allows the project team to know the stakeholders better and adjust future actions for that. In short, this recommendation can be summarised as 'the more you know, the better'.

3. *Organise a meeting during the plan detailing phase to elaborate on knowledge gathering methods and legal norms used for the assessment of external effects, cost-efficiency of mitigating measures and financial costs of alternative designs, specifically focused on residents directly affected by external effects,*

This meeting can be used to make the knowledge base more certain and achieve more consensus on used norms for severity of external effects and financial costs of alternatives, keeping a large group of Initiators from submitting a View. Many Views were handed in from a NIMBY perspective. A more personal treatment of these initiators might prevent them from submitting Views. When these initiators understand the measuring methods and how the 'cost-efficiency' criterium of mitigating measures work, less Views will be submitted.

The recommendations should be nuanced though, following from the context of the case study.

First of all, if these recommendations lead to a total disappearance of Views, the DTD becomes the TD. However, the maximum amount of time saved would only be a year, since that is the an average time needed to get from the DTD to the TD (I5). If the changes require too much additional resources it might not even be cost-effective to implement them.

Second of all, the goal of a plan study is not to minimalize the amount of Views but to build a solid DTD. Within the scope therefore it is logically sound to maximise the value of this DTD. A change to this main goal of the participatory process therefore might not prove fruitful, since the overall quality of the DTD will decrease.

Also, the use of a bottom up approach is time and resource consuming and whether unnoticed stakeholders with new and relevant information will turn up is debatable. Stakeholders that want to participate but are not selected by the project team will not accept that decision and will still submit. Views.

Besides, it is not guaranteed that these changes to the process design will actually achieve what they intend to. The knowledge gap between initiators and project team is too large to solve in one meeting and the 'persistency' of initiators to accept the 'truth' will still result in a large submission of Views.

Finally, the recommendations might not be implemented simply because the information they intend to explain is not available during the plan study. The main aspect of the DTD is that all information it contains is definitive. Antea Group cannot organise a meeting for knowledge exchange when there is no information to share. At the same time, some information cannot be made public since it will compromise the client in the tender phase. This was one of the reason the knowledge on financial costs of the alternative intersection design were not shared with initiators initially.

7.3 Recommendations for further research

This research report provides insight into the dimensions of participatory processes and whether current participatory processes of Antea Group can be improved to reduce the amount of Views submitted after the DTD has been published. As the discussion has shown however, future research should include improvements to increase the validity and credibility of this research. Several recommendations will be made research into these phenomena.

The time scope of this research was limiting and only allowed for the studying of one case. Further research in possibly multiple case studies should include.

1. Check the applicability of the theoretical framework to other IPA projects and participatory processes, especially when done by another engineering and consultancy firm such as Antea Group.
2. Perform a cross-case analysis to improve the external validity and generalisability of the research findings. Given the time scope, the used method of expert interviews is sufficient, but a multiple case study using a cross case comparison would improve this substantially.
3. Have a research team of mutually independent researchers assess and interpret the data of this case study, to further improve the reliability and internal validity of this research. For instance, by peer reviewing the content of Views, the interpretation of these Views will improve.
4. Interview several other parties participating in participatory processes to clarify the information gathered and interpreted from documents. The client Rijkswaterstaat plays a large role in road infrastructure projects. Their influence as clients and opinion on the future of participation shapes participatory process design.

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I4 - Interview Report – 14/06/2019 IPA Expert Advisor/Contract Manager N35 - RQ6

I5 - Interview Report – 18/06/2019 – Technical Manager A4 – RQ6

I6 – Interview Report – 18/06/2019 – IPA Project Expert/Senior Advisor – RQ6