

The Environmental Impact Assessment in Seattle's planning practice

Master thesis Urban Planning

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Abstract:

This thesis investigates the role of the Environmental Impact Assessment in the planning practice for the protection of environmental qualities in the City of Seattle.

Keywords:

Environmental Impact Assessment, City of Seattle, Performance planning, Collaborative planning, Participation, Air Quality, Water Quality.

Cover photo:

Lake Union and Downtown Seattle, viewed from Gas Works Park, Wallingford, Seattle, WA, USA.

SUMMARY

This research focuses on the role of the Environmental Impact Assessment in the planning practice for the protection of environmental qualities in the City of Seattle. During the last decades environmental planning got more attention in urban planning. The EIA helps to investigate the environmental impacts that a particular development project has and to include environmental effects to a greater extent in the decision-making process in planning (Levy, 2006; PADC Environmental Impact Assessment and Planning Unit, 1983; Van Eijk et al., 2005). The United States was the first country that used the Environmental Impact Assessment, which is nowadays used all over the world (Canter, 1996). Seattle is no exception to this, as under the NEPA (and SEPA) it is required to perform an Environmental Impact Assessment (EIA) for both local and national plans and projects. Unfortunately, developers are rarely required to choose the most environmental friendly alternative that is included in the EIA, but can continue their work as long as they choose an alternative that fit the environmental standards set by law. This makes it confusing whereas the value of the EIA is located. Can the EIA lead to more environmental friendly outcomes, even when the most environmental friendly alternative is not chosen? To create more clarity, this research focuses on the consequences the EIA has for measures undertaken to protect environmental qualities from being lost. Therefore, the main question is: *“What is the impact of the Environmental Impact Assessment for the environmental planning in the City of Seattle?”*

During the process to accomplish plans and policies, planners have to operate in corporation with other actors. Therefore, most decisions are the result of a collaboration process. This could cause the outcome to differ from the original plans or policy. The Environmental Impact Assessment is one of the tools used during this process that leads to the accomplishment of plans and policies. The EIA provides a lot of information about possible environmental impacts of plans and policies. It provides decision-makers and participants a better understanding of these impacts, so they can consider them properly during the planning process. It could also cause new actors to find a reason to start participating in the process and stand for their rights regarding the environmental quality of their surroundings. In this way the EIA helps to give the environment a more prominent place in the collaboration and decision-making process in planning.

But does the EIA lead to measures regarding the protection of environmental qualities? As stressed above, the information the EIA provides can mobilize actors to represent the environmental interest. In addition, as environmental impacts are identified in the EIA, it can be verified if considered alternatives of the plan fit the requirements set in the legislation. If they do not, measures have to be taken to meet these requirements before the alternative can be adopted. In this research, two spatial plans are investigated to get more insight in this role of the EIA in the establishment of these measures; The Northgate Urban Center Rezone Proposal, one of the Neighborhood Plans included in Seattle's Comprehensive Land Use Plan, and Transportation 2040: the transportation plan for the Puget Sound Region. In both cases it turns out that all alternatives comply with the quality standards set by law. For this reason the EIA has no directing role regarding the alternative that has been chosen, because all alternatives are allowed. The Environmental Impact Statements focuses therefore above all on (more procedural) requirements for the construction and the EIA for specific development projects. In this way they want to ensure that the developed projects (according the plan) cause no adverse environmental impacts as well.

It should be said that, the EIA does not lead necessarily to the establishment of additional measures to improve environmental qualities, when law does not require these. For example, it is not required that the most environmental friendly alternative is chosen if other alternatives also comply to the environment standards. What additional value can the EIA have for the environmental planning practice, besides examining the plan alternatives? It turns out that, an EIA that is integrated in the early stages of the planning process can lead to more environmental friendly outcomes in planning. When the environment has already a more prominent place in the plan-making, plan alternatives with unacceptable environmental impacts could have been excluded or adapted during the designing-phase. In this way, the consideration of the environment during the plan-making can lead to better results for the environment, even if, in a later phase, the most environmental friendly alternative is not chosen (as was in case of Transportation 2040).

Thus, the EIA gives the environment a more prominent place in spatial planning. Not only in the decision-making process or as an examination tool, but increasingly also in the plan-making. This can cause better protection of environmental qualities. But, even with a more prominent place in the planning process, the environment will remain just one of the aspects that planners and decision-makers have to take into account in the (political) process of planning. Yet, the most environmental friendly alternatives are not guaranteed, but at least is the environment, through the EIA, part of the deliberation process.

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PREFACE

This is the report: “The Environmental Impact Assessment in Seattle’s planning practice”, a master thesis in Urban Planning, written to finish the master Urban Planning at the University of Groningen, Faculty of Spatial Science. The research focuses on the role of the Environmental Impact Assessment in the planning practice for the protection of environmental qualities in the City of Seattle. During four years of study I became interested in environmental planning (and the complexity of the related issues), so I’m glad it was possible to write my thesis about this topic.

As the title indicates, the research area for this thesis is the City of Seattle. To elaborate the case study I got the opportunity to stay in Seattle for two months. I saw this as a big chance to learn about urban planning in the United States. It was interesting to see the differences between the Dutch and American planning system and through learning about the American planning system I have obtained a better understanding of the Dutch planning practice. Moreover, I have had a great time in Seattle, and I am thankful it was possible for me to stay there.

Now I want to thank some people without whom I could not finish this thesis in the way that I have done now. First of all it was not possible to write this thesis without help from, Drs. T. van der Meulen (teacher at the University of Groningen), Dr. F. Niekerk (teacher at the University of Groningen), Prof. Dr. G. de Roo (teacher at the University of Groningen), and Prof. D. H. Miller (teacher at the University of Washington). So, I want to thank them for all the feedback they gave me during the process.

Also, I’d like to thank the people I have interviewed about the research topic. It was nice talking to them and they provided me with a lot of information. So, thanks to:

- Alon Bassok (Department of Systems and Analysis, Puget Sound Regional Council)
- Tom Hauger (Department of Planning and Development, City of Seattle)
- Miles Mayhew (Department of Seattle Public Utilities, City of Seattle)

At last I want to thank my boyfriend for his support and advice during the process. Also thanks to my parents, brothers and sister, as to my friends, for supporting me.

Finally, I hope you will enjoy reading this thesis.

Marjolein Verheijen

Groningen, March 2011

CHAPTER ONE

INTRODUCTION

This first chapter explains the reasons that led to the investigation of the Environmental Impact Assessment in Seattle's planning practice. Why is it interesting to investigate the consequences Environmental Impact Assessments have on the formation of measures in the environmental planning practice in Seattle? Which research questions are central to this research? And what makes Seattle such an interesting research area? These questions are central to section 1.1 which handles the research design. In the next section (1.2) the methodology of the research is clarified. How is the research performed? This section also provides a description of the structure of the thesis.

1.1 Research design

Central to this first section is the research design. Therefore, primary attention is paid to the outline of the problem and relevance of the research. It gives a short introduction to the research subject, whereupon the objectives of this research and the research questions to reach these objectives are set. Additional, attention is paid to this research area; why is the City of Seattle chosen as case study in this research? But let's start with questioning why it is interesting to perform this research in the first place.

Outline of the problem

Worldwide the conflicts on the interface between spatial development and environmental conditions increase, and the United States are no exception. It is difficult to combine environmental intrusive activities and environmental sensitive activities in areas with a high population density, like cities, without impacts on the quality of life. This makes environmental planning to become an important topic within urban planning, since the late sixties and early seventies (Levy, 2006; de Roo, 2001).

During the last decades environmental planning got more attention in urban planning again and is also in Washington State's politics a serious topic. That this applies for the City of Seattle is evidenced by the increasing attention paid to environmental protection by the government and citizens. Environmental qualities are threatened by spatial developments in the city. An Environmental Impact Assessment (EIA), or a variant, is mostly used to ensure the environmental impacts are considered during the planning process. The EIA helps to investigate the environmental impacts a particular development project has and to include environmental effects to a greater extent in the decision-making process (Levy, 2006; PADC Environmental Impact Assessment and Planning Unit, 1983; Van Eijk et al., 2005). The United States was the first country that used the Environmental Impact Assessment, which is nowadays used all over the world (Canter, 1996). But despite the fact that it is broadly required to use an EIA, developers are rarely required to choose the most environmental friendly alternative. They can choose other alternatives as well, as long as these fit the standards set by law (for example a financially favorable alternative). Seattle is no exception to this. So it's confusing whereas the value of the EIA is located. Can the EIA lead to more environmental friendly outcomes, even when the most environmental friendly alternative is not chosen? To create more clarity about this, this research focuses on the consequences the EIA has on measures that were taken to protect environmental qualities from being lost.

Objectives and Research questions

The purpose of this research is to investigate the meaning of the Environmental Impact Assessment in the environmental planning practice. This is done by getting more insight in the role the EIA has in the

formation of measures for the protection of environmental qualities, like air and water quality. It is valuable to do so, because most of the time the influence of the EIA in the planning practice is not clear. To reach this objective, the following main question is set for this research: “*What is the impact of the Environmental Impact Assessment for the environmental planning in the City of Seattle?*”

To answer this question, the context of environmental planning in Seattle should be clarified first. Even as the place of the Environmental Impact Assessment in the planning process. Afterwards the following sub questions can be answered:

- How can the role the EIA has for the accomplishment of plans and policy be explained?
- What consequences does the EIA have for the formation of measures regarding the preservation of air and water quality?
- Does the EIA have other consequences for the environmental planning practice?

The answers given to the sub question help to formulate the answer to the main question. Before the explanation of the exact methodology to accomplish this, which is given in the next section, this section ends with an introduction to the research area.

Research area: the city of Seattle

Washington State is the so-called Evergreen State, because of the amount of environmental qualities this state has. In the City of Seattle these qualities can be found as well. As the map of figure 5.1 shows, many water bodies surround the City of Seattle. The city also owns a good amount of parks.

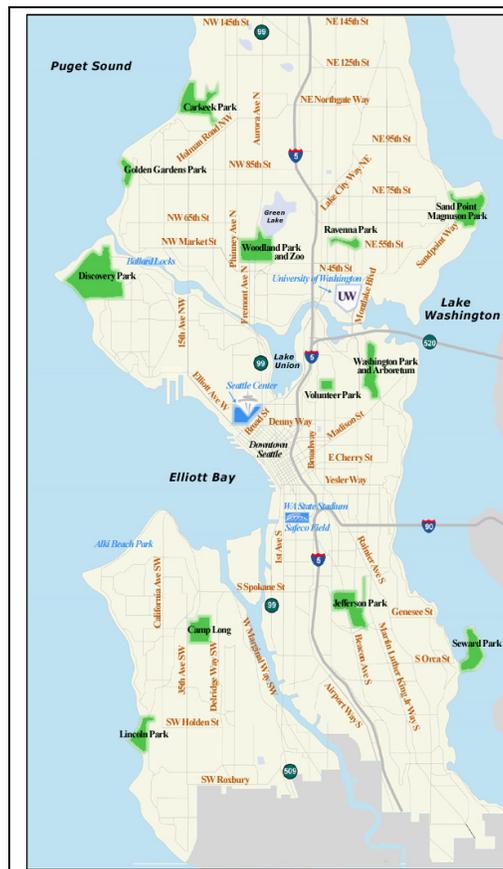


Figure 5.1: Map of the City of Seattle (Website City of Seattle, 2010)

Because of the Growth Management Act, the population growth is concentrated in a few growth centers. This leads to more intense developments in these areas, and therefore the environmental sensitive aspects, as air and water quality, will face greater pressure. Because of the large amount of environmental qualities that are located in the City of Seattle, it is interesting to focus on the measures the City of Seattle takes to prevent or compensate these losses.

These environmental impacts and loss of these environmental qualities has attention from Seattle's citizens as well. This is evidenced by the formation of 'Sustainable Seattle', a network of citizens who ask attention for the loss of their quality of life. Meanwhile they operate in collaboration with business leaders and governmental representatives. This organization set up indicators to reach a sustainable community, including aspects in relation to environmental treatment in cities. For example: air quality, open space in Urban Villages and water consumption. Indicators are also set for Transportation and Energy (Sustainable Seattle, 1995). In this way they try to clarify the impacts that spatial developments have on the environmental quality and to motivate the government to take measures regarding the protections of environmental qualities. This research focuses on the role that the Environmental Impact Assessment has in the establishment of these measures.

