E-18 GATEWAY (Turku/Naantali to Vaalimaa border crossing)

PRELIMINARY MAPPING OF BOTTLENECS AND DELAYS.

authors

**Introduction**

Baltic Loop project has been collecting information about the existing delays and bottlenecks of cargo transport along the E-18 gateway. The information gathered at the project is based on questionnaire surveys at 2019, 2) existing available information from the literature , 3) seminars and interviews of of stakeholders and academics, during 2019 and 2020. Ports are not surveyded here in its total details. Åbo Akademi University (ÅAU) is collecting the data from ports.

On the following there are number referring to maps (A…F), followed by short description abouts its nature and source if information. Colors refer the type of problem. (green= *non technical*), red= *technical*, blue= *mixture of problems*)

On the maps two different kind of symbols have being used: black dot= small scale type and easy to locate, dot line= problems covering larger area.

text information= hindrances and bottlenecs that cannot be located but seen as a problem largely along the E-18 route.

**MAPS A to F**

*Table 1. Existing delays and bottlenecks of cargo transport along the E18 Route Finland.*

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| --- | --- | --- | --- | --- |
| 1 | Port of Naantali | mixture of problems | like waiting times, jams during loading, too low amount of boats | ÅAU provideds details |
| 2 | Port of Turku | mixture of problems | like waiting times, jams during loading, more daily ferry trips between Finland and Sweden | ÅAU provideds details |
| 3 | Naantali-Raisio urban area | technical, non technical | regular traffic jams, time consuming slow driving, lot of traffic lights | interviews of stakeholders |
| 4 | Turku-Raisio urban area | non technical | poor accessibility from port to E-18; slow route, time consuming, traffic lights | intervies os stakeholders |
| 5 | Tuulissuo-Avanti industrial area | technical | temporary slow down (2020-2023) of traffic at E-18 because of road reconstruction), reduced accessiblity to/from industrial area  future: new industrial areas being planned : Yhdysmäki-area  Drastically increasing heavy traffic with DB Schenker’s new terminal | field survey, interviews of stakeholders |
| 6 | Meriniitty and other associated industrial areas | non technical | poor accessibility via 110 and 224 to E-18 from industrial area | stakeholder interview |
| 7 | road 52 | non technical | slow driving from/to road 52 and E-18; last section of Salo Ring Road East under planning | Salo City planning |
| 8 | Intersection of 25; traffic from Kässanhaka and Kirkniemi industrial areas | non technical | regular traffic jams, traffic lights, slow driving, lack of route guidance for heavy traffic | interviews from transport companies |
| 9 | Ring Road 3 | non technical | lack of resting and waiting areas and coffee break places | interviews from transport companies |
| 10 | Ring Road 3 | non technical | traffic jams and driving security along E-18 but also with the intersections Road 1,2,3 and 4 | transport companies |
| 11 | Road 103/E-18 /Ring Road 3 intersection | non technical | Vuosaari port traffic: traffic jams  E-18 lot of traffic | transport companies |
| 12 | Skoldvik road 148 intersection | non technical | traffic jams to from Sköldvik (slow driving) | transport companies |
| 13 | Road 170 and other intersections | non technical | high traffic intensity at E-18 , accessibility from Stadshagen industrial area to E-18 | transport companies |
| 14 | Road 6 and E-18 intersection | non technical | traffic jams | transport companies |
| 15 | E18 from Pyhtää border --Kyminlinna-Hovila-Karhula | mixture of problems | traffic lights, poor accessibiliy from Kotka Kantasatama, Mussalo and Hietanen, traffic jams | transport companies |

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| --- | --- | --- | --- | --- |
| 16 | Intersection of R18 and Road 371 from Syväsatama | non technical | traffic jams, traffic lights | transport companies |
| 17 | Road 26 and E-18 intersection area | non technical | slow traffic | transport companies |
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**Bottleneck description (bottleneck numbering with reference to table 1.)**

**Bottlenecks 1 and 3 (Port of Naantali – E18 / E8 junction Raisio)**

Throughout this bottleneck area, major sections are urban streets and suburban roads, 1 to 2 lanes per directions. There are no interchange junctions on the segment, all the junctions are intersections with traffic signals or "yield" traffic signs. (National Land Survey of Finland 2020.)

The segment is vulnerable to congestion and interference. All the traffic congestion is common mon-fri 7:30 to 9:00 and 15:30 to 17:00, with total delays of 10 to 15 mins. E18 / Road 185 intersection with "yield" traffic sign. E18 Raisio Town center, several traffic signals, insufficient traffic capacity of street. Junction E8 / E18 in Raisio (traffic signals, motorway exit traffic merging to urban traffic). (Traffic Management Finland 2020.)

