



Workshop urban node Rotterdam

Impression and summary report on outcomes

Thursday 29 March 2018

RDM Campus

Directiezaal, Heijplaatstraat 17, Rotterdam

Version: 1.0

Date: 17.04.2018

Authors: Kevin van der Linden and Raymond Linssen

The sole responsibility for the content of this document lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the EASME nor the European Commission are responsible for any use that may be made of the information contained therein.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 769458

Table of contents

| | | |
|---|-----------|--|
| 1. Introduction | 3 | |
| 1 Trends in logistics | 3 | |
| 2 Fingerprint Rotterdam | 5 | |
| 3 Pitches corridor, province, municipality and Port of Rotterdam | 6 | |
| 3.1 Corridor: EGTC Rhine-Alpine | 6 | |
| 3.2 Province South-Holland | 6 | |
| 3.3 Municipality Rotterdam | 7 | |
| 3.4 Port of Rotterdam | 7 | |
| 4 Synthesis | 9 | |
| 4.1 Balancing city, labour, logistics and port..... | 9 | |
| 4.2 Port 2.0: separation of functions behind functionmix? | 9 | |
| 4.3 Small residential areas | 10 | |
| 4.4 Collaboration in the chain and on the corridor | 10 | |
| 4.5 Good practice Stockholm, Sweden..... | 11 | |
| 4.6 Route to regional logistics development? | 11 | |
| 4.7 Use the water | 12 | |
| 5 Packages of measures and the role of Europe | 13 | |
| 5.1 Building blocks for CEF | 14 | |
| 6 Conclusion: To a coherent Rotterdam package | 15 | |
| 7.1 Building blocks for a package on infrastructure and quality | 15 | |
| 7.2 Overall observations | 15 | |
| Attachments | 17 | |
| 1. Fingerprint urban node Rotterdam..... | 18 | |
| 2. Good practices with validation of scores..... | 24 | |
| 3. Map corridor level..... | 30 | |
| 4. Map regional / urban node level..... | 31 | |
| 5. List of participants Rotterdam workshop | 32 | |
| 6. Programme of the Rotterdam workshop | 33 | |



1. Introduction

The characteristic location of the former Rotterdamse Droogdok Maatschappij in Rotterdam-Heijplaat is the set for this workshop, part of the Horizon 2020-project Vital Nodes (see www.vitalnodes.eu). Twenty professionals in spatial development, mobility and transport and logistics came together on Thursday 29 of March in the afternoon to explore opportunities improving the synergy between problems and initiatives in the urban node Rotterdam and the TEN-T corridors.

1 Trends in logistics

The kick-off for the workshop is done by moderator of the workshop, Tertius Hanekamp. He gives a short presentation on relevant trends in the world of logistics in connection with spatial development and networks.

- Increasing concentration of population growth and economic growth in urban areas;
- Robotised and automatization (e-commerce): manufacturing industry returns to Europe ('reshoring'), but economics of scale cause scaling such as "XXL Warehouses". Wehkamp's distribution centre in Zwolle illustrates this principle, "it is one big robot".
- Availability of higher-educated labour potential is an important condition for the location choice of logistic oriented companies;
- Increasing flexibility of logistics by opening infrastructure for third parties: more shared facilities such as distribution centres, packaging installations and vehicles;
- Increasing freight volumes, population growth in cities and changes in regional mobility flows increase the pressure on the main road network and the need for robust networks (reserve capacity, alternative routes (detours)), while the multimodal approach should form the base.
- Impact of energy transition: on the one hand the fleet and ships, on the other hand the enormous impact in the longer term when fossil fuels are phased out. This will have a major spatial impact on harbours (silo's) and on the freight volumes (realization that the freight flow of about 30 million tons of coal to Germany will ever decrease).

Specifically focussed on the situation in Rotterdam we see the market share of freight transport by rail remains the same, while the growth in transshipment in Rotterdam results in more transport by road and water (Transport by rail between 2009 and 2015 more or less the same at 800.000 teu, while transport by road increased in this period from 3.7 million teu to circa 4.5 million teu and transport by water increased from 2.2 million teu to 3 million teu).

From a spatial point of view the changing relationship with the labour market is important. Logistical activities, such as terminals and distribution centres, are built on less logical areas (from an infrastructural perspective), since there should be enough labour potential. Besides we recognize small-scaled positioned logistical points in the city, near the customers. This looks like the pattern of micro and midi hubs for first&last mile distribution in Vienna. Many cities experiment with cargo bikes and collection points at stations (Doddle, for example, offers this at the British stations for DHL and other companies). The French company Monoprix has a connection from its distribution centre to the urban rail network.



A special 'good practice' is the midsized Swedish city Norrköping.

The development in the Swedish city of Norrköping (130.000 inhabitants) might be inspiring. The city is situated 165 km southwest of Stockholm and is transforming fast due to the building of a new high-speed rail line linking the Swedish capital with Gothenburg and Malmö including a new railway station in Norrköping. At this moment the existing rail link is heavily used by both passenger and freight transport. The new high-speed railway connection will create conditions for improving freight transport and activities at both the corridor and the local level. At corridor level the new high-speed rail link will leave extra capacity at the existing rail link for freight trains (also causing less mixing of freight and passengers traffic). At local level, harbour and logistics activities will be concentrated on a 'Harbour Island' that will be developed North of the city at the former harbour area, while a new harbour extension is created to the east in seaward direction. Several smaller distribution centres that are currently scattered in the city and thereby disturbing the city life will be relocated to the Harbour Island. A new, consolidated logistic centre will be developed in the new harbour area as well.

It is striking that such transitions and innovations often do not originate from the world of logistics, but more from the world of spatial/urban planning. Logistics knows very well how to optimize the supply chain, but thinking about issues on scaling up and spatial issues is a challenge for them. Although city logistics is 'sexy' at the moment – an alderman poses with pleasure next to a bicycle courier with cargobike -, other sectors think too little about logistics: "Logistics is not sexy". But there is a sense of urgency: logistics is the most important function to facilitate abovementioned trends and parent issues (circular, energy), but 'it is too logistically oriented'.



2 Fingerprint Rotterdam

The Vital Nodes project team explains the Fingerprint of Rotterdam. It is a short analysis based on facts & figures and developments in the city and region. Key task is how to fit all developments that meet in Rotterdam.

Some characteristics of the urban node Rotterdam:

- Functional urban area: “Mainport meets Greenport”;
- Functional urban area includes all logistical activities in the axis of Rotterdam via the Betuweroute and A15-corridor, Moerdijk, Tilburg and Venlo to the Rhein/Ruhr region;
- On local level there are major social-economical assignments in Rotterdam-Zuid. The discussion on a possible third riverbank connection should be placed in this social-economical context (enlarging accessibility of labour).
- Wish to develop the Waal-Eemhaven area to a shortsea hub

Pipelines are not part of the fingerprint, but we should not forget this modality in the near future (for example the importance of the pipeline Rotterdam-Antwerp). The pipelines are part of the National Environmental Vision (Nationale Omgevingsvisie, NOVI), but these are not yet well developed. Aviation is not part of the fingerprint as Rotterdam The Hague Airport has not developed airfreight activities.

The demand for cohesion with the southern neighbour Antwerp is interesting. Some stakeholders call it one big logistics area, maybe Rotterdam and Antwerp form together one node. There is also a combined petrochemical cluster, while Rotterdam and Antwerp are competing as container ports.



3 Pitches corridor, province, municipality and Port of Rotterdam

3.1 Corridor: EGTC Rhine-Alpine

Coen Mekers, EGTC Rhine-Alpine, gave a short pitch on the urban node Rotterdam in the perspective of the freight corridor Rhine-Alpine. This corridor connects the North Sea ports with the North of Italy. Some statements from this pitch:

- The EGTC Rhine-Alpine is about international collaboration in an innovative, green and smart way;
- It is necessary to develop the corridor in general, developing the hubs is not sufficient;
- “Look over the borders of the port area” and search for connections with investments at other areas.
- The corridor/network is as strong as all hubs and the intermediate areas together;
 - o Collaboration on the corridor is essential: Program-approach Freightcorridor (Programma-aanpak Goederencorridor) is a good example as a multilevel approach
 - o Vital Network in stand of Vital Nodes?
- Pay more attention to passenger transport, think about the accessibility of port areas for employees and about border regions (regional rail connections);
- In terms of financing the corridor investments by partners: look also for measures with a lower investment volume (circa 50 million euros). All these small(er) investments and initiatives could form together an interesting proposition. It is not all about the large packages of measures.
- Research has been done to investments and the return on investments on corridor level in 2017. The highest returns on investment are situated in the border areas and how to arrange this and that.
- Do it in an innovative and sustainable way. Example: in the European Railfreightline System research will be done to an intercity cargo train. The rail capacity is better used when using intercity cargo trains.

3.2 Province South-Holland

Donald Broekhuizen, province of South-Holland, gave a short pitch on projects on regional level, such as the development of the highway A4 Midden-Delfland in what liveability and accessibility go hand in hand, and on projects on higher and multimodal level on the corridor Rotterdam-Antwerp. Some statements from this pitch:

- CLINSH programme: cleaner inland shipping, better use of water and alternative fuels;
- MIRT-study Greenport – Mainport. In this study the focus is on the relationship with the Westland and the improvement of agri-food logistics to mainports and hinterland;
- The Flemish-Dutch Delta conference (Rotterdam, 7 November 2018) is hosted by the province of South-Holland. The province also organises the EGTC conference during the Corridorweek in the second week of November.