1.2 Methodology

After the previous section has explained the research design, this section concerns the methodology and structure of the research. How is the research performed? It is useful to discuss why the used research methods are chosen. What are the advantages and disadvantages of using these methods? And how are they applied within this particular research.

The first research method used is literature research. Literature research is done to obtain insights in the context of the research and to provide a theoretical background. The literature research will look into previous relevant research to provide information that is needed to answer the sub questions. The advantages of doing literature research are obvious; it takes relative little time and produces a framework of approaches and insights regarding the research topic. Besides more general literature research, planning documents are studied to get information about the planning policy and to sketch an overview of environmental planning in Seattle.

In addition, interviews are used as a research method to get more in-depth information about the role the Environmental Impact Assessment has in planning practice. The dialogue-nature of interviews is an advantage, not only because it possibly produces in-depth information, but also because the interviewees have the possibility to point out some topics themselves (Flowerdew and Martin, 2005). In this way it is possible to get more insight in how planning policy documents are interpreted and accomplished, and the way in which the EIA helps planners by doing so. This information cannot be found in the literature or policy documents, what makes interviewing an appropriate method for this research.

Structure of the thesis

This thesis is divided into five chapters. This first chapter is an introduction to the research. The second chapter provides the context of the research and chapter 3 provides the theoretical framework on account of this background. Afterwards, in chapter 4, this thesis looks at the role the Environmental Impact Assessment has in the planning practice in Seattle, based on an empirical study. In the last chapter the conclusions and a short comparison with the Netherlands are given.

CHAPTER TWO

ENVIRONMENTAL PLANNING PRACTICE IN SEATTLE

To investigate the role the Environmental Impact Assessment has in the formation of measures to protect environmental qualities, it is necessary to sketch a context for the research to be placed in. What does the environmental planning practice in Seattle look like? Logically, to answer this question an introduction to environmental planning in the United States is required. Section 2.1 focuses on this. Afterwards, section 2.2 gives an overview of the administrative structure in Washington State and the City of Seattle, which also influence the environmental planning in Seattle. Finally, the last section (2.3) will give a sketch of the environmental planning practice in the City of Seattle. Together these provide a valid context for this research.

2.1 Environmental planning in the United States

The emergence of environmental planning in the 1970s derives from the growing awareness of the importance of environmental health (Miller and De Roo, 2005). This led to a lot of efforts to protect environmental quality in urban development for the last decades. This emerging of the growing environmental awareness resulted, worldwide, in a lot of planning instruments and concepts for solving the conflicts between spatial planning and environmental protection. Examples are: the Dutch initiative of *Integrated Environmental Zoning*, the *Growth Management* in the United States (Miller and De Roo, 2005) and the idea of the *Compact City* (De Roo and Miller, 2000). Along with the adoption of legislation concerning this topic, also during the seventies, the environmental planning starts to exist.

As environmental planning is a broad concept, this section discusses what environmental planning means. What is exactly environmental planning? Daniels and Daniels gave in their article in *The Urban and Regional Planning Reader* the following, clear definition of environmental planning: "Environmental planning involves deciding how to use natural resources, financial capital, technology and human resources to achieve and maintain healthy communities and a high quality of life" (Birch, 2009, p.299). This is a broad definition, but it is reasonable to conclude these decisions are also made in the urban planning practice.

In addition to this definition they point out that the environment is build up of three broad land use types: natural areas (wildlife habitats), working landscapes (farmland and recreation areas) and built environments (cities) (Birch, 2009). As the City of Seattle is the research area, this research logically focuses on the last kind of environments: cities.

But what issues are central to environmental planning? All over the world different kinds of environmental planning can be found. But because of different conditions in developed and developing countries, environmental planning has different meanings when appearing at different places. For example: environmental problems that appear in East Asia, North America and Europe differ in nature and the approaches they require to solve them. In East Asia most problems are in the case of air and water pollution, insufficient open space and poor urban infrastructure, in North America it is mostly about the reduction of urban sprawl and car dependence, whereas in Europe it is mainly about the protection of environment and agriculture land through concentrating the development (Sorensen et al., 2004). The emphasis differs between these areas, but they all have problems on the edge of urban development and the environment.

An important aspect in the environmental planning in the United States is the Smart Growth-movement. This movement tries to fight urban sprawl and provide well-designed communities with a variety in housing, transportation, employment and recreation. The goals are: to improve quality of life for all citizens, to promote healthy behavior, to minimize hazards to people, and to protect and restore the natural environment” (Geller, 2003). Growth management in Washington State builds partly on the same ideas as these (Levy, 2006; Bassok, 2010). In section 2.3 this and other plans and policy regarding environmental planning in Washington State and the City of Seattle are discussed. First, the upcoming section (2.2) pays more attention to the administrative structure of Washington State.

2.2 The government and legislation of Washington State

The United States is a federal state, existing out of self-governing states, what results in differences in governmental structure between these states. This is mostly because the Constitution designed states as the lowest level of governmental units, not recognizing sub state units as an official unit. Sub state governmental units (as cities or counties) are created by their state, and only receive the power the state gives them (Feitelson, 2004; Levy, 2006). For this reason counties and city municipalities exist at the local level in Washington State. Counties operate at a higher spatial scale, so they contain many municipalities, but they have no jurisdictional power inside these. Counties have these powers only for the ‘unincorporated areas’ in their county (Website King County, 2010). In case of Seattle, a municipality exists for the city of Seattle, which is located in King County.

Above the local level, there is a regional council for the Puget Sound Region; the Puget Sound Regional Council (PSRC). Such a council is meant to offer better opportunities to municipalities and counties in a metropolitan region to communicate and negotiate (Levy, 2006). Within the Puget Sound Regional Council, the four counties: King, Pierce, Snohomish, and Kitsap are, as part of this council, working together with the city municipalities located within them on the topics: regional transportation, growth management and economic development planning. Admittedly, the PSRC review all applications for federal money to build transportation facilities (Interview A. Bassok, 22nd July 2010). This motivates the City of Seattle to design their transportation plans in accordance with these of the PSRC.

As a state, Washington State faces influences of the federal government as well. These mostly derive from federal laws. These laws can be seen as a framework for Washington State and their local governments to operate in. The federal government influences spatial planning also by funding, but has no own spatial plans (Levy, 2006). Plans and policies of the local governments should be drawn according to federal and state legislation. The City of Seattle faces, like other local governments, requirements about the content and procedures of policy, as set by this legislation. In this way the federal government has an opportunity to direct developments in a desirable way. How these laws affect the planning practice is central to the next section, wherein the environmental planning practice of Seattle is explored. For now an overview of these laws is showed in figure 2.1, together with the governmental structure of Washington State.

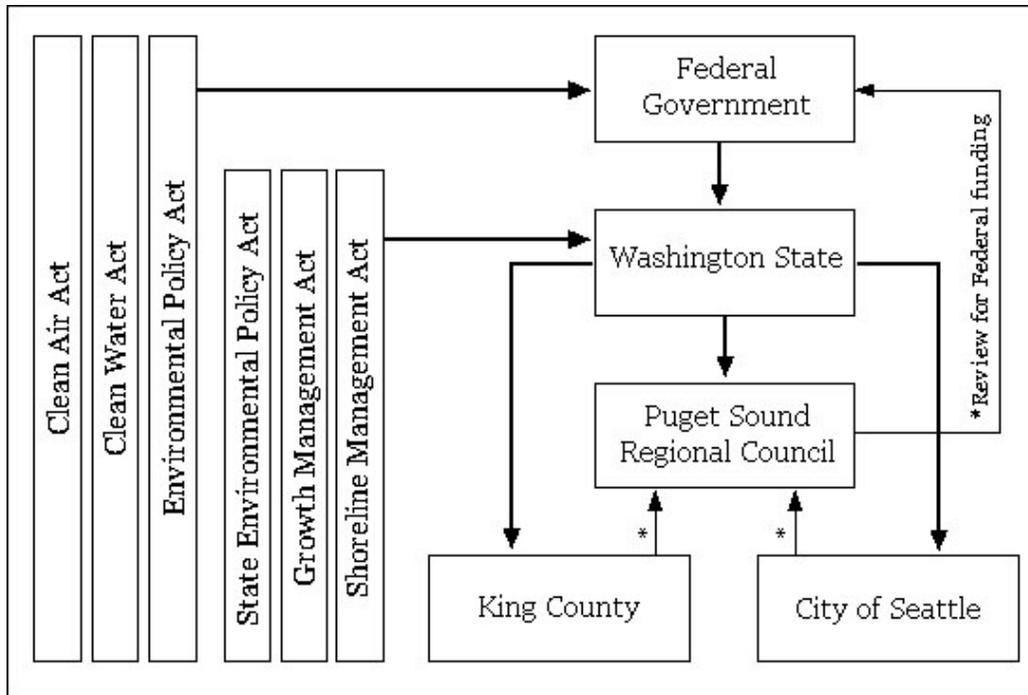


Figure 2.1: Legislation concerning environmental planning and governmental structure in Washington State.

2.3 Environmental planning in Seattle

In Seattle a lot of actions are taken to solve the environmental issues existing in the city. Most of these actions are worked out on the local level, but, as the previous section has explained, they derive from requirements of Federal and State legislation or have to be consistent with policy and plans from the higher governmental levels (Levy, 2006). This leads to different ways of intervention in order to protect the city from excessive environmental impacts and the loss of environmental qualities.

The laws as shown in figure 2.1 (in the previous section) determine the environmental planning in Seattle to a great extent. How these laws lead or relate to plans and policies, which form the environmental planning practice is the central topic of this section. Through an overview of the most important plans and policies existing in Seattle, a good sketch will be given of the environmental planning practice in this city. A broad distinction can be made between the following aspects: Regulation and Ordinance, Growth Management, Regional planning, Zoning and Land use Codes, and Environmental Impact Assessments, all shortly discussed below.

Regulation & Ordinance

First of all, regulation exists to control environmental effects, derived from the legislation about air and water quality. These regulations make demands on the least air and water quality that cannot be exceeded. The accomplishment of this is reviewed by the NEPA or SEPA, depending on the kind of project (national or state level), by means of monitoring.

Regulations regarding the water quality derive mostly from the Clean Water Act. This act includes regulations for both flow water control and water treatment. The goals set by this act are measured in form of Water Quality Standards and permit issues are used to reach these standards (e.g. Total Maximum Daily Loads) (Interview M. Mayhew, 14th July 2010). In this way the government is able to enforce a minimum water quality.

The regulation for air quality is not exercised by the City of Seattle. Because air quality is not bounded to a particular area, air quality in the Puget Sound Region (including Seattle) is controlled on a larger scale by the Puget Sound Clean Air Agency. This agency has designed different programs to reduce the emission of green belt gasses and other pollutants. The aim of these is to meet the standards as required by the Clean Air Act and to increase air quality where possible, and thereby the quality of life (Website Puget Sound Clean Air Agency, 2010).

When taken these air quality programs into account, it's remarkable that very less attention is paid to bad odor, because the air quality is related to this. The attention to noise pollution in spatial planning is also limited. The government uses ordinances, besides the regulations, to set requirements to reduce these negative externalities, as noise pollution and bad odor. For noise pollution, for example, it is set that all loud noise between 10.00 p.m. and 7.00 a.m. could be seen as pollution. But for some areas, e.g. industrial areas, an exception can be made. The zoning of these areas allows more noise pollution (Website Department of Ecology, State of Washington, 2010).

Whether the requirements forced by the ordinances are fulfilled is not regularly measured through the City of Seattle. Only when people complain about noise pollution or bad odor, the City undertakes action to intervene, when this is at least necessary (Interview T. Hauger, 27th July 2010).

