

# Heritage Impact Assessment

The potential impact of the Stockholm Bypass and Ekerö Road project on the Outstanding Universal Value of the World Heritage Property of Royal Domain of Drottningholm Sweden

*Report phase I*

*January 2012*



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Fig 2. Suecia Antiqua et hordierna, gravör Erik Dahlberg

Fig 4a. Le Moine, Stockholm Stadsmuseum

Fig 4b. Postcard

Fig 4c. Postcard

Fig 4d. Lennart Petersens, Stockholm Stadsmuseum

Fig 4e. Ingvar Lundqvist

Fig 4f. Jan Norrman, The Swedish National Heritage Board

## PREFACE

The Swedish Transport Administration has, as a representative of the State Party, initiated this Heritage Impact Assessment process by assignment from the Swedish National Heritage Board. It deals with the potential impacts of two infrastructure projects, the Stockholm Bypass and the Ekerö Road on the World Heritage property Royal Domain of Drottningholm. Its aim is, at this first phase, to identify the scale and significance of the impact which the two projects can have on the Outstanding Universal Value of the World Heritage property. The outcome will be used in the coming planning processes.

The Stockholm Bypass project has been subject to a Feasibility study (förstudie), a Preliminary Design study (vägutredning) and a Final design plan (arbetsplan). According to Swedish legislation these planning processes include a comprehensive public consultation process with national and municipal authorities and the local community. Different alternatives and their impacts on the cultural environment have been presented and discussed. The Swedish Government has granted permission for the location of the Stockholm Bypass, according to the Environmental Code. With this decision the areas of national interest for cultural environment on Lovö has been overruled by the national interest of roads. However, the Government's decision stipulates several preconditions for the subsequent plans. Among others, the values of the World Heritage property should not be threatened. The designation of a natural / cultural reserve aims at preventing cumulative effects of the junctions and preserving the valuable cultural landscape. Following the government's decision, and after a broad consultation process, the Swedish Transport Administration has decided to locate two junctions on Lovö. The HIA process departs from these decisions.

The Ekerö Road project is in a Feasibility study (förstudie) where different alternative solutions are been examined. The HIA analysis is based on the suggestion that the road will be widened with one additional bus lane.

This Heritage Impact Assessment is based on the recent ICOMOS guidance. It has been adapted to the current project situation and deals with the impacts of the present project proposals on the World Heritage values. The preceding environmental impact assessments and cultural landscape analysis deal with the overall impacts on the cultural environment and they have been used as baseline data (see Chapter 7).

The present HIA document summarizes the first phase of the assessment and constitutes a basis for further work with the development of the project proposals and mitigation measures. This comprises an opportunity to develop solutions in line with the values of the World Heritage site as well as the preconditions of the Swedish government. A comprehensive HIA will be completed on the basis of the solutions and measures suggested in the Final design plans for the two road projects.



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# Executive summary

## Introduction

The World Heritage property Royal Domain of Drottningholm is subject to changes due to the planned Stockholm Bypass and the adjoining Ekerö Road projects. A Heritage Impact Assessment was commissioned by the Swedish National Heritage Board with the aim to investigate the impacts of these two projects on the World Heritage Outstanding Universal Value.

The Royal Domain of Drottningholm, situated on the island Lovö close to Stockholm, was inscribed on the World Heritage List in 1991 as one of the finest examples of an 18th-century north European royal residence inspired by the Palace of Versailles.

The 21 km long Stockholm Bypass project is a new north-south motorway link west of Stockholm and will be built as a tunnel under the island of Lovö. Two junctions connect the motorway with the existing Ekerö Road, which passes through the World Heritage property. These junctions will be located in the surrounding cultural landscape which functions as a buffer zone for the World Heritage property. The location of the junctions has been granted permission by the Government, as long as the stipulated conditions are met, and the alternatives have not been subject to the HIA. The Ekerö Road project aims at improving the public transport between Ekerö and mainland by an adjustment and widening of the existing road with a bus lane.

The Swedish Government stipulated several conditions for the implementation of the Stockholm Bypass with the aim of limiting the negative consequences for the cultural environment. The values of the World Heritage property Royal Domain of Drottningholm should not be threatened.

An agreement has been made by the responsible authorities to work together for achieving these goals. The agreement also includes conditions for the Ekerö Road design.

## Heritage Impact Assessment

The Heritage Impact Assessment (HIA) was an adaptation of the methodology presented in ICOMOS Guidance on Heritage Impact Assessments (2011). The current HIA focused strictly on the existing boundaries and the Outstanding Universal Value (OUV) of the World Heritage property as it was evaluated by ICOMOS and adopted by the World Heritage Committee at the time of the inscription. This Outstanding Universal Value is the reference point for all activities associated with the property.

The HIA covered direct, indirect and cumulative impacts on the key heritage attributes of the OUV. Protection and management is part of the OUV and the Drottningholm World Heritage Management Plan management goals were included in the assessment. The overall construction time for the projects is expected to be 8-10 years and the HIA covered the impacts both during and after construction. The authenticity and integrity was reviewed according to the recommendations in the Operational Guidelines for the implementation of the World Heritage Convention (UNESCO 2008).

The HIA method is a process. This HIA presents the results from the first stage where the key issues and impacts on the World Heritage values have been identified. There is a need for more detailed studies, development of alternatives and an agreement on mitigation measures before a full HIA can be completed. The next phases include a consultation process and review by the stakeholders before final reporting.

## Grading and evaluation

In the first step of the HIA the scale and severity of the change on the World Heritage OUV was investigated. The scale of impacts was graded on a scale from *no change* to *major change* which would result in a loss of Outstanding Universal Value. The scale of impact was assessed *without evaluating them as adverse or beneficial*. The aim was to identify in detail which physical or intangible attributes of the OUV were in fact, subject to a change.

The second step concerned *the significance* of the change in relation to the OUV values. The overall impact is seen as a function of the importance of the attribute and the scale of change. For example, a minor change has a larger impact if the value is considered high.

The baseline for assessments is the definition of OUV in 1991 when the property was inscribed on the World Heritage List. Undoubtedly the present traffic situation on the Ekerö road already has a very negative impact on the OUV. Consequently, the grading of *no change* has not been seen as merely neutral. The potentials for the improvement of the situation were weighed positively and commented in the assessment. All key features identified in the Statement of Outstanding Value of the World Heritage property were, to different degrees, affected by the proposed projects. Taken on balance the overall *significance* of the

Stockholm Bypass and the Ekerö Road on the key attributes of the World Heritage OUV were on a scale from *slight - moderate/large - large/very large* following the ICOMOS HIA grading. Please see *Summary* below.

A difficulty was found in applying the HIA grading in relation to *beneficial or adverse* impact assessment. The methodology is most easily applicable when it deals with the impacts of one project proposal and requires that the change impacting on a physical heritage asset and its setting is seen as adverse or beneficial. It does not allow for a way of measuring complex proposals which have some beneficial and some adverse aspects. The same applies in weighing the consequences of different project alternatives which were lacking at this phase of the HIA. Consequently, a full HIA cannot be completed at this stage.

### Conclusions

The outcome of the HIA at this phase confirms that traffic through Drottningholm has the main impact on the World Heritage property. All measures should aim at reducing the present traffic and amend the historic character and context of the World Heritage property. Therefore the Stockholm Bypass and Ekerö Road projects affect the authenticity and integrity of all key features of the World Heritage Outstanding Universal Value.

The adverse or beneficial nature of the impacts depends on if the traffic volume and mode can be substantially reduced. The Stockholm Bypass opens two new connections for the traffic between Ekerö and the mainland and provides an opportunity to implement very strict conditions for heavy traffic, traffic volume and overall transit traffic through Drottningholm. If fully considered and resolved these regulations would have significant beneficial consequences compared with the situation today or with an unregulated traffic growth. These conditions, which are stipulated in the Government decision for permission for the Stockholm Bypass, are not yet defined in

subsequent detailed plans and decisions. It is therefore not possible to evaluate the adverse or beneficial impact of the traffic reduction before all necessary measures are adopted and alternatives are presented.

The widening of the Ekerö road in order to improve public transport between Ekerö and the mainland is in a feasibility phase where different partial options are presented but no coherent alternative can yet be assessed. More detailed studies and alternatives in the next planning phase are needed in order to provide demonstration of how the road and the traffic mode can minimize environmental damage and harmonize with the historic character and spirit of the World Heritage property. If a future reduction of transit traffic through Drottningholm will take place the possibilities to restore the historic character of the road must be considered in planning.

The Stockholm Bypass junctions will constitute a new dominant element in the historic landscape of Lovö. The location of the junctions has been granted permission by the Government in 2009 and the alternatives have not been subject to this HIA. The junctions will have an irreversible adverse impact on the setting, cultural context and future development of the World Heritage property. Further detailed studies of road design, technical and landscaping solutions should be included in the next phase of the HIA and mitigation measures agreed to.

The HIA was made on the basis of the boundaries and Outstanding Universal Value as defined at the time of inscription in 1991 when buffer zones were not required. The designation reflects the thinking at the time. Today the World Heritage concept emphasizes the importance of the context and setting of the properties. The past and present relationship of the Drottningholm Royal court with its whole royal domain on Lovö is essential for the understanding of the World Heritage values. The formalization of the buffer zone to be evaluated by ICOMOS and adopted by the World Heritage Committee should be of high priority. It would also give guidance for the new cultural / natural reserve designation and for management priorities.

### Summary of impacts on OUV key features.

VALUE OF HERITAGE ASSET	SCALE AND SEVERITY OF CHANGE/IMPACTS				
	No change	Negligible Change	Minor Change	Moderate Change	Major Change
	SIGNIFICANCE OF EFFECT OR OVERALL IMPACT (ADVERSE OR BENEFICIAL)				
<b>WORLD HERITAGE PROPERTIES VERY HIGH</b>	Neutral	Slight	Moderate/Large	Large/Very Large	Very Large



Fig 1. Overview Stockholm Bypass  
Site limits of the Royal Domain of Drottningholm,  
world heritage boundary marked with black line.

# 1. Introduction

## 1.1 Background to this assessment

This Heritage Impact Assessment aims at objectively assessing the impacts of the planned Stockholm Bypass and the Ekerö Road project on the Outstanding Universal Value of the World Heritage property Royal Domain of Drottningholm on Lovö. The assessment has been commissioned by the Swedish National Heritage Board and prepared by the Swedish National Transport Administration. The World Heritage property Royal Domain of Drottningholm.

## 1.2 The World Heritage property Royal Domain of Drottningholm

The Royal Domain of Drottningholm situated on the island Lovön close to Stockholm was inscribed on the World Heritage List in 1991 as one of the finest examples of an 18th-century north European royal residence inspired by the Palace of Versailles. The World Heritage property of 162 ha encompasses the Drottningholm Palace, the Theatre, the Chinese Pavilion, the Canton Street, the gardens and office buildings at Malmen. No formal buffer zone has been established but the Area of National Interest which includes the Lovö island is considered as such by the national authorities.

## 1.3 The Stockholm Bypass and Ekerö Road project

The 21 km long Stockholm Bypass project is a new north-south motorway link west of Stockholm. The Stockholm Bypass will be built as a tunnel under the island of Lovö. Two junctions connect the motorway with the currently existing Ekerö Road, which passes through the World Heritage property. These junctions will be located within an area surrounding the property that functions as a buffer zone. The Ekerö Road project aims at improving the traffic situation between Ekerö and Stockholm.

## 1.4 Conditions for the Stockholm Bypass and Ekerö Road projects

On September 3, 2009, the Swedish Government granted permission for the location of the motorway with two junctions on the island of Lovö. The Government's decision stipulated several conditions for the subsequent detailed plans. Among others, there should be limited negative consequences to the cultural environment, and the values of the World Heritage property of Drottningholm should not be threatened.

The Swedish National Heritage Board, the Swedish Transport Administration, The National Property Board Sweden and the Ekerö municipality have come to an agreement about the continued work (Agreement April 7, 2011). The focus of the agreement is to reduce the impact of the junctions and limit the disturbance from Ekerö Road where it passes through the World Heritage property. The aim is also to preserve and recreate historical, functional and visual values in the surrounding landscape within the World Heritage property and its buffer zone. If the agreed measures do not lead to the expected effects of solving the traffic problems an alternative solution of a tunnel for Ekerö road under the property will be explored.

The common target of the involved parties is that the traffic projects are to:

- Be designed and implemented with a comprehensive view of and good adaptation to the cultural landscape within the World Heritage site and its buffer zone so that the values of the World Heritage site are not threatened.
- Contribute to significant improvements within the World Heritage site and its buffer zone with regard to spatial contexts and noise
- Improve accessibility for those who live and work in and visit Ekerö municipality
- Lead to an increased proportion of public transport
- Improve the traffic situation through the World Heritage site when the Stockholm Bypass has opened

## 2. Assessment methodology

### 2.1 ICOMOS Heritage Impact Assessment Guidance

A Heritage Impact Assessment aims at evaluating effectively the impact of potential development on the Outstanding Universal Value of World Heritage properties. This Heritage Impact Assessment is based on ICOMOS (International Council on Monuments and Sites) Guidance on Heritage Impact Assessments (HIA) for Cultural World Heritage Properties (January 2011). ICOMOS is an Advisory Body to the World Heritage Committee regarding cultural heritage. The present HIA is based on the existing documentation and data and focuses on the World Heritage Outstanding Universal values whereas The ICOMOS HIA Guidance encompasses all heritage values of the site grading them according to their significance.

### 2.2 Heritage Impact Assessment Process

A Heritage Impact Assessment is a process with different stages. The present HIA at this phase I is a report where the scope of work, the key assets of the World Heritage property and the preliminary impacts of the proposed changes are assessed. It was too early to make an assessment of the different project proposals and more detailed studies are needed in further work.

The next stages in the HIA process will include the assessment of the alternative options and mitigation measures, stakeholder consultations, moderating the assessment results and agreeing on mitigation and dissemination of the final results according to ICOMOS HIA Guidance.

### 2.3 Scope of Assessment

The present Heritage Impact Assessment focuses on the impacts of the present project proposal of the Stockholm Bypass and Ekerö Road project on the Outstanding Universal Value of the Royal Domain Drottningholm World Heritage property. The impact assessment covers:

- Direct, indirect and cumulative impacts
- The impacts during construction works and after completion
- The cumulative impacts on the World Heritage property in its wider setting and context

### 2.4 Definition of the Assessment Area

The assessment area is the World Heritage property. No formal buffer zone is yet designated. The delimitation of The Areas of National Interest for the Conservation of the Cultural Environment on Lovö/Lindö acts as the buffer zone of the World Heritage property.

### 2.5 Data Sources

The HIA is based on existing documentation regarding the World Heritage property. The Statement of Outstanding Universal Value has been revised during 2011 and submitted in January 2011. It has been the reference for HIA. Other documentation consulted is:

- Documentation regarding The Ordinance for State Owned Listed Buildings,
- Preliminary cultural landscape analysis for the cultural/natural reserve designation of Lovö and Kårsö by the Stockholm County Administrative Board.
- A cultural landscape analysis for Lovö and Lindö as part of the Environmental Impact Assessment for the Stockholm Bypass.
- The Ekerö Road project landscape character analysis of the World Heritage property
- The project descriptions for Stockholm Bypass and Ekerö Road projects are as of August 2011 and can be downloaded from the Swedish National Transport Administration website.
- Supplementary data has been provided when necessary to highlight specific impact areas and mitigation proposals.