- Task: what different modalities are used by our partners, resilient corridors and intermediate areas, vitality and resilient, etc.

3.3 Municipality Rotterdam

Richard van der Wulp presents the pitch from the municipality of Rotterdam. The municipality of Rotterdam argues initiatives on logistics in the Maas-city are part of a wider package to form local climate policy and to improve air quality. The city is working on city logistics for ten years, since environmental zones was set up. The main focus is on building logistics: 30% of the city logistics is related to building logistics. Only 4% concerns parcel deliveries, but this percentage might increase as for example in London the parcel deliveries increased enormously. Based on CO2 emissions parcel deliveries only account for 4% and if the share of parcel deliveries will double, it will still be the smallest category.

Rotterdam uses a 'Living Lab' approach since 2014, in what Rotterdam and its partners work on aspects as technics, logistics, behaviour, law and regulations and communication. The main focus is on transporters and shippers, but this focus shifts to other target groups as purchasers since they have influence on zero emissions.

Attention points from a logistic point of view:

- Combination of city logistics, port logistics and other sectors such as passenger transport and freight. Take the 'Better Use' (Beter Benutten) approach as an example.
- Decoupling points and bundling: strive to more efficiency in the city by bundling nearby the delivery addresses (hub on neighbourhood level). In France research is going on to shifting warehouses to inland locations.
- Breytner as the first transporter which drives totally electric;
- Environmental zones and privileges for electric drivers (Ecostars). In 2025 zero-emission based city logistics.
- Developments have a major impact on the spatial assignment.

Now it is necessary to take a step forwards by looking at assignments in the city of Rotterdam in a more integral way. Rotterdam has for example a building programme for 50.000 houses, while the region (MRDH) in general needs 240.000 new houses. The question is were these houses should be located.

Thereby the relationship with other modality issues, such as stimulating e-biking or cycling and public transport. Moreover, there is some tension between logistics and spatial planning and there are many regulations setting the context for possibilities and impossibilities.

3.4 Port of Rotterdam

The last pitch is given by Joop Verdoorn, Port of Rotterdam. The Port of Rotterdam is working on an accessibility vision for the area. Other topics are the multimodal mix of hinterland connections, supply chain efficiency (digitalization) and their future steps in the energy transition (Climate agreement of Paris). On the 10th and 11th of April 2018, shortly behind this workshop, they communicate their next steps. At that moment a meeting with enterprises will be organized to form together these next steps in the energy transition (Energy Transition Summit).



Some strategic challenges are the digitalization and the sustainability of fuels, taking their target goal into account there should be no fossil fuels in the port area at 2050 and the bottlenecks from the NMCA (National Market- and Capacity analysis) and the tension with the building programme for houses (e.g. at the Merwe-Vierhavens).

Two-thirds of all freight transport has its destination in the region, what shows the dynamics in logistics here. On short distance trips it is, according to the Port of Rotterdam, difficult to shift on a large scale from road to other modalities.

In the upcoming years the City terminal Waalhaven should be redeveloped from a deep sea to a short sea hub with more freight transports. It is very important to strengthen the relationship with neighbouring area Rotterdam-Zuid for the labour potential for this area.

Labour potential on the local level should not decrease until 2040. The new and old economies should coexist and in the upcoming years an increase in labour potential is expected.

Shifting functions to the hinterland means shifting labour potential to the hinterland. At this point the questions raises if this labour potential should shift away from the port. Low land prices in the hinterland could be a main reason for logistic oriented companies to shift.



4 Synthesis

4.1 Balancing city, labour, logistics and port

The port is very important for the settlement climate of Rotterdam and even for knowledge (institutes) and services. Jokingly some say 'the Third Maasvlakte is at the Weena'. During the discussion we will focus at the question what areas are important for mobility and for the urban system.

Makers District and the Merwe-Vierhavens are concrete assignments for the city and the port. The city has a new (third) riverbank crossing on her wish list to improve the accessibility of this area from a social-economic point of view: people should travel to their work easily and it is very important to secure the logistical flow. From the employees perspective the Maasvlakte is not attractive to work as the distance to Rotterdam, circa 40 kilometres, is very high.

A new future for the port area close to the city can offer the inhabitants of Rotterdam-Zuid (for example surrounding Maashaven/Tarwewijk) perspectives. Most of these inhabitants work already in the Waalhaven East and South. Because of this it is doubtful if only housing is wishful in the Waalhaven area. The inhabitants should travel over larger distances to office, while they could go by foot or bike to the Waalhaven South. The workshop participants agreed upon the Waalhaven is and should remain as an important area of labour potential for the inhabitants of Rotterdam-Zuid. A broader collaboration between the municipality of Rotterdam and the Port of Rotterdam is necessary to realize this.

This rubs on the issue discussed in the Vital Nodes workshop Vienna. In the rapidly growing urban node Vienna planners take into account innercity areas for companies. These areas will not be upgraded as they will be affordable for the 'classic employment' as manufacturing. In this way we can offer perspectives for this situation in Rotterdam: DHL is looking for locations in the city centre of Rotterdam, but high rents impede a cost-effective business case.

4.2 Port 2.0: separation of functions behind functionmix?

The relationship between the city and the port gets new perspectives by the existence of function separations next to the function mix. Mixed functions can reduce the amount of transport flows, although the port is developed by a function separation in the last few years. Can we form the transition of the port in a smarter way by mixing functions and moreover by covering the social-economic assignment in neighbouring areas and the future of the port in one big integrated assignment? In this case we prevent the optimization of only one part. Because of this it is better to integrate the assignments in stand of separating functions.

This integrated approach is valid for that part of the port that becomes intertwined with the city. An increase in knowledge intensive integrated businesses and employment, focussed on the inhabitants and with changes for mixed functions, investments in cycling and in public transport as well as waterborne building logistics. Here the port offers a rewarding perspective for a thriving urban node.

In the port area a dichotomy might exist. The port areas close to the city, for example the Waal-Eemhaven at the south of the Maas and the Merwe-Vierhavens at the north, have a relatively high labour



intensity due to the current port activities at that location. On the other hand, the large-scaled complexes at the Maasvlakte become more and more automated and robotised, as a result of which these areas are becoming more and more physically remotised from perspective of the city. The Maasvlakte might be slightly ahead of the rest of the Netherlands with robotised, but robotic environments will also become normal in other parts of the country. The car factory in Born is also largely automated. Nevertheless, a distripark will be realized at Maasvlakte II where, among other things, a location with bus connections has been realized. In this distripark low-skilled jobs in warehousing functions will be offered. This facility cannot be shifted to the hinterland, as freight arrives via deep sea and continues via short sea.

4.3 Small residential areas

The vitality of small residential areas in the Rotterdam port area is a recurrent theme. Sometimes we proof some tension between the vitality in the areas Rozenburg, Pernis and Heiplaat and the port activities in surrounding areas. Possibly these residential areas will win in strength and quality by transforming the port area. What can the residential area Rozenburg offer the port? Earlier programmes to clear these residential areas are not relevant or wishful.

Logistics on the window of Rotterdam is important, but a city consisting of only logistical functions is undesirable. To this we will try to formulate spatial assignments with for example the Blankenburg connection as lever: revitalise the surrounding of Rozenburg, provide with recreational facilities, etc. The Rotterdam municipality programme 'Small residential areas' (Kleine Kernen) is already improving such qualities in for example Overschie, Pernis and Oud-IJsselmonde.

There is also a critical node for mixing functions in the Waalhaven and the residential areas in the port area: the urgency to have environmental contours may remain. If a transition to large complexes ('plants') will be formed by reusing the locations on what currently (petro)chemical activities take place, it is likely that the current environmental limits will remain. If the port will also be important in the future and if the 'BV Netherlands' will provide areas for large-scaled activities with a large environmental contour, it is not likely to expand the function 'living area' in these parts of the port.

4.4 Collaboration in the chain and on the corridor

To have the optimal supply chain a fast handling at the terminal is just as important as preventing traffic jams on the motorways A15 or A16. Half an hour waiting time at the terminal is for the driver as important as a traffic jam. To this, 'Think global/European and act local' is important. Argue from large scale to small scale. Collaboration on the corridor connects good practices and strengthens the corridor in general, by solving assignments in the same manner, having identical regulations, etc. in this way we work in the capillaries, collaborate by shifting through the different scales, and on the corridor level we work on the transition to electric driving and hydrogen driving and LNG.

At corridor level you can densify better and make better use of existing infrastructure, so the existing space can absorb growth. 'Connecting by implementing good practices between urban nodes'.

The challenge is how to catch urban growth in the existing space, without using more space because there is no more space. Investing in other modalities probably arranges capacity (for freight) on the corridor. On local and regional scale there are changes for (electric) cycling mobility: bicycles are a good alternative for local and regional car trips, giving more capacity on road. On metropolitan level (MRDH)



we see some potential in public transport, but investing in public transport will be cost-effective if it is combined with spatial developments. We can achieve a lot by seducing a small part of the local and regional car drivers in such a manner to stay away of the main road network.

An interesting question to study is how the Functional Urban Area (FUA) for freight and logistics and the Daily Urban System (DUS) for commuting traffic will differ.