But logically, these regulations and ordinances have impacts on urban planning and development. The norms and standards of these regulations limit the locations for different types of development to take place. Because developments are only allowed at the locations where they do not surpasses the norms. However, the regulations and ordinances do not really belong to the physical planning, because the federal and state governments have no power to implement (Levy, 2006), they influences spatial planning definitively. This is important in case of environmental planning.

Growth Management

Growth management is a spatial plan, specially designed to protect environmental qualities and open space from being threatened by urban growth. Growth management takes place under the Washington State Growth Management Act, which aims to control growth and to concentrate development into urban growth areas (Miller and Lee, 2002). The GMA requires King County to design growth boundaries, wherein the coming growth should take place. These boundaries have to contain enough space to maintain all growth as projected by the State's Office of Financial Management for the next twenty years. However, King County's growth boundary is now, twenty years later, nearly the same as it was in the beginning and contains still enough land to meet the growth projections. The growth boundary has done a good job to prevent development outside the boundary. Almost all new developments took place inside the boundaries. But where the boundary contains such amount of space, it can be doubt how successful the Growth Boundary is in concentrating the growth (Amati, 2008).

Nevertheless, inside the growth boundaries Urban Development Centers are designed, whereas most of the growth should be concentrated. These are locations where most of the required infrastructure already exists and where new development is desirable. Five of the total 21 growth centers in King County are located in the City of Seattle (Puget Sound Regional Council, 2002). These are included in "Seattle's Comprehensive plan: *Towards sustainable Seattle*" out 2005. This plan, which the city has to draw under the GMA, contains the actions that are considered to be necessary to manage Seattle's growth till 2024 in a sustainable way (City of Seattle, Department of Planning and Development, 2005a). Worth mentioning is that only five of the eleven themes covered in this plans are required by

the GMA: Land Use, Transportation, Housing, Capital Facilities, and Utilities. The other elements are considered to be valuable by the City of Seattle. These topics are: Urban Village element, Economic Development, Neighborhood planning, Human development, Cultural resources, and Environment (City of Seattle, Department of Planning and Development, 2005b). The allocation of the urban growth has influence on the amount of environmental impacts in specific areas. In areas where the growth is concentrated more pollution will occur, which leads to more environmental impacts (Driessen and Glasbergen, 2000).

The City of Seattle has to provide implementation strategies for the comprehensive plan as well. These can be found in the City's zoning map and Land Use Code. In addition to the comprehensive plan functional plans exist, which contain the policies and actions for separated aspects of the plan (City of Seattle, Department of Planning and Development, 2005b). For example *Transportation 2040*, a transportation plan set by the Puget Sound Regional Council, which is additional to the transportation element of Seattle's comprehensive plan. The next part, about regional planning, focuses on *Transportation 2040* and the other regional plan: *Vision 2040*.

Regional planning

The transportation element of Seattle's comprehensive plan has to be consistent with the more detailed transportation plan of the Puget Sound Regional Council: *Transportation 2040*. Transportation projects are tested to this plan, before any federal funding can be obtained. But also concerning other topics regional plans are designed. Local plans have to be consistent with these as well. The Growth Management Act requires a strategic plan to be designed at the regional scale. For the Puget Sound region this is *Vision 2040*.

- *Vision 2040*: The *Vision 2040* describes the strategy to accommodate the regional growth of 1,712,000 people till 2040. It's a regional agreement regarding to environment protection and expected growth, and it includes strategies for transportation and economic development as well. It provides a framework that should help local governments to make their decisions for allocating the expected growth in an environmental friendly way. Growth Centers, regional nodes, are designed as locations for most of the expected growth (Puget Sound Regional Council, 2009). That this has impact on the allocation of growth in Seattle is clear. Figure 2.2 on the next page shows these regional growth centers (red bullets).
 - *Transportation 2040*: In addition to *Vision 2040*, *Transportation 2040* provides a more detailed strategy regarding the development of the transportation system in the Central Puget Sound Region. This action plan is a responds to the predicted growing travel demand, caused by the expected population growth during the next decades. *Transportation 2040* looks at the best ways for local governments to invest in the accommodation of this increasing demand. (Puget Sound Regional Council, 2010a).
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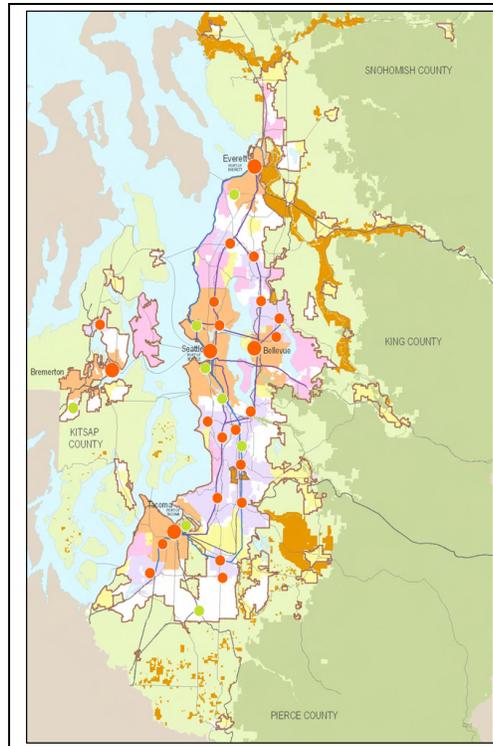


Figure 2.2: Central Puget Sound Regional Growth Strategy (Puget Sound Regional Council, 2009).

Zoning & Land use Code

The City of Seattle uses zoning and their Land Use Code to implement the plans discussed. Therefore, zoning is an important manner for Seattle's (physical) land use planning to come into practice. Every piece of land is assigned to a zone, what determines the kind of development there may take place, such as residential, commercial, industry, or a combination of these (e.g. residential with some commerce). The zoning determination includes most of the times building regulations regarding to height and the distance between the building and the street/neighbors as well (Bassok, 2010). Comprehensively there are "site layout requirements, requirements for structure characteristics, uses to which structures may be put and procedural matters" for each separate zones (Levy, 2006, p.121).

Zoning gives local governments the opportunity to guide development and to separate environmental intrusive activities from environmental sensitive activities, and to minimize the impacts of externalities by doing so. Besides the directing of development in a desirable way to prevent externalities, zoning is also used to protect the environment. This is achieved through the selection of environmental critical areas, for which the zoning includes more requirements regarding environmental protection, and constrains building options (Miller and de Roo, 2005).

The different zones are included in the Seattle Municipal Code. Information about special districts and various procedures can be found in this Land Use Code as well. A zoning map shows the different zones with a letter-number combination, which designates the land uses allowed in that zone (Website Seattle City Clerk's Office, 2010a). Figure 2.3 shows a part of the zoning map from the Seattle Municipal Code.

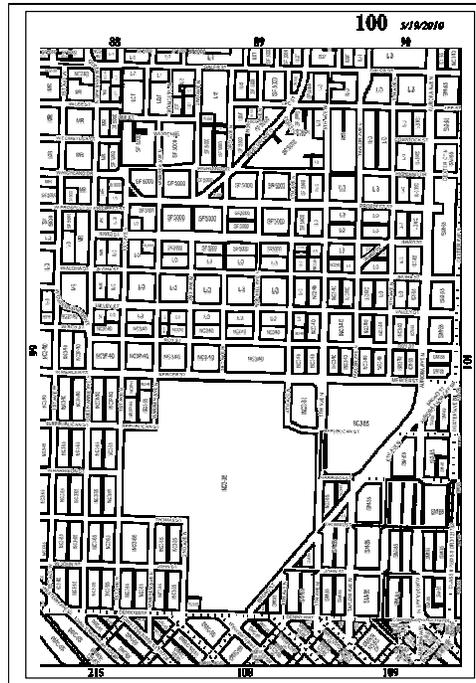


Figure 2.3: Seattle Municipal Code Zoning Map 100 (Website Seattle City Clerk's Office, 2010b).

When developments are consistent with the zoning requirements, still significant environmental impacts can appear. Therefore, an additional Environmental Impact Assessment has to be done for the developments. This is to make sure the developments can be realized on this location without causing negative environmental impacts.

Environmental Impact Assessments

The NEPA and SEPA require an Environmental Impact Assessment (EIA) to be performed for both local and national plans and projects in Washington State. The EIA helps to include environmental effects in the urban planning process, by identifying all environmental impacts of the plan or project (Levy, 2006; PADC Environmental Impact Assessment and Planning Unit, 1983; Van Eijk et al., 2005). The considered topics during this process can be divided broadly into: Air, Land, Water, Flora and Fauna, and Human aspects. These contain topics like: Energy, Land Use, Transportation, Public Services and Utilities, Noise, Archaeological resources and visual quality (Canter, 1996; Washington State, Department of Ecology, 2002).

M. Mayhew stresses that the EIA is a procedure for particular developments. It isn't a land use plan, but the EIA becomes part of the game at the start of single development plans or projects with significant environmental impacts (Interview M. Mayhew, 14th July 2010; Levy, 2006; Washington State, Department of Ecology, 2002). The EIA helps to clarify these impacts and to investigate the possibilities to diminish them, by the following seven steps:

1. Identification of issues and impacts (scoping)
 2. Conduction of baseline studies of the environment
 3. Prediction and evaluation of impacts
 4. Mitigation planning
 5. Comparison of alternatives
 6. Decision making relative to the proposed action
-

7. Study documentation through the preparation of an environmental assessment or an EIS (Canter, 1996, p.589).

The results of the EIA are recorded in an Environmental Impact Statement (EIS). The EIS provides information about the impact the plan or project has on the environment and the mitigation options that can be taken to reduce those. Most of the times there are different alternatives of the original plan included in the EIS. Amongst these alternatives a most environmental friendly one is designed. Planners and developers are not required by law to choose this alternative, but it should at least become part of their consideration. Citizens can comment to the alternatives in the draft version of the EIS and a responds to these comments have to be included in the final EIS. This offers citizens an opportunity to participate in the planning process (Canter, 1996; Wathern, 1990).

In the United States the EIA became an important part of the urban planning process during the last decades. But as it is not required to choose the most environmental friendly alternative, what value does an Environmental Impact Assessment have in the planning practice regarding the protection of environmental qualities? What other consequences does the EIA have for the environmental planning practice? And to what extent does the EIA influence the accomplishment of plans and policies? These are the questions central to this research. Primary, the next chapter provides a theoretical background. This will be the foundation for the analysis made in chapter 4; which explores to what extent the EIA has consequences for the environmental planning process in Seattle.

CHAPTER THREE

THEORETICAL FRAMEWORK

The previous chapter ended with an overview of plans and policies regarding environmental planning in the City of Seattle. This research investigates the role the Environmental Impact Assessment has in the formation of measures to protect environmental qualities during the accomplishment of plans and policies. Before the role of the EIA in Seattle's planning practice is investigated, this chapter provides a theoretical background for the process that leads from these plans and policies to the accomplishment of those in planning practice (section 3.1 and 3.2). Whereby section 3.2 ends by explaining the way by which the EIA helps to give the environment a more dominant place in the decision-making process. Additional, in section 3.3 attention is paid to the role the EIA can play in the process of plan-making that leads to the intended plan. This is because of the influence that the EIA could have on the contents of (alternatives of) plans and policies this way, in the first place.

3.1 From plans and policies to accomplishment

When plans are accomplished in exactly the same way as they are drawn, the process from plans and policies to their accomplishment can be visualized as showed in figure 3.1. Nevertheless, this is not how the planning practice works.

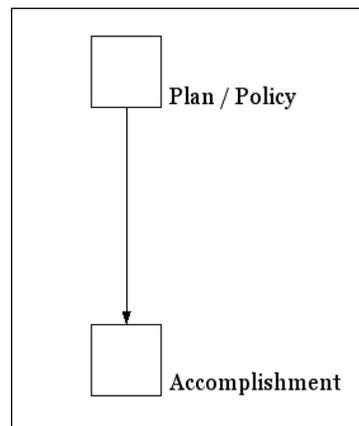


Figure 3.1: Model of conformance planning

The decision-making in urban planning processes depends on contextual influences, as is confirmed by the amount of scientific research about this topic. An important scientist in this field is John Forester. In his books he emphasizes the importance of planners to be aware of contextual aspects, and their ability to deal with this context, for good results of the planning process. He also presumes that this context influences the decisions made in planning and the planning instruments used therefore, assuming the 'Critical Theory' of Habermas. Following the Critical Theory societies evaluates by a learning-process through self-reflection; by understanding and explaining why they were acting in a certain manner. Forester considers planning and policy-making also to be purposive action, which use rationality to start a learning process in the society (Forester, 1989 and 1993).