**Bottlenecks 2 and 4 (Port of Turku – E18 / E8 junction Raisio)**

The first 6 km of E18 traffic infrastructure from Port of Turku are urban streets. Majorly 2 lanes per direction, traffic signals. The last 3 km to the end of segment 1a is motorway, 2 lanes per direction. (National Land Survey of Finland 2020.)

There is a shorter urban street network connection from Port of Turku to west end of Turku – Helsinki motorway via centrum of Turku. However, cargo traffic is guided by static traffic signs to use E18 Turku ringway to enter and exit Port of Turku. It´s forbidden to drive through centrum of Turku with semitrailer, full-trailer and multi-trailer vehicle combinations with total length > 15,0 m. (Traffic Management Finland 2020.)

The segment is vulnerable to congestion and interference. There are regular daily traffic congestion (delays 10 to 15 min) in three sections: Streets close to Port of Turku Truck check-in and exit (around RO-PAX ferry departures and arrivals). Junction E8 / road 1851 in Turku Härkämäki (traffic signals) mon-fri 7:30 to 9:00 and 15:30 to 17:00. Junction E8 / E18 in Raisio (traffic signals, motorway exit traffic merging to urban traffic) mon-fri 7:30 to 9:00 and 15:30 to 17:00. (Traffic Management Finland 2020.)

**Bottleneck 5 (Tuulissuo – Avanti industrial area; E18 Turku Ringway Highway 10 junction Auranlaakso – Highway 1 junction Kirismäki)**

Throughout the segment, new improved highway with two driving lanes per direction, separated driving directions and interchanges are under construction, completed in 10/2021. Before the new highway is completed, regular congestions occur due to road construction with temporary traffic arrangements and decreased speed limits. Number and accessibility of junctions and street network between Tuulissuo-Avanti industrial area and E18 is currently insufficient.

**Bottlenecks 6 to 8 (most important junctions from E18 to logistics / industrial areas and regional crossing highways at Salo and Lohja)**

Around bottlenecks 6 to 8 the average daily traffic is locally high due to commuter traffic in Lohja region and between Helsinki region and its commuting area around E18 (max. 36 000 vehicles per day between the busiest junctions). Therefore, during the peak hours and close to the busiest junctions, there is typically slight to moderate queuing. Exit ramps to industrial areas of Meriniitty Salo and Kirkniemi Lohja, roads 224, 52 and 25 as well as the crossing roads and streets are not very capable due to insufficient number of driving lanes and old-fashioned junctions with traffic signals.

**Bottlenecks 9 and 10 (E18 Helsinki Ringway III)**

This segment is the farthest ringway (Ring III) of Helsinki. The closest ringway of Helsinki (Ring I) is the other option to pass Helsinki metropolitan area without urban driving. However, Ring III is taken into account of more detailed investigation, because long-haul traffic in east-west direction is guided to drive via Ring III as a part of E18 route by traffic signs. Ring III is also serving multiple logistics, industrial and business centers in Espoo and Vantaa – e.g. several domestic distribution centers as well as Finnish domestic and international hub airport Helsinki-Vantaa are located close to Ring III. (National Land Survey of Finland 2020.)

This segment is absolutely the busiest one on E18 route in Finland. The busiest traffic observation point on the segment is located around Helsinki-Vantaa airport west junction (shopping mall Jumbo). Average daily traffic flow at the point is almost 94 000 vehicles per day. At the busiest point, there are 4 to 5 lanes per driving direction. All the junctions are interchange type. (National Land Survey of Finland 2020; Finnish Transport Infrastructure Agency 2019.)

Regular traffic congestion occurs on the middle and east (city of Vantaa administrative area) of the ringway. The highway standard in western part of Vantaa area (west of E12 junction) is older and partly insufficient to the current traffic flow. On the western half of the ringway (city of Espoo administrative area) the highway standard is modern with higher capacity. )

Almost throughout Ring III between E12 and E75 junctions, there is one bus/taxi/cargo lane per direction. Only busses, taxis and cargo vehicles allowed to drive on the lane during daily peak hours. There are also several separated bus stop traffic channels at junctions. (National Land Survey of Finland 2020; Traffic Management Finland 2020.)

The most common bottlenecks on the Helsinki Ring III are: The busiest junction (Airport west, Jumbo), multiple traffic flows are merging to one ringway in one multi-channel junction. E18 Ring III / E75 junction. In the latter junction, the major problem is, that there are three sequential junctions (Porttipuisto / Ikea, E75 and old E75 (road 140) very close to each others with too short acceleration and exit lanes and traffic merging areas. Delays of 15 to 30 mins occur mon-fri 07:00-09:00 and 15:30-17:00. (Traffic Management Finland 2020.)

