Vuosaari harbour –

environmental processes due to the past and for the present and for the future

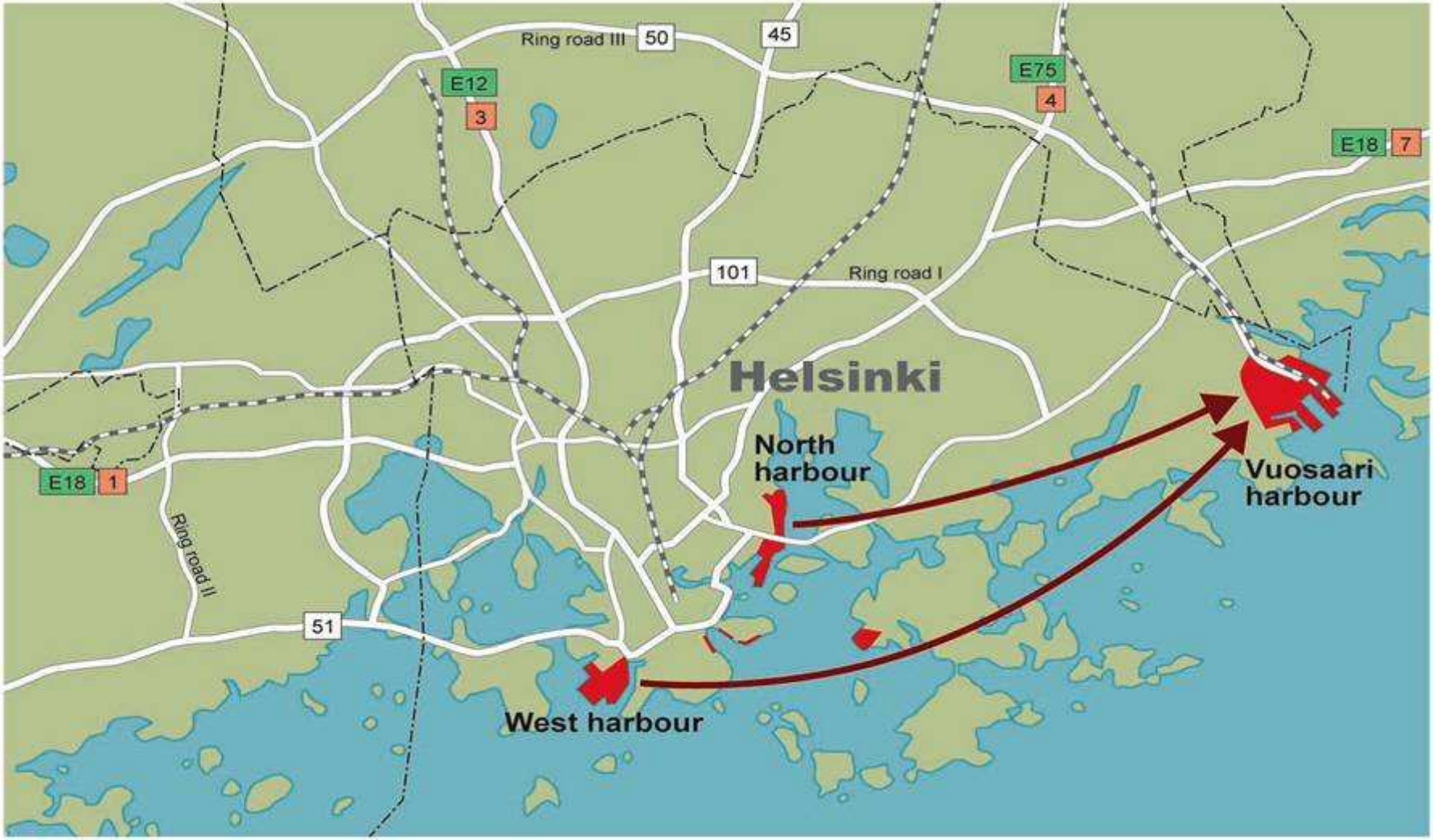
- The area of the port has been an industrial area for tens of years, with past as shipbuilding, ship repair and heavy industry
- Start of transition to port in 2002
- Beginning of port operations in 2008
- Environmental impact assessment throughout the building process and continuing during operations
- At this point, a renewal process of the environmental permit required for the port
  - Unique at least in the Scandinavian countries for the port to require an environmental permit
  - Permit valid for 5 years, or until operational changes require a new permit