Planning issues and policy cannot be seen separated from there history either. Forester stresses: "Policy problems are historically constructed patterns of attention and claims reflecting social learning". A planner should be able to judge if, and how consensus can be achieved about the

development of policy statements (Forester, 1993). This emphasis again that planning appears within a society, which in the meantime is influencing the planning process. In this way, the planning process could differ in various situations.

Additional, it should be taken into account that planning takes place in a political environment. Planners have no power on their own, but influencing the political process of the society (Levy, 2006). This emphasis that planners have to argue the choices they made on the accomplishment of plans and policies, which matches the ideas of the performance planning.

Performance planning

In this theoretical base the process that leads from plans and policies to the accomplishment is central. It is desirable to explain the *performance* and *conformance* of strategic planning policy in this context. Mastop and Faludi (1993) point out the evaluation of spatial strategic plans, long-term plans with a framework-setting function, is more complicated than the evaluation of operational plans. Often a wrong direct causal link is assumed between these two aspects. They argue that the evaluation of strategic planning doesn't lead to correct results when only taken into account the conformance between the strategic plan and the final decisions made for ways to intervene. Even if the final decisions are not in line with the original plan, the plan should not be classified as failed immediately. The plan can be successful by influencing the formation of the final decisions and the behavior of actors during this process. Only valid arguments make it possible to differ from the strategic plan. So, when planners are not following the original plan, they have to argue their actions. In this way, the original plan has effects, even when the results are not consistent with the original purposes. Mastop and Faludi call this *performance planning*. Notice that the knowledge and skills of the decision-makers, and the contents and the actors' interpretation of the strategic plans, influences the conformity of the plan and the final results as well. This can lead to performance without conformance (De Roo, 2001). But for what reason can the outcome differ from the original plan?

Collaborative planning

During the process to accomplish plans and policies, as described above, planners have to operate in corporation with other actors. Important, therefore, is the communicative rational approach in planning, to which collaboration and consensus building are central. In the communicative approach the planner is seen no longer as expert, but more as manager. It is the planner's task to lead the process of collaboration between stakeholders during the planning process. In the communicative approach the emphasis is mostly on the process. Other characteristics are self-regulation and shared responsibility (De Roo, 2001). These last aspects lead to the appearing of communicative action. Herein, stakeholders search together for a solution to the problems they are facing, that everyone can agree. The success of communicative action is measured to the extent mutual understanding is reached between the actors (Rydin, 2003). Important is that communicative action leads to decisions made in collaboration with the different stakeholders and the government has therefore less power to implement on their own. The planning approach fitting those characteristics is the collaborative planning.

3.2 Focusing on the United States

Citizens have an important role in the planning process. In the United States citizen participation is seen as a part of democracy. Therefore, it is not surprising that participation is part of the urban planning process. To include public participation in the planning process, in Washington State the Open Public Meeting Act sets requirements about the involvement of citizens by public meetings. For example: all public meetings should be open for citizens and has to be announced two weeks before

they take place (Bassok, 2010). Other legislation includes requirements and procedures to make sure citizen participation take place during the planning process as well. Logically, the City of Seattle has to meet these requirements during the urban planning process.

But what does the relationship between the government and the citizens exactly looks like in Seattle? In 1976 Seattle was called an ideal city for citizen participation, because the high degree of understanding between participating citizens and planners (Onibokun and Curry, 1976). Still citizens are playing a fair role in the urban planning process in Seattle; from *Citizens Control* (for example: neighborhood plans) to *Informing* (for example: construction of the Alaskas way viaduct) on Arnstein's ladder of citizen participation, and everything in between (Bassok, 2010).

In the United States the individual has an important position, caused by the importance of freedom and individual rights. Urban planners should take into account the rights considering private property. Governments have no control over the use of privately owned land, what affects the planning practice. Every citizen in the United States should have the possibility to do with its property whatever he or she want to do, and it is not likely for the government to limit them to do so. An example: When the zoning constrains a land owner to develop only six stores, instead of the eight stores according to the market demands, the land owner has to be compensated for this (Levy, 2006; Interview T. Hauger, 27th July 2010). Private owners own most of Seattle's land, what makes urban planning more difficult in the city. This is because the private property rights limited the opportunities for the government to implement their land use plans in the build-up areas.

Besides the emphasis on individual rights and freedom in the American culture, there is a search to cohesion in development through urban planning. This is seen as a responsibility of the government as a higher authority. Nevertheless, the decision-making regarding urban planning is decentralized in the Unites States (Burke, 1979). The Federal and State governments cannot directly intervene in urban planning practice. The local governments only have power to implement, according the ideas of subsidiarity. But local governments have to work mostly within a framework of Federal and State laws (Levy, 2006).

The decisions made at the local level are taken in consideration with the citizens most of the times, as they have a strong position in the American urban planning process. Therefore, most decisions are the result of a collaboration process, a principle of collaborative planning. This can cause that the outcome can differ from the original plan or policy (as shown in figure 3.2).

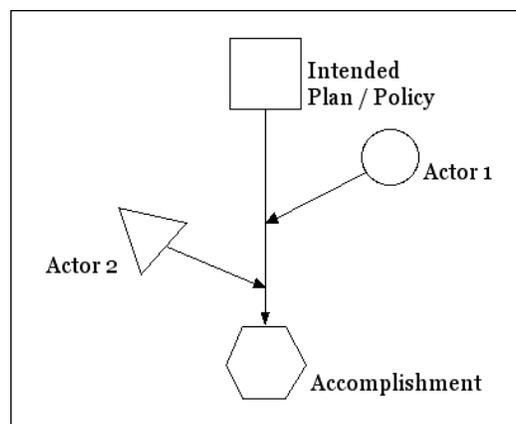


Figure 3.2: Model of performance planning and collaboration

The Environmental Impact Assessment is one of the tools used during this process of collaboration that leads to the accomplishment of the plans and policy. An EIA gives a lot of information about the environmental impacts of plans and policy, as well as the impacts of specific development projects. This can help actors and decision-makers to get insights in the environmental impacts of the plan or policy, so they are able to consider them properly during the process. In this way, they may be able to take a better decision (Glasson et al., 1999). The information about the environmental impacts can also be a reason for new actors to start participating, because they care about the environmental qualities that will be threatened through the developments of the plan.

In addition, the information about the environmental impacts makes it possible to test if the plan or policy fit the requirements as set by law. When during the process becomes clear the plan doesn't fit these requirements, the plan should be adapted. For this reason, and because the accomplishment of the plan can be influenced by the participating actors (whose actions can be influenced by the EIA), the EIA can lead to performance instead of conformance in planning, as described above.

Besides influencing the collaboration and decision-making process the EIA can have influence during the plan-making as well. In this context it is desirable to pay additional attention to the Strategic Environmental Assessment.

3.3 The Strategic Environmental Assessment

Even in the early eighties it became clear an EIA should be also performed for strategic plans and policies besides project-related EIAs. This kind of EIAs are called Strategic Environmental Assessment (SEA). The reason for this is that these plans and policies shape a framework for the development of projects. They determine the (kind of) projects that are developed and thereby the environmental impacts that these projects have (PADC Environmental Impact Assessment and Planning Unit, 1983).

A distinction can be made between a SEA for examining the proposed plan or policy and a SEA integrated into the planning process of the plan or policy (Wathern, 1990). A SEA that examines the plan or policy is nearly the same as a project-related EIA, but it has the advantage that it is performed at a larger scale, so the cumulative effects of separated projects can be evaluated (Therivel et al., 1992). Adversely, a SEA that is started earlier in the planning process, demonstrates to have more advantages. As Van Buuren and Nootboom stress: "The SEA can contribute to the general consensus within a controversial planning process by facilitating the accomplishment of a legitimate selection of policy ambitions, a process of mutual learning between stakeholders with different perceptions and the realization of a jointly agreed-upon body of knowledge" (Van Buuren and Nootboom, 2010, p. 134).

The SEA can cause advantages regarding the appearance of environmental impacts as well, when included early in the planning process. But for long-term plans it is not feasible to examine all environmental impacts at one point during the process. As, particularly for long-term plans, it is not likely for all environmental impacts to be clear at the beginning of the process. They depend on decisions that are not made yet. The plan becomes designed in more detail during the process. This causes decisions to be made at a latter point in the process that influences the appearance of environmental impacts. It is, therefore, important that the SEA is linked to the planning process and the environmental impacts are evaluated several times during the process; at these moments that decisions are made that influences the appearance of environmental impacts (Van Eck, 2004; Van Eijk et al., 2005).

In an EIA the environmental impacts of the proposed plan alternatives are examined, and it is determined if the plan should be adopted, adapted (for example by adding mitigating measures to reduce the impacts) or rejected. A SEA that is integrated in the early stages of the planning process provides the opportunity to mitigate the environmental impacts caused by the plan alternatives (Therivel et al., 1992), because of the evaluation of environmental impacts when important decisions are made. Glasson et al. agree and point out “the consideration of environmental impacts early in the planning life of a development can lead to environmentally sensitive development” (Glasson et al., 1999, p.9).

Besides, it becomes clear that for strategic plans or policies an evaluation of only the possible environmental effects is not sufficient anymore. Additional attention should be paid to the design principles that lead to the plan design as well. It should be considered if the plan encourages sustainable developments and prevents the appearance of undesirable developments (Van Eijk et al., 2005). Following Van Eijk et al. (2005), if the design principles that are used during the plan-making lead to a reduced chance of environmental impact due by the plan, the plan can be assumed to be sustainable. This should be taken into account when investigating the role the EIA (and SEA) has in the environmental planning practice in the City of Seattle as well.

So additional to the role of the EIA can have in the collaboration and decision-making process (described in section 3.2), its role in the plan-making should be considered as well. The empirical study of this research is divided into three parts. Primary, there is looked at the decision-making process. Herein the EIA can help actors during the participation process and decision-makers to consider environmental impacts properly, by providing the necessary information about environmental impacts of proposed plans or policies. This information about environmental impacts can also be used to testify if the proposed plan or policy meets the environmental standards set by legislation, like an examination tool. This is investigated in the second part of the empirical research. The last part of the study focuses on the EIA in the plan-making, in which the EIA can help to design plan alternatives in an environmental friendly way, as described above. The several parts of the empirical research are shown in a conceptual model on the next page (figure 3.3).

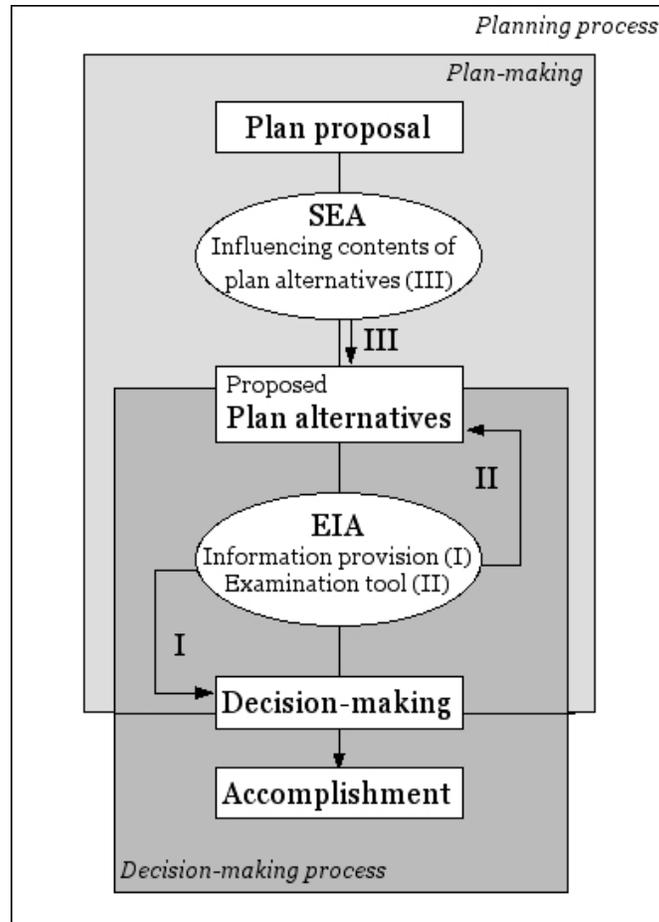


Figure 3.3: Conceptual model of the empirical research

Through investigating all these aspects, it will be clarified how, in Seattle's planning practice, the EIA helps to ensure that environmental qualities are considered properly in the planning process, and to protect them from being lost.