For references, see page 54, chapter 7.

### 2.6 Evaluation of Heritage Resource

The following steps in assessment have been applied following the ICOMOS HIA Guidance.

1. Description of the significance of the asset and its contribution to OUV according to the World Heritage inscription
2. Identification of the condition of the asset ; authenticity and identity on each of its attributes
3. Description of changes affecting the asset and its setting
4. Definition of the scale and severity of the impact
5. Definition of the significance of the impact

<b>ICOMOS HIA Process</b>	<b>Activities June - August 2011</b>
Initial development and design	Request from World Heritage Centre to apply ICOMOS HIA Guidance. The HIA was commissioned by the Swedish National Heritage Board and prepared by the National Transport Authority. Adaptation of the ICOMOS HIA method to focus on the OUV
Early consultation	The Swedish National Heritage Board, The Swedish National Property Board, Stockholm County, Drottningholm Court Administration
Identify and recruit suitable organizations to undertake works	Working group meetings took place during June - August 2011 and the preliminary report was carried out with the working group led by an external expert. Timeframe of approximately three weeks.
Establish study area	The World Heritage property and the Area of National Interest as preliminary buffer zone
Establish scope of work	The inscribed property and the Statement of Outstanding Universal Value prepared by Drottningholm Court Administration
Collect data	World Heritage ; National Historic Building and overall Drottningholm documentation, historic landscape analysis for EIA for the Stockholm Bypass and landscape analysis for the Ekerö Road project, Stockholm Bypass and Ekerö Road project descriptions, additional data from NGOs, site analysis and expert interviews
Characterize the heritage resource especially in identifying the attributes that convey OUV	Attributes and key characteristics according to the Draft Statement of OUV and World Heritage Management Plan 2007-2012
Model and assess impacts, direct and indirect	Assessment according to ICOMOS HIA grading Identification of need for further studies
	<b>Next steps</b>
	Further studies and project development: Ekerö Road studies and alternative project proposals Stockholm Bypass traffic regulation measures Natural and cultural reserve designation ( first draft spring 2012)
Draft mitigation - avoid, reduce, rehabilitate or compensate	
Draft report	
Consultation	
Moderate the assessment and mitigation	
Final reporting and illustration - to inform decisions	
Mitigation	
Dissemination of results and knowledge gained	

TO BE DEFINED

### 2.6.1 Definition of the scale and severity of the impact

The first stage of the HIA investigates the scale and severity of the change on the World Heritage OUV. The scale of impacts is graded on a scale from no change in the present situation to major change which would result in a loss of Outstanding Universal Values. The examples of impact grading are given in the ICOMOS HIA Guidance. The aim is to identify in detail which physical or intangible attributes of the OUV were in fact, subject to a change.

The Royal Domain of Drottningholm is inscribed as an ensemble, with character elements of built heritage, historic urban landscape, historic landscape and

intangible cultural heritage. A comprehensive mapping of all the above in one matrix was found to be the most representative of the OUV of the property.

### 2.6.2 Definition of the significance of the effect

The second stage is to assess the significance of the change in relation to the OUV values. The overall impact is a function of the importance of the attribute and the scale of change. For example, a minor change has a larger impact if the value is considered high.

The assessment was made for each of the key components following the table below following the ICOMOS HIA Guidance.

IMPACT GRADING	BUILT HERITAGE / HISTORIC URBAN LANDSCAPE / HISTORIC LANDSCAPE / INTANGIBLE CULTURAL HERITAGE
<b>Major Change</b>	Change to key historic building elements that contribute to the OUV, such that the resource is totally altered. Comprehensive changes to the setting. Change to most or all key historic landscape elements, parcels or components, extreme visual effects; gross change of noise; fundamental changes to use or access, resulting in a total change to historic landscape character and loss of OUV. Major changes to area that affect the ICH associations or visual links and cultural appreciation.
<b>Moderate Change</b>	Changes to many key historic building elements, such that the resource is significantly modified. Changes to setting of an historic building, such that it is significantly modified; change to many key historic landscape elements, visual changes to many key aspects of the historic landscape, noticeable differences in noise or sound quality; considerable changes to use or access; resulting in moderate changes to historic landscape character. Considerable changes to area that affect the ICH activities or associations or visual links and cultural appreciation.
<b>Minor Change</b>	Change to key historic building elements, such as the asset is slightly different. Changes to setting of an historic building, such that it is noticeably changed; change to few key historic landscape elements, parcels or components; slight visual changes to few key aspects of historic landscape; limited changes to noise levels or sound quality; slight changes to use or access, resulting in limited change to historic landscape character. Changes to area that affect the ICH activities or visual links and cultural appreciation.
<b>Negligible Change</b>	Slight changes to historic building elements or setting that hardly affect it. Very minor changes to key historic landscape elements, parcels or components, virtually unchanged visual effects, very slight changes in noise level or sound quality; very slight changes to use or access; resulting in a very small change to historic landscape character. Very minor changes to area that affect the ICH activities or associations or visual links and cultural appreciation.
<b>No Change</b>	No change to fabric or setting, no change to elements, parcels or components, no visual or audible changes, no changes in amenity or community factors. No change to ICH

*Adapted from ICOMOS HIA Guidance, January 2011*

VALUE OF HERITAGE ASSET	SCALE AND SEVERITY OF CHANGE/IMPACTS				
	No change	Negligible Change	Minor Change	Moderate Change	Major Change
	<b>SIGNIFICANCE OF EFFECT OR OVERALL IMPACT (EITHER ADVERSE OR BENEFICIAL)</b>				
<b>For WH properties Very High - attributes which convey OUV</b>	Neutral	Slight	Moderate/ Large	Large/ Very Large	Very Large

### 3. World heritage: The Royal Domain of Drottningholm

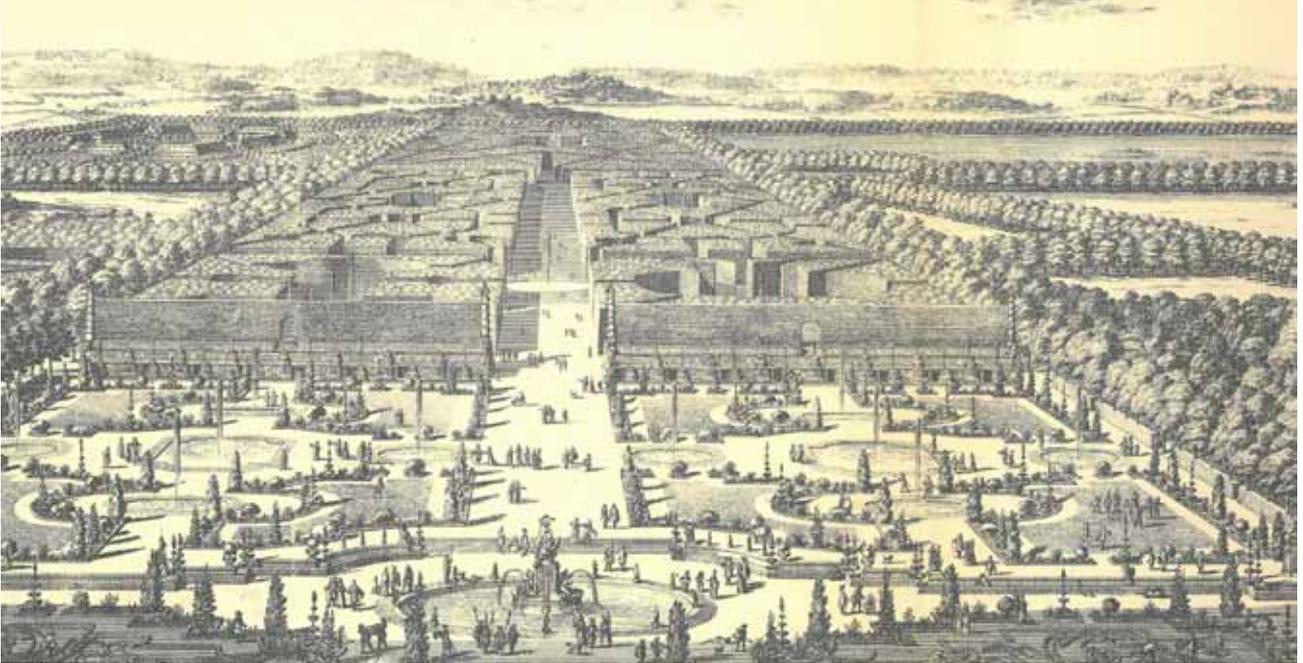


Fig 2. Drottningholm, *Suecia Antiqua et Hordierna*, 17th century



Fig 3. Drottningholm castle, approach by land

#### 3.1 Outline

This section gives a brief outline of the World Heritage context of the Royal Domain of Drottningholm; the concept and its application for the purposes of this HIA. It does not attempt to cover all issues in detail but gives references for further reading. The World Heritage concept is explored in the UNESCO Operational Guidelines for the Implementation of the World Heritage Convention (2008) and the World Heritage website gives additional information about

the concept and the Drottningholm World Heritage (<http://whc.unesco.org>). A comprehensive description of the historical development and cultural character can be found in the extensive documentation of Drottningholm as a National Historic Building designation. The Drottningholm World Heritage Management Plan includes detailed information of the current status and development of the property.

### 3.2 Ekerö road historical overview

A historical analysis of the connections and travels to Drottningholm is one of the recommendations for further studies. Briefly, the royal history of Drottningholm goes back to the 16th century when a Crown demesne was established on island of Lovö. The current palace domain dates from the 17th century and the ensemble has been in continuous use as a royal household since 1660. The island of Lovö was connected with the mainland with bridge in 1787 near the present location of the Drottningholm bridge. The existing bridge dates from 1970's. The present

delineation of the Ekerö road through the property dates from the 1940's. At this time it was broadened to two lanes and designed as a tree avenue in the southern part of the property. A third lane was added in the late 80s and the Lindö tunnel was completed 1995. The traffic has increased from estimated 16 700 v/d in 1991 at the time of the World Heritage inscription to present 19 000 v/d. The heavy traffic, the congestions during peak time and increased speed of vehicles have successively changed its character from a rural road to a major commuter link.



Fig 4a. Year 1800



Fig 4b. Year 1905



Fig 4c. Year 1910



Fig 4d. Year 1943



Fig 4e. Year 1986



Fig 4f. Year 1992

### 3.3 World Heritage Outstanding Universal Value (OUV)

World Heritage properties must demonstrate Outstanding Universal Value (OUV) which is defined in the UNESCO Operational Guidelines for the Implementation of the World Heritage Convention (2008):

*‘Outstanding universal value means cultural and / or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole.’*

The OUV of a property is based on three foundations; the criteria, the conditions of authenticity and integrity and its ability to maintain these for future generations – protection and management. The OUV is reflected in key features or attributes which convey the OUV of the property. The OUV is defined by the World Heritage Committee when the property is inscribed and is non-negotiable. OUV is the reference point for all activities linked to the property.

#### 3.3.1 Justification for World Heritage inscription

The Royal Domain of Drottningholm was inscribed in 1991 by the World Heritage Committee based on criteria C (iv);...*an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history.*

Justification of the criteria: *“The ensemble of Drottningholm – castle, theatre, Chinese pavilion and gardens – is the best example of a royal residence built in the 18th century in Sweden, and is representative of all European architecture of this period, heir to the influences exerted by the Chateau of Versailles on the construction of royal residences in western, central and northern Europe.”*

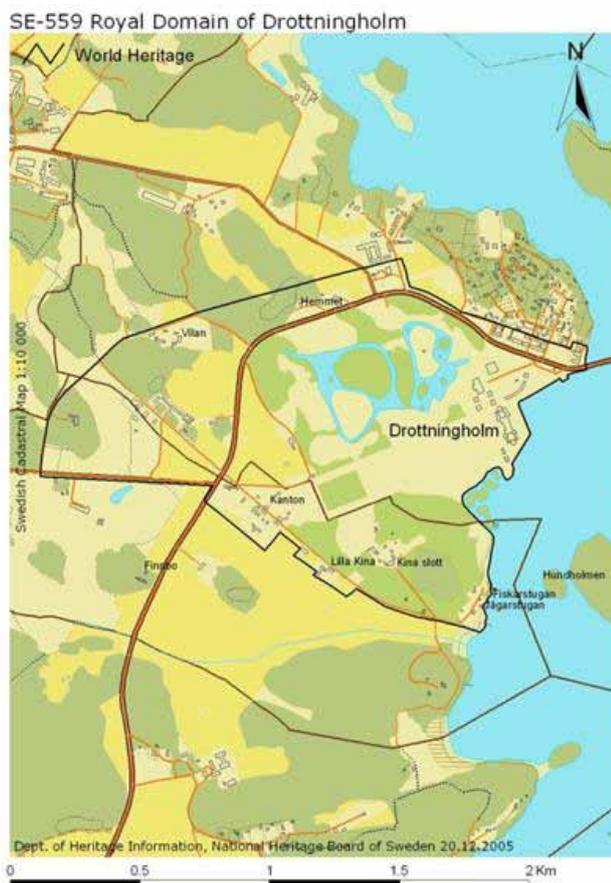


Fig 5a. World Heritage Boundaries

### 3.3.2 Statement of Outstanding Universal Value

The Statement of OUV is linked to tangible and relevant intangible attributes of the site, so that there is a clear understanding between OUV and the property's attributes. The attributes – the OUV “on the ground” are essential for considering authenticity and integrity of the property.

A Statement of OUV was not required at the time of the inscription of Drottningholm World Heritage property, as it is today. By 2012 all World Heritage properties must submit a Statement of OUV for approval by the World Heritage Committee. The Drottningholm Statement of OUV has been reviewed and submitted in January 2012 and is used as a reference for the HIA:

#### **Brief synthesis**

The Royal Domain of Drottningholm, situated on the island of Lovön close to Stockholm, is an exceptionally well-preserved ensemble with gardens and buildings with original interior furnishings. The palace is representative of 17th and 18th century West and North European architecture, and the palace grounds were also created during that period. The Royal Domain of Drottningholm includes Drottningholm Palace, the Palace Theatre, the Chinese Pavilion, Canton Village, the gardens and part of Malmen. Drottningholm has been used for pleasure and summer recreation from the Baroque era until today. As the current home of the Swedish Royal Family, Drottningholm upholds a cultural continuity with the original purpose of the site.

Drottningholm Palace was created with strong references to 17th century Italian and French architecture. The interiors reflect Sweden's ambitions as one of the most powerful nations of 17th century Europe, both from a cultural and political viewpoint. Leading Swedish architects worked together with the best craftsmen in Europe to create a unique ensemble of buildings with rich and lavish interiors.

The Palace Theatre is the only surviving 18th century theatre where the original machinery is still regularly used and the original stage sets are preserved. Opera productions performed at the theatre are often historically staged and accompanied by music played with historical instruments by Drottningholm Theatre Orchestra.

The Chinese Pavilion with its incomparable combination of architecture, interior decoration and collections is preserved and a symbol of 18th century contacts between Europe and Asia. Together with Canton Village, which includes former buildings for manufacture and living quarters for members of the royal court, this ensemble of buildings gives a comprehensive picture of court life during this era, with touches of influence from distant places.

The gardens were created during different periods and show both continuity and changes in fashion over time. The French formal garden, the rococo garden and the ideal landscape garden are preserved side by side. The French formal garden holds the world's largest collection of sculptures by Adriaen de Vries.