4.5 Good practice Stockholm, Sweden

Trafikverket (Sweden) explains their successful *congestion charge* in Swedish capital Stockholm. The gains will be reinvested in the city of Stockholm, as these gains are in favour of the regional mobility fund. Spatial development and mobility are integrated. This game is easier to play in Sweden as Trafikverket is responsible for road, aviation and rail.

The workshop participants agreed pricing mobility is difficult in the Netherlands. The way how the government is organised makes it difficult to negotiate with cities. All parties have the desire and willingness. Probably a first building block could be to set up regional funds for other types of solutions.

4.6 Route to regional logistics development?

As earlier mentioned in the introduction the logistics sector has a different type of logic than the 'traditional' traffic engineer and consumer. Location choices for (major) distribution centres depend on the availability of land and the land prices. Passing on negative impacts might occur: if a distribution centre is built on low priced land, but on the wrong location, this will result in negative effects on the network. The low ground costs will rolled out over the society.

During the past years many distribution centres were developed in the Zuidplaspolder (Waddinxveen, Gouda) in an area that was meant for expansion of Rotterdam. The total surrounding is vulnerable because of the Gouwe Aquaduct and because the area is a polder far below sea level: 'We are creating our miseries'.

The participants asked in what way and on what scale interests are prioritized. In the Zuidplaspolder the network for companies was preferred over the local aspects: 'logical network'. Local interests and logistical interests met well in Waddinxveen.

De municipality of Rotterdam has the challenge to build 50.000 dwellings in the existing urban area. They work in urban alliances to invest in alternative ways of transport, to facilitate the construction of dwellings and to facilitate the third riverbank connection which is important for the network and for the development of Rotterdam-Zuid. They integrate different challenges in a smart way. One of the participants mentioned this concept is very interesting for the urban area. However, for the bigger picture it is difficult: how to combine long distance and local (isolating versus integrating)?

The legacy from the recent past plays a role in this: every municipality got its business park, also if the location was not at the right place on the network (example: Kickersbloem in Hellevoetsluis). Possibly an approach of having a regional development company has some perspectives for the future to let public, private and society come up together with the development of ideas by having smart combinations and strategic choices.



The partners in the Zuidvleugel of the Randstad have a clear vision where to realise the large amount of new dwellings: they will realise them at the rail corridor The Hague – Delft – Rotterdam – Dordrecht. *Transit Oriented Development (TOD)* is recently a well know planning paradigm, but the use of *Logistics Oriented Development (LOD)* is faraway.

4.7 Use the water

The participants asked if we can make more use of waterborne transport for city distribution. In Rotterdam and Delft (via the Schie) tests are done with building logistics via water. One of the participating forwarders is also focussed on the recurring (retour) flows. Keeping the climate goals in mind, using waterborne transport can help very well. The disadvantage is that many cities are not built in such a way that waterborne transport fits. This makes building logistics via water a challenge. In Utrecht and Amsterdam the beer-ship inspires, but the example of a logistics hotel with a rail connection in Paris raises the question what business model is used. In Paris the government has a heavy share.

Participants think we can have more gains from other modalities we have not think of earlier. This requires thinking through and peeling possibilities in a structured way.



5 Packages of measures and the role of Europe

Different participants think it is necessary to work on comprehensive packages of measures and initiatives. It would be well to release 'ad hoc' together and to substantially come to a new kind of package. Some building block for the package that should be developed:

- Housing
- Making the current city more attractive, competing cities;
- Transition of energy
- Climate adaptation
- Circular economy
- City logistics and city distribution

How are the city and logistics related, what does it ask from the sector of logistics? (micro and midi hubs as in Vienna?); how functions an urban hub in relation with long-distance flows? How are these challenges related to logistics? Can we take some smart measures and how can we formulate these as a comprehensive and integrated package? In short, how can we work on 'NEXT LOGISTICS'?

The European Commission applies quality standard or KPI's (key performance indicators) for connections between hubs. These are not related to the quality levels of specific hubs. Possibly we can design a comprehensive system with requirements for running times, setting up intercity cargo trains and/or offering a reduction in running times. The European Commission (EC) is looking for ideas as these. But, one of the recommendations to the EC is that the relationship with the urban areas should be improved.

Working on a reliable network requires flexibility in modalities (such as the rail braking in Rastatt in 2017 showed us). This should be enrolled on the corridor level to guarantee the system works well. Also current measures as environmental zones and traffic regulations might be effective.

'Rotterdam is the biggest port for Milano' as was mentioned during a workshop in this city in the north of Italy last year. This does not automatically remain as there is insufficient innovation in the corridor. A wider collaboration (governance) on all different scales is essential. The common message from the participants of this workshop is that more collaboration between the different stakeholders is key for further development of city and port and that a common and clear message should be sent to the EC.

Different participants recognized elements from the MIRT-studies Rotterdam-The Hague and Renewing MIRT, but also in these studies spatial planning and mobility are different and separated and is it difficult to look for understanding each other and combine the different ideas and projects. Strengthening regional collaboration / governance forms a recommendation and Europe can offer a valuable lever. In the current settings it is difficult for parties to look further than the own boundaries. An increase in waterborne transport is, for example, due to this very difficult as parties say 'it is not mine' and it is no part of public transport. In this case even the future development of the Waal-Eemhaven remains a hot potato.

Most of the time there is a financial aspect behind these mechanisms, so the participants see added value in European funding to put multi-stakeholder governance forward.



Another message to Europe is to see an urban node in its spatial and functional area on the corridor in stand of looking at the urban nodes as independent units. Connect also functional alliances, also on the corridor.

Last message is to pay attention to passenger transport by developing the corridors in a sustainable way. The better the long-distance connections for passenger transport are (f.e. international train connections) and the better regional mobility systems function, the better the freight transport on corridor level and in the hubs will be.

5.1 Building blocks for CEF

Currently the TEN-T fund has an amount of EUR 30 billion, with one-third for cohesion countries. Is it now being invested in those locations the most economical benefits can be achieved?

For the EC it is important to realize that cities and regions will think different, such as the abovementioned packages of measures showed, and that such a methodology at the EC is not self-evident now. For example, given the importance of social inclusion. Logistics in particular is for social inclusion a difficult task as digitization might be a threat.

Besides the corridor as a whole of hubs and intermediate areas must be considered. Particular in the transition areas between member states (border regions) there is much to be gained.



6 Conclusion: To a coherent Rotterdam package

Based on the workshop we can conclude the following:

In the light of recent insights into the wishes of the European Commission it is important to focus on a package of smaller measures, resulting in a larger coherent package. Be as distinctive, innovative and sustainable as possible as we can consider our integrated thinking as a force. The EU could be a lever for stimulating collaboration, learning 'tricks' to improve the collaboration between the now separated worlds of freight, logistics, urban planning, traffic and infrastructure.

7.1 Building blocks for a package on infrastructure and quality

- Strengthening accessibility of the Waal-Eemhaven by bike and public transport to create capacity on the higher network (relationship with TEN-T);
- Look at the coherence between passenger flows and freight flows: the big size of passenger flows creates challenges for freight flows. Splitting off the freight flows is not the solution, but steering and regulating passenger flows might be. In this case capacity for freight flows will be created;
- Coherence with social and labour components;
- Third riverbank connection crossing the Nieuwe Maas: the Swedish city Gothenburg might be a reference, in which with CEF-funding a cable car will be realized;
- Develop rest areas and facilities to function the buffer around the city;
- Locations for bundling, creating space for shifting and loading parcels/containers;
- On the background of building 4,000-5,000 dwellings annually in Rotterdam, public parties as well as market parties should interweave these growth with building logistics, logistics of freights and passenger transport;
- Distinctive character of the Eurodelta – also in relation with Flanders and North Rhine Westphalia – relative to most of the other European urban nodes and hubs: the capacity and dynamic is totally different (region, corridor) compared with most of the urban nodes since in those nodes the hinterlands are more evident. In the Eurodelta the mass exists and there are a lot of possibilities to serve as living lab/test area;
- See hubs as part of the whole corridor and create coherent packages of measures with other partners on the corridor.

7.2 Overall observations

- Relevance: logistics plays an important role in many solid social-economical trends such as e-commerce, circular economy and liveability;
- Separation: there is a strong separation between (infra)planning for passengers and freight. Passenger transport is government-driven, while freight is market-driven. A recommendation might be to innovate spatially with new concepts to combine these areas;
- Closed: the world of logistics is internal focussed on logistical efficiency and technics. Development of networks and spatial developments are most of the time excluded;



- Challenge: there are two parallel moves: (1) isolation, autonomous logistic functions which are isolated from other spatial functions and (2) integration, in what logistics is more and more integrated with the labour market and urban functions;
- There are a lot of initiatives and tracks in the Netherlands that focus on an integrated, spatial developed and multimodal approach. Most of the time logistics is no part of these initiatives;
- Keeping the policy objectives in mind, such as competitiveness, liveability and housing, it seems valuable to incorporate actively an integrated planning approach;
- Practically on all governance layers – EU corridor to local/urban level – synergy is possible by an approach that is focussed on the modal shift on a corridor from local traffic to sustainable modalities and a strategy on a function mix for logistics, labour market and mobility;
- Pilots: carrying out pilots/living labs gives possibilities to experiment with future solution directions.