Vuosaari Harbour

Starting situation in 2002

Situation in 17.11.2008

Cargo harbour operations are concentrated to Vuosaari Harbour



West Harbour

Future

City of Helsinki
City Planning Department

North Harbour

Future

City of Helsinki
City Planning Department

Keski-Pasila

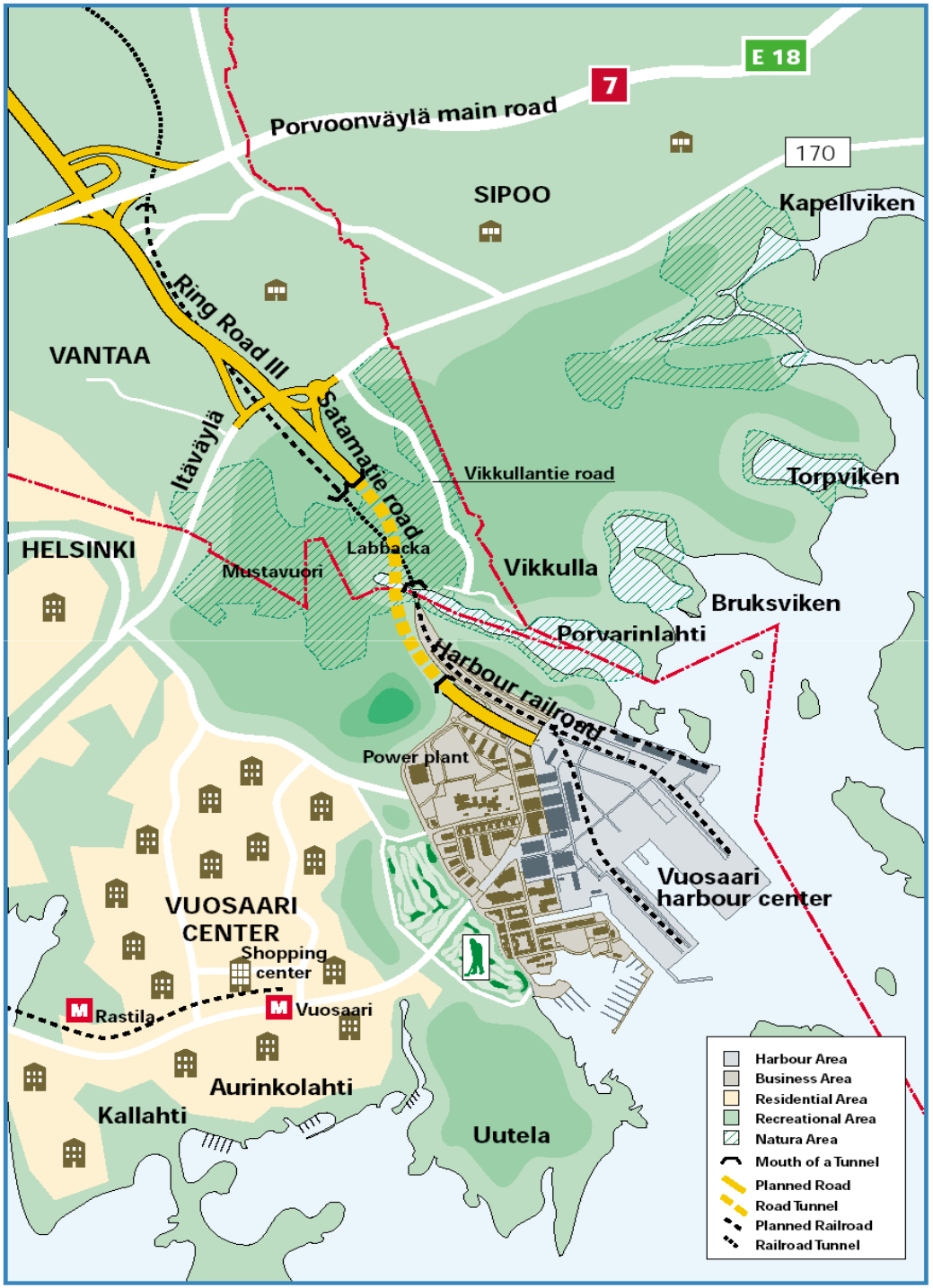
Future

City of Helsinki
City Planning Department

•The Vuosaari Harbour Project

The environmental cornestones:

the EIA process in 1995-1996

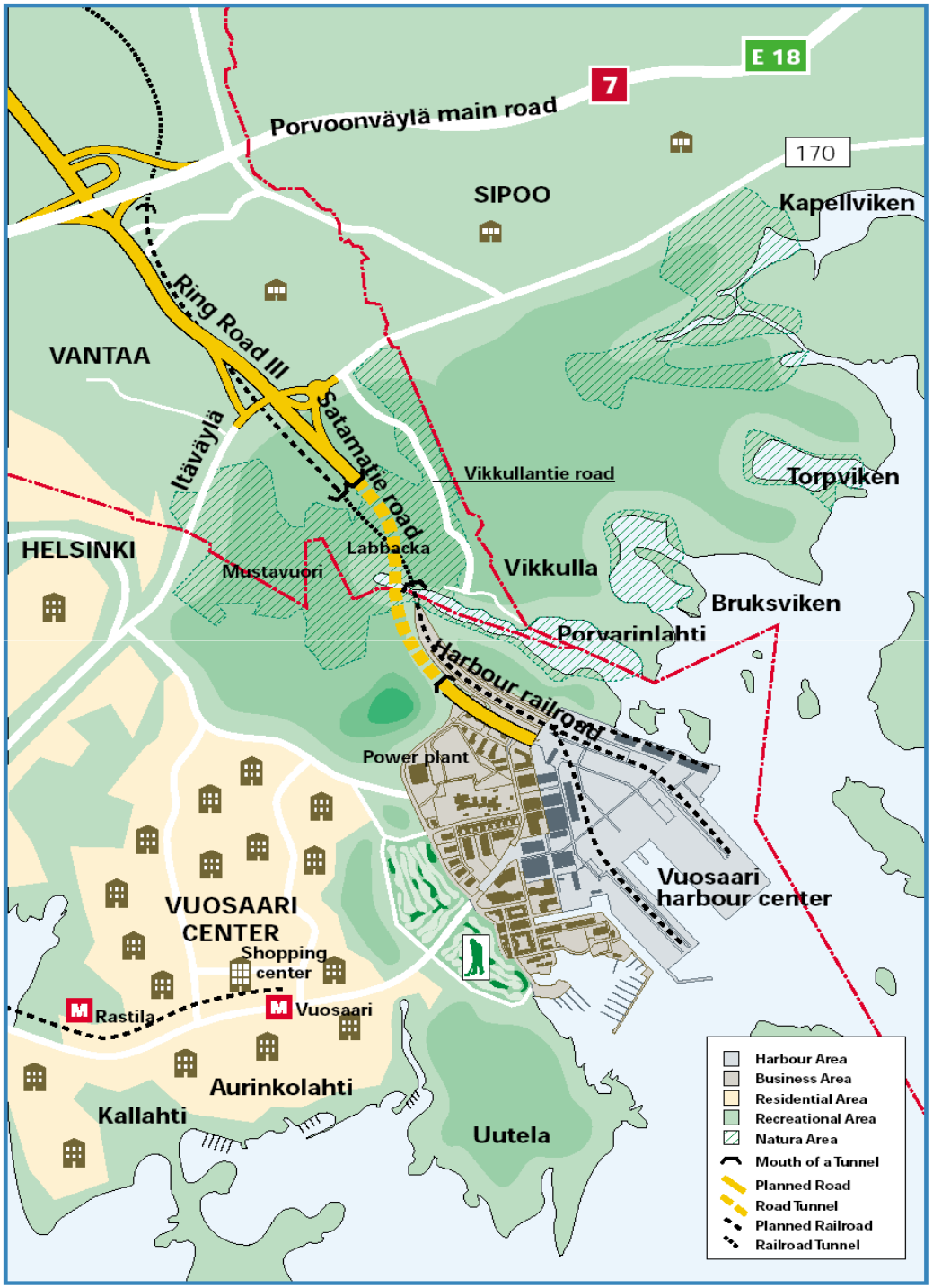


•The Vuosaari Harbour Project

The environmental cornestones:

The EIA process in 1995-1996

The regional plan and the local plan in 2002



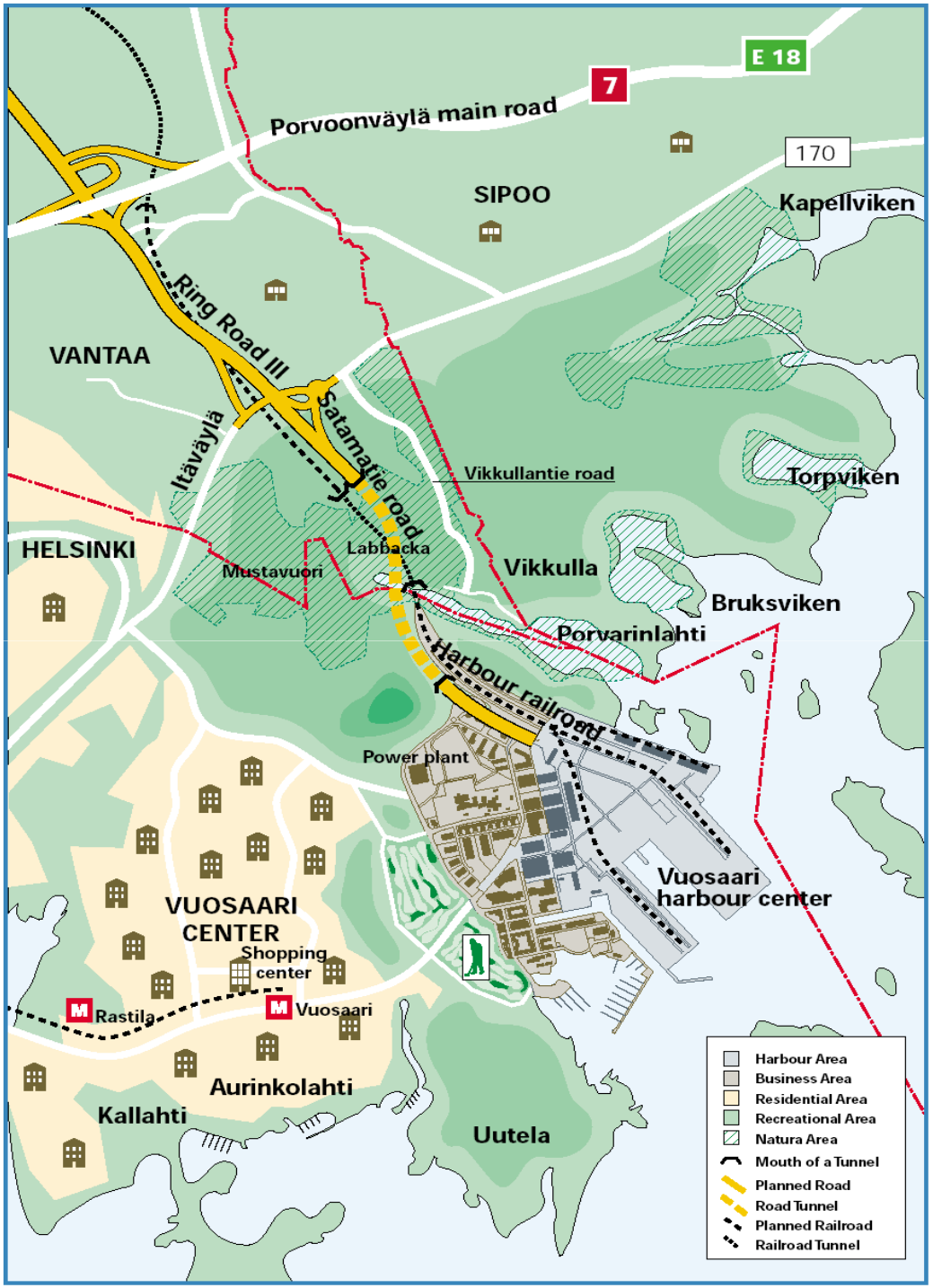
- The Vuosaari Harbour Project

The environmental cornestones:

The EIA process in 1995-1996

The regional plan and the local plan in 2002

The water permit in 2002



- The Vuosaari Harbour Project

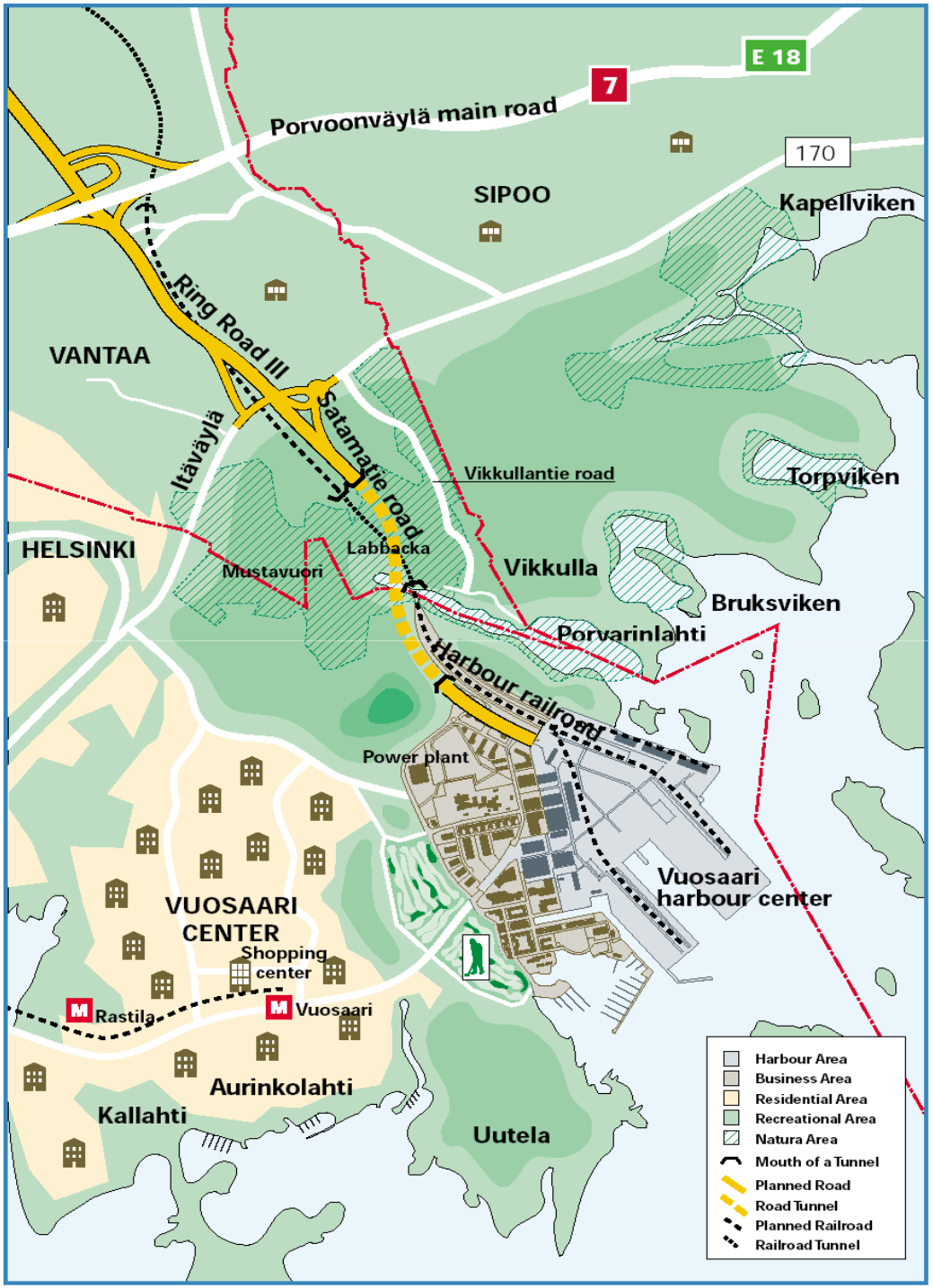
The environmental cornestones:

The EIA process in 1995-1996

The regional plan and the local plan in 2002

The water permit in 2002

The functional environmental permit in 2004

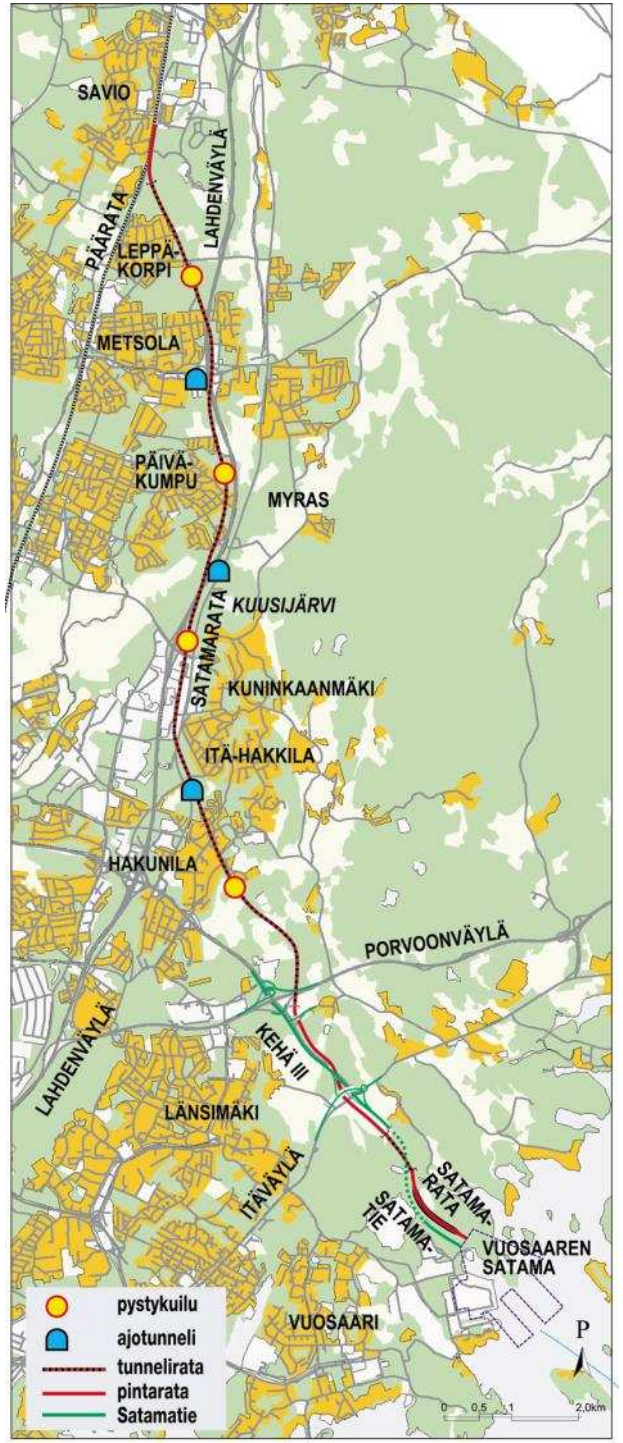


The harbour road and the harbour railway are passing through the Natura area in tunnels

The Natura site of Mustavuori grove and Östersundom bird wetlands.

The harbour railway passes through the densely populated areas of Vantaa and Kerava in a 13.5 km tunnel

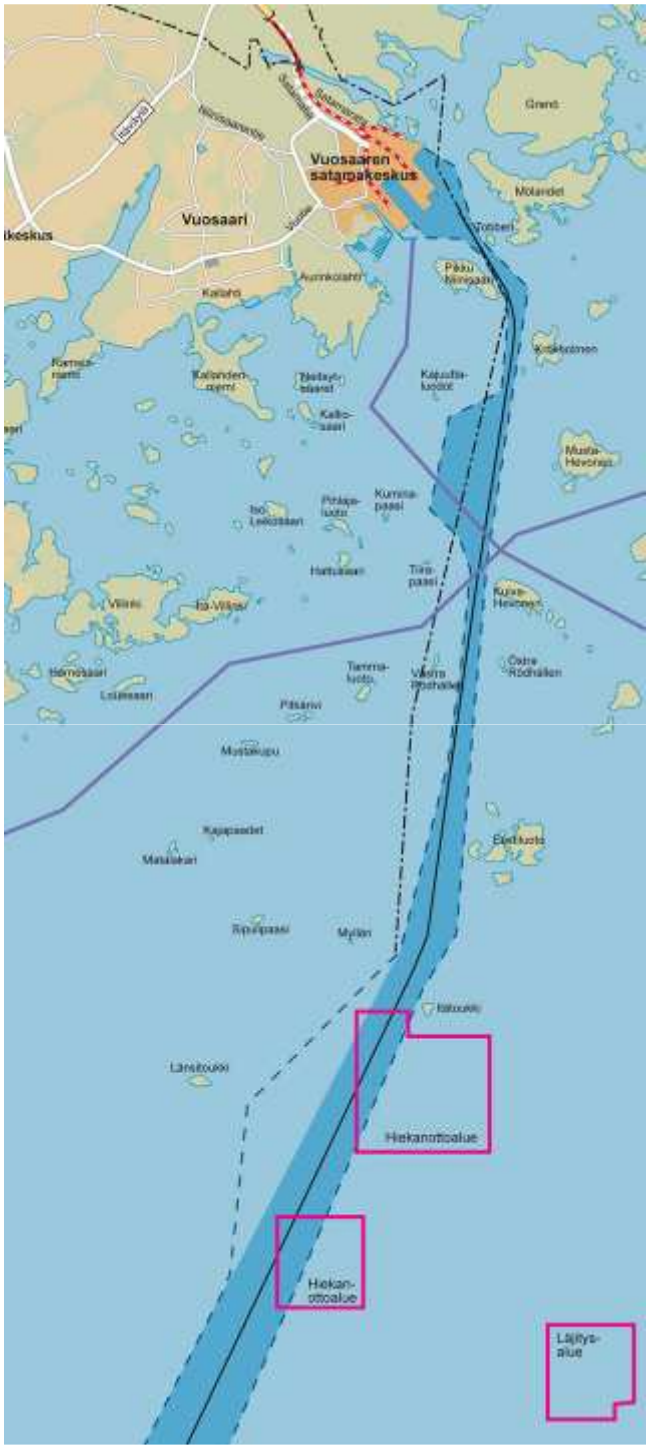
The total lenght of the harbour railway tunnel is 14.1 km