**Bottlenecks 11 to 17 (E18 Highway 7 east of Helsinki Ringway III with most important junctions)**

Bottleneck 14 (Road 6 and E18 interchange): The reason to queuing is, that the exit ramp to highway 6 is not very capable because traffic is queuing on highway 6 (1 + 1 lane highway). However, this kind of problem occurs typically only on friday afternoons and holiday eves to direction east, because a lot of vehicles and are driving to highway 6 to have holidays in Eastern Finland.

Around bottlenecks 15 to 17 the average daily traffic is locally high due to commuter traffic in Kotka-Hamina region (max. 32 000 vehicles per day between the busiest junctions). Therefore, during the peak hours and close to the busiest junctions, there is typically slight to moderate queuing. Exit ramps to industrial areas of Hietanen and Jylppy in Kotka, road 371 and highway 26 as well as the crossing roads and streets are not very capable due to insufficient number of driving lanes and old-fashioned junctions with traffic signals.

HUOMIOITA

Venäläisten logistiikkatietoisuus ja osaamien on kehittynyt voimakkaasti viime vuosien aikana. Logistiikalta odotetaan entistä parempaa palvelutasoa. Myös viranomaiset kiinnittävät yhä enemmän huomiota logistiikan toimivuuteen. Ongelmia (siis yleisesti koko E-18):

**\*\*\*Annan kommentit**

* Logistiikan toimijoita ohjaa asiakkaiden haluamat lyhyet toimitus- tai vasteajat (24h /48h). Kaavoittajia, suunnittelijoita ja ylläpitäjiä kustannukset ja aluekehitysideat tms. Tavoitteiden yhteensovittaminen?
  + **Tämä näkökulma ELY/Liitot haastatteluihin**
* HUB-järjestelmän toimimattomuus/kehittymättömyys liikennekäytävällä; (keskusterminaatöi ja niiden alla pienempia tavatavirtoja käsittelevät terminaalit
  + **HUB-toimitamallin kehittäminen, Baltic Loop? Tulevaisuuden trendit?**
* Intermodaalien puute (Kouvolassa on ja joka kytkeytyy transsiperia rataan); eri liikennemuotoja yhdistävät ketjut; kehittymätön tai ei ole olemassa
  + **Intermodaalisuus, miten voitaisiin kehittää?**
* Turku-Naantali satamat suuryksiköiden käytön vähäisyys
  + **Satama-alueiden ja muiden odotusalueiden kehittäminen**

**IT-teknologian hyödyntäminen:**

* Yhteistyön ja tiedonkulun heikko taso eri viranomaisten välillä hidastaa kuljetuksia (ja aiheuttaa lisäkustannuksia
* Tieto- ja viestintäteknologian käyttö on yleistä vain suurissa ja usein kansainvälisissä yrityksissä, mikä vähentää mm logistiikkaketjujen suunnitelmallisuutta, toimivuutta ja seurattavuutta
* IT teknologiaa on olemassa lyhentämään vasteaikoja, kuljetusten seurantaan, odotusaikoja jne, mutta hyödynnetään puutteellisesti ja yhtiöillä on oma järjestelmänsä. Yhteistoimintaa ei kilpailusyistä juurikaan ole.
  + **Tulevaisuuden trendit**
* Rajanylitys on edelleen merkittävä hidaste
  + **Keskitytäänkö tähän, miten?**
* Kaupunkiseutujen kasvu ruuhkauttaa alueita E-18 varrella, jolloin logistinen tehokkuus edellyttää toimintojen siirtämistä ja uusien logististen keskusten kehittämistä. Ongelmana voi olla näiden kskusalueiden ulkopuolisen infrastruktuurin heikko taso
  + **Tämä huomioidaan haastatteluissa?**
* Kaupunkijakeluun liittyvän ajallisen etäisyys ongelma, vähentäminen tarpeellista esim. lähijakeluterminaalien avulla
  + **Lähijakelun merkitys Baltic Loopille?**
* Tauko-, lepo- ja odotusalueiden puute käytävällä
  + **Tästä oma selvitys**

**SAAVUTETTAVUUS:**

* Katujen ja liittymien mitoitus Varsinais-Suomessa, vox-vote
* Turun kehätie, vox-vote
* E18 saavutettavuus eteläisestä saaristosta, tie 180
* E18 saavutettavuus Hangon suunnasta, tie 52
* Tieinfran mitoitus uusille ajoneuvoille, HCT 34,5 m
* Länsisataman saavutettavuus
* Tie 25 saavutettavuus pk-seudulle
* E18 saavutettuus pohjois-etelä suunnassa Kotka-Hamina -sataman alueella

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