Attachments

1. Fingerprint urban node Rotterdam (info graphic)
2. Good practices with validation of scores
3. Map corridor level
4. Map regional/urban node level
5. List of participants Rotterdam workshop
6. Programme of the Rotterdam workshop



1. Fingerprint urban node Rotterdam



Rotterdam, The Netherlands

Fingerprints Vital Nodes - Facts and Figures

A) General facts and figures | B) Corridor | C) Regional (NUTS3) and functional area | D) City of Rotterdam | E) Capacity | F) Challenges

| | City of Rotterdam baseyear 2016 | trend | region (NUTS 3 = Corop 339 Groot Rijnmond) baseyear 2016 | trend |
|------------------------------|------------------------------------|-------|---|-------|
| city area (km ²) | 320 | = | 1.631,85 | = |
| population City: | 629.148 | ↑ | 1.412.322 | ↑ |
| population density City: | 1.966 | ↑ | 865,47 | ↑ |
| GDP (bn €) | nb | ↑ | 59 | ↑ |
| GDP per capita (bn €) | nb | ↑ | 41.100 | ↑ |

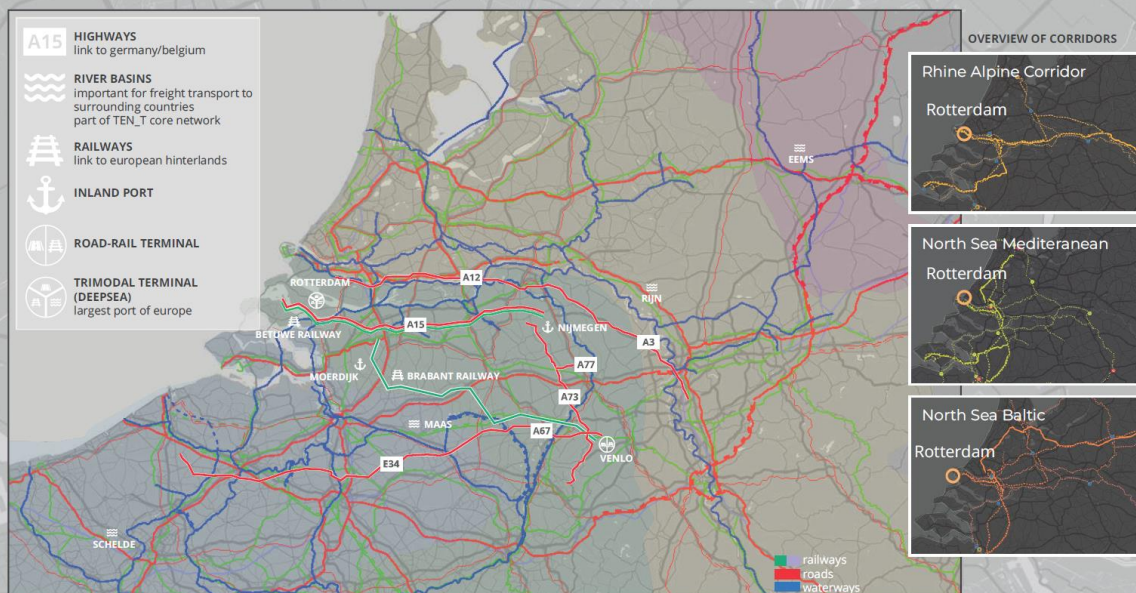
increase ↑ neutral = decline ↓



Rotterdam, The Netherlands

Fingerprints Vital Nodes - Facts and Figures

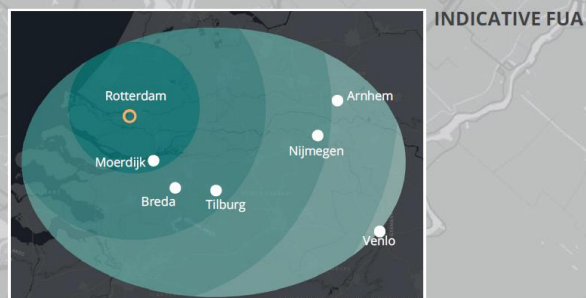
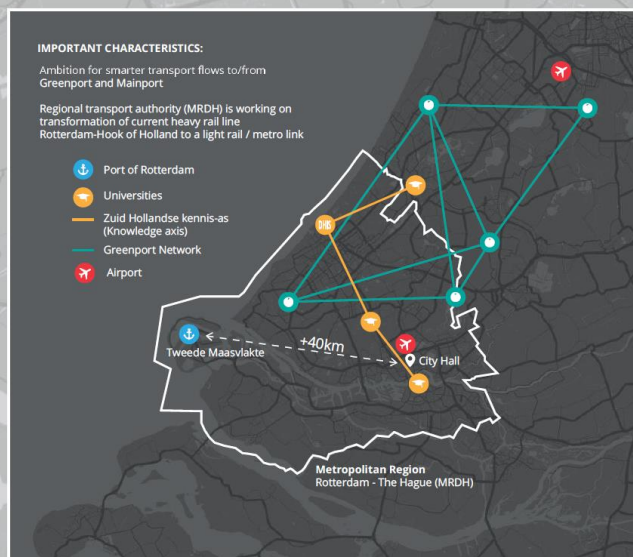
A) General facts and figures | B) Corridor | C) Regional (NUTS3) and functional area | D) City of Rotterdam | E) Capacity | F) Challenges



Rotterdam, The Netherlands

Fingerprints Vital Nodes - Facts and Figures

A) General facts and figures | B) Corridor | C) Regional (NUTS3) and functional area | D) City of Rotterdam | E) Capacity | F) Challenges



FREIGHT INFRASTRUCTURE baseyear 2016

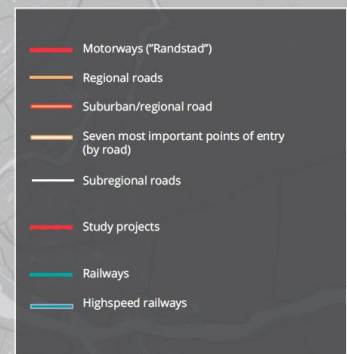
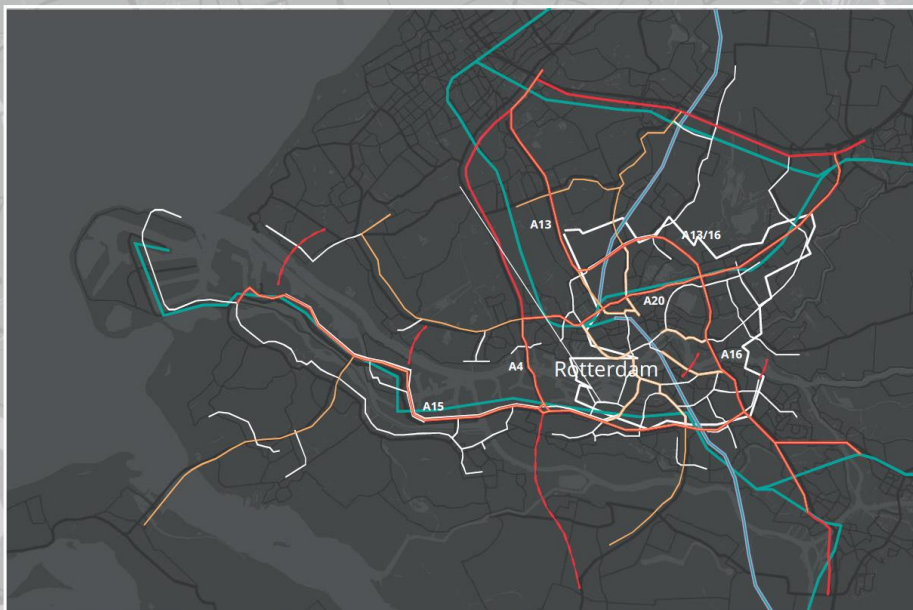
| | Number | ha | mton | TEU |
|-----------------------------|--------|-------|-------|-----------------|
| Road-Rail terminal | 1 = | 24 ^ | 4 ^ | 350.000 (cap) ^ |
| Air terminal | 0 = | 0 = | 0 = | not applicable |
| Trimodal terminal (deepsea) | 5 = | 750 ^ | 127 ^ | 12.385.168 ^ |

increase ^ neutral = decline v

📍 Rotterdam, The Netherlands

Fingerprints Vital Nodes - Facts and Figures

A) General facts and figures | B) Corridor | C) Regional (NUTS3) and functional area | D) City of Rotterdam | E) Capacity | F) Challenges



Rotterdam, The Netherlands

Fingerprints Vital Nodes - Facts and Figures

A) General facts and figures | B) Corridor | C) Regional (NUTS3) and functional area | D) City of Rotterdam | E) Capacity | F) Challenges



CAPACITY RAIL

Expansion of the German part of the Betuweroute (ABS Emmerich-Oberhausen) will serve as stimulus for growth in rail freight along the Rhine-Alpine Corridor.



CAPACITY WATER

No major capacity issues observed.



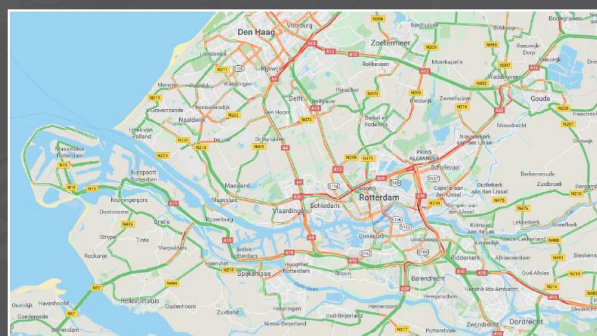
CAPACITY AVIATION

Rotterdam - The Hague airport only serves passenger traffic.