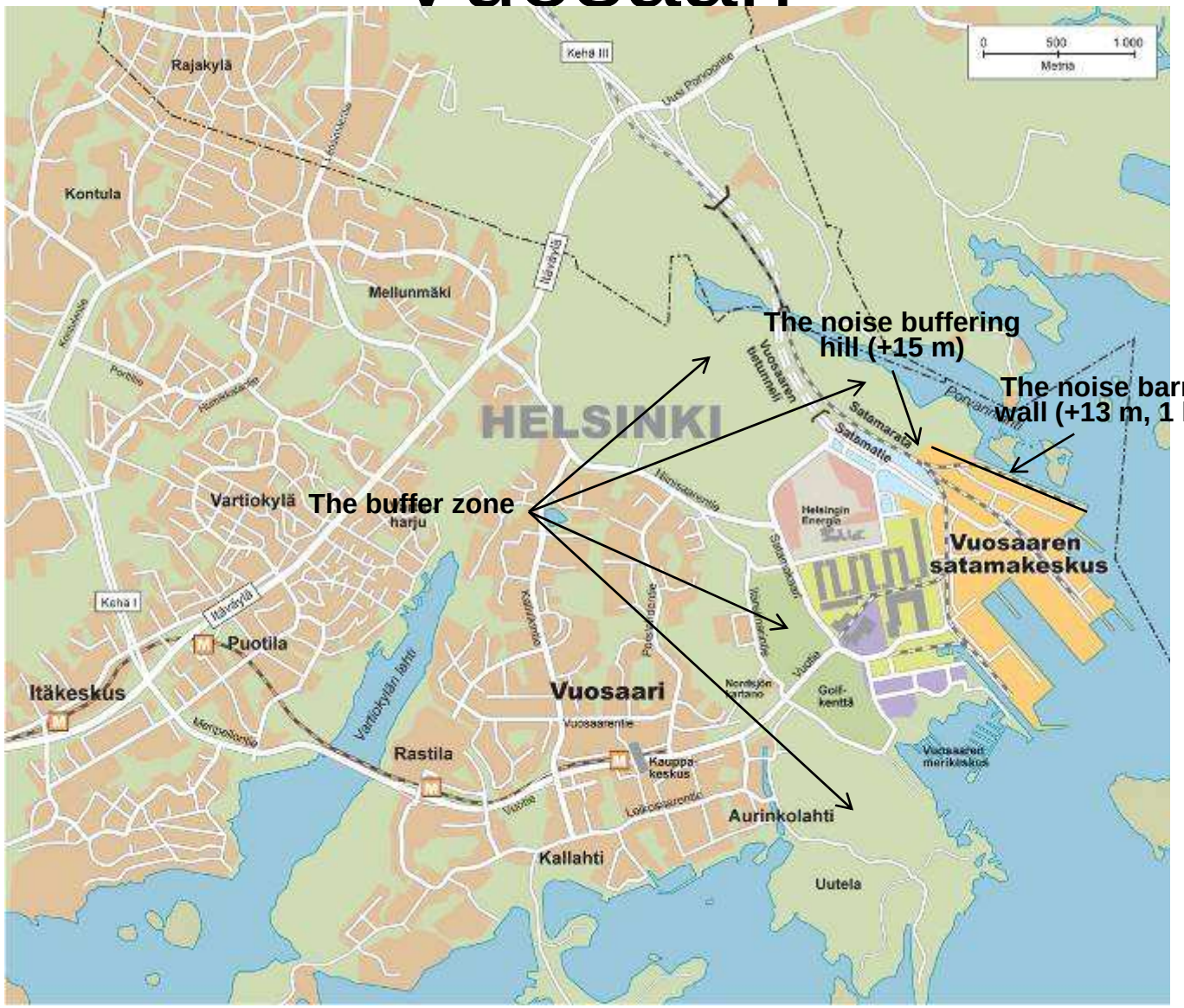
Environmental advantages

- Location with good logistical connections avoiding center of Helsinki
  - Less congestion – less emissions from connecting traffic
  - Less disturbance due to noise
  - Central city areas freed for inhabitants, living and recreation
  - Larger logistical area allows more optimized operation – avoiding un-necessary heavy traffic in the port
  - Fairway to port shorter, easier to navigate – less risks ships, less maneuvering,

The straight, safe and easily navigable fairway alignment



Vuosaari


The noise buffering hill (+15 m)
The noise barrier wall (+13 m, 1 km)
The buffer zone
Vuosaaren satamakeskus
Vuosaari
HELSINKI
Rajakylä
Kontula
Mellunmäki
Vartiokylä
Puotila
Itäkeskus
Rastila
Kallahti
Aurinkolahti
Uutela
Kehä III
Kehä I
Häränsilta
0
500
1 000
Metrit