Malmen is an adjoining 18th century residential area for courtiers and officials of the royal court as well as a site for various palace offices. Malmen was granted a town charter in the late 18th century. The buildings in this area still partly retain their original function, and their facades are important features of this historical setting.

*Statement of OUV, submitted in January 2012*

### 3.3.3 Attributes

Attributes are key features of a property which are associated with or express the Outstanding Universal Value. They express also intangible aspects of the heritage which can be, for example, the spirit and feeling of the place and the relationship between a material and intangible aspect of the heritage. An attribute can also be a process.

Drottningholm Palace, Palace Theatre, Chinese Pavilion, Gardens, Malmen office buildings and the Canton Street have been identified as the key elements in the Statement of OUV. Together they create the unique ensemble of Drottningholm. Therefore the assessment attempts to pay specific attention to the interconnections and linkages both within the property and in its larger context. The choice of attributes is done for the purpose of the present HIA at phase I. It functions as an analysis and shall be revised in consultation with stakeholders and experts.

### 3.3.4 Qualifying Conditions; Authenticity and Integrity

#### 3.3.4.1 Authenticity

Properties are understood to meet the conditions of authenticity if their cultural values are truthfully and credible expressed through a variety of attributes. Authenticity is about the link between attributes and OUV.

The authenticity of the Royal Domain of Drottningholm is expressed as follows in the Statement of OUV (submitted in January 2012):

*The historical setting, with the Drottningholm Palace, the Palace Theatre, the Chinese Pavilion, the gardens and the facades of Malmen's buildings, is intact in form and material from the 17th and 18th centuries. The primary guideline for this property is to conserve and not to restore. Great respect is held for both the original forms and the original materials.*

#### 3.3.4.2 Integrity

Integrity is a measure of the completeness or intactness of the attributes that convey OUV. The key words are 'wholeness', intactness and 'absence of threats'. These can be understood as follows:

- Wholeness: the property includes all the elements necessary to express its OUV; it is of adequate size to ensure the complete representation of the features and processes which convey its significance.

- Intactness: all the necessary attributes are still present- none are lost or have been significantly damaged or have decayed. The processes, relations and dynamic functions essential to their distinctive character are maintained
- Absence of threats; none of the attributes are threatened by the development, deterioration or neglect

The integrity is described in the proposed Statement of OUV:

*No great changes have been made to this World Heritage site since it was inscribed on the List. The unique whole that existed then is still present. The Drottningholm Palace, the Palace Theatre, the Chinese Pavilion and gardens remain intact and represent a royal domain with important elements of 17th and 18th century Swedish and European history.*

*The Royal Domain of Drottningholm has been an intercultural meeting place for centuries, from the time of its construction by architects and workers of different nationalities to the theatre activities and tourism of today. For centuries, the Drottningholm area has been used for pleasure and summer recreation. Both theatre performances and the interest visitors to Drottningholm show in this site maintain this tradition and its function as the home of the Swedish Royal Family.*

### 3.3.5 Site, setting and buffer zone

In World Heritage concept *the property* is the area which has Outstanding Universal Value. Where the *setting* can be a part, or integral to the OUV, it should be part of the inscribed property. Beyond the physical and visual aspects, the setting includes interaction with the natural environment, and intangible cultural heritage aspects that created and formed the space as well as the current and dynamic cultural, social and economic context. (ICOMOS Xi'an Declaration 2005). *Buffer zone* is a clearly delineated area outside a World Heritage property and adjacent to its boundaries which contribute to the protection, conservation, management, integrity, authenticity and sustainability of the outstanding universal value of the property. Buffer zones do not contain OUV - in that case they should be included in the property - but their role is to protect, respect and transmit the OUV.

The buffer zone was not required when the Drottningholm was inscribed on the World Heritage list. The Area of National Interest for the Protection of Cultural Environment (Riksintresse) functions as a buffer zone.

### 3.3.6 Protection and Management

The Statement of Outstanding Universal Value is a key reference for management. Drottningholm World Heritage Management Plan 2007 – 2012 is the guiding document and sets out visions for the future development of the property. More specific conservation plans for the buildings, parks and gardens are in place in accordance with the designation of the whole property as a National Historic Monument.

Three main stakeholders operate within the Drottningholm World Heritage site: the National Property Board, the Drottningholm Palace administration and the Drottningholm Palace Theatre. They work together in long-standing continuous cooperation. A management plan for the World Heritage site was adopted in 2007 by these three stakeholders. A new Visitors' Center was opened in 2009.

The main Swedish legislation safeguarding the buildings and gardens of this World Heritage site is the Ordinance for State-owned Listed Buildings. The Swedish National Heritage Board, County Administrative Board of Stockholm and Ekerö Municipality are the national, regional and local authorities responsible for granting permits for alterations to the World Heritage site.

The Drottningholm area is listed as an area with State-owned Listed Buildings of national importance since 1935, and the borders of this area corresponds with the borders of the World Heritage site. In the Master Plan of Ekerö Municipality, a buffer zone is pointed out for the World Heritage site which coincides with the Area of National Interest on Lovön. This buffer zone will be formalized in connection with the coming Periodic Reporting. The planned creation of a Lovön Culture and Nature Reserve would enhance the current level of protection for this area.

Current developments in the infrastructure of Greater Stockholm will affect the Drottningholm area in the future. Road 261 passed through the World Heritage site long before Drottningholm's nomination, but the traffic situation has changed notably. All involved parties aim to limit the negative consequences of this and work to identify new possibilities and solutions for improved accessibility to the area in conjunction with the developments related to the ongoing project Stockholm Bypass.

*Statement of OUV, submitted in January 2012*

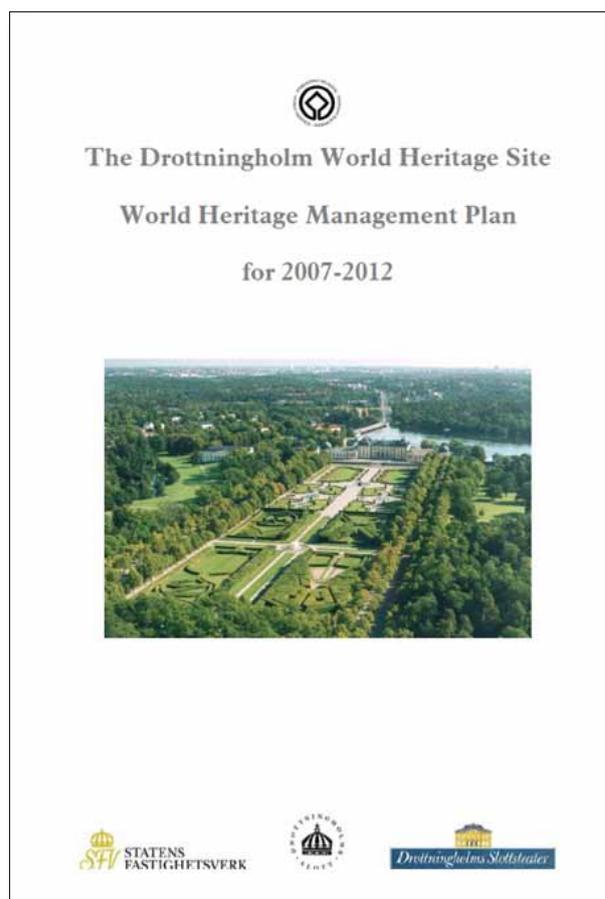


Fig 5b. World Heritage Management Plan

### 3.4 Other designations

A "Natura 2000" site is on Lovö near Edeby and on Kårsö opposite of the Royal Castle. The conservation of the urban area of Malmen, adjacent to the World Heritage property, is regulated by the Master Plan of Ekerö Municipality.

The cultural and natural values of the area, Lovön and the adjacent island of Kårsö, are part of the Stockholm County program for protection of urban fringe nature. At present cultural landscape studies and inventories are made and next consultation phase will be in spring 2012. The designation for a reserve enhances conservation of the cultural and natural landscape and includes issues as land use, landscape protection and rehabilitation and compensatory measures. It does not include infrastructure and road planning.

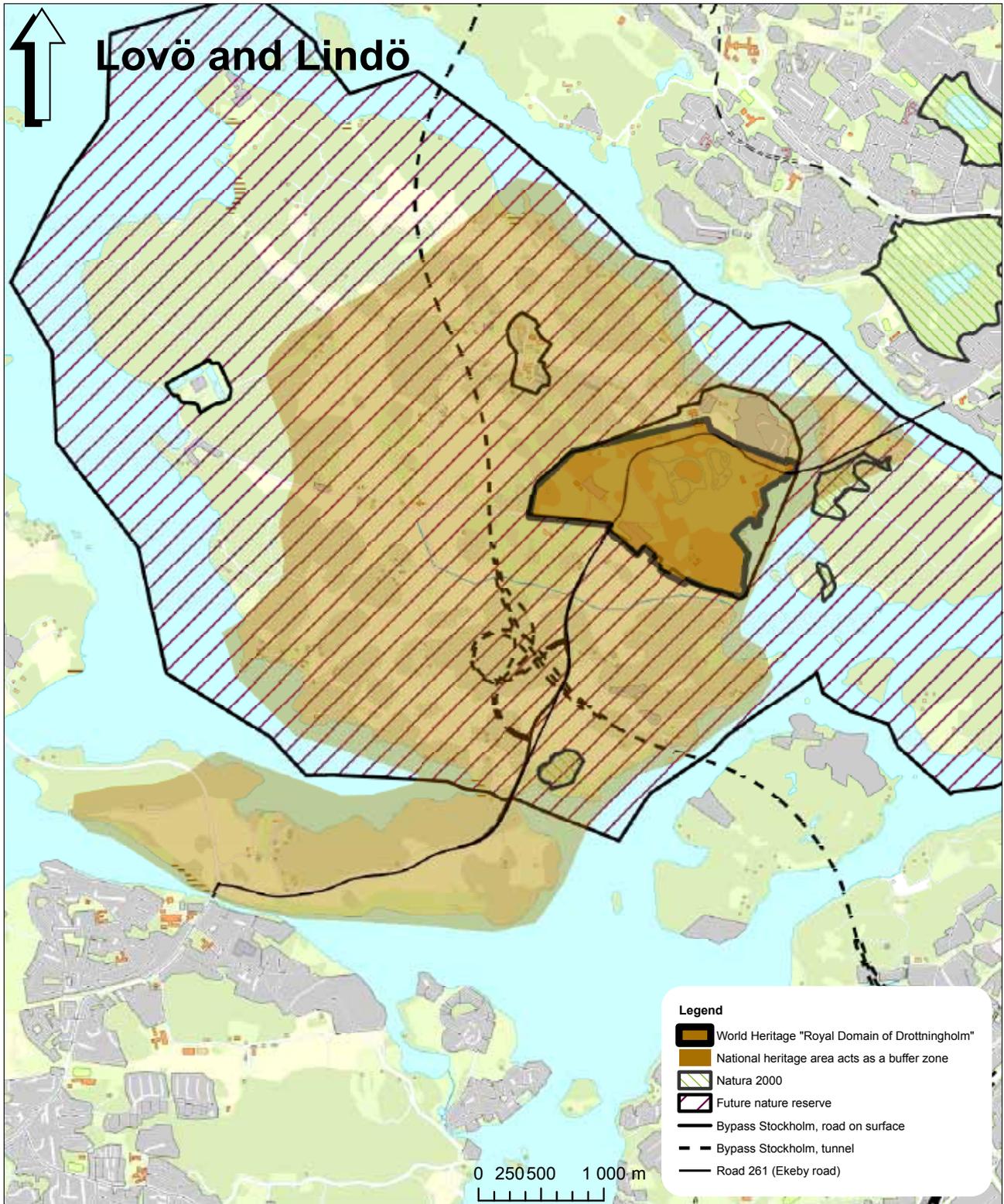


Fig 6. Protected areas overview

# 4. Proposed development: The Stockholm bypass and Ekerö road



Fig 7. Overview

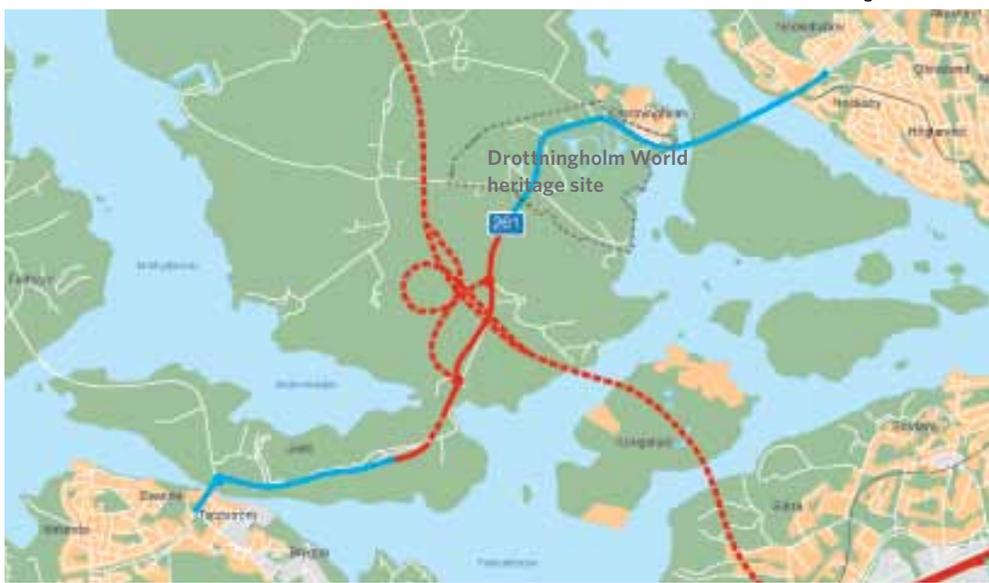


Fig 8. Overview:

Red markings = The Stockholm Bypass

Blue markings = The Ekerö road

The Ekerö road project also includes the parts of the Ekerö road shown in red on the map above.

- ~ Ingår i Förstudie väg 261
- ~ Inår i Förbifart Stockholm

## 4.1 Background

### 4.1.1 Stockholm Bypass and Ekerö road project

The planned Stockholm Bypass is a motorway creating a new north – south link west of Stockholm. Its aim is to ease the traffic pressure on the existing road infrastructure and through the city centre. The link will be 21 km long, 1, 7 km of which will be built as tunnels. One of the six interchanges will be on the island of Lovö, where the World Heritage property is situated. Two junctions on Lovö will connect the motorway with Ekerö road which today passes through the World Heritage property. These junctions will be located about 0.9 and 2.1 km southwest of the World Heritage property's boundary within an area that functions as a buffer zone.

The municipality of Ekerö is growing and the need for a better communication with the region is urgent. Until today the Ekerö road has been the only road connection with the mainland. The road infrastructure on Lindö has remained unchanged until 1995 when the road was reconstructed and the Lindö tunnel was built. After this the traffic has increased and especially during rush hours there are traffic congestions. Already during the feasibility study and the consideration of permissibility, the Stockholm Bypass was adapted to the sensitive surroundings by leading the main stretch of the road in tunnel, and a planned

bridge from the northern part of the Lovö island to the mainland, was converted into a tunnel. Thus, the Stockholm Bypass is built in tunnels under the full length of Lovö, except for the two connecting junctions.