CHAPTER FOUR

THE ENVIRONMENTAL IMPACT ASSESSMENT IN SEATTLE'S PLANNING PRACTICE

This chapter describes the empirical part of this research. In this study it is investigated what role the EIA has in the environmental planning practice in the City of Seattle. To start, the role of the EIA in the collaboration and decision-making process in Seattle is central to section 4.1. It explains how the information about environmental impacts that the EIA supplies helps actors during the participation process and if decision-makers are able and willing to consider environmental impacts more properly after an EIA is done. The subsequent section (4.2) focuses on the use of an EIA to testify if proposed plans or policies meet the environmental standards set by legislation. This is investigated based on two spatial plans, which are recently adopted in Seattle. In the last section of this chapter (4.3) is explored what role the EIA has had in the plan-making of these plans. Did the EIA led to the design of more environmental friendly plan alternatives in the first place? By the end of this chapter it should be clear which role the EIA has in Seattle's environmental planning practice.

4.1 The EIA in the decision-making process

One of the values of an EIA can be found in the providing of information. It's used as a tool to clarify facts about the exact impacts a plan or project has on environmental qualities to both decision-makers and the public. This can cause better decisions may be taken and provide the environment a more prominent place in the decision-making. Whether the EIA is perceived this way in Seattle is investigated through interviewing three planners. In this section, the results are structured based on the functions of the EIA in the collaboration and decision-making process in planning.

To start with, the environmental effects of a proposed plan or policy are clarified by the EIA (Levy, 2006; PADC Environmental Impact Assessment and Planning Unit, 1983; Van Eijk et al., 2005). The EIA gives decision-makers and participants the necessary information about the environmental impacts of the plans and policies, so they can consider them properly. The information provides insights in the environmental impacts to new actors as well (for example; citizens), for whom this is probably a reason to start to participate. They can, based on the information, express their concerns about the environmental impacts and represent the environmental interest in the planning process. Additional, they can appeal if they don't agree with the development plans, also regarding bad odor and noise pollution, despite these aspects are not regulated by law. In this way, it gives citizens the opportunity to stand for their rights. Meanwhile, a possible disadvantage planners and developers is that the process can be delayed (Interview M. Mayhew, 14th July 2010).

Besides, the clarification of the environmental impacts a plan has, the EIA helps to underpin opinions about the environmental effects of the plan. In this way, the information supply of the EIA can help to improve the quality of decisions made in planning (Glasson et al., 1999). Environmental impacts could be more important to some people than they are to others. This leads to different opinions about the earnestness of these impacts. In this case an Environmental Impact Statement makes it possible to clarify whether complaining and fears about environmental losses are valid or not (Interview A. Bassok, 22nd July 2010; Interview T. Hauger, 27th July 2010). T. Hauger points out that this way the EIA can lead to better, at least more deliberated, decisions (Interview T. Hauger, 27th July 2010). This is complemented by A. Bassok, who stressed the following: "It allows people to mix and match,

because in the end planning is a political process. [...] Planners aren't the decision-makers and the EIA makes it possible for electives to make considered decisions" (Interview A. Bassok, 22nd July 2010).

Finally, the information that the EIA provides is above all used to test if the planned developments fit the environmental quality standards set by legislation. For example: Seattle's Comprehensive Plan pays attention to the environmental effects of the plan and an EIA done before the comprehensive plan was adopted. This was not very detailed, as the EIA is done for the entire plan. Even if the environmental impacts on a citywide scale are permissible, they can exceed the quality standards in specific areas. For this reason, a project-based EIA is required as well for developments planned according the comprehensive plan. A precise study to the environmental impacts of the project should determine if these impacts fit the required standards as set in, for example, the Clean Air Act and Clean Water Act (Interview T. Hauger, 27th July 2010). In this way, the EIA relates the comprehensive plan, and other spatial plans, with the required standards set in the legislation.

As a remark should be made that, the EIA ensures only the consideration of environmental impacts during the decision-making process. The EIA contains no requirements regarding the choice of an alternative, as long as the environmental impacts of the alternative don't surpass the standards set by legislation. Doing an EIA gives no guarantee that the most environmental friendly alternative will be chosen. For example, the Final Environmental Impact Statement of the Puget Sounds Regional Council's Transportation 2040 stresses that for all considered alternatives the air pollution remains within the required standards of the Clean Air Act (Puget Sound Regional Council, 2010b). This makes it possible, regarding air quality, to choose any of the alternatives, even as there are real differences in air pollution between them. See figure 4.1, which shows the percent change in emissions of each alternative compared to the Baseline Alternative.

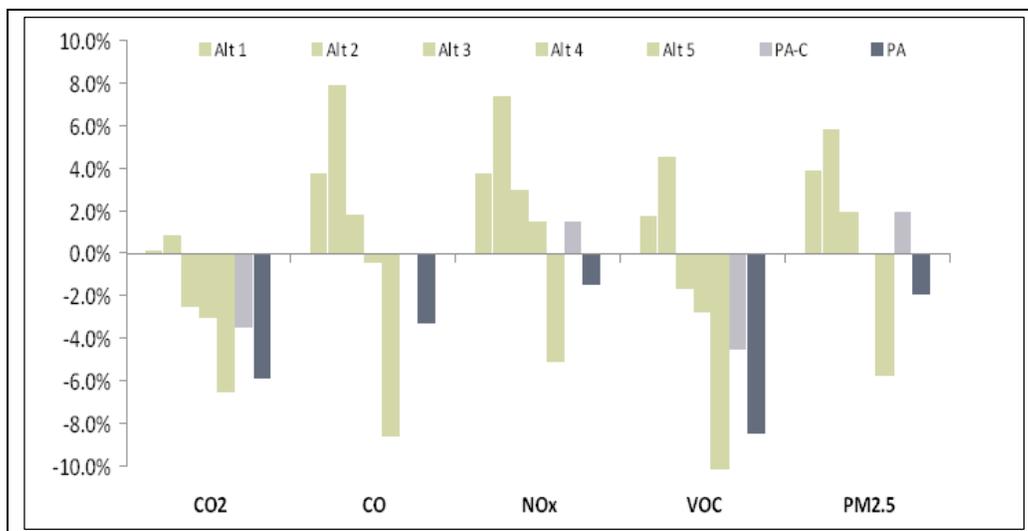


Figure 4.1: Percent change in emissions from 2040 Baseline Alternative (Puget Sound Regional Council, 2010b).

So, does the EIA have influence on the outcome of plans and policies, does it lead to the formation of measures for environmental protection or is it just a formality during the process to accomplish them? The next section investigates the role of the EIA as examination tool for proposed plans and policies more extensive.

4.2 The EIA and the adoption of spatial plans

To give a proper answer to the questions raised at the end of the previous section, about the consequences the EIA probably has for the formation of measures regarding the preservation of environmental qualities, this section focuses on the examining of environmental impacts in the EIA, before the adoption of spatial plans. Therefore, two plans are explored in this section: the Northgate Urban Center Rezone Proposal and Transportation 2040. For both plans is investigated what role the EIA has in the process that has led to their accomplishment. Attention is paid to the measures for diminishing air and water pollution, as is caused through the plan, to explore what consequences the EIA had for those.

The reason this section focuses on measures to ensure air and water quality only, is that the City of Seattle, actually, has only policies concerning Air pollution and Water treatment. The City of Seattle considers other externalities, as noise pollution and bad odor, only when somebody complains about it (Interview T. Hauger, 27th July 2010). This makes it hard to see how the EIA affects the preservation of them, because there is no legislation as base for it. But as the previous sections points out: the EIA provides clarifying facts about these externalities as well, what possible is a reason for people to complain. For this reason there can probably been undertaken action to decrease these pollutants, but these are not considered in this section.

Northgate Urban Center Rezone Proposal

The first plan central to this section is the Northgate Urban Center Rezone Proposal. Up to 98 acres of land will be rezoned to allow more intensive residential and commercial developments (see figure 4.2). This rezone plan should make it possible for the growth, as is allocated in the Northgate Area Neighborhood Plan, to be realized. This neighborhood plan is part of Seattle's Comprehensive Plan, as Northgate is one of the designated Urban Centers (shortly discussed in chapter 2). The main objective of this neighborhood plan is "to transform an auto-oriented landscape to a pedestrian friendly destination with densities to support transit" (City of Seattle, Department of Planning and Development, 2008, p. 1-1).

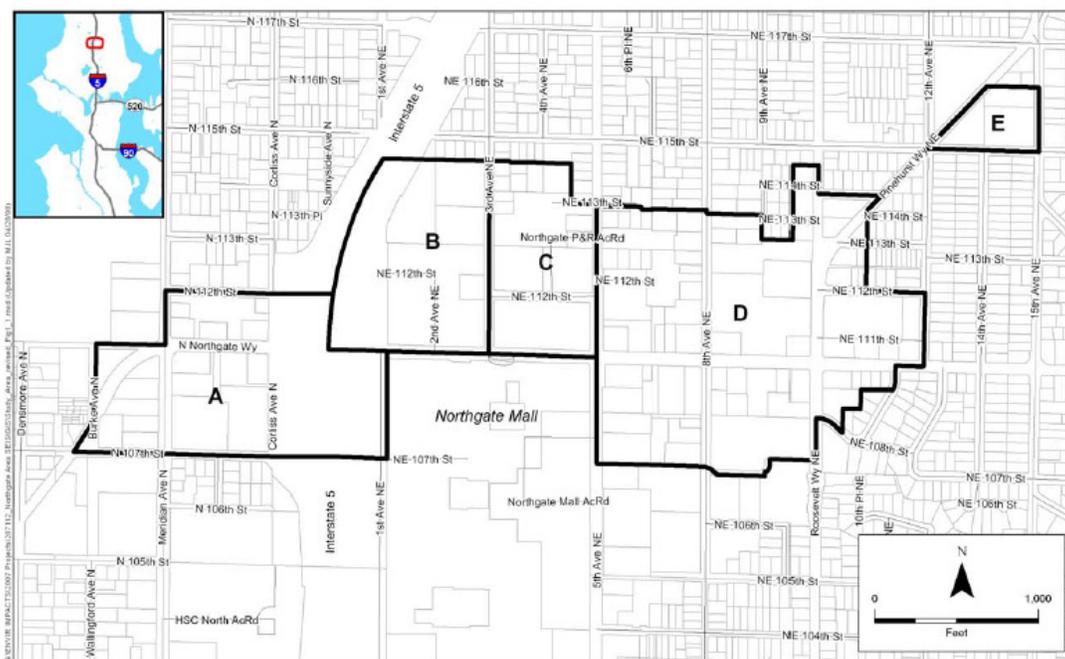


Figure 4.2: Study Area for the Northgate Urban Center Rezone
(City of Seattle, Department of Planning and Development, 2008).

Rezoning does not cause direct environmental impacts, because it is a legislative action. But as it allows more intense development, which can cause pollution, the rezoning proposal can indirectly result in environmental impacts. That's why an EIA is done for the Northgate Urban Center Rezone Proposal as well. The EIA considers Air Quality, Water, Plants and Animals, Land Use, Housing, Aesthetics, Transportation, and Parks and Recreation. Three alternatives are examined in the process. Among them is the Focused Rezone alternative, which contains rezoning in the subareas B, C and D only. Table 4.1 shows the expected growth in the Northgate area for each alternative compared to the "no action" alternative.