CAPACITY ROAD

Average intensity road on evening peak:



CHALLENGES

- Transition of the Port Industrial Complex
- Sustainable last mile logistics
- Mobility challenges because of regional growth
- Port areas on the urban frontier
- Peak usage of road capacity
- Strengthen the socio-economic relation between the port and the city

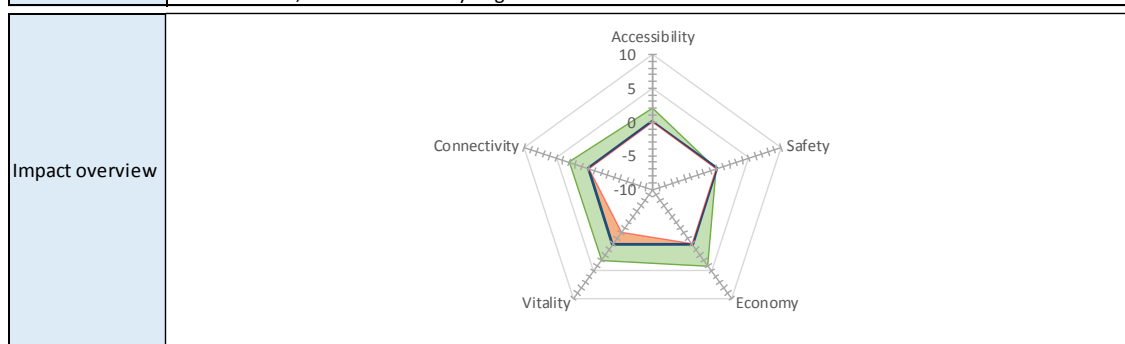
2. Good practices with validation of scores

| | | |
|------------------------|---|---------------|
| Solutions name | Theemsweg Trace for railfreight | |
| Type of solution | Optimizing infrastructure | |
| Node | Rotterdam | |
| Link or contact | https://www.portofrotterdam.com/en/our-port/port-development/from-calandbrug-to-theemswegtrace | |
| Investment costs | n.a. | |
| Description | The Action is part of a Global Project aiming to remove the bottleneck in the rail freight access of main port Rotterdam connecting three core network corridors (Rhine Alpine, North Sea-Mediterranean and North Sea-Baltic), by upgrading the infrastructural node at Caland Bridge and rerouting rail freight transport via an alternative route: The Theemsweg railway section. The Action's main objective is to carry out the civil infrastructure works to create the alternative route to avoid the Caland Bridge, consisting of the double track Theemsweg railway section of an approximate length of 4.5 km. | |
| Impact overview | | |
| Impact criteria | Questions | Answer |
| A Accessibility | The solution impacts the chosen modality of the flows | 1 |
| | The solution impacts the route of the flows | 1 |
| | The solution impacts the volume of the flows | 1 |
| | The solution impacts the timing of the flows | 1 |
| | The solution impacts the available infrastructure capacity | 1 |
| B Safety | The solution impacts the number of pedestrian casualties | 0 |
| | The solution impacts the number of cyclist casualties | 0 |
| | The solution impacts the number of motorised vehicle casualties | 0 |
| | The solution impacts the external safety of dangerous goods transport | 0 |
| | The solution impacts the external safety of warehousing operations | 0 |
| C Economy | The solution impacts the attractiveness of the local scale (city) of the Node for investments (value capture) | 0 |
| | The solution impacts the attractiveness of the FUA from logistics perspective of the Node for investment | 0 |
| | The solution impacts the price of living in urban areas (socio economic) | 0 |
| | The solution impacts synergies with other sectors | 0 |
| | The solution impacts the GDP | 0 |
| D Vitality | The solution impacts the air quality | 1 |
| | The solution impacts the noise levels | -1 |
| | The solution impacts health of citizens | 0 |
| | The solution impacts the ease of moving in the city for citizens | 1 |
| | The solution impacts the quality of living | 0 |
| E Connectivity | The solution impacts the connection between the city and the functional urban area from a mobility perspective | 0 |
| | The solution impacts the connection between the city and the functional area from a logistics perspective | 2 |
| | The solution impacts the connection with other Nodes on the Corridor | 2 |
| | The solution impacts the connection with other TEN-T Corridors | 2 |
| | The solution impacts the connection with the comprehensive network | 2 |

2 strong positive impact 1 Positive impact 0 No substantial impact -1 Negative impact -2 strong negative impact



| | |
|------------------|--|
| Solutions name | Building of the Erasmus Bridge |
| Type of solution | Adding infrastructure |
| Node | Rotterdam |
| Link or contact | igor.heller@rws.nl |
| Investment costs | 165 Mil. EUR |
| Description | The Erasmus bridge was built as a new connection between the Rotterdam city centre and the Kop van Zuid area south of the river. The bridge was part of the large scale restructuring of older harbour areas no longer used as a harbour into a high density urban area. The bridge can be used by cars, trams, cyclists and pedestrians. The bridge does not have a very high flow of traffic (the underground Metro opened in 1968 on the same place is used by about half of the people crossing the river), but in a very short time it has become the main landmark of the city of Rotterdam, known all over the world. It changed the image of Rotterdam from an old industrial (and dirty) harbour into a modern attractive Western city. How much investments in the city this image generated cannot be said, but it will be a very large amount. |



| Impact criteria | Questions | Answer |
|-----------------|--|--------|
| A Accessibility | The solution impacts the chosen modality of the flows | 0 |
| | The solution impacts the route of the flows | 1 |
| | The solution impacts the volume of the flows | 0 |
| | The solution impacts the timing of the flows | 0 |
| | The solution impacts the available infrastructure capacity | 1 |
| B Safety | The solution impacts the number of pedestrian casualties | 0 |
| | The solution impacts the number of cyclist casualties | 0 |
| | The solution impacts the number of motorised vehicle casualties | 0 |
| | The solution impacts the external safety of dangerous goods transport | 0 |
| | The solution impacts the external safety of warehousing operations | 0 |
| C Economy | The solution impacts the attractiveness of the local scale (city) of the Node for investments (value capture) | 1 |
| | The solution impacts the attractiveness of the FUA from logistics perspective of the Node for investment | 1 |
| | The solution impacts the price of living in urban areas (socio economic) | 1 |
| | The solution impacts synergies with other sectors | 1 |
| | The solution impacts the GDP | 0 |
| D Vitality | The solution impacts the air quality | -1 |
| | The solution impacts the noise levels | -1 |
| | The solution impacts health of citizens | 0 |
| | The solution impacts the ease of moving in the city for citizens | 2 |
| | The solution impacts the quality of living | 1 |
| E Connectivity | The solution impacts the connection between the city and the functional urban area from a mobility perspective | 1 |
| | The solution impacts the connection between the city and the functional area from a logistics perspective | 1 |
| | The solution impacts the connection with other Nodes on the Corridor | 0 |
| | The solution impacts the connection with other TEN-T Corridors | 0 |
| | The solution impacts the connection with the comprehensive network | 1 |

2 strong positive impact 1 Positive impact 0 No substantial impact -1 Negative impact -2 strong negative impact