The planned junction south of the Edeby farm gives the Ekerö residents two new options to reach the rest of the region, but not until after ten years when the Stockholm Bypass is opened. The present traffic situation must be solved now and the Ekerö Road project aims at improving the public transport. It proposes an adjustment and partial widening of the existing road through the World Heritage site allowing for bus traffic lanes and options for new pedestrian and bicycle lane alignments. For a comprehensive cultural landscape analysis please see the Environmental Impact Assessment for the Stockholm Bypass, references on page 54.

### 4.1.2 Road planning process

The Swedish planning process for new roads is under strict legal regulation. The scheme below illustrates the present status of the both projects.

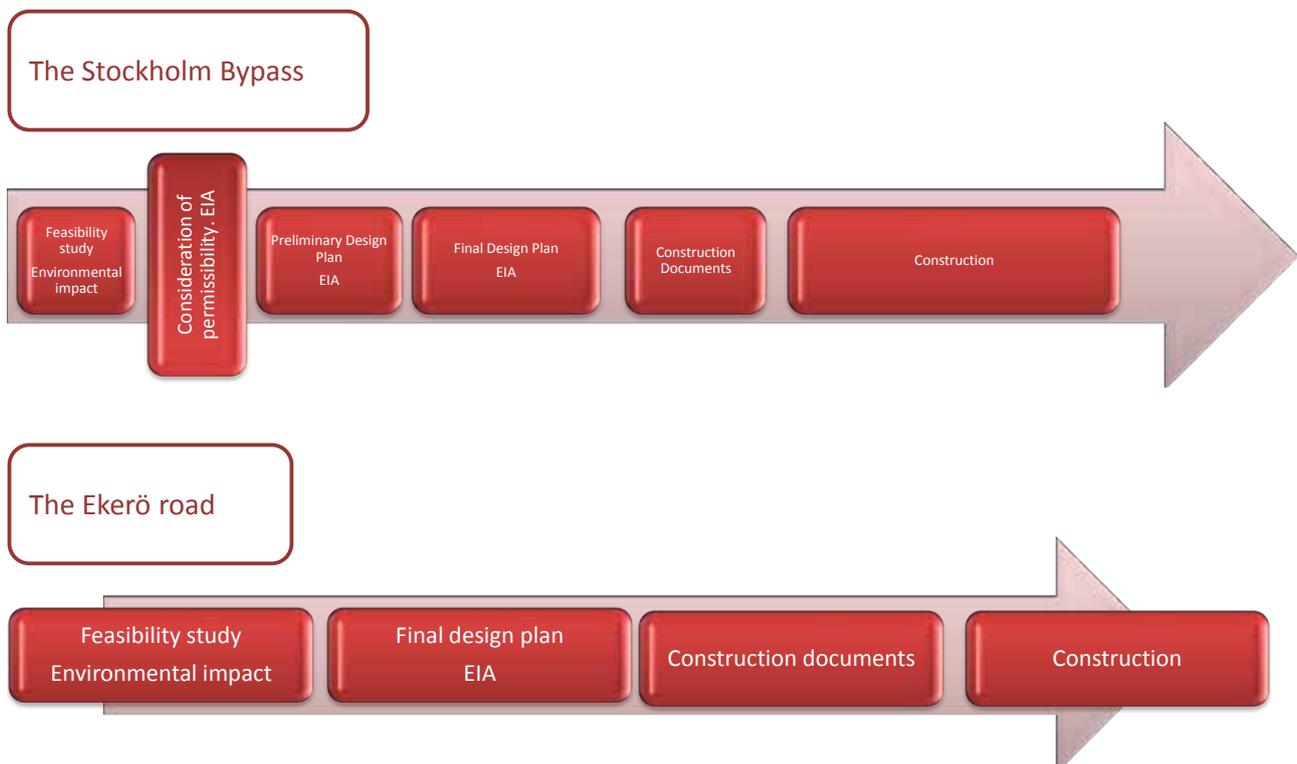


Fig 9. Road planning process for the Stockholm Bypass and Ekerö Road

## 4.2 Changes and construction works on Lovö and in the buffer zone

Stockholm Bypass will be in a rock tunnel in its entire stretch deep beneath Lovö. Stockholm Bypass has a junction for connecting to Ekerö Road. It consists of ramp tunnels that connect on the surface level to Ekerö road at two roundabouts. One roundabout

located north of 'Tillflykten' on the edge of a slightly larger landscape space. The second is at the height of Edeby Farm in a smaller landscape space. Tunnel openings are retracted behind the forest edge.



Fig 10. Stockholm Bypass junction without changes on the Ekerö Road north of Edeby. World heritage boundary shown at the bottom of the pictures. The proposed widening of the Ekerö Road is not shown.

Ekerö road is proposed to be rebuilt in its entire length between Ekerö and Nockeby. The proposed design of the road varies depending on the landscape it is set in. On the stretch around the roundabout Edeby the road profile is lowered. The pedestrian and bicycle path that runs parallel to Ekerö road needs to change sides where it passes the proposed roundabouts to avoid crossing the motorway ramps. In the proposal for the Stockholm Bypass project, a bicycle/pedestrian bridge is proposed to achieve this. The bridge will be visually and functionally disturbing the historic landscape in close connection with the World Heritage property. The Ekerö road project creates a possibility of shifting the entire bike path to the southern side of Ekerö road in its entirety which means that the overpass bridge can be avoided. The underpass is designated to facilitate movement of farming machines on the road as well.

Lindö tunnel will be supplemented with an additional tunnel tube. To ventilate the main tunnel, air exchange stations will be built at junction Lovö and on the north Lovö. These stations consist each of two air supply plants and two exhaust air towers. Exhaust towers need to be about 10 meter high and have an area at ground level of approximately 100 m<sup>2</sup>. Air supply plants need a grid space of 200 m<sup>2</sup>. To cool the

electrical system in the tunnel eight pits for fresh air intake need to be built. Their construction size is approximately 10 m<sup>2</sup>.

The part of Ekerö road between and to either side of the roundabouts needs to be redesigned to be able to cope with the new traffic behavior. This means that the road is given a s new layout both horizontally and vertically. To achieve adequate traffic safety and adhere to mandatory design guidelines, road signs and lighting will be needed in the locality surrounding the roundabouts.

### 4.3 Changes and construction works within the World Heritage property

The Ekerö Road project proposal includes a new lane in order to improve the traffic situation and improving the public transport. The existing three lane road will be transformed to a narrow four lane road. This can partly be done within existing road area, but in some parts the road will be widened and adjusted. New location alternatives for the pedestrian and bicycle paths passing through the World Heritage area are being studied. The Drottningholm Bridge can ac-



Fig 11. Ekerö Road overview. Principal designs for different speed limits

commodate the four traffic lanes but the pedestrian/bicycle lane must be added onto the existing bridge on either side. The traffic situation today with estimated 19 000 v/d has a considerable adverse impact on the World Heritage property. At the time of the inscription the traffic was estimated to be 16 700 v/d. The Ekerö Road project includes proposals for improved road design for a reduction of disturbance from the present traffic volume.

#### 4.4 Impacts during construction

The construction works for the Stockholm Bypass are planned to start 2012 and are estimated for 8 – 10 years. Ekerö Road construction time is estimated for two years for the road construction and three years for the bridge constructions. These are done at the same time so the works take up to three years. A possible reconstruction of the Nockeby Bridge may prolong the construction time of the Ekerö road. The schedule will be coordinated with the Bypass works. Both projects are planned to be in operation by 2022.

The works will include one tunnel surcharge of approximately 350 meters northeast of the Edeby and one about 250 meters west of Sofiero. Work tunnels are isolated from existing settlements by existing terrain formation and by woodland. The rock is primary crushed underground or adjacent to the tunnel entrance in order to transport it by the covered conveyor to two temporary ports. The transport of material will take place by sea, by temporary ports in the lake Mälaren. The work tunnel at Edeby connects to a port on the west side of Lovö while the working tunnel in the north is connected to a port on Lovö north shore. The port in the north will also be utilized to bring in materials for the tunnel construction, such as concrete.

Establishment sites are situated next to the work tunnels, the temporary ports and connections to Ekerö road during the construction period. Even when building above ground facilities such as air exchange stations the ground is affected beyond the surface required by the finished facility. To take advantage of rock that can be used in road building and to avoid duplication of transport, possibly a secondary crushing will take place within establishment area.

A temporary diversion of traffic is required for road works when working in the road alignment. A certain amount of transport of material to the work station at Edeby and the traffic junction Lovö will be via Ekerö road. The number of heavy vehicles will be limited as much as possible to the advantage to transport by boat. Today, about 19,000 vehicles per day use the Ekerö road of which approximately 200 are heavy vehicles.

The construction works along the parts of Ekerö road within the buffer zone will most likely resemble typical road works with the worksite moving along the road in increments as portions of the road are completed. It is safe to assume that any road works carried out within the World Heritage site would be done with extraordinary measures to achieve minimal impact.

The temporary environmental impacts would be visible, in that machinery and temporary barriers and signage would be in place and audible, as the construction works generate noise. The disturbances for existing agricultural, forestry and other land use must be considered due to the long construction time. It is necessary to assume that an extensive documentation and monitoring of existing structures will be carried out prior to and during any works to avoid any damage due to vibrations.



Fig 12. Establishment sites and construction work areas on Lovö

## 4.5 Impacts after construction/in operation

### 4.5.1 Traffic

The traffic prognosis is that a yearly increase in traffic with 1,9% the traffic on the Ekerö Road will increase with 10 -20% by 2020, that is before the opening of the Stockholm bypass. After the Stockholm bypass opening the traffic volumes and travel patterns will change successively. The traffic volume north east of the tunnels will not change considerably between 2020 and 2035. The reference point for the evaluation of the OUV was its condition in 1991. In 1990 traffic volume was estimated to be 16 700 v/d.

The general increase of traffic in the Stockholm region is approximately 2% per annum due to increasing population and a general increase in movement year on year. These numbers have also been used when calculating future traffic amounts on Ekerö road. This means that the traffic volumes on Ekerö

road would increase by 10 – 20%. Historically however, Ekerö road traffic has only increased by 0,5% per year. This may also be the case for coming years but the regional standard number of 2% has been used for transparency reasons. After the opening of the Stockholm Bypass new route options are made available and Ekerö road loses its position as singular connection to the inner Stockholm region. In doing so, it is assumed that the traffic increase on Ekerö road will freeze at 2020 levels on the part of the road to the east of the Stockholm Bypass. The addition of another buss lane also facilitates the possibility of moving a larger portion of trips to public transport.

The opening of the Stockholm Bypass provides an opportunity to introduce measures to regulate heavy traffic and implement traffic restrictions through tolls, temporal restrictions and other regulations.

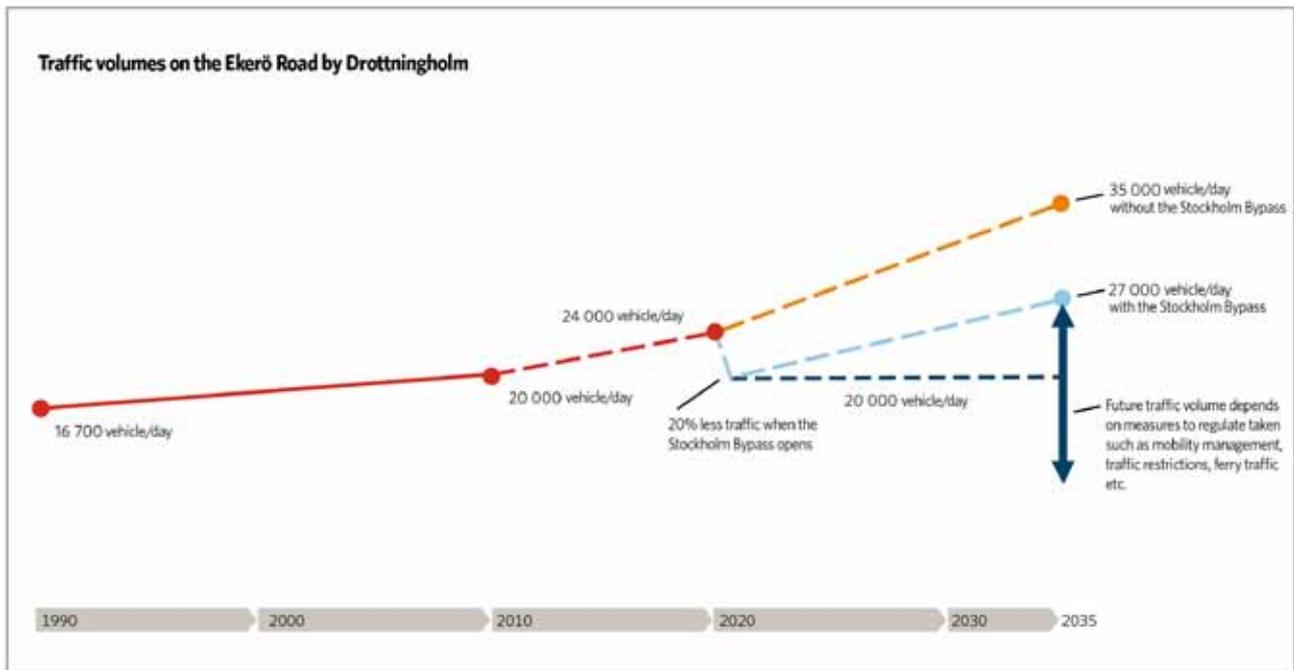


Fig 13. Traffic development through the World Heritage property 1990 – estimated 2035

## 4.5.2 Environment

### 4.5.2.1 Noise

The existing speed limits on the Ekerö road vary between 70 -50. Different alternatives for speed limits are currently being examined. The aim is to reduce the speed within the World Heritage area. Options vary between 60/50/40/30. The aim is to reduce speed which results in lower noise levels even with increased traffic. The redesign of Ekerö road facilitates the movement of vehicles through the World Heritage site with reduced congestion and variations in speed which are adverse to a good noise environment.

The portion of Ekerö road set in the open landscape between Canton Street and Edeby is also a source of noise impacting on the World Heritage site. Several of the proposed changes result in reduced noise levels here as well. Noise from tunnel ventilation towers will be local and is not estimated to have an impact on the World heritage property.

### 4.5.2.2 Air quality

The traffic is not estimated to exceed allowed air quality limits. Air pollution from the ventilation towers is estimated to dissolve at 10-15 meters height and have a minor impact. Through the World heritage

site the contributors to levels of pollution are speed and frequency of studded winter tires rather than numbers of vehicles. The reduced speeds proposed are beneficial in lowering the pollution levels. The “Natura 2000” areas on Kårsön are at a distance from Ekerö road so as that no added negative impact is likely.

### 4.5.2.3 Vibrations

As with air quality, the spread of vibrations from vehicles to surrounding structures is a function of speed, vehicle type and soil composition. The greatest change as a result of the proposals is the significant reduction in speed through the World Heritage site resulting in a reduced spread of vibrations

### 4.5.2.4 Hydrology

The proposed changes to the road are not estimated to change the hydrological situation in the World Heritage property. However, parts of the English park are suffering from high ground water levels which could possibly be adjusted to a more suitable level when road works are carried out.