<i>Alternative</i>	<i>Total New Residential Units within the study area</i>	<i>Net Increase in Residential Units over the No Action Alternative Due to Rezone</i>	<i>Total New Commercial Floor Area within the study area (square feet)</i>	<i>Net Increase in Commercial Floor Area over the No Action Alternative Due to Rezone (square feet)</i>	<i>Total Job Growth</i>
No Action	2,516	--	342,835	--	908
1.A Broad Rezone – Residential Focus	4,120	1,604	1,078,287	735,452	3,080
1.B Broad Rezone – Commercial Focus	928	-1,588	4,216,835	3,874,001	12,000
2 Focused Rezone	3,617	1,101	843,519	500,684	2,400

Table 4.1: Estimated Growth through 2030 for all Alternatives (City of Seattle, Department of Planning and Development, 2008).

None of these alternatives has preference during the implementation of the EIA. Therefore, this section focuses on the way environmental qualities are prevented in each of the examined alternatives. Set the alternatives requirements to new developments for the maintenance or improvement of air and water quality in the area? Or leads the rezoning to negative influence of environmental impacts? Where the zoning allows more intense developments, the developments are not designed on project-level yet. For this reason, a precise analysis of the appearing environmental impacts cannot be done. But the EIA stresses specific procedures for the EIA's (or environmental reviews) that have to be done for developments on project-level. How the EIA tries to ensure a properly consideration of air and water pollution appearing at the project-level is investigated below.

The rezoning allows more intensive developments in the Northgate area. These developments have to be constructed. The EIS says about this the following: "In general, construction activities would not be expected to significant affect air quality because construction is considered to be temporary and because contractors would be obligated to comply with applicable air quality rules limiting emissions" (City of Seattle, Department of Planning and Development, 2008, p. 4-77). But the demolishing of buildings that will be replaced by new buildings or roadways could lead to the removal of materials that contains asbestos. Demolishing can lead also to the appearance of dust in the air. To avoid this, the EIS stresses, the contractors are required to comply with the PSCAA (Puget Sound Clean Air Agency) Regulation I, Section 9.15. For mitigation measures during the construction phase there is also referred to the Washington Associated General Contractors brochure Guide to Handling Fugitive Dust from Construction Projects.

In addition, more intensive developments cause a larger amount of traffic (and possible congestion). This can lead to an increase of air pollution in the area. The EIA investigates the differences in traffic growth among the alternatives. It turns out for these differences to be very small (just one percentage point). Because of the overall increasing of traffic, in an already auto-oriented area, the EIA focuses on the concentration of CO, in case of air pollution. The State and Federal government had identified the CO as a problem for the air quality already before the EIA for this proposal was performed. They set stringent requirements for fuel quality, which causes a decrease of CO emission. All alternatives met the air quality standards because of this measure. As the “calculated worst-case CO concentrations at the three most project-affected intersections are within the levels allowed by the applicable air quality standards” (City of Seattle, Department of Planning and Development, 2008, p.4-80). For this reason the EIS concludes with: “No significant unavoidable adverse air quality impacts have been identified with any of the alternatives examined for the Northgate Urban Center Rezone, and none would be anticipated” (City of Seattle, Department of Planning and Development, 2008, p.4-83).

Regarding water pollution the EIS includes pollution of surface water bodies only. None of the groundwater resources in the area are used for drinking, and because site-specific development plans are not available yet, groundwater is not considered precisely during the EIA process. This has to be considered on project-level, especially in areas with peat soils. If on the project-level groundwater impacts are identified by the EIA, mitigation measures should be undertaken. For example: infiltration of storm water runoffs to ensure stream flows are not reduced by new impervious surfaces. The EIS includes for this the following requirement: “the Northgate Urban Center Design Guidelines require either 15 percent of the site area or 15 percent of the Gross square footage in commercial zones to be dedicated as open space”, which means pervious surfaces (City of Seattle, Department of Planning and Development, 2008, p. 4-85).

More attention is paid to surface water, as there are two streams located within (Victory Creek) and just outside (Maple Leaf Creek) of the rezone study area. Both are located in the east and southeast of Subarea D (see figure 4.2). There are several small wetlands located in the area as well. The City of Seattle's Storm water, Grading and Drainage Control Code requires all land disturbing activities or addition and replacement of impervious surface to comply with the drainage, erosion control and source control requirements. “Those additional requirements include the installation and maintenance of storm water treatment facilities, protection of streams and wetlands in the form of temporary and permanent erosion controls and pollution preventions” (City of Seattle, Department of Planning and Development, 2008, p. 4-84). Where the existing developments did not been face with these requirements when they were constructed, redevelopments can lead to improvements in the prevention of surface water bodies. But the construction of these new developments can result in increased erosion and sedimentation, which can lead short-term turbidity in streams.

The highest probability of impacts associated with sedimentation occurs when construction takes place adjacent to surface water bodies, which would be along the streams in the south-east corner of subarea D. Several building lots in the areas next to the streams and wetlands are, for this reason, environmentally critical areas. Seattle's Municipality Code requires an application to be done, before developments can start on these plots. But as, in this case, Seattle's Department of Parks and Recreation owns these plots and they are not likely to develop them, this won't lead to any impacts from future developments soon.

So, as became clear the EIS contains requirements for new developments to prevent air quality and water quality in the area from being polluted through them. These are mostly requirements for procedural actions that should be undertaken on project-level, when projects are designed in the area. The rezoning can lead to environmental impacts, but all alternatives remain within the allowable quality standards as set in legislation. Therefore, all alternatives are allowed and they could be adopted without the EIA requires additional environmental protection measures.

Transportation 2040

As described in chapter 2, Transportation 2040 provides a more detailed strategy regarding the development of the Central Puget Sound Regions transportation system. As responds to the predicted growth of travel demand, caused by the expected population growth during the next decades, this plan should help “to address critical issues like congestion and mobility, the environment, and transportation finance in the Central Puget Sound Region” (Puget Sound Regional Council, 2010b, p. 3).

In the EIA for Transportation 2040 seven alternatives are considered. One of them is the Baseline Alternative, and among the other six there is a Preferred Alternative. The impacts the alternatives have on the following aspects are investigated: Transportation; Freight and Goods; Land Use, Population, Employment and Housing; Air Quality and Climate Change; Noise; Visual and Aesthetic resources; Water Quality and Hydrology; Ecosystems and Endangered Species Act issues; Energy; Earth; Environmental Health; Public Services and Utilities; Parks and Recreation resources; Historic and Cultural resources; Environmental Justice; and Human Health. For this research, only the aspects Air Quality and Climate Change, and Water Quality and Hydrology are investigated.

Regarding Air Quality, all alternatives meet the standards set in the Clean Air Act (as discussed above). They comply with the motor vehicle emission budget as well, for both pollutants (CO₂ and PM₁₀) where the Puget Sound region has a maintenance status for. Therefore, measures to mitigate them are not required. But nevertheless, attention is paid to them. The EIA joins existing policy to reduce air pollution above all, to help to achieve the goals set in these policies and improve air quality. For example: a Four-part Green House Gas Strategy is included in the Transportation 2040 plan to reduce greenhouse gas emissions. This helps to achieve the goals as are already set in the PSRC's Green House Gas Strategy. But there are other pollutants of concern in the region as well. That's why “the existing programs and measures to ensure the region's continued attainment and maintenance states should continue” and the Transportation 2040 plan includes “an expanded analysis of the potential benefits from improvements in vehicle and fuel technology, as well as policy considerations such as market penetration and cost issues” (Puget Sound Regional Council, 2010b, p. 6-28). At last, the transportation plan contributes to the regional achievement of the benchmarks set in HB 2815, for the reducing of the statewide annual per capita VMT (Vehicle Miles Traveled).

As point out before, for plans of such extent it is mostly required to perform an EIA on project-level as well. Herein, a more detailed analysis is done to the location specific circumstances and environmental impacts of the project planned according the adopted plan. When the air quality standards would be exceeded on project-level, the different manners for the mitigation of air pollution should be evaluated and implemented to avoid adverse impacts. The final EIS concludes that “if all mitigation measures required as part of subsequent project-level actions are implemented, no significant unavoidable adverse air quality impacts are expected under any of the alternatives” (Puget Sound Regional Council, 2010b, p. 6-29).

Logically, the Transportation 2040 plan affects water quality and hydrology also. New impervious surfaces (including new pollutant-generating impervious surfaces), and effects from automobile emissions can lead to water pollution. These can lead to an increasing amount of pollutant sources, increased runoff, and decreased infiltration because of the new impervious surfaces. For all alternatives impacts like these could appear, but the extent of the impacts depends on the amount of new impervious surfaces and the location where these occurs. In table 4.2 the amount of new impervious surfaces for each alternative are shown and table 4.3 shows the number of projects close to flood zones.

	2040 Baseline	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Preferred Alt
Acres of New Lane Miles	28,582	28,871	29,839	29,150	29,072	28,842	29,482
Acres of New P&R Stalls	539	619	707	690	631	765	657
TOTAL ACRES	29,121	29,490	30,546	29,840	29,703	29,607	30,139

Table 4.2: Acres of New Lane Miles and Park-and-Ride Stalls for Each alternative (Puget Sound Regional Council, 2010b).

Project Type	Baseline Alt	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Preferred Alt
Transit, roadway, and ferry related projects	50	82	205	113	117	106	232
Nonmotorized projects	7	19	41	39	41	108	105

Table 4.3: Projects in the Vicinity of Flood Zones (Puget Sound Regional Council, 2010b).

As the table shows the Preferred Alternative will lead to the most transit, roadway and ferry related projects next to flood zones. Logically, projects close to flood zones result in relative more water pollution. As the final EIS stresses: "Without adequate mitigation, this would result in greater increases in peak flows, a potential increase in flooding, greater runoff of pollutants to surface waters, and changes to aquatic structure that can affect aquatic species" (Puget Sound Regional Council, 2010b, p. 9-26). But the other alternatives cause water pollution as well. "It is expected that any of the alternatives could have some significant unavoidable adverse impacts to water quality and hydrology, in particular in respect of construction [...] but at different levels among the alternatives. Minimization and mitigation measures for specific projects, if properly designed and implemented, would be able to largely offset these adverse impacts." (Puget Sound Regional Council, 2010b, p. 9-29). To mitigate these impacts the EIS suggests the project design to be in such way that the amount of impervious surfaces is minimized. Low-impact design techniques should be used, like pervious pavers, the creation of wetlands or management of runoffs.

The EIS includes also requirements regarding the minimization of impacts caused during the construction of the various parts of Transportation 2040. Developers should prepare a Surface Water Pollution Prevention Plan in addition to the requirements set by legislation (for example the requirements as indicated before in the section about the Northgate Urban Center Rezone). This plan should lead to the mitigation of water pollution during the construction by performing site-specific BMP's, operating procedures, and monitoring protocols (Puget Sound Regional Council, 2010b).

Finally, is emphasized that reparation or replacement of parts of the transportation facilities (as is planned in Transportation 2040), gives the opportunity to improve both air and water quality. Because of technical innovations measures can be undertaken that are more effective to prevent air and water

from being polluted. There can be assumed that technical innovations have benefits for other environmental aspects as well.

Nevertheless, regarding both environmental qualities, the Preferred Alternative is not the most environmental friendly one. Figure 4.1 (in the previous section) has shown this for air pollution. As this counts for water pollution as well, is proved through the tables 4.2 and 4.3 above. The Preferred Alternative may be selected for many reasons, because (as A. Bassok has pointed out before) planning is always the result of a political decision-making process. Environmental qualities got a more prominent place in the planning process, because of the EIA. But the decision-makers have to weigh the environment against other aspects of importance (Wathern, 1990). For this reason, another alternative than the most environmental friendly one can be seen as best alternative.