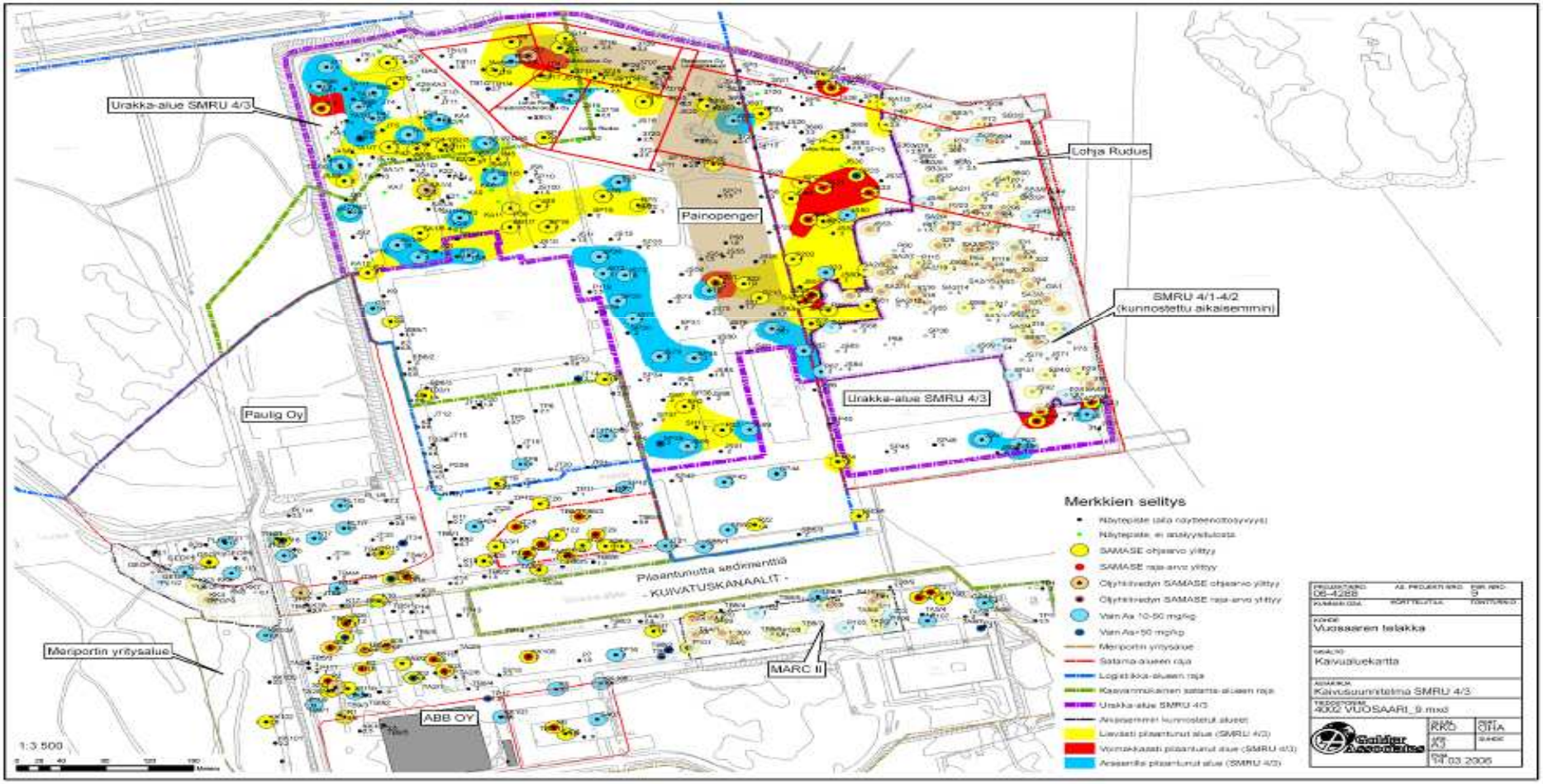
The noise abatement structures on the northeastern side

The noise buffering hill
(here under construction)