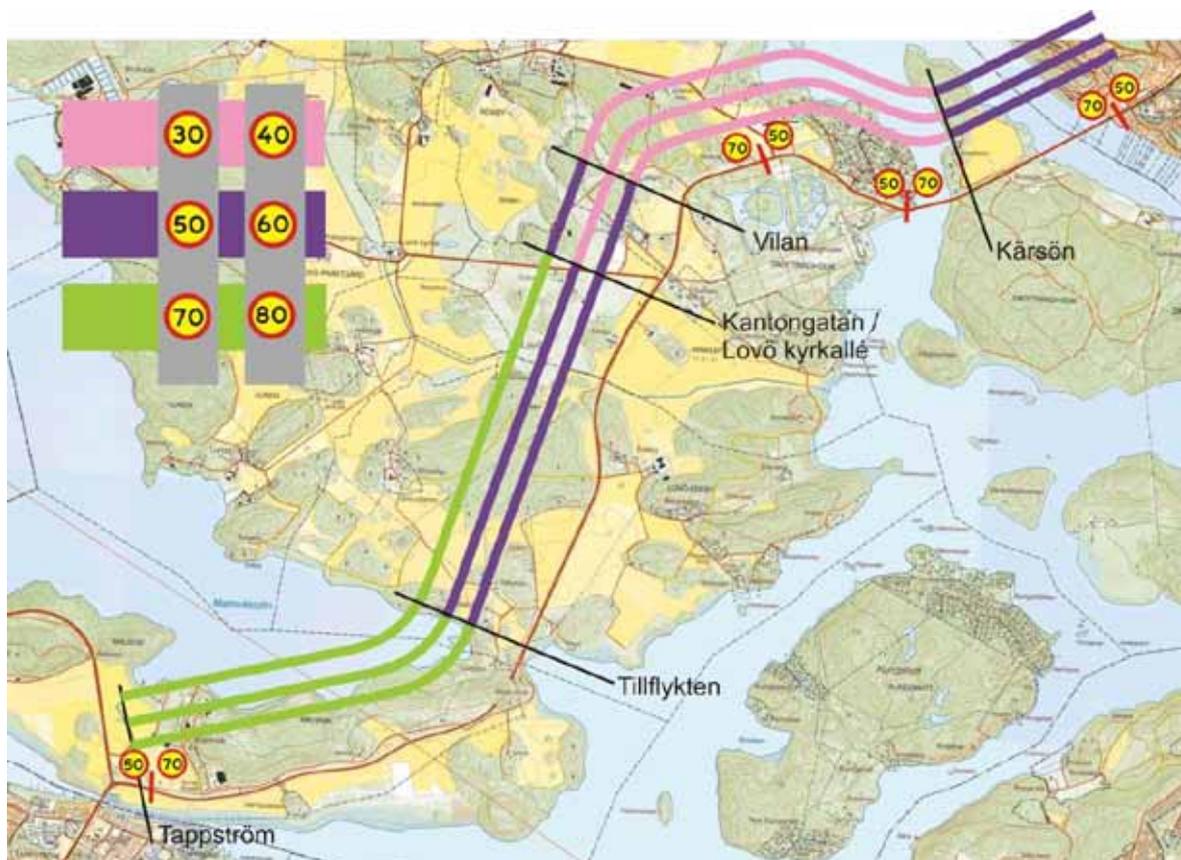


Fig 14. Discussed speed limits on the Ekerö Road

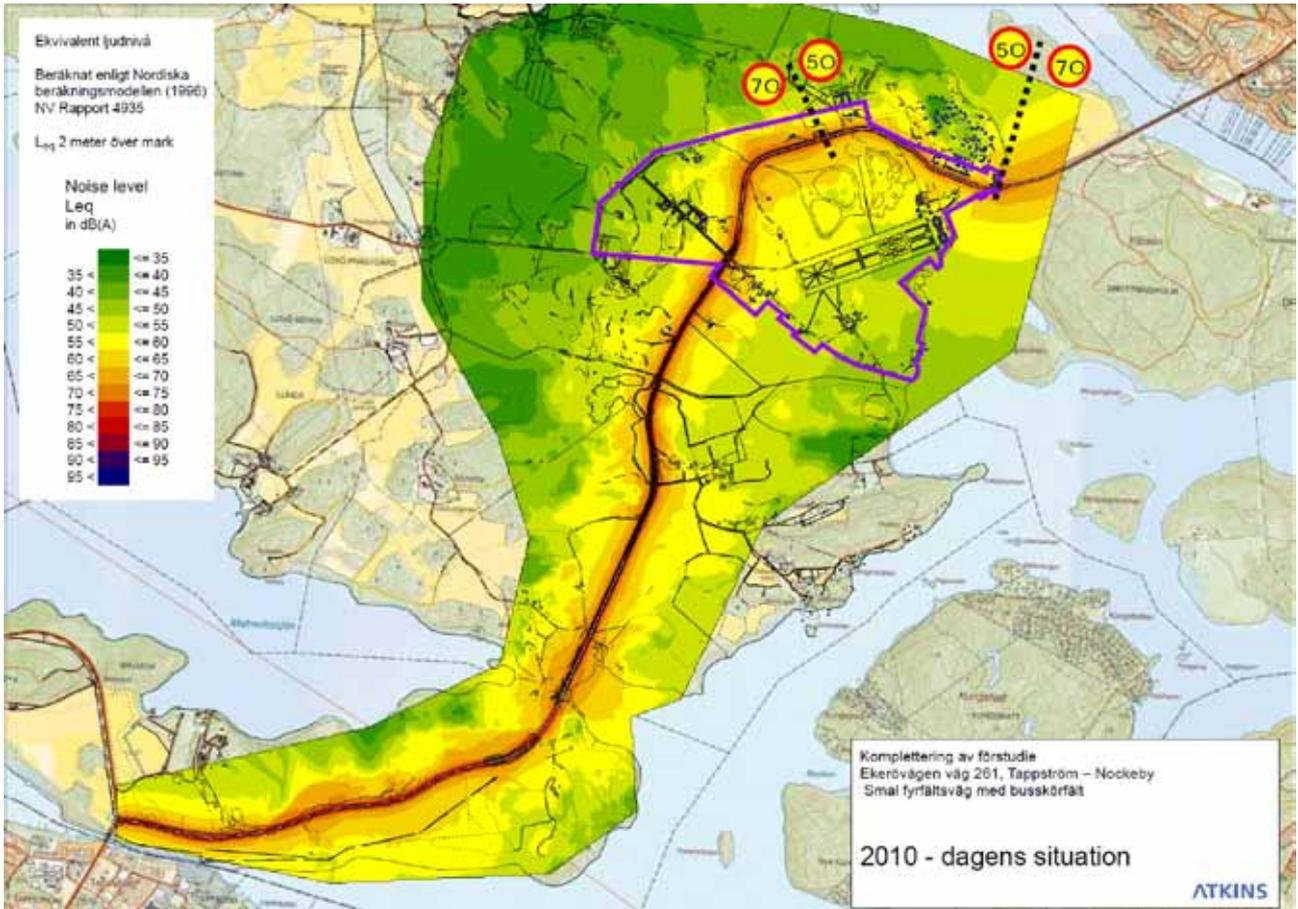


Fig 15a. Noise today

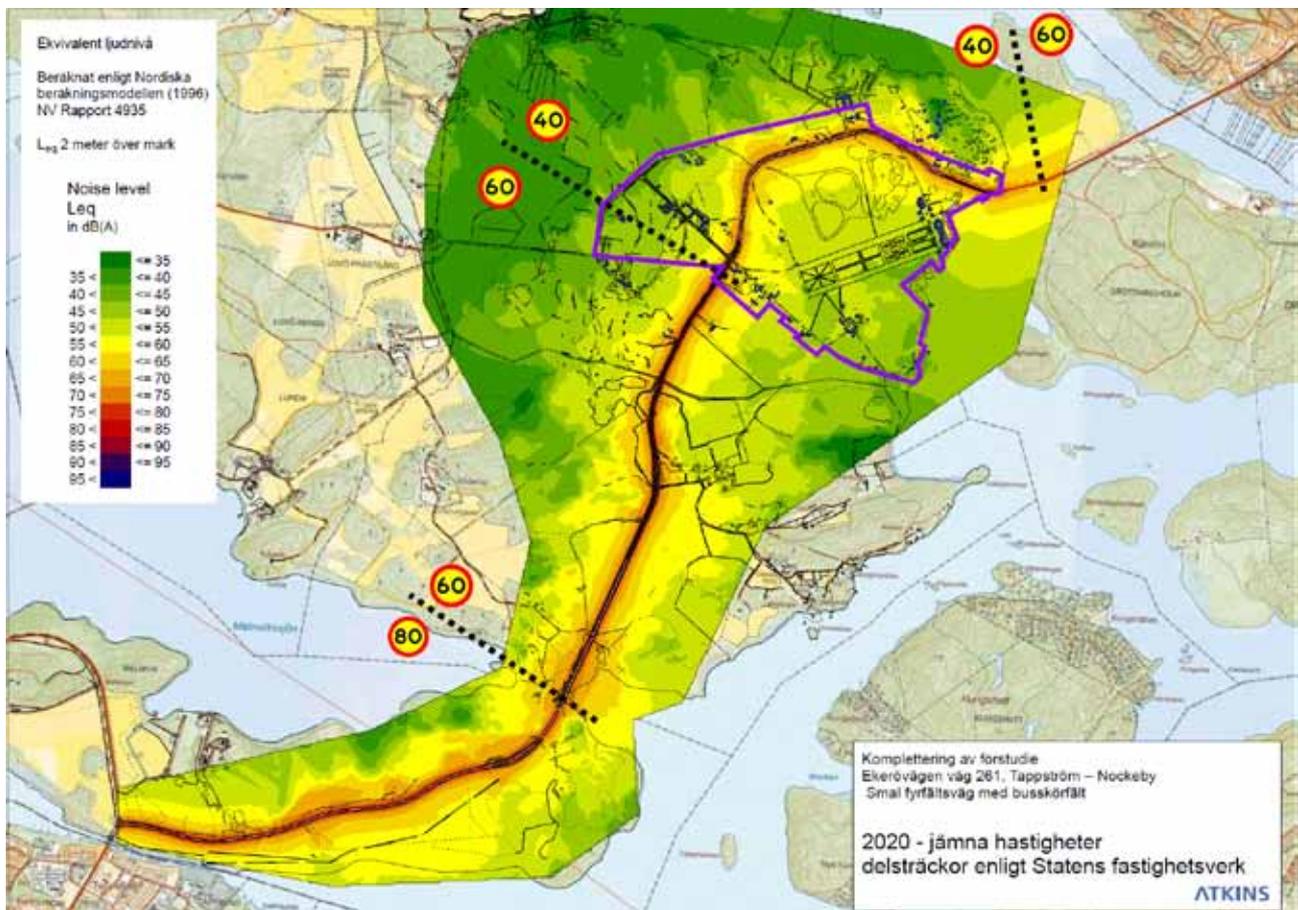


Fig 15b. Noise speed limits 60/40 km/h on the Lovö island, 40 km/h from Kanton

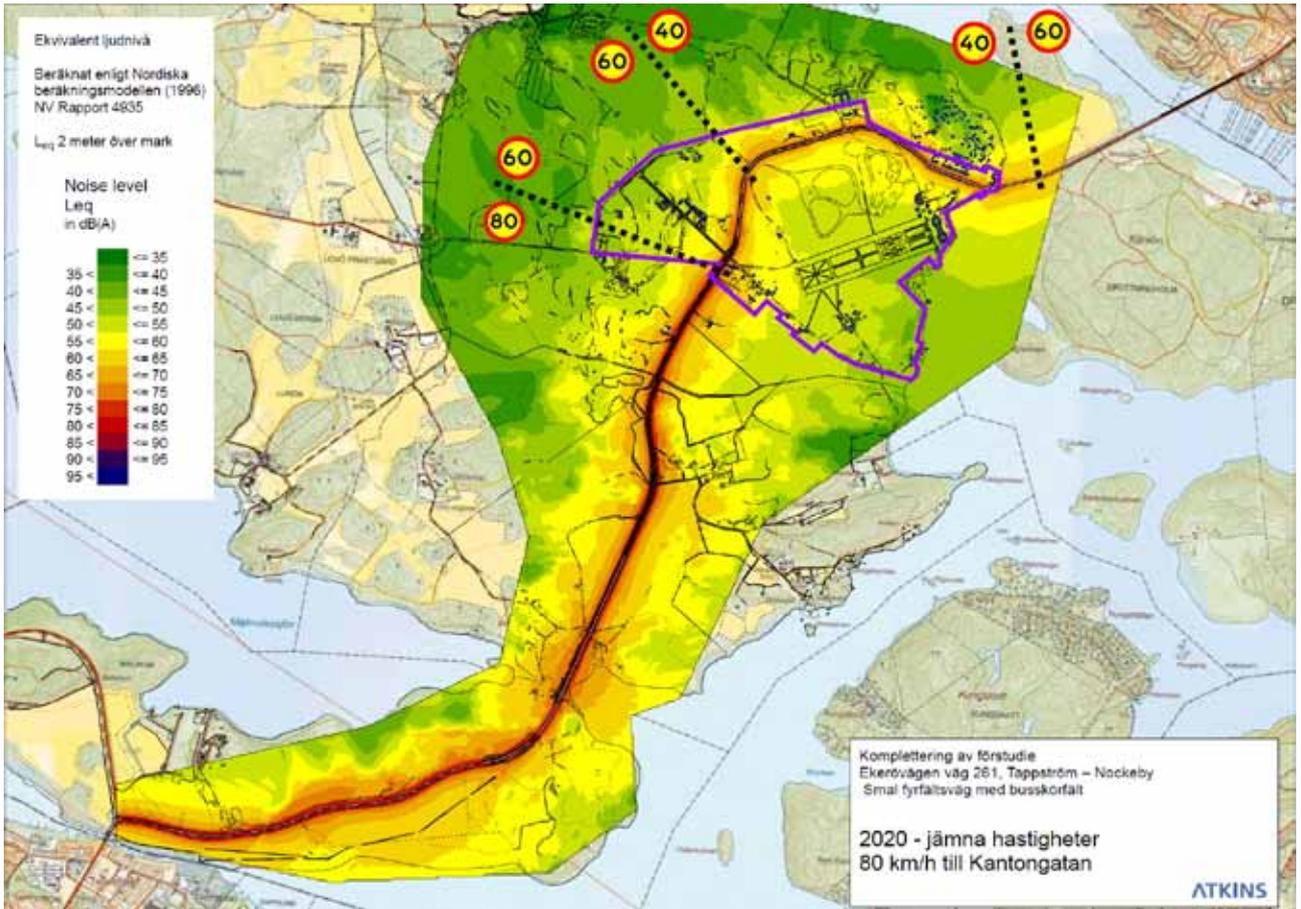


Fig 15c. Noise speed limits 80/60/40 km/h on the Lovö island, 40 km/h from Kanton