For both plans discussed above the EIA could not have a directing role regarding the chosen alternative. Because all alternatives comply with the quality standards set by law, there were no alternatives excluded based on environmental reasons. The EIS's focuses therefore above all on (more procedural) requirements about the construction and the EIA for specific development projects. In this way, there is tried to ensure that developed projects (according the plan) not cause any adverse environmental impacts. But for the investigated plans measures to diminish air and water pollution are not required (because all alternatives fits the standards), so the EIA has no consequences for those. That all plan alternatives meet the environmental requirements set by law is possible caused by a SEA that is included early in the planning process. When the environment has already a more prominent place in the plan-making, plan alternatives with unacceptable environmental impacts could have been excluded or adapted during the designing-phase. In this way, it is more likely for the alternatives of the intended plan to comply to the environmental standards. The next section focuses on the extent to which this holds for the both investigated plans.

4.3 The EIA in the plan-making

The place the environment has in the plan-making can be proved by the following aspects: the used design-principles and the amount of environmental evaluations during the process. These both can help reducing the environmental impacts of the proposed plan (-alternatives) or policy (Van Eck, 2004; Van Eijk et al., 2005). This section investigates to what extent this was the case in the plan-making of the Northgate Urban Center Rezone Proposal and Transportation 2040. It can possibly be for this reason that the EIA has not a directing role regarding the adoption of the proposed plans. For each of the plans the objectives, design-principles and process of evaluating environmental impacts are explored in order to clarify the role the EIA has had in the plan-making.

Northgate Urban Center Rezone Proposal

The main objective of the Northgate Urban Center Rezone Proposal is to allow the goals and policies included in the Northgate Neighborhood Plan section of Seattle's Comprehensive plan. The only policy (out of the 25 goals and policies) regarding environmental quality was the following policy about drainage: "Promote reduction of potential runoff into Thornton Creek, and encourage restoration of the Creek to enhance aquatic habitat and absorb more runoff" (City of Seattle, Department of Planning and Development, 2005a, p. 8.137). Thus, when starting the plan-making, the environment was not really a starting-point. Anyhow, the goals could have been realized in an environmental friendly way. Was there attention for environmental impacts during the plan-making?

In addition to the Design Guidelines for the entire City of Seattle, there are Neighborhood Specific Design guidelines for the Northgate Neighborhood as well. The following guidelines should help to ensure a good urban design for new developments in the neighborhood:

- 1) Provide direct and convenient pathways, comfort, visual interest and activity for pedestrians;
- 2) Design identity should be defined block-by-block;
- 3) Increase public accessible open spaces and connections between them;
- 4) Landscape design to enhance the site or address special site conditions
(City of Seattle, Department of Planning and Development, 2010, p.III).

Especially the last of those will help to ensure environmental qualities are considered in the plan design of development projects this area. It's objective is to "Incorporate existing natural features into the site design and consider including new landscape that could provide areas of interest and enhance the site", by using "design strategies to preserve existing on-site natural habitats, significant vegetation or other natural features including drainage features that can be incorporated into the site design" (City of Seattle, Department of Planning and Development, 2010, p.28). But because no development projects are included in the Northgate Urban Center Rezone Proposal, the influence these guidelines have had on the proposed rezoning plan remained slight.

In the beginning of the plan-making the Department of Planning and Development, of the City of Seattle, "performed a number of preliminary planning and environmental analysis to help define the parameters of the Northgate Urban Center Rezone alternatives" (City of Seattle, Department of Planning and Development, 2008, p. 2-11). Those transportation analysis and assessment of market and economic conditions (no environmental assessment was performed in this phase) led to the two alternatives for the rezone proposal. For these alternatives an EIA is performed to comply with the requirements of the SEPA.

The environmental impacts of proposed alternatives are examined by the end of the planning process. An advantage of this EIA compared to a normal project-related EIA is that the cumulative impacts (of the plan in combination to the development projects that are implemented in the area during the EIA process) are examined as well. The environmental impacts the proposal can cause for a planned, but not yet constructed park, are also included in the EIA. Nevertheless is this EIA comparable to a normal project-related EIA performed at a plan-level scale, and it didn't play an explicit role in the plan-making.

Transportation 2040

That in the plan-making of Transportation 2040 the environment is included to a greater extent becomes clear when looking at the following plan objectives:

- Prioritize projects and make strategic investments to produce the greatest net benefits to users of the system (both for personal and commercial travel) and to the environment, with a specific environmental focus on climate change factors and the health of Puget Sound waters; and
- Improve the region's water and air quality and find creative ways to address climate change (Puget Sound Regional Council, 2010b, p. 4).

Based on these (and the other) objectives three key issues are developed as starting-point of the plan-making. One of the key issues is about Environmental Concerns: "Reduce greenhouse gas emissions linked to climate change and the water quality impacts on Puget Sound. The second major challenge is to learn how to reconcile the need for transportation facilities and their uses with growing concerns about how to protect and restore the quality of the built and natural environment. Transportation

activities, if unmitigated, are a major source of water and air pollutants, including greenhouse gas emissions” (Puget Sound Regional Council, 2010b, p. 6).

With the Environmental Concerns and the other key issues (Congestion and Mobility, and Transportation Funding) as base, the plan alternatives were developed as representation of the different transportation policy choices. Subsequently, these alternatives were examined by a policy review, an EIA and several evaluating criteria. The final EIS of the plan stresses that “Transportation 2040 provides additional information on travel trends, physical constraints, and the environmental concerns that need to be addressed to meet the region’s commitment to environmental stewardship” (Puget Sound Regional Council, 2010b, p. 6), one of the evaluation criteria that are developed to examine the goals of the transportation planning process.

Because of the prominent place that the environment has had from the beginning of planning process, the final Transportation 2040 plan rightly points out that: “The plan is designed to keep the region’s air and water healthy, sustain the region’s overall ecology, assist in coordinated efforts of the Puget Sound Partnership to protect and restore the health of the region’s watersheds, and lead in the development of emerging federal and state initiatives to reduce overall greenhouse gas emissions to address global climate change” (Puget Sound Regional Council, 2010a, p. 31). It can be concluded that in case of Transportation 2040 an SEA is performed, what has helped the inclusion of the environment in the design-process of the plan alternatives.

Both previous sections have focused on the role of the EIA in the decision-making process: providing information about environmental impacts. The information the EIA provides can mobilize actors to represent the environmental interest, and makes it possible to test if the considered alternatives of the plan fit the requirements set in legislation. If they do not, measures to mitigate the environmental impacts have to be taken, so the alternatives comply to these standards before the alternative can be adopted. In addition, this section showed that the EIA can play a role in the plan-making, as was the case for the Transportation 2040 plan. In this way, the EIA can also help to give the environment a more prominent place in Seattle’s planning practice. And thus, even when the most environmental friendly alternative is not chosen, the consideration of the environment during the planning process can lead to better results for the environment. The upcoming chapter focuses on the overall conclusions and reflection of this research.

CHAPTER FIVE

CONCLUSIONS AND REFLECTION

Central to this last chapter are the conclusions and reflection of the research. The answers to the sub questions and main question are given in section 5.1, and a comparison with the Netherlands is made in the subsequent section (5.2). A reflection of the research can be found in section 5.3. This section provides also some recommendations on account of this research.

5.1 Conclusions

This section is about to answer the main question of this research: *“What is the impact of the Environmental Impact Assessment for the environmental planning in the City of Seattle?”* Therefore it is necessary to give answers to the sub questions.

Sub questions

The first sub question of this research reads as follow: *“How can the role the EIA has for the accomplishment of plans and policy be explained?”* The EIA provides a lot of information about possible environmental impacts of plans and policies. This helps to give the environment a more prominent place in the collaboration and decision-making process. It provides participants and decision-makers a better insight in these impacts, so they can consider them properly. This may result in better decisions. It could cause also new actors to find a reason to start to participate in the process and stand for their rights regarding the environmental quality of their surroundings.

The information about the environmental impacts of a plan or policy is also used to examine if the proposed plan or policy complies to the environmental quality standards. If they do not, they should be adapted or will be rejected. To investigate this further the second sub question is: *“What consequences does the EIA have for the formation of measures regarding the preservation of air and water quality?”* The EIA examines indeed whether the plan alternatives (and the projects they contain) meet the environment requirements or not. But for both investigated plans all alternatives comply to the environmental quality standards set by legislation, and no measures to diminish the environmental impacts were required for any of the alternatives. As therefore the EIA had no directing role regarding the alternative that has been chosen, it was not possible to get good understanding of the role the EIA had in the establishment of measures to ensure the preservation of air and water quality.

What additional value can the EIA have for the environmental planning practice, besides examining the plan alternatives? Therefore the following sub question was set up: *“Does the EIA have other consequences for the environmental planning practice?”* It turns out that, an EIA that is integrated in the early stages of the planning process brings advantages regarding environmental quality. When the environment has already a more prominent place in the plan-making, plan alternatives with unacceptable environmental impacts could have been excluded or adapted during the designing-phase. In this way, the consideration of the environment during the plan-making can lead to better results for the environment, even if, in a later phase, the most environmental friendly alternative is not chosen (as was in case of Transportation 2040).

Main question

Now the sub questions are answered, the main question can be answered as well: *“What is the impact of the Environmental Impact Assessment for the environmental planning in the City of Seattle?”* Regarding to the conclusions of the sub questions, the answer to the main question can be formulated as follows: In Seattle decision-makers and participants get better insight in the environmental effects of plans and policies because of the EIA, what may result in better considered decisions. The EIA helps also to identify if mitigation measures for environmental impacts are required to ensure the quality standards set in legislation are not surpassed. But the EIA does not lead necessarily to the establishment of additional measures to improve environmental qualities, when law does not require these. For example, it is not required that the most environmental friendly alternative is chosen if other alternatives also comply to the environment standards. Nevertheless, through the including of the environment in the early stages of the planning process (especially in the plan-making) a decline of the environmental impacts of plan alternatives can be reached. This can lead to more environmental friendly outcomes in planning. But even then, the environment will still remain just one of the aspects weighed in planning process.

5.2 Looking at the Netherlands

At the end of this research it is valuable to take a look at the Dutch planning system. Therefore a reflection to the Netherlands is made in this section.

It is clear the political environment in the Netherlands differs from that in the United States. Whereas in the United States individuality and property rights are important, in the Netherlands the general interest and equality are seen as more important. Nevertheless, in both countries different actors are involved in the planning process. They can influence the process from plans and policy to their accomplishment and stand for their rights. But the difference in political environment causes a different relationship between actors in the planning process (the government, the private parties and citizens); the way actors interact and relate to each other during the planning process would be different.

Besides, there is said that Seattle is more comparable to some European cities than to other American cities. The attitude that the residents of Washington State have regarding the environment is also comparable to more European one. In the Netherlands there is a common feeling about the protection of existing environmental qualities, as there is also in Washington State. In both countries the Environmental Impact Assessment is used to ensure that environmental qualities are at least considered during the urban planning process. But the use of the EIA can differ a little, because of the difference in planning context in both countries.

5.3 Reflection and recommendations

When reflecting the research, it became clear some things in the process could have gone better. Most important is that, after coming back from Seattle, the objectives of the research had to be changed largely. Because interviews are used as research method, this resulted in some problems regarding the empirical study. As the interviews could not be hold again, most of the questions asked during the interviews are not consistent with the new research objectives. This causes that most of the results of the interviews were no longer relevant to the research questions. For this reason, the empirical study is largely based on policy documents instead of on the interviews.

In addition, for both plans investigated in section 4.2 all plan-alternatives meet the quality standards as set by law. For this reason, the EIA has no directing role regarding the chosen alternative, because all alternatives are allowed. Where pollution in specific areas may be greater than in the entire area, it

is more likely that the alternatives exceed the quality standards as set by legislation. Possibly, investigating the role of the EIA on project-level had provided more information about the influence that the EIA has on measures to protect environmental qualities. This can be recommended for future research.

Moreover, every plan or project is unique as well as the role that the EIA has in the accomplishment of it. Therefore, investigating two plans only could probably have lead to a little deviation of the results. But as the use of the EIA is broadly the same (because of standards procedures), the outcome could admittedly result in conclusions by the end of this research.

Finally, it can be interesting to investigate the precise benefits that the use of the EIA has in the protection of environmental qualities. This research investigates the way the EIA helps to ensure the prevention of environmental quality, but less attention is paid to the extent to which this leads to environmental benefits. This can also be recommended for future research.