| Solutions name | Waal Eemhaven | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|-----------|--------|---|---|---|---|---|---|--|---|--|---|--|---|---|---|---|---|---|---|--|---|---|---|--|---|---|---|---|---|------------------------------|---|--------------------------------------|----|---------------------------------------|----|---|---|--|---|--|---|--|---|---|---|--|---|--|---|--|---|
| Type of solution | Spatial planning | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Node example | Rotterdam | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Link or contact | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Investment costs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Description | <p>The municipality of Rotterdam together with the Port of Rotterdam (port authority) wish to develop the Waal-Eemhaven in Rotterdam from a deep sea terminal to a short-sea container terminal with a higher amount of freight transport via road. This development has impact on the freight flows to and from the Rotterdam port area, but also could have mayor impact on the connection with Rotterdam South. Traditionally Rotterdam South has many low educated inhabitants in the neighbourhoods Maashaven and Tarwewijk (directly surrounding the Waal-Eemhaven area). Further development of the port can open up new job opportunities for these inhabitants and a new future via this port area, that is located on short distance from the city centre. The development of the Waal-Eemhaven area to a housing area means that lots of people that are currently working in Waalhaven East and South would need to travel much further to get to their work in the future, which would increase traffic flows. Mixing the functions of the Waal-Eemhaven area is therefore seen as an option in order to stimulate using bike and public transport to travel over shorter distances to work. On the other hand, the development of housing would mean turning down the environmental contour that is labelled to the area. Preserving this environmental contour for possible future developments and need for industrial areas is preserved. For example petrochemical industry and the conservation of this in order to have the port area remain interesting and relevant for the future and of added value for the Netherlands. As there are not so much big industrial areas left with a big environmental contour. The development of the Waal-Eemhaven, although it is still in process, could be seen as an example in which investments in the city take into account liveability, accessibility and safety issues as well as infrastructure, logistic and spatial planning aspects.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Impact overview | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Impact criteria | <table> <thead> <tr> <th>Questions</th><th>Answer</th></tr> </thead> <tbody> <tr> <td>The solution impacts the chosen modality of the flows</td><td>1</td></tr> <tr> <td>The solution impacts the route of the flows</td><td>2</td></tr> <tr> <td>A Accessibility The solution impacts the volume of the flows</td><td>1</td></tr> <tr> <td>The solution impacts the timing of the flows</td><td>1</td></tr> <tr> <td>The solution impacts the available infrastructure capacity</td><td>1</td></tr> <tr> <td>The solution impacts the number of pedestrian casualties</td><td>0</td></tr> <tr> <td>The solution impacts the number of cyclist casualties</td><td>0</td></tr> <tr> <td>B Safety The solution impacts the number of motorised vehicle casualties</td><td>0</td></tr> <tr> <td>The solution impacts the external safety of dangerous goods transport</td><td>1</td></tr> <tr> <td>The solution impacts the external safety of warehousing operations</td><td>0</td></tr> <tr> <td>The solution impacts the attractiveness of the local scale (city) of the Node for investments (value capture)</td><td>2</td></tr> <tr> <td>The solution impacts the attractiveness of the FUA from logistics perspective of the Node for investment</td><td>2</td></tr> <tr> <td>C Economy The solution impacts the price of living in urban areas (socio economic)</td><td>0</td></tr> <tr> <td>The solution impacts synergies with other sectors</td><td>2</td></tr> <tr> <td>The solution impacts the GDP</td><td>2</td></tr> <tr> <td>The solution impacts the air quality</td><td>-1</td></tr> <tr> <td>The solution impacts the noise levels</td><td>-1</td></tr> <tr> <td>D Vitality The solution impacts health of citizens</td><td>0</td></tr> <tr> <td>The solution impacts the ease of moving in the city for citizens</td><td>0</td></tr> <tr> <td>The solution impacts the quality of living</td><td>2</td></tr> <tr> <td>The solution impacts the connection between the city and the functional urban area from a mobility perspective</td><td>1</td></tr> <tr> <td>The solution impacts the connection between the city and the functional area from a logistics perspective</td><td>1</td></tr> <tr> <td>E Connectivity The solution impacts the connection with other Nodes on the Corridor</td><td>0</td></tr> <tr> <td>The solution impacts the connection with other TEN-T Corridors</td><td>0</td></tr> <tr> <td>The solution impacts the connection with the comprehensive network</td><td>0</td></tr> </tbody> </table> | Questions | Answer | The solution impacts the chosen modality of the flows | 1 | The solution impacts the route of the flows | 2 | A Accessibility The solution impacts the volume of the flows | 1 | The solution impacts the timing of the flows | 1 | The solution impacts the available infrastructure capacity | 1 | The solution impacts the number of pedestrian casualties | 0 | The solution impacts the number of cyclist casualties | 0 | B Safety The solution impacts the number of motorised vehicle casualties | 0 | The solution impacts the external safety of dangerous goods transport | 1 | The solution impacts the external safety of warehousing operations | 0 | The solution impacts the attractiveness of the local scale (city) of the Node for investments (value capture) | 2 | The solution impacts the attractiveness of the FUA from logistics perspective of the Node for investment | 2 | C Economy The solution impacts the price of living in urban areas (socio economic) | 0 | The solution impacts synergies with other sectors | 2 | The solution impacts the GDP | 2 | The solution impacts the air quality | -1 | The solution impacts the noise levels | -1 | D Vitality The solution impacts health of citizens | 0 | The solution impacts the ease of moving in the city for citizens | 0 | The solution impacts the quality of living | 2 | The solution impacts the connection between the city and the functional urban area from a mobility perspective | 1 | The solution impacts the connection between the city and the functional area from a logistics perspective | 1 | E Connectivity The solution impacts the connection with other Nodes on the Corridor | 0 | The solution impacts the connection with other TEN-T Corridors | 0 | The solution impacts the connection with the comprehensive network | 0 |
| Questions | Answer | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the chosen modality of the flows | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the route of the flows | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A Accessibility The solution impacts the volume of the flows | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the timing of the flows | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the available infrastructure capacity | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the number of pedestrian casualties | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the number of cyclist casualties | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B Safety The solution impacts the number of motorised vehicle casualties | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the external safety of dangerous goods transport | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the external safety of warehousing operations | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the attractiveness of the local scale (city) of the Node for investments (value capture) | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the attractiveness of the FUA from logistics perspective of the Node for investment | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C Economy The solution impacts the price of living in urban areas (socio economic) | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts synergies with other sectors | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the GDP | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the air quality | -1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the noise levels | -1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D Vitality The solution impacts health of citizens | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the ease of moving in the city for citizens | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the quality of living | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the connection between the city and the functional urban area from a mobility perspective | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the connection between the city and the functional area from a logistics perspective | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E Connectivity The solution impacts the connection with other Nodes on the Corridor | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the connection with other TEN-T Corridors | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The solution impacts the connection with the comprehensive network | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

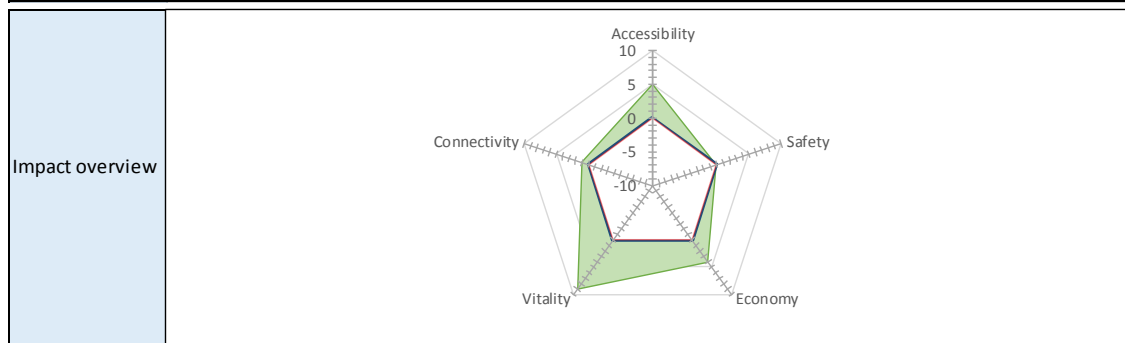
2 strong positive impact 1 Positive impact 0 No substantial impact -1 Negative impact -2 strong negative impact



| | |
|------------------|---|
| Solutions name | Living lab for city logistics |
| Type of solution | Governance |
| Node | Rotterdam |
| Link or contact | https://greendealzes.connekt.nl/en/living-labs/living-lab-rotterdam/ |

| | |
|------------------|--|
| Investment costs | |
|------------------|--|

| | |
|-------------|--|
| Description | <p>Since 2014 Rotterdam uses a 'Living Lab' approach in city logistics in which the city works together with partners on technical, logistic, behavioural, law, policy and communication aspects. In the previous years the city has acknowledged Ecostars as a system for transport companies, introduced a environmental protection zone in the city centre, and on national level, made appointments between stakeholders about a green deal zero emission city logistics. In order to achieve the goals of the Living Lab approach, knowledge exchange and communication are key elements. The focus within the approach is on transporters and shippers, but more and more attention is given to the buyers as well, due to their impact on the zero emission goals. Within logistics, companies are supported through the Beter Benutten programme, decoupling and bundling points and smart procurement. The pilots that are being carried out provide opportunities to experiment with future solutions, which is necessary because achieving the goals of the zero emission policy involves a lot of aspects which transport companies do not want to take care of themselves.</p> <p>Together with partners, it is nevertheless possible to achieve certain goals by asking the question what one can do to strengthen the total. For example the port is not only a gateway to Europe, but also creates value. One concrete example of an outcome is the company of Breytner as the first complete electric transport company for urban delivery of goods and services.</p> |
|-------------|--|