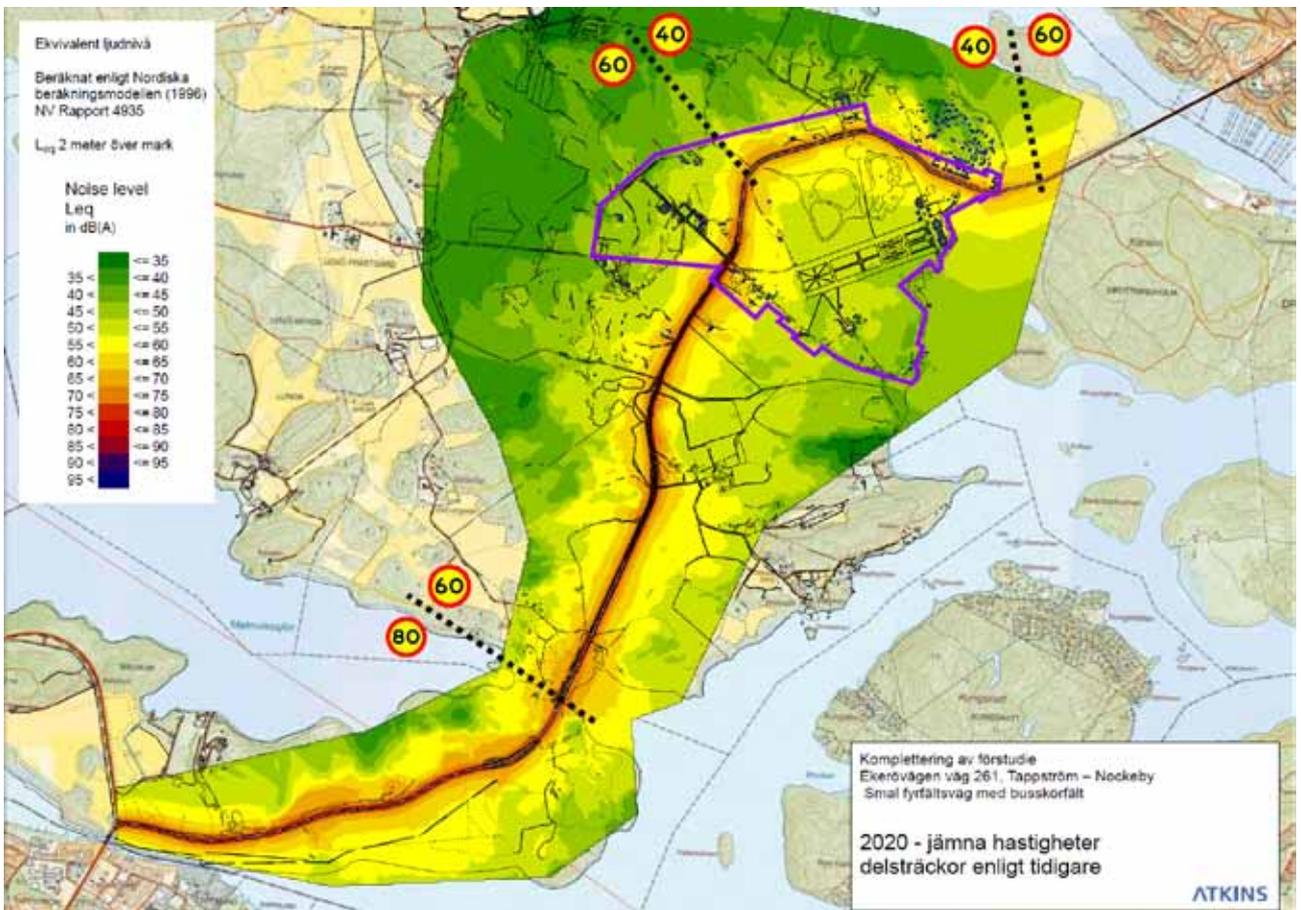


Fig 15d. Noise speed limits 60/40 km/h on the Lovö island, 40 km/h from the English garden

### 4.5.3 Visual and functional changes

The widening of the existing Ekerö road with a bus lane will increase the encroachment of the road and its visual impacts on the property although it will follow the alignment of the existing road. The widening of the Drottningholm Bridge with a new pedestrian and bicycle lane will have an impact on the landscape setting and approach to the whole property. The proposed upgrading will include renewal of parking areas, rebuilding of the entrance area by the Drottningholm Bridge. New bus stops, road crossings and technical road installations will add to the total visual impact. Today's barrier effect of the Ekerö road will remain even if the Ekerö Road project proposes mitigation measures which can improve the visual and functional integrity of the property. Changes on the Ekerö road section between the World Heritage boundary and Edeby roundabout will have a direct and irreversible impact on the World Heritage property. It is necessary to note that all proposals within the World Heritage property are not directly connected to or conditioned by the implementation of the

Ekerö road project and could be done independently within World Heritage management framework.

The tunnel openings and roundabouts of the Stockholm Bypass will be discernible and constitute a new dominant modern infrastructure element in the rural context of the Royal Domain of Drottningholm. However, the visual impact from the World Heritage property is limited by landscape and vegetation. Technical road installations, lighting, road signs and other arrangements will give an additional visual effect even if their dominance can be reduced by adaptive design.

The visual effects of the ventilation towers cover a limited area, but their number will influence the rural identity of the historic landscape. The present use of local road network is not affected after the completion of the works. However, possibilities for new enter and exit junctions will be limited.

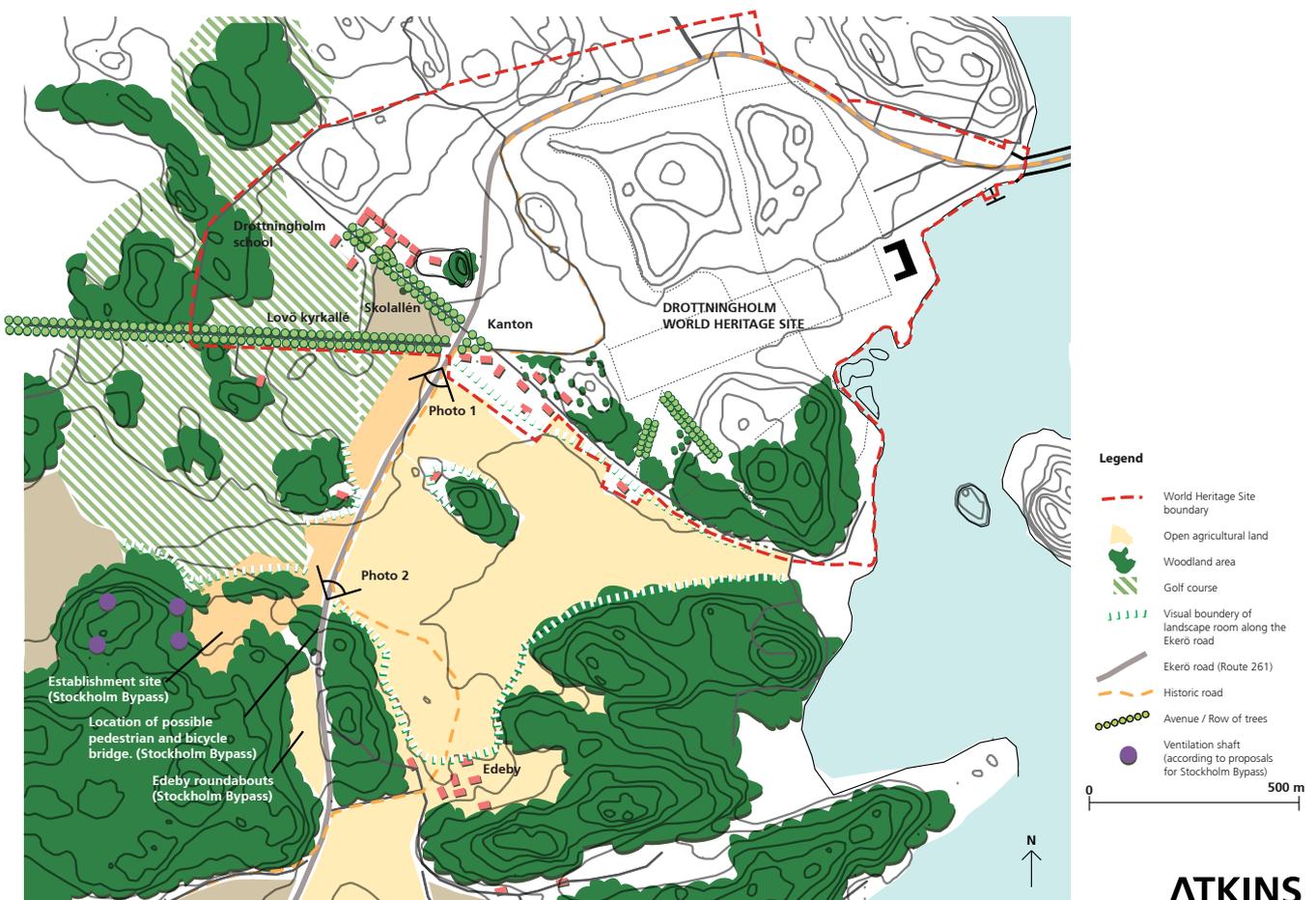


Fig 16a. Visual impacts from World Heritage border towards Stockholm Bypass junction

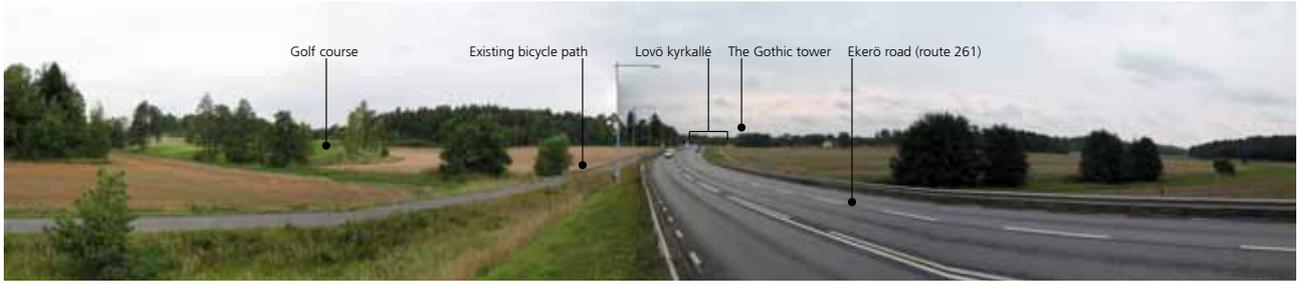


Fig 16b. Visual impacts from the Stockholm Bypass junction towards World Heritage border, the Ekerö Road as present. Photo angle as shown in fig 16a.



Fig 16c. View from the World heritage boundary at the road junction Lovö kyrkallé/Ekerö road towards Edeby. Photo angle as shown in fig 16a.

## 4.6 Cumulative impacts

The infrastructure on Lovö has retained its character from the 17<sup>th</sup> century and has been virtually unchanged up to the 1990's. The construction of the Stockholm Bypass in the buffer zone leads to an irreversible change in the transport behavior and mobility in the region. The changes over time may affect the continuity of the present agricultural and forestry use on Lovö, attract development and result in an increasing urbanization of today's rural landscape. The introduction of a modern large scale

element in the cultural landscape will affect historic landscape identity and the cultural context of the World Heritage property. The Environmental Impact Assessment made for the Stockholm Bypass identifies potential permanent damage in the cultural landscape. If necessary regulations are implemented, the new traffic options can allow for a major reduction of the transit traffic through Drottningholm allowing for a downgrading and rehabilitation of the historic Ekerö road.

## 5. Assessment and evaluation of impacts



Fig 17. Overview World Heritage key areas

### 5.1 Approach

Not all aspects and attributes in a complex site as The Royal Domain of Drottningholm convey the OUV. This assessment focuses strictly on impacts on the OUV, as it is defined in the Statement of Outstanding Value, submitted in January 2012. Consequently these key assets and attributes are all considered as being of 'Very High Value' according to the ICOMOS HIA Guidance grading.

A difficulty encountered in the work with this HIA has been assessing the adverse or beneficial nature of the impacts. The present HIA is based on the current project proposals. The two projects, Stockholm Bypass and the Ekerö road are in different planning and decision stages. Consequently the range of alternatives and options for mitigation measures differ. This means that the scale and significance of an impact

can be evaluated, but depending on which proposed alternatives or solutions are chosen, its significance can be either adverse or beneficial. The impact of traffic, for example is large, but depending on the traffic regulations the proposed project can have a beneficial impact in comparison with an adverse impact due to an unregulated growth of traffic. In assessing impacts it is important to take into account that the baseline for assessing impacts is the situation at the time of the ICOMOS evaluation of the nomination dossier in 1991.

One of the shortcomings of the present HIA is the lack of baseline data and indicators to measure economic and social impacts. The issue of evaluating cultural capital, as a development potential, merits attention in further work.

## 5.2 Introduction to assessments of impacts

The Royal Domain of Drottningholm represents 400 years continuity of royal presence on Lovö. It is not only a 17<sup>th</sup> and 18<sup>th</sup> century palace complex but also a complete royal court and household with its economic and social functions in its entire domain on Lovö. The spatial and functional context and historical linkages are assessed in connection with each key asset regarding authenticity of setting and context and their integrity.

The impacts on the following five key assets of the Royal Domain of Drottningholm have been assessed:

Drottningholm Palace  
 Drottningholm Palace Theatre  
 Chinese Pavilion  
 Gardens  
 Canton Street and Malmen office buildings

The capacity to develop and manage the values is part of the OUV of the property and therefore the management goals of the World Heritage Management Plan 2007 -2011 are included as key components of the OUV.

A tentative analysis is made of each of these five key assets and the management plan in relation to their significance and contribution to OUV. An assessment is then made of the impacts using the grading according to the ICOMOS HIA Guidance. The impacts are assessed according to the checklist below which includes a variety of attributes as suggested in the Operational Guidelines for the Implementation of the World Heritage Convention (2008):

<b>Buildings and fabric</b>	form and design
	materials and substance
	use and function
	traditions, techniques and management systems
<b>Context and setting</b>	location and historic orientation
	intangible heritage
	spirit and feeling

*(Operational Guidelines for the Implementation of the World Heritage Convention 2008)*

## 5.3 Assessment of Impacts on key features of the OUV

The section is a simplified summary of the outcomes of the HIA and not meant to be an exhaustive analysis. The descriptions are based on the Statement of OUV, submitted in January 2012. A comprehensive historic landscape analysis is presented in the Ekerö Road project landscape character analysis of the World Heritage Property. More detailed descriptions and inventories can be consulted in the documentation for the National Historic Buildings. (see references page 54)

### **Integrity (2011)**

*No great changes have been made to this World Heritage site since it was inscribed on the List. The unique whole that existed then is still present. The Drottningholm Palace, the Palace Theatre, the Chinese Pavilion and gardens remain intact and represent a royal domain with important elements of 17th and 18th century Swedish and European history.*

*The Royal Domain of Drottningholm has been an intercultural meeting place for centuries, from the time of its construction by architects and workers of different nationalities to the theatre activities and tourism of today. For centuries, the Drottningholm area has been used for pleasure and summer recreation. Both theatre performances and the interest visitors to Drottningholm show in this site maintain this tradition and its function as the home of the Swedish Royal Family.*

### **Authenticity (2011)**

*The historical setting, with the Drottningholm Palace, the Palace Theatre, the Chinese Pavilion, the gardens and the facades of Malmen's buildings, is intact in form and material from the 17th and 18th centuries. The primary guideline for this property is to conserve and not to restore. Great respect is held for both the original forms and the original materials.*

### 5.3.1 Drottningholm Palace



Fig 18a. The Royal palace from the seaside



Fig 18b. Approach towards Drottningholm from Stockholm by land



Fig 18c. Approach towards Drottningholm from Stockholm by land

### 5.3.1.1 Significance and contribution to OUV

*Drottningholm Palace was created with strong references to 17th century Italian and French architecture. The interiors reflect Sweden's ambitions as one of the most powerful nations of 17th century Europe, both from a cultural and political viewpoint. Leading Swedish architects worked together with the best craftsmen in Europe to create a unique ensemble of buildings with rich and lavish interiors.*

### 5.3.1.2 Assessment of scale and severity of impact

#### **Buildings and fabric**

- The construction works of the Ekerö Road cause adverse functional, visual and noise disturbances on the buildings and the gardens, especially the waterfront parterre which is an important element of the setting of the Palace.
- Changes in environmental impacts (vibrations, emissions) from traffic on the buildings and fabric are not expected but should be documented and monitored.