REFERENCES

- Amati, M. (2008), *Urban Green belts in the twenty-first century*. Aldershot: Ashgate.
 - Arnstein, S.R. (1969), A Ladder of Citizen Participation. *Journal of the American Institute of Planners* 35(4) p. 216-224.
 - Birch, E.L. (ed.) (2009), *The urban and regional planning reader*. London: Routledge.
 - Burke, E.M. (1979), *A participatory approach to urban planning*. New York/London: Human sciences press.
 - Buuren, A. van, S. Nooteboom (2010), The success of SEA in the Dutch planning practice; How formal assessments can contribute to collaborative governance. *Environmental Impact Assessment Review* 30(2) p. 127-135.
 - Canter, L.W. (1996), *Environmental Impact Assessment*. New York/St. Louis/San Francisco: McGraw-Hill Inc. Second edition
 - City of Seattle, Department of Planning and Development (2005a), *Comprehensive Plan; Toward a Sustainable Seattle*. Seattle: Department of Planning & Development.
 - City of Seattle, Department of Planning and Development (2005b), *Comprehensive Plan; Toward a Sustainable Seattle. Readers' guide*. Seattle: Department of Planning & Development.
 - City of Seattle, Department of Planning and Development (2008), *Northgate Urban Center Rezone; Draft Environmental Impact Statement*. Seattle: Department of Planning & Development.
 - City of Seattle, Department of Planning and Development (2010), *Northgate Urban Center & Overlay District; Design Guidelines*. Seattle: Department of Planning & Development.
 - Driessen, P.P.J., P. Glasbergen (eds.) (2000), *Milieu, samenleving en beleid*. Den Haag: Elsevier bedrijfsinformatie b.v.
 - Eck, M. van (2004), Ijburg en m.e.r. Samen opgegroeid. *Kenmerken* 11 (2) p. 10-12.
 - Eijk, P. van, H. Groenewoud, S. Tjallingii and H. Goosen (2005), Gebruik SMB als ontwikkelinstrument. *Kenmerken* 12(6) p. 16-21.
 - Feitelson, E. (ed.) (2004), *Advancing Sustainability at the Sub-National Level – The Potential and Limitations of Planning*. Aldershot: Ashgate.
 - Flowerdew, R., D. Martin (eds.) (2005), *Methods in Human Geography; A guide for students doing a research project*. Harlow: Pearson Education Limited. Second edition.
 - Forester, J. (1989), *Planning in the Face of Power*. Berkeley/Los Angeles: University of California Press.
 - Forester, J. (1993), *Critical theory, Public Choice and Planning practice: Toward a critical Pragmatism*. Albany: State University of New York Press.
 - Geller, A.L. (2003), Smart Growth: A Prescription for Livable Cities. *American Journal of Public Health* 93(9), p. 1410-1415.
 - Glasson, J., R. Therivel and A. Chadwick (1999), *Introduction to Environmental Impact Assessment*. London: UCL Press Limited. Second edition
-

- Levy, J.M. (2006), *Contemporary Urban Planning*. Upper Saddle River, New Jersey: Pearson Education, Inc. Seventh edition
 - Mastop, J.M., A. Faludi (1993), Doorwerking van strategisch beleid in dagelijkse beleidsvoering, *Beleidswetenschap* 7(1), p 71-90.
 - Miller, D., G. de Roo (eds.) (2005), *Urban Environmental Planning; Policies, Instruments and Methods in an International Perspective*. Aldershot/Burlington: Ashgate Publishing Limited/Ashgate Published Company.
 - Miller, D., S. Lee (2002), Aiming for Sustainable Urban Development – Experiences with Growth Management Planning in the Seattle Metropolitan Region. *Asian Pacific Planning Review* 1(1).
 - Onikbokun, A.G. and M. Curry (1976), An ideology of citizen participation: The metropolitan Seattle transit case study. *Public administration review* 36 (3) p. 269-277.
 - PADC Environmental Impact Assessment and Planning Unit (1983), *Environmental Impact Assessment*. Boston/The Hague/ Dordrecht/ Lancaster: Martinus Nijhoff Publishers.
 - Puget Sound Regional Council (2002), *Central Puget Sound Regional Growth Centers, 2002*. Seattle: Puget Sound Regional Council Information Center.
 - Puget Sound Regional Council (2009), *Vision 2040; An Integrated Growth Management, Environmental, Economic and Transportation Strategy*. Seattle: Puget Sound Regional Council Information Center.
 - Puget Sound Regional Council (2010a), *Transportation 2040*. Seattle: Puget Sound Regional Council Information Center.
 - Puget Sound Regional Council (2010b), *Final Environmental Impact Statement, Transportation 2040*. Seattle: Puget Sound Regional Council Information Center.
 - Roo, G. de (2001), *Planning per se, planning per saldo*. Den Haag: Sdu Uitgevers. Third revised edition.
 - Roo, G. de, D. Miller (eds.) (2000), *Compact Cities and Sustainable Urban Development; A critical assessment of policies and plans from an international perspective*. Aldershot/Burlington: Ashgate Publishing Limited/Ashgate Published Company.
 - Rydin, Y. (2003), *Conflict, Consensus and Rationality in Environmental Planning; An Institutional Discourse Approach*. Oxford: Oxford University Press.
 - Sorensen, A., P.J. Marcotullio, J. Grant (eds.) (2004), *Towards Sustainable Cities; East Asian, North American and European Perspectives on Managing Urban Regions*. Aldershot/Burlington: Ashgate Publishing Limited/Ashgate Published Company.
 - Sustainable Seattle (1995), *Indicators of a Sustainable Community, 1995*. Seattle: Sustainable Seattle.
 - Therivel, R., E. Wilson, S. Thompson, D. Heaney and D. Pritchard (1992), *Strategic Environmental Assessment*. London: Earthscan Publications Ltd.
 - Washington State, Department of Ecology (2002), *Focus: Washington State Environmental Policy Act*. Olympia: Department of Ecology.
 - Wathern, P. (ed.) (1990), *Environmental Impact Assessment; Theory and Practice*. London/ New York: Routledge.
-

Online Sources

- City of Seattle (2010), *Map of Seattle*, Available at:
http://www.cityofseattle.gov/html/citizen/maps_seattle.htm (last visited: 2010, September 16th)
- Department of Ecology, State of Washington (2010), *Laws & Rules; Noise pollution*. Available at:
<http://www.ecy.wa.gov/laws-rules/noise.html> (last visited: 2010, September 17th)
- King County (2010), *King County Comprehensive Plan (KCCP)*. Available at:
<http://www.kingcounty.gov/property/permits/codes/growth/CompPlan.aspx> (last visited: 2010, August, 10th)
- Puget Sound Clean Air Agency (2010), Available at: <http://www.pscleanair.org/> (last visited: 2010, September 16th)
- Seattle City Clerk's Office (2010a), *Seattle Municipal Code Table of Contents*, Available at:
<http://clerk.ci.seattle.wa.us/~public/toc/t23.htm> (last visited: 2010, September 16th)
- Seattle City Clerk's Office (2010b), *Seattle Municipal Code Zoning Map 100*, Available at:
<http://clerk.ci.seattle.wa.us/~public/zoningmaps/zmap100.htm> (last visited: 2010, September 16th)

Other sources

- Bassok, A. (2010), *Introduction to Urban Planning in the United States*. Lecture Series: URBDP 300, University of Washington.

ATTACHMENT 1:

INTERVIEW QUESTIONS

Attachment 1a: Interview with Miles Mayhew (July 14th 2010)

Interviewee:	Miles Mayhew
<i>Employer:</i>	City of Seattle
<i>Department:</i>	Seattle Public Utilities
<i>Section:</i>	Restore Our Waters and Storm water Regulations

Questions:

1. How does planning practice address environmental effects of urban development, especially in case of water pollution?
 2. Where is this documented: where could I go to see how these are addressed, in e.g. plans, environmental quality regulations, EISs?
 3. To what extent are Environmental Impact Statements valuable within urban planning, as they are not mandatory?
 4. As Seattle's comprehensive plan dominates these EISs. Is it better that air, water and soil quality, and noise and odor are treated separately from physical development planning, by regulations and ordinances that focus on these topics, instead of running the risk of these environmental effects getting lost in city and county comprehensive plans, for example?
 5. Is attention being paid to possible increasing water pollution, when indicating Urban Development Centers under the Growth Management Act?
 6. How might land use (comprehensive) planning do a better job of addressing environmental issues? E.g. by including them in urban development plans?
 7. What legislation or other changes would be necessary to make this happen?
 8. In what extent do cultural aspects influences the choice for a particular way to solve environmental problems and reducing impact from externalities on the environmental? And how is this reflected in the planning practice?
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Attachment 1b: Interview with Alon Bassok (July 22nd 2010)

Interviewee:	Alon Bassok
<i>Employer:</i>	Puget Sound Regional Council
<i>Department:</i>	Data Systems and Analysis
<i>Section:</i>	-

Questions:

1. How does planning practice address environmental effects of urban development, especially in case of air pollution?
 2. Where is this documented: where could I go to see how these are addressed, in e.g. plans, environmental quality regulations, EISs?
 3. To what extent are Environmental Impact Statements valuable within urban planning, as they are not mandatory?
 4. As Seattle's comprehensive plan dominates these EISs. Is it better that air, water and soil quality, and noise and odor are treated separately from physical development planning, by regulations and ordinances that focus on these topics, instead of running the risk of these environmental effects getting lost in city and county comprehensive plans, for example?
 5. To what extent is attention paid to the possible increasing air pollution, for example the increase of traffic, when indicating Urban Development Centers under the Growth Management Act?
 6. How might land use (comprehensive) planning do a better job of addressing environmental issues? E.g. by including them in urban development plans?
 7. What legislation or other changes would be necessary to make this happen?
 8. In what extent do cultural aspects influences the choice for a particular way to solve environmental problems and reducing impact from externalities on the environmental? And how is this reflected in the planning practice? For example: private property has way more appearance in the United States, then it has in the Netherlands.
-

Attachment 1c: Interview with Tom Hauger (July 27th 2010)

Interviewee:	Tom Hauger
<i>Employer:</i>	City of Seattle
<i>Department:</i>	Planning and Development
<i>Section:</i>	Comprehensive and Regional Planning

Questions:

1. How does planning practice address environmental effects of urban development?
 2. Where is this documented: where could I go to see how these are addressed, in e.g. plans, environmental quality regulations, EISs?
 3. To what extent is attention paid to the possible increasing of negative externalities (e.g. air and water pollution, noise and bad odor), when indicating Urban Development Centers under the Growth Management Act?
 4. To what extent are Environmental Impact Statements valuable within urban planning, as they are not mandatory?
 5. As Seattle's comprehensive plan dominates these EISs. Is it better that air, water and soil quality, and noise and odor are treated separately from physical development planning, by regulations and ordinances that focus on these topics, instead of running the risk of these environmental effects getting lost in city and county comprehensive plans, for example?
 6. How might land use (comprehensive) planning do a better job of addressing environmental issues? E.g. by including them in urban development plans?
 7. What legislation or other changes would be necessary to make this happen?
 8. In what extent do cultural aspects influences the choice for a particular way to solve environmental problems and reducing impact from externalities on the environmental? And how is this reflected in the planning practice? For example: private property has way more appearance in the United States, then it has in the Netherlands.
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Attachment 1d: Interview with Alon Bassok (August 12th 2010)

Interviewee:	Alon Bassok
<i>Employer:</i>	Puget Sound Regional Council
<i>Department:</i>	Data Systems and Analysis
<i>Section:</i>	-

Questions:

- 1) What is exactly the difference between a Comprehensive plan and a Land use plan? And how are they related to each other?
 - 2) Is the combination of different externalities weighed in the EIA? For example, which area is designed as being worst: an area with extremely bad air quality or an area with bad air quality, noise pollution and odor (all not extremely bad)?
 - 3) To what extent do local planners have a choice for the way they deal with environmental problems, within the urban planning process in Seattle? As a lot of procedures are imposed from above?
 - 4) Do you think the economic crisis influences environmental planning in Seattle? E.g. are developers more acquisitive on incentives and grants?
-