The noise barrier wall

Restoration of contaminated soil

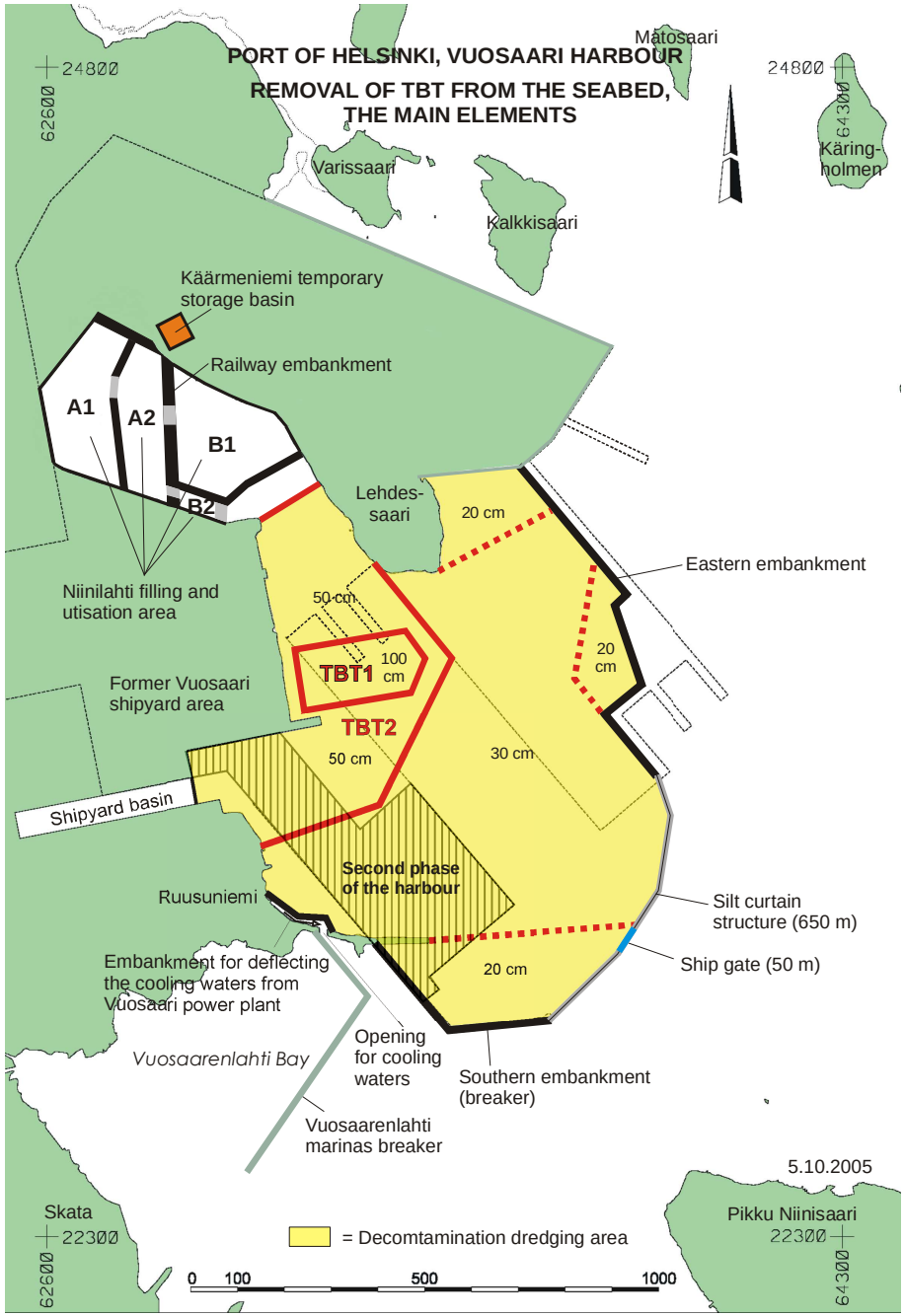
Soil sampling points



Restoration phases

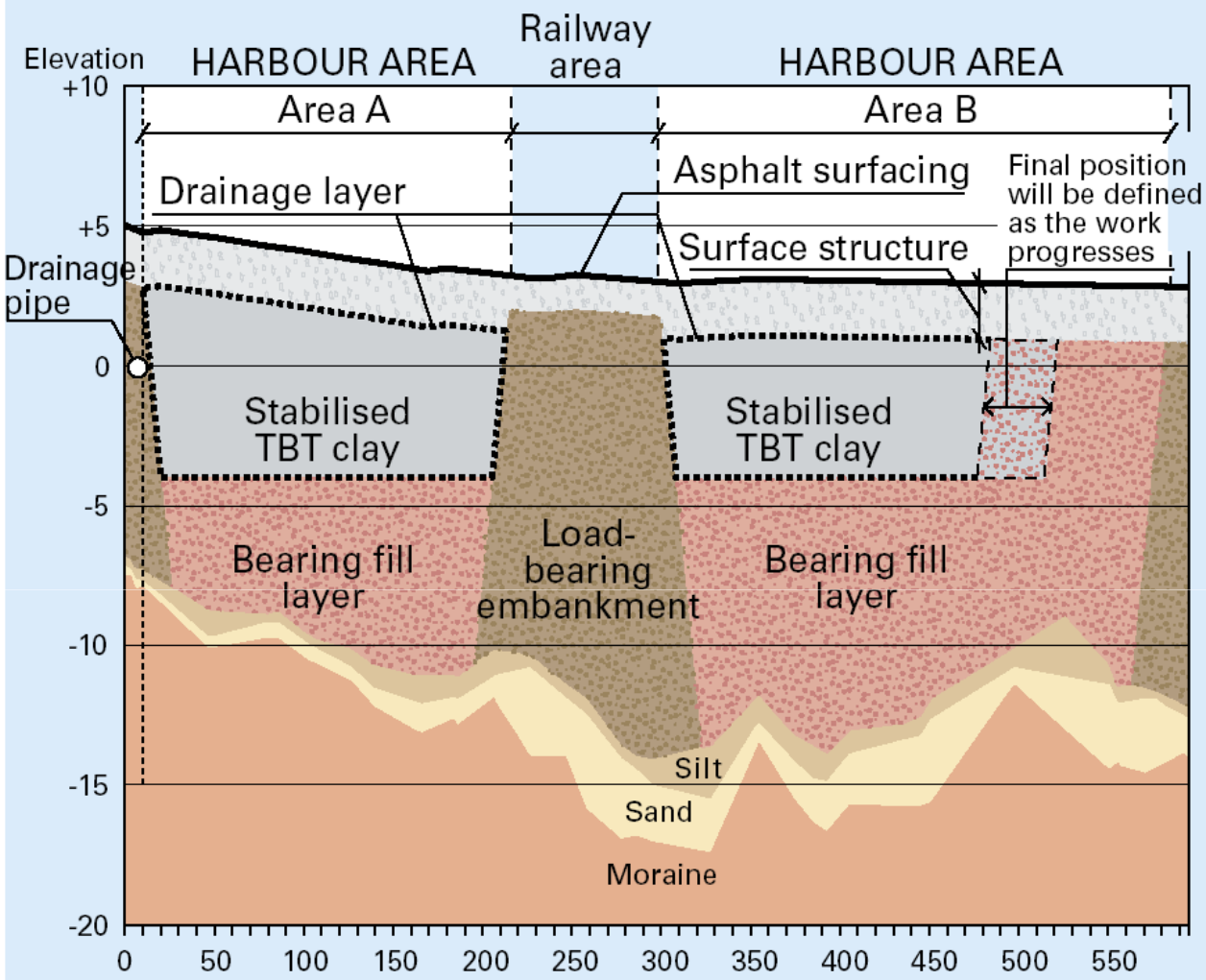
Removal of tributyltin (TBT) from the


PORT OF HELSINKI, VUOSAARI HARBOUR
STARTING POINT IN THE BEGINNING OF THE YEAR 2003
Matosaari
Varissaari
Kalkkisaari
Käring-holmen
Käärmeniemi
Niinilahti Bay
Lehdes-saari
Former Vuosaari shipyard area
Shipyard basin
Ruusuniemi
90 hectares fillings from the sea
Vuosaarenlahti marina
Vuosaarenlahti Bay
Skata
Pikku Niinisaari
24800
62600
64300
22300
0 100 500 1000


PORT OF HELSINKI, VUOSAARI HARBOUR
REMOVAL OF TBT FROM THE SEABED,
THE MAIN ELEMENTS
Matosaari
Käring-
holmen
Varissaari
Kalkkisaari
24800
62600
64300
Käärmeniemi temporary
storage basin
Railway embankment
A1
A2
B1
B2
Niinilahti filling and
utisation area
Lehdes-
saari
20 cm
Eastern embankment
50 cm
TBT1
100
cm
20
cm
Former Vuosaari
shipyard area
TBT2
50 cm
30 cm
Shipyard basin
Second phase
of the harbour
Ruusuniemi
Silt curtain
structure (650 m)
Ship gate (50 m)
20 cm
Embankment for deflecting
the cooling waters from
Vuosaari power plant
Vuosaarenlahti Bay
Opening
for cooling
waters
Southern embankment
(breaker)
Vuosaarenlahti
marinas breaker
5.10.2005
Skata
22300
Pikku Niinisaari
= Decomtamination dredging area
0
100
500
1000