Using the criteria for assessment of scale and severity of impact provided in the ICOMOS Guidance the impact of the development upon buildings and fabric of the asset is assessed as being **negligible**.

#### **Setting and context**

- The experience of the historic approach to Drottningholm by land or sea has a high intangible value. The widening of the Drottningholm Bridge will have an aesthetic, visual and noise effect over water on the historic landscape setting and the waterfront of the Palace ensemble. A detailed design alternative of the widening of the bridge was not available.
- The reconstruction of the Ekerö road will have impacts on the visual and functional integrity of the setting of the Royal Palace. The significance of the impact depends on which traffic regulation and design alternatives are chosen.
- The redesign and upgrading of the present entrance area to Drottningholm will improve the visitor access and overall character of the area if carefully designed.

Using the criteria for assessment of scale and severity of impact provided in the ICOMOS Guidance the impact of the development upon *setting and context* of the asset is assessed as being **minor**.

Overall scale severity of impact is assessed as being **negligible to minor**

<b>Negligible Change</b>	Slight changes to historic building elements or setting that hardly affect it. Very minor changes to key historic landscape elements, parcels or components, virtually unchanged visual effects, very slight changes in noise level or sound quality; very slight changes to use or access; resulting in a very small change to historic landscape character. Very minor changes to area that affect the ICH activities or associations or visual links and cultural appreciation
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*Fig 19. Entrance to Drottningholm today*

<b>Minor Change</b>	Change to key historic building elements, such as the asset is slightly different. Changes to setting of an historic building, such that it is noticeably changed; change to few key historic landscape elements, parcels or components; slight visual changes to few key aspects of historic landscape; limited changes to noise levels or sound quality; slight changes to use or access, resulting in limited change to historic landscape character. Changes to area that affect the ICH activities or visual links and cultural appreciation.
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Fig 20. Entrance area and proposed changes, see also Malmén fig.33.

### 5.3.1.3 Overall assessment of significance of impact

The overall significance of the effects of the application on OUV will be **slight to moderate** considering that the change to Royal Palace built structure is rated as negligible.

VALUE OF HERITAGE ASSET	SCALE AND SEVERITY OF CHANGE/IMPACTS				
	No change	Negligible Change	Minor Change	Moderate Change	Major Change
	0	1	1	0	0
	SIGNIFICANCE OF EFFECT OR OVERALL IMPACT				
<b>World Heritage Properties VERY HIGH</b>	Neutral	Slight	Moderate/Large	Large/Very Large	Very Large

### 5.3.2 Drottningholm Palace Theatre



Fig 21. Overview



Fig 22. Drottningholm Palace Theatre

#### 5.3.2.1 Significance and contribution OUV

*The Palace Theatre is the only surviving 18th century theatre where the original machinery is still regularly used and the original stage sets are preserved. Opera productions performed at the theatre are often historically staged and accompanied by music played with historical instruments by Drottningholm Theatre Orchestra.*

#### 5.3.2.2 Assessment of scale and severity of impact

##### **Buildings and fabric**

- The construction works of the Ekerö Road will cause adverse functional, visual and, especially, noise disturbances. Impacts from the traffic depend on the alternatives chosen.
- Changes in environmental impacts (vibrations, emissions) on the buildings and fabric are not expected but should be documented and monitored.
- The rebuilding and upgrading of the present entrance area to Drottningholm will improve the visitor access and overall character of the area if carefully designed.

Using the criteria for assessment of severity of impact provided in the ICOMOS HIA Guidance:  
Authenticity of building and fabric: **Negligible**

**Setting and context**

- The reconstruction of the Ekerö road will have noise and partially visual impacts on the Palace Theatre setting in the gardens which is part of the overall design concept. These affect the authenticity of spirit and feeling of an 18<sup>th</sup> century theatre performance.

Using the criteria for assessment of severity of impact provided in the ICOMOS HIA Guidance:  
Authenticity of setting and context: **Negligible**

Overall severity of impact is assessed as being **negligible**

<b>Negligible Change</b>	Slight changes to historic building elements or setting that hardly affect it. Very minor changes to key historic landscape elements, parcels or components, virtually unchanged visual effects, very slight changes in noise level or sound quality; very slight changes to use or access; resulting in a very small change to historic landscape character. Very minor changes to area that affect the ICH activities or associations or visual links and cultural appreciation.
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5.3.2.3 Overall assessment of significance of impact

The overall significance of the impacts on OUV will be **slight**.

VALUE OF HERITAGE ASSET	SCALE AND SEVERITY OF CHANGE/IMPACTS				
	No change	Negligible Change	Minor Change	Moderate Change	Major Change
	0	2	0	0	0
SIGNIFICANCE OF EFFECT OR OVERALL IMPACT					
<b>World Heritage Properties VERY HIGH</b>	Neutral	<b>Slight</b>	Moderate/Large	Large/Very Large	Very Large

### 5.3.3 Chinese Pavilion



Fig 23. Overview



Fig 24. Chinese Pavilion

#### 5.3.3.1 Significance and contribution OUV

*The Chinese Pavilion with its incomparable combination of architecture, interior decoration and collections is preserved and a symbol of 18<sup>th</sup> century contacts between Europe and Asia. Together with Canton Village, which includes former buildings for manufacture and living quarters for members of the royal court, this ensemble of buildings gives a comprehensive picture of court life during this era, with touches of influence from distant places.*

#### 5.3.3.2 Impact assessment and assessment of scale and severity of impact

##### **Buildings and fabric**

- The construction works of the Stockholm Bypass and the Ekerö Road have acoustic impacts from construction work and heavy traffic.

Using the criteria for assessment of severity of impact provided in the ICOMOS HIA Guidance: Authenticity of building and fabric: **negligible**

##### **Setting and context**

- The authenticity of the historic setting and experience is affected by the traffic on Ekerö Road. The Ekerö Road project proposes design and landscaping measures for the road and for the crossings which would have impacts on the wider setting of the Chinese Pavilion with adjacent Canton Street.
- The cumulative effects of Stockholm Bypass may cause changes in the pastoral character of the surrounding landscape and have an impact on the cultural context and setting of the Chinese Pavilion. The vistas from the Pavilion out to the open landscape, for example by the “Kastanje allén” are one example of the original landscape plans and can be affected by the changes in the adjacent buffer zone.

Using the criteria for assessment of severity of impact provided in the ICOMOS HIA Guidance: Authenticity and integrity of context, setting and character: **minor**

Overall severity of impact is assessed as being **negligible to minor**

<p><b>Negligible Change</b></p>	<p>Slight changes to historic building elements or setting that hardly affect it. Very minor changes to key historic landscape elements, parcels or components, virtually unchanged visual effects, very slight changes in noise level or sound quality; very slight changes to use or access; resulting in a very small change to historic landscape character. Very minor changes to area that affect the ICH activities or associations or visual links and cultural appreciation.</p>
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Fig 25. Vistas from the Chinese Pavilion från Landskapsanalys

### 5.3.3.3 Overall assessment of significance of impact

The overall significance of the effects of the application on OUV will be **slight to moderate/large**.

VALUE OF HERITAGE ASSET	SCALE AND SEVERITY OF CHANGE/IMPACTS				
	No change	Negligible Change	Minor Change	Moderate Change	Major Change
	0	1	1	0	0
	SIGNIFICANCE OF EFFECT OR OVERALL IMPACT				
World Heritage Properties VERY HIGH	Neutral	Slight	Moderate/Large	Large/ Very Large	Very Large



Fig 26. Visual connections

### 5.3.4 Gardens

#### 5.3.4.1 Significance and contribution OUV

The gardens were created during different periods and show both continuity and changes in fashion over time. The French formal garden, the rococo garden and the ideal landscape garden are preserved side by side. The French formal garden holds the world's largest collection of sculptures by Adriaen de Vries.

#### 5.3.4.2 Assessment of scale and severity of impact

##### **Structure and fabric**

- The widening of the Ekerö Road with the pedestrian / bicycle lane will have functional and visual impacts on the design and vegetation structure of the gardens. The pedestrian/bicycle lane alternatives south of the Ekerö Road are not developed in detail and cannot be fully assessed.
- The alternatives include partial new encroachments in the gardens as well as upgrading and rehabilitation measures.
- Changes in environmental impacts (vibrations, emissions and hydrology) especially under construction works can affect the trees and vegetation, especially the English Garden.
- The authenticity of spirit and feeling in the different gardens is highly related to the impacts of noise and the overall disturbance from traffic. The significance of the impact depends on how the traffic volume and mode will be regulated.

Using the criteria for assessment of severity of impact provided in the ICOMOS HIA Guidance:  
Authenticity of structure and fabric: **negligible to minor**.

<b>Negligible Change</b>	Slight changes to historic building elements or setting that hardly affect it. Very minor changes to key historic landscape elements, parcels or components, virtually unchanged visual effects, very slight changes in noise level or sound quality; very slight changes to use or access; resulting in a very small change to historic landscape character. Very minor changes to area that affect the ICH activities or associations or visual links and cultural appreciation.
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<b>Minor Change</b>	Change to key historic building elements, such as the asset is slightly different. Changes to setting of an historic building, such that it is noticeably changed; change to few key historic landscape elements, parcels or components; slight visual changes to few key aspects of historic landscape; limited changes to noise levels or sound quality; slight changes to use or access, resulting in limited change to historic landscape character. Changes to area that affect the ICH activities or visual links and cultural appreciation.
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**Context and setting**

- The widening of the Ekerö road and the new alignment of the pedestrian / bicycle path consolidates the existing barrier effect. The visual impact of traffic in the all parts of the Drottningholm gardens depends on which traffic regulation measures are chosen.
- Cumulative impacts of the Stockholm Bypass and the Ekerö Road projects on the rural landscape character will have impacts on understanding the design concept and vistas to / from the gardens towards the open fields. The pastoral landscape was an important design concept and includes landmarks which are visible from distance. The changes will also have an impact on possibilities for future rehabilitation of the historic landscape.

Authenticity and integrity of context, setting and character: **moderate** considering that the existing situation already has a considerable negative impact on the authenticity and integrity of the gardens.

Overall severity of impact is assessed as being **moderate / large** weighing the authenticity and integrity of context in a garden higher than form and design

<b>Moderate Change</b>	Changes to many key historic building elements, such that the resource is significantly modified. Changes to setting of an historic building, such that it is significantly modified; change to many key historic landscape elements, visual changes to many key aspects of the historic landscape, noticeable differences in noise or sound quality; considerable changes to use or access; resulting in moderate changes to historic landscape character. Considerable changes to area that affect the ICH activities or associations or visual links and cultural appreciation.
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Fig 27a. Ekerö Road widening proposals



Fig 27b. View towards "Hemmet", the English garden to the right

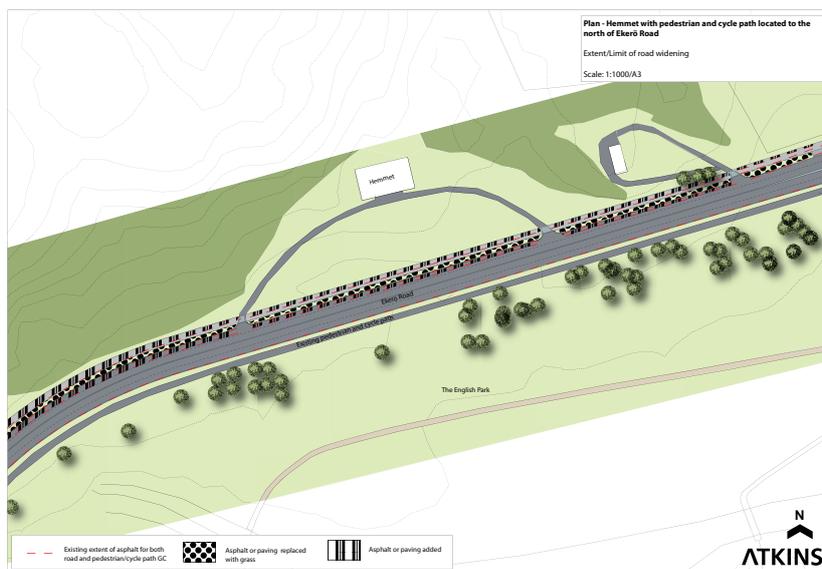


Fig 28. Ekerö Road widening proposals

5.3.4.3 Overall assessment of significance of impact

VALUE OF HERITAGE ASSET	SCALE AND SEVERITY OF CHANGE/IMPACTS				
	No change	Negligible Change	Minor Change	Moderate Change	Major Change
	0	1	1	1	0
SIGNIFICANCE OF EFFECT OR OVERALL IMPACT					
<b>World Heritage Properties VERY HIGH</b>	Neutral	Slight	Moderate/Large	Large/ Very Large	Very Large

The overall significance of the effects of the application on OUV will be **moderate / large**.

### 5.3.5 Canton Street and Malmen Office Buildings



Fig 29. Overview Malmen

#### 5.3.5.1 Significance and contribution OUV

Malmen is an adjoining 18th century residential area for courtiers and officials of the royal court as well as a site for various palace offices. Malmen was granted a town charter in the late 18th century. The buildings in this area still partly retain their original function, and their facades are important features of this historical setting.

#### 5.3.5.2 Assessment of scale and severity of impact

##### **Buildings and fabric**

- The construction works of the Ekerö Road will have visual, acoustic and environmental impacts on the Malmen office buildings and the Canton Street houses.
- The Stockholm Bypass construction works are outside the World Heritage property but may have visual and noise impacts the of the Canton street houses.
- The traffic noise and vibrations will have impacts on the buildings and fabric of the Malmen Office buildings

Using the criteria for assessment of severity of impact provided in the ICOMOS HIA Guidance:

Authenticity of structure and fabric: **minor**

##### **Context and setting**

- The existing Ekerö Road and the traffic situation today disturb the authenticity of setting and spirit of both the Canton and the Malmen part of the World Heritage property.
- The facades of the Malmen office buildings are an essential part of the integrity of the Drottningholm historical setting. The functional barrier effects of Ekerö Road remain with the widening of the Ekerö Road.
- The new pedestrian and bicycle lane alignment, new crossings, new bus stops and other technical road installations will have an impact on the historic environment. The alternative locations of the pedestrian / bicycle lane are not presented.
- Canton street connection with the Lovö church is today disrupted. The Lovö Church is an essential component of the Drottningholm domain and the tree avenue is part of the overall design concept. The proposals for the landscape and road rehabilitation can contribute to the overall historical integrity of the area.



Fig 30. Canton Street



Fig 31. Ekerö Road widening project by Canton street

Authenticity and integrity of context, setting and character **minor**

Overall severity of impact is assessed as being **minor** weighing the authenticity and integrity of context and setting higher than form and design.

The overall significance of the effects of the changes on OUV will be **moderate / large**.