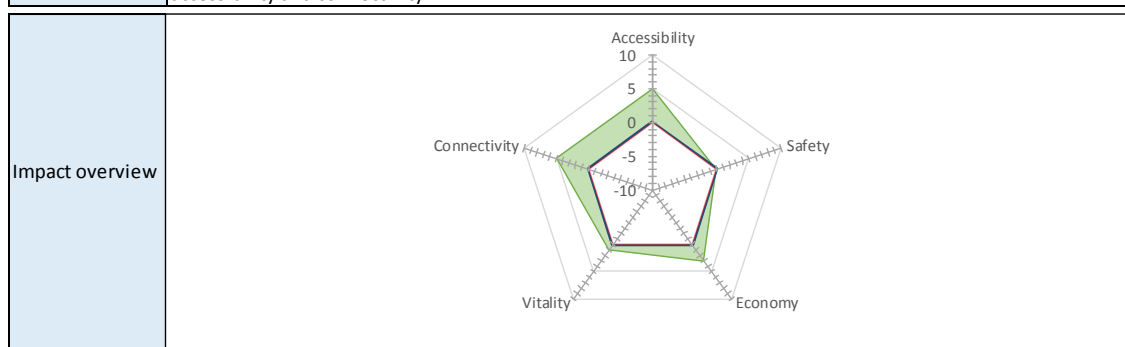


| Impact criteria | Questions | Answer |
|-----------------|---|--------|
| A Accessibility | The solution impacts the chosen modality of the flows | 1 |
| | The solution impacts the route of the flows | 1 |
| | The solution impacts the volume of the flows | 1 |
| | The solution impacts the timing of the flows | 1 |
| | The solution impacts the available infrastructure capacity | 1 |
| B Safety | The solution impacts the number of pedestrian casualties | 0 |
| | The solution impacts the number of cyclist casualties | 0 |
| | The solution impacts the number of motorised vehicle casualties | 0 |
| | The solution impacts the external safety of dangerous goods transport | 0 |
| | The solution impacts the external safety of warehousing operations | 0 |
| C Economy | The solution impacts the attractiveness of the local scale (city) of the Node for investments (value capture) | 1 |
| | The solution impacts the attractiveness of the FUA from logistics perspective of the Node for investment | 1 |
| | The solution impacts the price of living in urban areas (socio economic) | 0 |
| | The solution impacts synergies with other sectors | 1 |
| D Vitality | The solution impacts the GDP | 1 |
| | The solution impacts the air quality | 2 |
| | The solution impacts the noise levels | 2 |
| | The solution impacts health of citizens | 1 |
| | The solution impacts the ease of moving in the city for citizens | 2 |
| E Connectivity | The solution impacts the quality of living | 2 |
| | The solution impacts the connection between the city and the functional urban area from a mobility p | 1 |
| | The solution impacts the connection between the city and the functional area from a logistics perspec | 0 |
| | The solution impacts the connection with other Nodes on the Corridor | 0 |
| | The solution impacts the connection with other TEN-T Corridors | 0 |
| | The solution impacts the connection with the comprehensive network | 0 |

2 strong positive impact 1 Positive impact 0 No substantial impact -1 Negative impact -2 strong negative impact



| | |
|------------------|--|
| Solutions name | Utilisation Road Network Rotterdam (not existing title for a group of smaller and larger programs between 1995 and 2025) |
| Type of solution | Governance |
| Node | Rotterdam |
| Link or contact | igor.heller@rws.nl |
| Investment costs | |
| Description | The Bereik! organisation is a cooperation of national, regional and local infrastructure authorities whose mainwork is to develop a network wide traffic management strategy that keeps the Metropolitan Area of Rotterdam / The Hague moving. The organisation is responsible for traffic and transport management. The participating authorities also invest in several projects for improving accessibility and connectivity. |

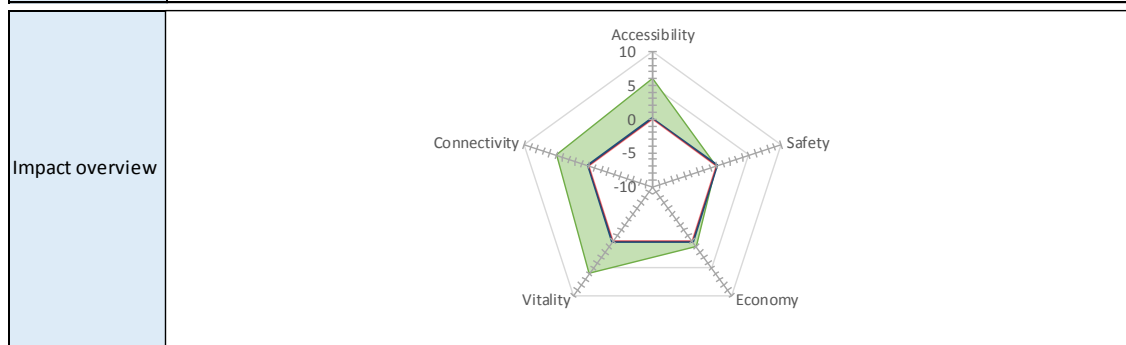


| Impact criteria | Questions | Answer |
|-----------------|---|--------|
| A Accessibility | The solution impacts the chosen modality of the flows | 1 |
| | The solution impacts the route of the flows | 2 |
| | The solution impacts the volume of the flows | 0 |
| | The solution impacts the timing of the flows | 1 |
| | The solution impacts the available infrastructure capacity | 1 |
| B Safety | The solution impacts the number of pedestrian casualties | 0 |
| | The solution impacts the number of cyclist casualties | 0 |
| | The solution impacts the number of motorised vehicle casualties | 0 |
| | The solution impacts the external safety of dangerous goods transport | 0 |
| | The solution impacts the external safety of warehousing operations | 0 |
| C Economy | The solution impacts the attractiveness of the local scale (city) of the Node for investments (value captur | 1 |
| | The solution impacts the attractiveness of the FUA from logistics perspective of the Node for investmen | 1 |
| | The solution impacts the price of living in urban areas (socio economic) | 0 |
| | The solution impacts synergies with other sectors | 0 |
| | The solution impacts the GDP | 1 |
| D Vitality | The solution impacts the air quality | 0 |
| | The solution impacts the noise levels | 0 |
| | The solution impacts health of citizens | 0 |
| | The solution impacts the ease of moving in the city for citizens | 0 |
| | The solution impacts the quality of living | 1 |
| E Connectivity | The solution impacts the connection between the city and the functional urban area from a mobility p | 1 |
| | The solution impacts the connection between the city and the functional area from a logistics perspec | 1 |
| | The solution impacts the connection with other Nodes on the Corridor | 1 |
| | The solution impacts the connection with other TEN-T Corridors | 1 |
| | The solution impacts the connection with the comprehensive network | 1 |

2 strong positive impact 1 Positive impact 0 No substantial impact -1 Negative impact -2 strong negative impact



| | |
|------------------|--|
| Solutions name | Focus on type of urban logistics in relation to emissions |
| Type of solution | Business casing base |
| Node | Rotterdam |
| Link or contact | Mr. Richard van der Wulp - municipality of Rotterdam |
| Investment costs | |
| Description | The municipality of Rotterdam argues initiatives on logistics in the Maas-city are part of a wider package to form local climate policy and to improve air quality. The city is working on city logistics for ten years, since environmental zones was set up. Based on CO2 emissions parcel deliveries only account for 4% and if the share of parcel deliveries will double, it will still be the smallest category. Based on CO2 emissions building logistics account for 30% Therefore, the main focus is on building logistics. |

