



FINEST LINK WP2

Appendix 1.

Scenario 0+



EUROPEAN UNION
European Regional Development Fund



General

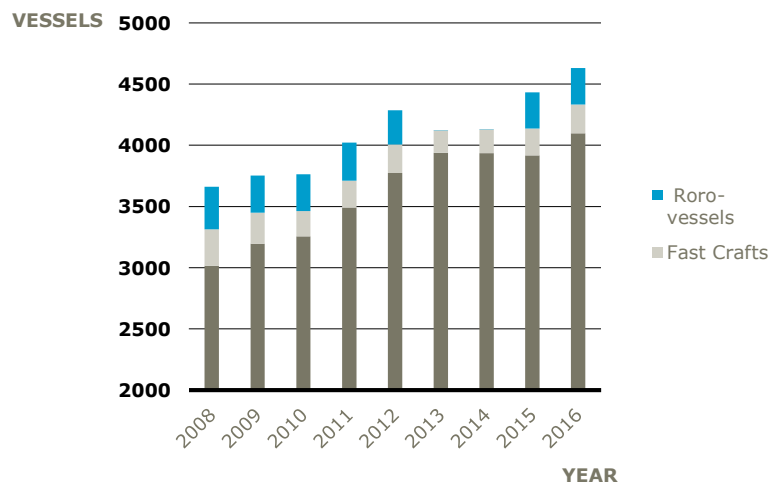


- The 0+ scenario is developed in order to evaluate what will happen and how ferry traffic between Estonia and Finland will be managed, if the fixed link will not be built.
- Ferry traffic between Finland and Estonia started 1978 (m/s Georg Ots). Traffic developed rapidly after independence of Estonia in 1991.
- Typical passage time with current vessels is approximately 2 hours. This is considered relatively long for daily commuting.

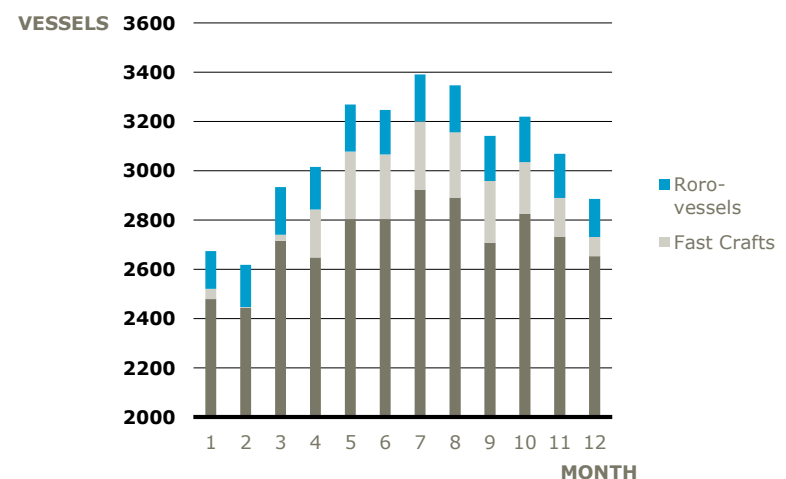
Current Ferry Traffic

- Three ferry companies are providing services on the Helsinki-Tallinn sea route all year around carrying both cargo and passengers: Eckerö Line, Tallink Silja, Viking Line.
- Two shipping lines are providing fast crafts services during summer: Linda Line and Viking Line.
- Both passenger and cargo transportation are important for ferry companies in order to balance capacity.

PORT VISITS PER YEAR



VESSEL TYPES PER MONTH 2008-2016



0+ Description

- The Basic 0+ option is based on current port terminals. However, three other alternatives have been recognised:
 - 0+ Cargo to Vuosaari
 - 0+ All Ferry Traffic to Vuosaari
 - 0+ Other Ports
- There is a cargo vessel transporting cargo between Helsinki and Tallinn. This is expecting to continue, but all cargo is unlikely to be shifted to Vuosaari because of synergies with passenger traffic.
- Moving all ferry traffic to Vuosaari is possible but not considered realistic at the moment.
- Other ports (especially Hanko and Paldiski) support traffic but can't replace Helsinki and Tallinn.
- Train ferry traffic has been ceased generally in the market. Train ferry is not considered a feasible choice to compare in this study.

Ferry Capacity



- Calculation is theoretical and preliminary.
- Capacity is approx. 17 million passengers per year (two way)
- Estimated requirement for scenario 0+ is 14,1 million passengers per year (two way) or 10,6 million passengers per year with the scenario Fixed Link.
- Conclusion: Ferry capacity is adequate to meet future demands, considering traffic without the fixed link. Capacity can be increased by acquiring bigger and/or additional vessels.

| Vessel | PAX | Dep./d | PAX/d | Months | Fill rate | PAX/a |
|--------------|-------|--------|---------------|--------|-----------|------------------|
| Finlandia | 2 080 | 2,5 | 5 200 | 12 | 80 % | 1 497 600 |
| Megastar | 2 800 | 3 | 8 400 | 12 | 80 % | 2 419 200 |
| Superstar | 2 080 | 3 | 6 240 | 12 | 80 % | 1 797 120 |
| Europa | 3 013 | 1 | 3 013 | 12 | 80 % | 867 744 |
| Viking XPRS | 2 500 | 2 | 5 000 | 12 | 80 % | 1 440 000 |
| Karolin | 353 | 3 | 1 059 | 4 | 80 % | 101 664 |
| Merilin | 383 | 3 | 1 149 | 4 | 80 % | 110 304 |
| Viking FSTR | 836 | 2,5 | 2 090 | 6 | 80 % | 300 960 |
| TOTAL | | | 32 151 | | | 8 534 592 |

Terminal and Infrastructure Capacity



- New passenger terminals have been built in Helsinki and Tallinn.
- Current terminal capacity is considered adequate.
- All ferry terminals are in the city centres, which causes some challenges.



Challenges

- Vehicle traffic through city centres is not an optimal choice and it is contrary to general city planning principles.
- Possible city boulevards in Helsinki will have an impact on traffic to and from the ferry terminals in Western Harbour, Southern Harbour and Katajanokka. Impacts are related to actual planning solutions and require more detailed analyses.
- Impacts caused by the possible centre tunnel require more detailed analyses.



Terminal and Infrastructure Investments



Traffic investments in Helsinki

- Tyynenmerenkatu 14 M€ 2017-2026
- West Harbour Traffic improvements 5 M€ 2017-2026

These investments will be done regardless of the possible Fixed Link.

Additional:

- West Harbour Terminal 1 renovation or rebuilding planned.
- Mitigation measures if city boulevards proposed in the new City Plan will be established.

Traffic investments in Tallinn

- Masterplan 2030 competition on August 2017 was won by Zaha Hadid Architects.
- Discussion to move ferry traffic from the Old City Harbour to Muuga; in order to ease congestion issues.
- Reidi road improvement plan (28,5 M€) is expected to help with congestion.
- Plans to take tramline or light rail to the Old City Harbour in near future.

New Technologies

Electric or Hybrid powered ships

- The two ferries will operate completely on battery power between Helsingør (Denmark) and Helsingborg (Sweden), a distance of approximately 4 km carrying more than 7.4 Million passengers and 1.9 million vehicles annually.
- Will there be an option for a longer route in the future?



Automation

- Automated mooring is in use
- Non-Stop traffic with autonomous ships?

Smart Mobility

- Open data for traffic planning and control
- Real time traffic light control
- Mobile applications for improving accessibility and procedures