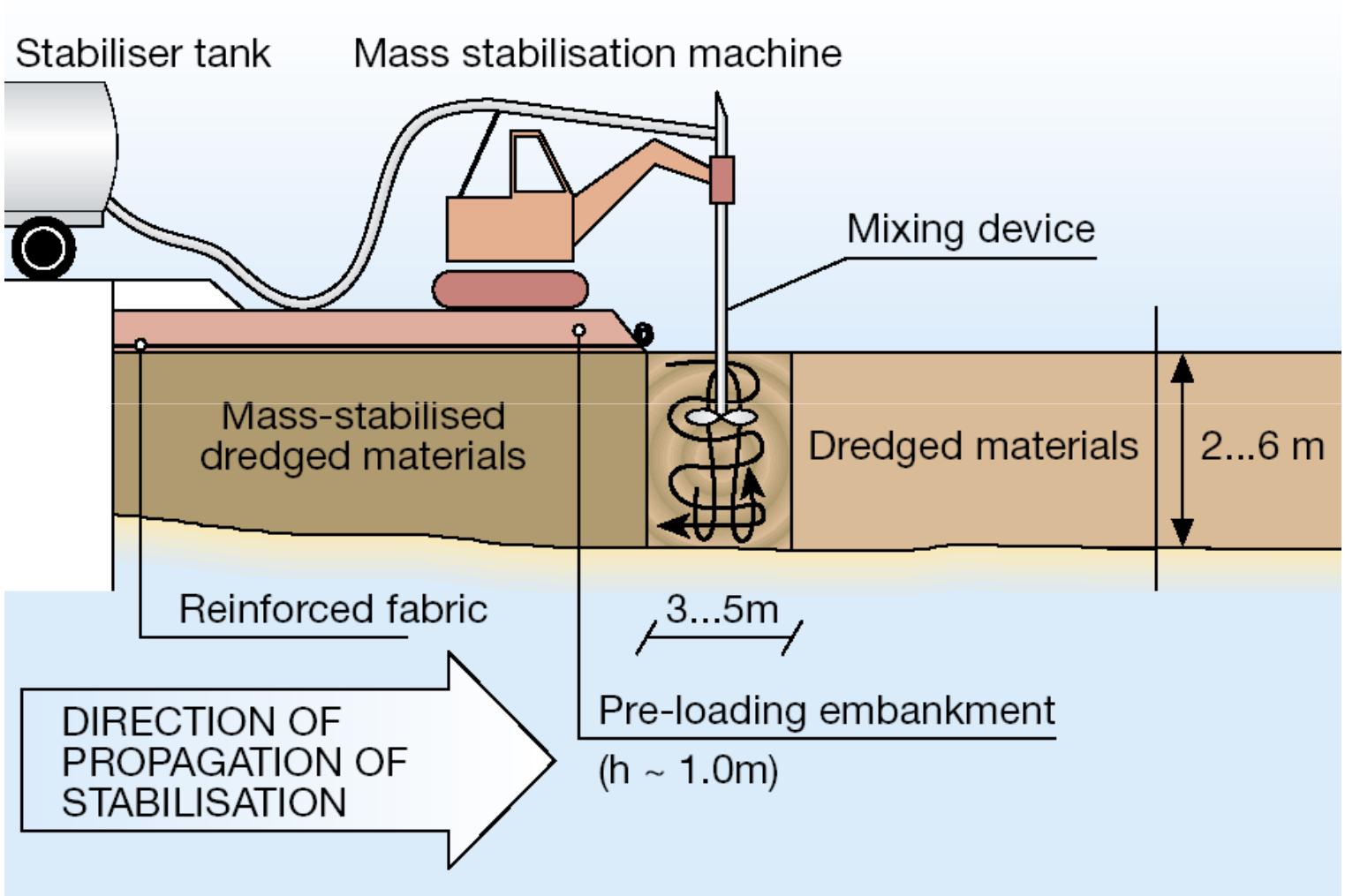
Decontamination dredging inside the protective structures

Niinilahti, section A-A



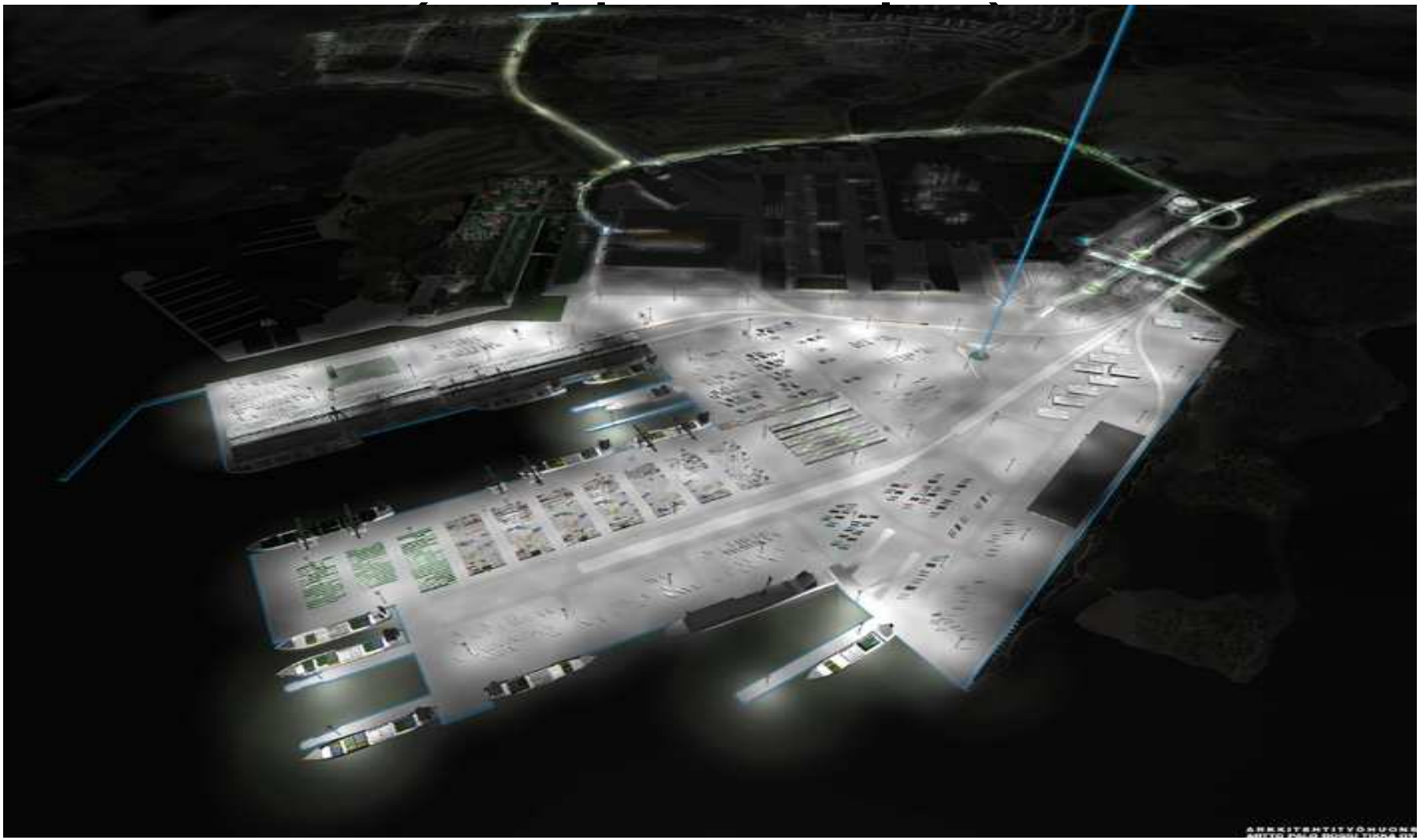
The stabilised TBT clay is deposited as a layer about five metres in thickness on a bearing fill layer. The stabilised layer is covered with a drainage layer and a surface layer, with an asphalt layer on top. The stabilised structure is surrounded by a system of drainage pipes.

Principle of mass stabilisation



Mass stabilisation in Niinilahti area

The selected lighting solution



The harbour by night (actual

Current environmental operation

- Noise level limits
  - Noice requirements for example with work equipment
- No special fee
  - Vessels are required to pay a waste fee regardless if they land waste or not
- Port reception facilities
  - Port is required to take ALL waste the vessels wish to land
- Emission rules
  - SOx, soot blowing, NOx, cold ironing
- Ballast rules
  - Alien species control,

Northeastern shore, the possible future as a high level recreational area

The port is a responsible neighbor!