<p><b>Minor Change</b></p>	<p>Change to key historic building elements, such as the asset is slightly different. Changes to setting of an historic building, such that it is noticeably changed; change to few key historic landscape elements, parcels or components; slight visual changes to few key aspects of historic landscape; limited changes to noise levels or sound quality; slight changes to use or access, resulting in limited change to historic landscape character. Changes to area that affect the ICH activities or visual links and cultural appreciation.</p>
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Fig 32. Malmen "Långa raden"

**Overall assessment of significance of impact**

VALUE OF HERITAGE ASSET	SCALE AND SEVERITY OF CHANGE/IMPACTS				
	No change	Negligible Change	Minor Change	Moderate Change	Major Change
	0	0	2	0	0
SIGNIFICANCE OF EFFECT OR OVERALL IMPACT					
World Heritage Properties VERY HIGH	Neutral	Slight	Moderate/Large	Large/ Very Large	Very Large

## 5.4 Overall Impacts on Management Objectives

Protection and management of the World Heritage values is one of the three “pillars” of the OUV besides the justification of the criteria and the demonstration of authenticity and integrity. The Drottningholm World Heritage Management Plan 2007 – 2012 specifies ten long term goals. The goals deal with

conservation and management but also with future development of the property. The changes in the preliminary buffer zone are relevant for the legibility and understanding of the World Heritage and for future research.

Guideline	Issue	Scale and severity of change
<b>2</b> Borders and buffer zone shall be monitored in order to ensure that the universal values of the area are properly protected	<ul style="list-style-type: none"> <li>- permanent impact on historic landscape structure in the buffer zone, possible cumulative impacts on land-use continuity</li> <li>- direct visual and noise impacts on WH property</li> <li>- impacts on perception of approach and cultural appreciation of WH property</li> </ul>	<b>Minor change</b>
<b>3</b> All main actors at the WH site shall make a risk assessment and maintain suitable guidelines for responding to these risks	<ul style="list-style-type: none"> <li>- road access</li> </ul>	<b>Moderate change</b>
<b>4</b> The unique unity that exists in both exteriors and interiors at the World Heritage site should be covered by a unified view on maintenance and restoration, which facilitates management and care in the long term and in the day-to-day work	<ul style="list-style-type: none"> <li>- environmental impacts due to traffic</li> </ul>	<b>No change</b>
<b>5</b> Care, preservation and restoration of the gardens and parks at the World Heritage site should be governed by a unified view to facilitate the management and care in the long term as well as in day-to-day work	<ul style="list-style-type: none"> <li>- environmental impacts due to traffic</li> <li>- visual and functional impacts due to road construction and traffic</li> <li>- future restoration of parks and rehabilitation of their integrity</li> </ul>	<b>Moderate change</b>
<b>7</b> Cultural tourism and visitor operations at the World Heritage site shall be used to emphasize the development of good finances, provided this does not have any negative effects on the integrity and universal values of the World Heritage site	<ul style="list-style-type: none"> <li>- visitor access and management</li> <li>- cultural tourism development including the royal domain and cultural landscape of Lovö as a cultural resource</li> </ul>	<b>Moderate change</b>
<b>8</b> Accessibility to and within the World Heritage site should be improved	<ul style="list-style-type: none"> <li>- visitor access , adapted parking facilities</li> <li>- cultural appreciation of historic approach by land and sea</li> </ul>	<b>Moderate change</b>
<b>9</b> Facilities and information for visitors to the World Heritage site shall be developed at all levels to meet their expectations and to enhance the experience and understanding of the universal value and status of Drottningholm as a World Heritage site	<ul style="list-style-type: none"> <li>- cultural appreciation of historic approach by land and sea</li> <li>- development of cultural tourism in the whole Royal Domain and in the cultural landscape of Lovö</li> </ul>	<b>Moderate change</b>
<b>10</b> All efforts shall be made to improve understanding of how the World Heritage concept was created, developed and now used. The educational activities should be developed and be based on the principles of life-long learning	<ul style="list-style-type: none"> <li>- legibility of the historic environment</li> <li>- understanding of the cultural context of the whole Royal Domain</li> <li>- future scientific research</li> <li>- educational activities</li> <li>- understanding of World Heritage concepts of continuity and use</li> </ul>	<b>Moderate change</b>

#### 5.4.1 Overall assessment of significance of impact

VALUE OF HERITAGE ASSET	SCALE AND SEVERITY OF CHANGE/IMPACTS				
	No change	Negligible Change	Minor Change	Moderate Change	Major Change
	1	0	1	6	0
	SIGNIFICANCE OF EFFECT OR OVERALL IMPACT				
<b>World Heritage Properties VERY HIGH</b>	Neutral	Slight	Moderate/Large	Large/Very Large	Very Large

The overall significance of the effects of the application on OUV will be **large**.

## 5.5 Summary of Impacts on OUV Key Features

*This is a technical summary of the assessments. It will be developed and adjusted in the next phases of the HIA process.*

VALUE OF HERITAGE ASSET	SCALE AND SEVERITY OF CHANGE/IMPACTS				
	No change	Negligible Change	Minor Change	Moderate Change	Major Change
Key attributes	0	2	3	1	0
	SIGNIFICANCE OF EFFECT OR OVERALL IMPACT (ADVERSE OR BENEFICIAL)				
<b>World Heritage Properties VERY HIGH</b>	Neutral	Slight	Moderate/Large	Large/Very Large	Very Large

All key features identified in the Statement of Outstanding Value of the World Heritage property were, to different degrees, affected by the proposed projects. Taken on balance the overall *significance* of the Stockholm Bypass and the Ekerö Road on the key attributes of the World Heritage OUV were on a scale from *slight - moderate/large - large/very large* following the ICOMOS HIA grading.

The baseline for assessments is the definition of OUV in 1991 when the property was inscribed on the World Heritage List. Undoubtedly the present traffic situation on the Ekerö road already has a very negative impact on the OUV. Consequently, the grading of *no change* has not been seen as merely neutral. The potentials for the improvement of the situation were weighed positively and commented.

A difficulty was found in applying the HIA grading in relation to *beneficial or adverse* impact assessment. The methodology is most easily applicable when it deals with the impacts of one project proposal and requires that the change impacting on a physical heritage asset and its setting is seen as adverse or beneficial. All detailed studies of different alternatives in Ekerö Road project are not yet completed. It was found that it is too early to evaluate the beneficial or adverse quality of the overall impact before all measures and alternatives are investigated and can be evaluated.

This HIA (January 2012) at phase I cannot therefore be completed in this aspect. Consequently, a full HIA cannot be completed at this stage.

## 5.6 Issues to be considered in assessing the mitigation measures

Impact / issue	Issues to be considered
<b>Traffic through WH property</b>	<ul style="list-style-type: none"> <li>- Development of detailed proposals for reducing through traffic including tunnel alternative</li> <li>- Enforcement of decisions regarding conditions for traffic regulation through WH property before construction</li> </ul>
<b>Widening of the Ekerö road</b>	<ul style="list-style-type: none"> <li>- Detailed proposals for the road adjustment and the bicycle/pedestrian lane in its entire length to allow for a comprehensive impact assessment</li> <li>- Adaptive design solutions without disruptive elements like over- or underpasses ( Edeby, Canton Street, Malmen)</li> <li>- Enhancement of a coherent experience of the World Heritage character (including ways of approaching the site, traffic behavior with consistent low speed limit)</li> <li>- Proposals for the rehabilitation of the historic character by tree avenues (Hemmet – Canton and Lovö church avenue) and road surface adjustments (Hemmet, Malmen)</li> <li>- Detailed proposals for the Drottningholm bridge taking into consideration its landscape context</li> <li>- Consideration of reversibility of measures in case of traffic reduction</li> </ul>
<b>Environmental impacts ( noise, vibrations)</b>	<ul style="list-style-type: none"> <li>- Detailed vulnerability and impact studies on environment and buildings</li> <li>- Establishment of monitoring mechanism</li> </ul>
<b>Impacts of the Stockholm Bypass junctions</b>	<ul style="list-style-type: none"> <li>- Formal evaluation by ICOMOS and adoption by World Heritage Committee of the buffer zone regulations to give guidance to all conservation and development decisions</li> <li>- Finalization of the cultural / natural reserve designation of Lovö Kärsö with special attention to the World Heritage OUV</li> <li>- Development of detailed design solutions for the road design and technical arrangements to allow for an impact assessment</li> <li>- Secure continuity of use and environmental protection during construction works</li> </ul>

## 6. Conclusions and recommendations

### 6.1 Traffic through the World Heritage property

Today's traffic on Ekerö Road through Drottningholm is already a major damage to the historic environment. The overall priority is to reduce traffic and amend the historic character and context of the World Heritage property. The baseline should be the traffic situation at the time of the inscription on the World Heritage list in 1991. The outcome of the HIA at phase I confirms that traffic has the main impact on the World Heritage property. Therefore the Stockholm Bypass and Ekerö Road infrastructure projects affect the authenticity and integrity of all key features of the World Heritage Outstanding Universal Value.

The adverse or beneficial nature of the impacts depends on if and how the traffic volume and mode can be regulated. The Stockholm Bypass opens two new connections for the traffic between Ekerö and the mainland. Consequently it provides an opportunity to implement very strict conditions for heavy traffic, traffic volume and overall transit traffic through Drottningholm and substantially reduce or even eliminate the traffic through Drottningholm. If fully considered and resolved these regulations would have significant beneficial consequences compared with the situation today or an unregulated traffic growth. These conditions, which are stipulated in the Government decision for permission for the Stockholm Bypass, are not yet defined in subsequent detailed plans and decisions. It is therefore not possible to evaluate the adverse or beneficial nature of the impact of the traffic reduction before all necessary measures are adopted and alternatives are presented. The HIA considers the traffic regulation as a mitigation measure and the full impact cannot be evaluated until appropriate decisions are taken. A successful mitigation strategy means that they should be agreed to before construction and not after the opening of the Stockholm Bypass, in order to avoid partial solutions.

### 6.2 The Ekerö Road widening through Drottningholm

The aim of the Ekerö road project is to ease today's traffic problems and facilitate public transport between Ekerö and the mainland. The restructuration will, to a greater or lesser extent, result in a further encroachment in the historic environment and add to the overall impact and barrier effect of the Ekerö road through the World Heritage property. The present project proposes improvements of specific parts of the road but it does not give enough evidence for a proper impact assessment. More detailed studies and alternatives are needed during the initial phases of

the development of the Final Design Plan, in order to provide demonstration of how the road and the traffic mode can minimize environmental damage and harmonize with the historic character and spirit of the World Heritage property. These alternative solutions must be developed for the whole area in order to avoid partial solutions. The approach should be adaptive with low impact design solutions with an aim to retain and rehabilitate of spatial context and character of the historic environment. If a future reduction of transit traffic through Drottningholm will take place the possibilities to restore the historic character of the road must be considered in planning.

### 6.3 The Stockholm Bypass junctions in the historic landscape

The Stockholm Bypass junctions will constitute a new dominant element in the historic landscape of Lovö. The location of the junctions has been granted permission by the Government in 2009 and the alternatives have not been subject to the HIA. The assessment points out that the -junctions will have an irreversible adverse impact on the setting, cultural context and future development of the World Heritage property. Further detailed studies of road design, technical and landscaping solutions should be included in the next phase of the HIA and mitigation measures agreed to.

The HIA was made on the basis of the present boundaries and OUV defined at the time of inscription in 1991 which reflect the thinking at the time. Buffer zones were not required and therefore no formal buffer exists. Today the World Heritage concept emphasizes the importance of a more comprehensive approach. The function of the buffer zone is not only to protect the values but to enhance and transmit them. The past and present relationship of the Drottningholm Royal court with its whole royal domain on Lovö is essential for the understanding of the World Heritage values. The formalization of the buffer zone to be evaluated by ICOMOS and adopted by the World Heritage Committee should be of high priority. It would also give guidance for the new cultural / natural reserve designation and for management priorities.

## 6.4 Next steps in the HIA process

The present HIA addresses both a complex property and a process where two projects are in different planning and decision-making phases. The Stockholm Bypass and the Ekerö Road are in different stages of the legal planning procedure. In order to allow for an overall assessment of the impacts it is necessary to secure a coherent and integrated planning process. The parts of the Ekerö Road that interacts with the Stockholm Bypass will be coordinated and decisions for the Ekerö Road will be incorporated in the Stockholm Bypass project.

The Swedish Transport Administration suggests that chapter 5.6 “Issues to be considered in assessing the mitigation measures” will be used as specification for evaluating feasible solutions and mitigation measures in the coming planning processes. The issues that concern the physical design of the roads will be handled by the two projects of the Swedish Transport Administration. In order to address issues demanding legislative decisions, i.e for example traffic control, the Swedish Transport Administration will initiate a process to involve adequate decision making bodies. The County Administrative Board, which is the representative of the Government in the region and the coordinating body for State activities in the county, is currently developing plans for a cultural/natural reserve of Lovö and Kårsö including the World Heritage site of Drottningholm. A close cooperation with The Drottningholm World Heritage Council is foreseen.

This first phase report comprises an opportunity to develop solutions in line with the values of the World Heritage site as well as the preconditions of the Swedish government. An in-depth Heritage Impact Assessment will be conducted in the next phase of the project planning when there is a coherent proposal for the whole project and the alternatives are designed. A final report will be drafted after stakeholder consultation according to the Swedish planning legislation and ICOMOS HIA guidance.

## 7. References

### ICOMOS

<http://www.international.icomos.org>  
ICOMOS (2011). *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties*  
ICOMOS (2005). *Xi'an Declaration on the Conservation of the Setting of Heritage Structures, Sites and Areas.*

### Unesco World Heritage

<http://whc.unesco.org>  
UNESCO World Heritage Centre (2008). *Operational Guidelines for the implementation of the World Heritage Convention*

### The Royal Domain of Drottningholm World Heritage Property

<http://whc.unesco.org>  
UNESCO World Heritage List  
World Heritage Committee Decision  
Advisory Body Evaluation  
Periodic Reporting  
*The Drottningholm World Heritage Management Plan for 2007 -2012*

[www.sfv.se](http://www.sfv.se)  
[www.kungahuset.se/royalcourt](http://www.kungahuset.se/royalcourt)

Documentation regarding national and regional protection and planning, local plans and specific conservation planning

[www.raa.se](http://www.raa.se)  
[www.ekero.se](http://www.ekero.se)  
[www.ab.lst.se](http://www.ab.lst.se)  
[www.nationalmuseum.se](http://www.nationalmuseum.se)

### Stockholm Bypass and the Ekerö Road

The project descriptions for Stockholm Bypass and Ekerö Road projects are as of August 2011 and can be downloaded from the Swedish National Transport Administration website.

“Arbetsplan för E4 Förbifart Stockholm”  
<http://www.trafikverket.se/Privat/Projekt/Stockholm/Forbifart-stockholm/Dokument/>

“Förstudie Väg 261, Nockebybron – Tappström, Ekerö kommun, Objekt nr: 8448502 Februari 2010”  
<http://www.trafikverket.se/Privat/Projekt/Stockholm/Vag-261-Ekerovagen-/Dokument-vag-261-Ekerovagen-/>

A cultural landscape analysis for Lovö and Lindö as part of the Environmental Impact Assessment for the Stockholm Bypass. “E4 Förbifart Stockholm. FS1 Konsortiet Förbifart Stockholm: Kulturhistorisk landskapsanalys Lovö och Lindö ON140328”  
to order, please mail [stockholm@trafikverket.se](mailto:stockholm@trafikverket.se)

The Ekerö Road project landscape character analysis of the World Heritage property. “Komplettering av förstudien. Bilaga 6: Landskapsanalys”  
<http://www.trafikverket.se/Privat/Projekt/Stockholm/Vag-261-Ekerovagen-/Dokument-vag-261-Ekerovagen-/>

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