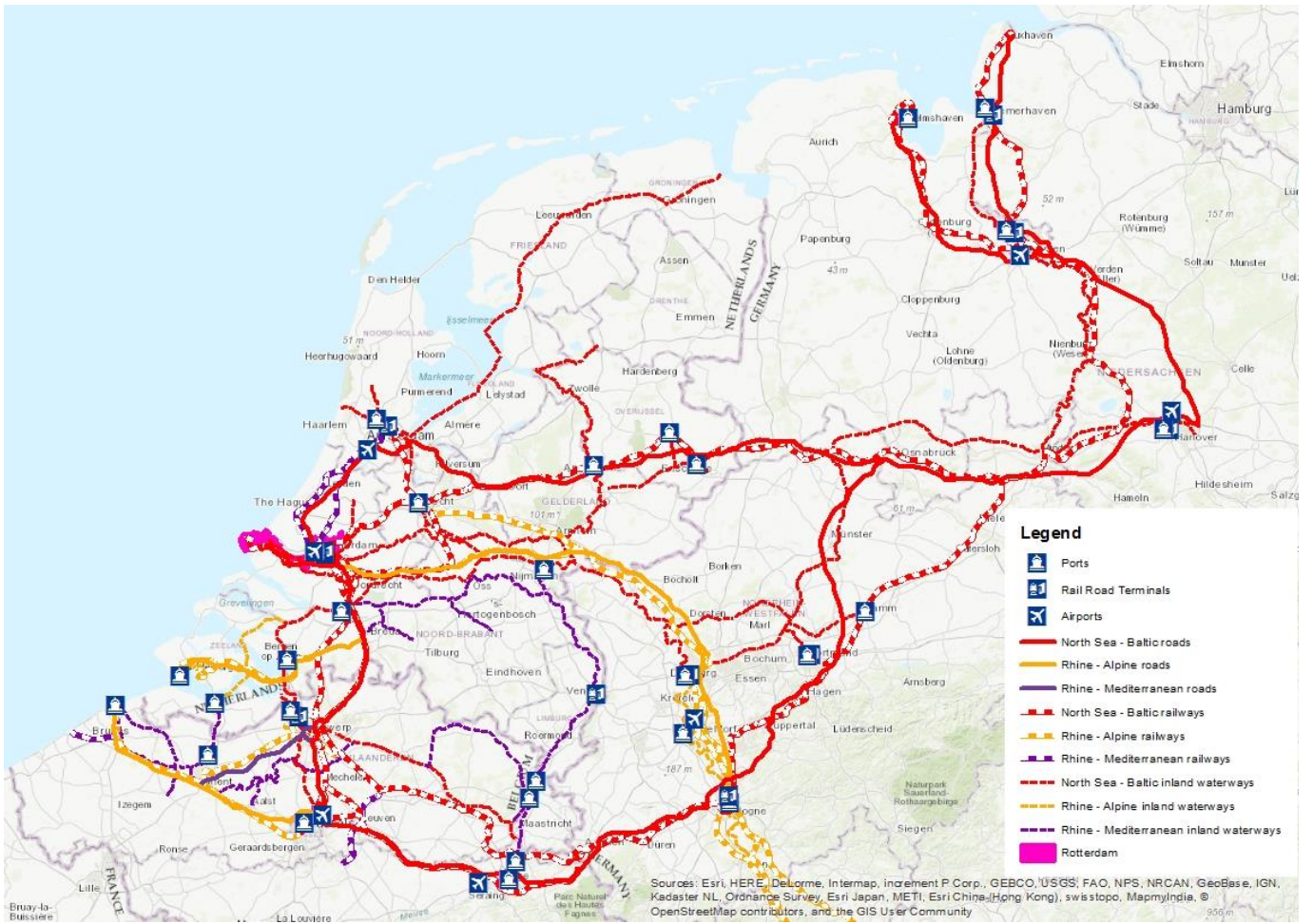


| Impact criteria | Questions | Answer |
|-----------------|---|--------|
| A Accessibility | The solution impacts the chosen modality of the flows | 1 |
| | The solution impacts the route of the flows | 1 |
| | The solution impacts the volume of the flows | 1 |
| | The solution impacts the timing of the flows | 2 |
| | The solution impacts the available infrastructure capacity | 1 |
| B Safety | The solution impacts the number of pedestrian casualties | 0 |
| | The solution impacts the number of cyclist casualties | 0 |
| | The solution impacts the number of motorised vehicle casualties | 0 |
| | The solution impacts the external safety of dangerous goods transport | 0 |
| | The solution impacts the external safety of warehousing operations | 0 |
| C Economy | The solution impacts the attractiveness of the local scale (city) of the Node for investments (value captur | 0 |
| | The solution impacts the attractiveness of the FUA from logistics perspective of the Node for investmen | 0 |
| | The solution impacts the price of living in urban areas (socio economic) | 0 |
| | The solution impacts synergies with other sectors | 1 |
| | The solution impacts the GDP | 0 |
| D Vitality | The solution impacts the air quality | 2 |
| | The solution impacts the visual quality of the environment | 1 |
| | The solution impacts the level of noise pollution | 1 |
| | The solution impacts the ease of moving in the city for citizens | 1 |
| | The solution impacts the quality of living | 1 |
| E Connectivity | The solution impacts the connection between the city and the functional urban area from a mobility p | 1 |
| | The solution impacts the connection between the city and the functional area from a logistics perspec | 2 |
| | The solution impacts the connection with other Nodes on the Corridor | 1 |
| | The solution impacts the connection with other TEN-T Corridors | 0 |
| | The solution impacts the connection with the comprehensive network | 1 |

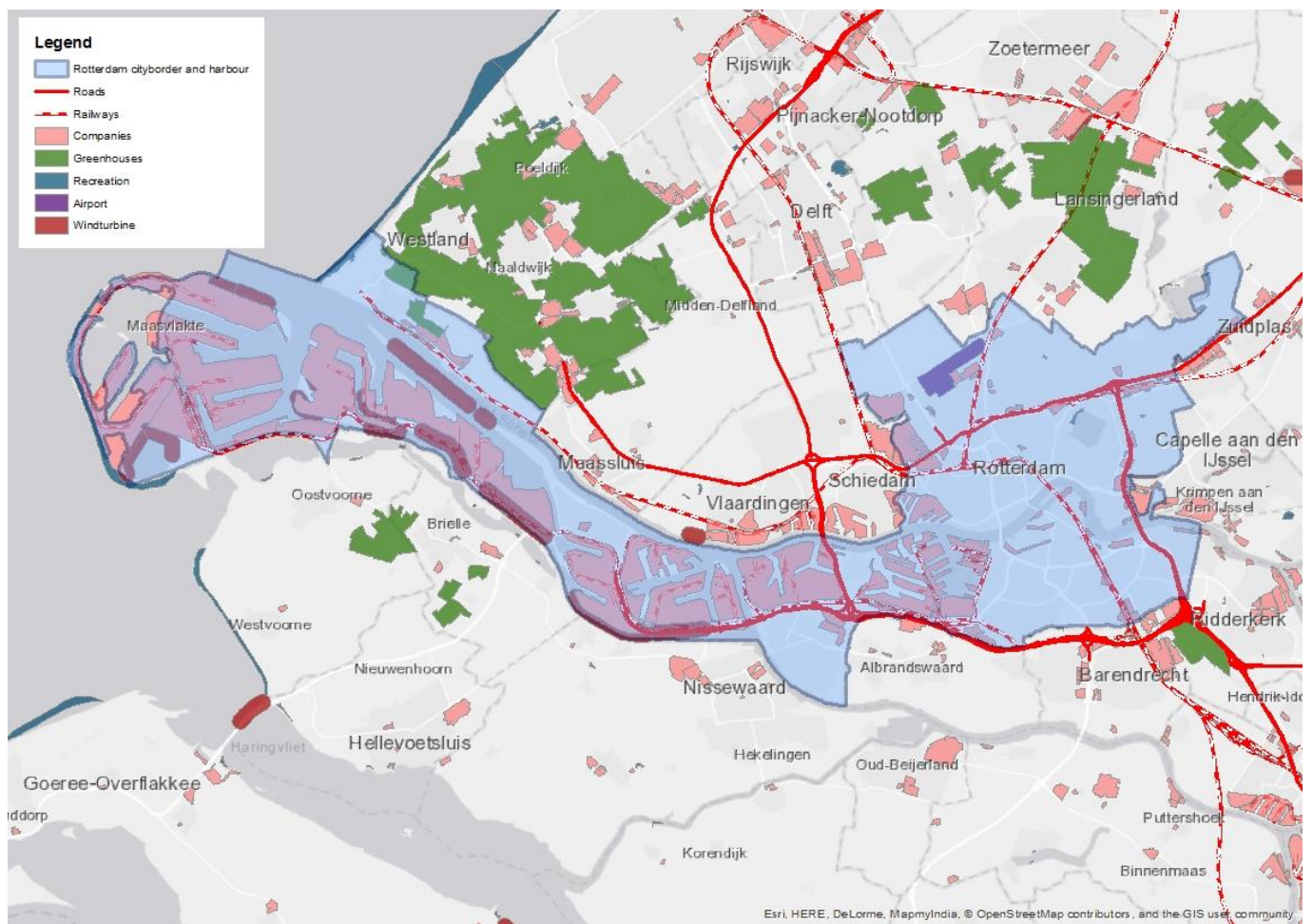
2 strong positive impact 1 Positive impact 0 No substantial impact -1 Negative impact -2 strong negative impact



3. Map corridor level



4. Map regional / urban node level



5. List of participants Rotterdam workshop

| Name | Organisation |
|--|--|
| Dolf Booij | Gemeente Rotterdam – planologie |
| Donald Broekhuizen | Provincie Zuid-Holland |
| Frank Bus | Havenbedrijf Rotterdam |
| Aldo Dorsman | Gemeente Rotterdam - economie |
| Michel Duinmayer | Ministerie van Infrastructuur en Waterstaat |
| Martin Guit | Gemeente Rotterdam – verkeer en vervoer |
| Tertius Hanekamp | TEMAH (moderator) |
| Marco den Heijer | Gemeente Rotterdam - stadsontwikkeling |
| Igor Heller | Rijkswaterstaat |
| Arjan Hoefnagels | Havenbedrijf Rotterdam |
| Hans ten Hoeve | Ministerie van Binnenlandse zaken en Koninkrijksrelaties |
| Raymond van Keerberghen | Gemeente Rotterdam – verkeer en vervoer |
| Marlies Langbroek | Havenbedrijf Rotterdam |
| Ingrid van Leeuwen | Provincie Zuid-Holland |
| Coen Mekers | Provincie Gelderland (EGTC Rhine Alphine corridor) |
| Jasper Nagtegaal | Deltalinqs |
| Gert Jan Polhuijs | Gemeente Rotterdam – verkeer en vervoer |
| Einar Schuch | Trafikverket |
| Jan Top | Rijkswaterstaat |
| Kirsten Verbeek | ProRail |
| Joop Verdoorn | Havenbedrijf Rotterdam |
| Richard van der Wulp | Gemeente Rotterdam – verkeer en vervoer |
| <i>Vital Nodes Organisation</i> | |
| Onno de Jong | Ecorys |
| Kevin van der Linden | Rijkswaterstaat |
| Raymond Linssen | Rijkswaterstaat |
| Ricardo Poppeliers | Ecorys |



6. Programme of the Rotterdam workshop

| | |
|---------------|--|
| 12.00 – 12.30 | Inloop en lunch |
| 12.30 – 12.45 | Welkom door Vital Nodes - Doel van het Vital Nodes project, doel van de workshop |
| 12.45 – 14.30 | Start, welkom en introductieronde - Programma workshop en ontwikkelingen |
| | Presentatie “Fingerprint Rotterdam” - Facts and Figures - Challenges / barrières - Voorbeelden en good practices |
| | Werken aan oplossingen voor Rotterdam, drivers en barrières en impact - Perspectiefschets vanuit corridor, regionaal en lokaal perspectief (pitches) - Interactieve discussie |
| 14.30 – 15.00 | Pauze |
| 15.00 – 17.00 | Vervolg op werken aan oplossingen voor Rotterdam, drivers en barrières en impact - Inzoomen op hotspot(s) - Interactieve discussie middels kaarten (“ruimtelijk ontwerp”) |
| | Wat is de toegevoegde waarde voor en van Europa, wat hebben we nodig en wat zijn aanbevelingen? - Interactieve discussie over “Integratie van stedelijk knooppunt Rotterdam in het TEN-T netwerk” |
| | Wrap up en follow-up |
| 17.00 – 18.00 | Borrel |

