ANNEX 1



## **Connecting Europe Facility (CEF)**

## Description of the action (DoA) Part B

Version 1.0

## **DESCRIPTION OF THE ACTION (PART B)**

The Rhombus UPSIDE project forms part of the Global Rhombus Project, so-called because of the Rhombus-shaped IWW transport system connecting Rotterdam-Nijmegen-Venlo-Liege-Antwerp. The system consists of the important inland waterways made up of the rivers Meuse, Wall and Rhine, Albert and Juliana Canals as well as several smaller canals in the area between waterways, with several connections to other transport modes. The Rhombus system spans important parts of the extensive IWW network which plays an important role in connecting the European hinterland with the maritime ports, mainly Rotterdam and Antwerp. Among the main objectives of the Global Rhombus project is increased modal shift from road to water by improving IWWs, increasing capacity at inland ports and improving multimodal connections in these ports.

The overall objective of the Rhombus UPSIDE Project is to complete preparatory studies which will lead to construction works in five comprehensive TEN-T inland ports located on either the Meuse River or canals that directly connect to the Meuse River, which is an important waterway in both the Dutch Freight Corridors and the NSMED TEN-T Core Corridor. These five ports are the Port of Stein (WP2), Port of Roermond (WP3), Port of Maastricht (WP4), Port of Venlo (WP5) and Port of Tilburg (WP6). Each of the five ports face capacity constraints and/or congestion, either already present or expected in the near future. This Project is expected to carry out studies into sustainable and circular design of IWW ports, develop the design and engineering of IWW ports' infrastructure, complete other necessary studies (e.g. CBA, EIA, PPP) and obtain all required permits and complete procurement procedures for the next phase of the Project – construction works in all five IWW ports.

The specific objectives and WPs of the Rhombus UPSIDE Project are:

**WP1** Project coordination, communication and EU grant management aims to ensure efficient management and coordination of this Project and implement communication activities to inform interested stakeholders on the outcomes of the Project. Moreover, an overarching study into sustainable and circular IWW portside infrastructure and construction practices will be carried out.

**WP2 Stein:** This WP concerns the IWW Port of Stein, which is part of a large chemical park Chemelot, located on the Juliana Canal. The Chemelot aims to reduce  $CO_2$  emissions to become fully carbon neutral by 2050 by replacing fossil fuels with recycled materials. This shift will lead to an estimated 22% increase in annual freight volumes in 2030 compared to 2019. The port of Stein and the multimodal connection between the port of Stein and Chemelot need to be upgraded to transport the growing volumes via IWWs instead of road.

The objective of WP2 is to complete all required studies in the Port of Stein which will lead directly to the next phase of the Project – the construction works, including upgrade of the port (PORT), development of a multimodal corridor (MMC) and satellite hubs (MODAL SHIFT). This WP is expected to prepare the infrastructure design, CBA, livability and stakeholder engagement and Engineering studies, EIA, study into sustainable and circular infrastructure development and construction practices, to obtain all necessary permits and to complete procurement procedures for construction works. Several feasibility and ex-ante studies have already been finalised outside the scope of this WP.

This WP will determine the following specifications of the foreseen future works at the Port of Stein:

- Upgrade to the Port of Stein (PORT):
  - o Basic water-side infrastructure: expansion and/or upgrading of current quays, jetties, pavement;
  - o Transhipment and storage facilities and equipment for gas, liquid and bulk goods;
  - Development of shore-side electricity supply for IWW vessels.
  - Multi-modal corridor for road freight, rail freight and pipeline transport (MMC):
    - Road infrastructure for (possibly road-train (i.e. a combination of one tractor with several trailers) and/or autonomous) trucks between the port and the Chemelot park;

- Connections between the road and loading and unloading sites on both the side of the port and within the chemical park.
- Development of Satellite hubs which will serve as supply point of recycled materials for Chemelot and transport connection between these hubs and Chemelot (MODAL SHIFT):
  - Satellite hubs are hubs for upstream and downstream production of circular feedstock to replace the fossil feedstock of Chemelot. A network of satellite hubs will be developed to serve as supply points for Chemelot (through the port of Stein) of recycled materials via IWW. Currently, Zevenellen and the port of Genk (BE) have been identified as satellite hubs for Chemelot. More satellite hubs will be identified as part of the studies in the Project.
  - Specific infrastructure and/or the logistics system between the satellite hubs and Chemelot via the port of Stein will be developed.

**WP3 Roermond:** This WP concerns the Willem Alexanderhaven which is a major part of the IWW port of Roermond located on the Maas river. Current quays in Willem Alexanderhaven need an upgrade to secure year-round navigability, create more space for push barges to improve IWW efficiency and increase transhipment capacity to support modal shift from road to water transport and to pre-emptively shift the expected future volumes from road to IWW. Preliminary studies have determined that ca. 40.000 tonnes can be shifted from road to IWW transport annually. The new quay infrastructure will serve a twofold function within one integral design - the additional quays will serve as flood protected barriers and the expansion of the quays will increase the surface area in the port that can be used for transhipment activities to support modal shift from road to water transport.

The objective of this WP is to complete all required studies which will lead directly to the next phase of the Project – the construction works on the quays in the Willem-Alexanderhaven. This WP is expected to prepare the EIA and other environmental studies, CBA, Engineering studies, study into sustainable and circular infrastructure development and construction practices, to obtain all necessary permits and to complete procurement procedures for construction works. Several feasibility and ex-ante studies have already been finalised outside the scope of this WP.

This WP will determine the following specifications of the foreseen future works at the Willem Alexanderhaven:

- Basic water-side infrastructure: expansion of the current quays and creation of around over 300m of new quays. Initial alternatives have been described and compared as part of the preparatory studies carried out outside the scope of this Project. The final alternative to be implemented will be selected as part of the current Project.
- Creation of parking and or mooring spaces for push barges;
- The feasibility of possible implementation of shore-side electricity facilities for IWW vessels.

**WP4 Maastricht:** This WP concerns the terminal of L'Ortye located on the north-eastern section of the IWWP of Maastricht on the Maas river. Currently, garbage collection services (ASL) in Maastricht and the south of Limburg are transporting waste via roads to incinerators over 300km away. This results in congestion on local highways as there are no facilities to efficiently transport waste via other modes that provide cleaner and more efficient transport. The terminal of L'Ortye aims to develop its infrastructure to provide IWW transport for waste by improving its quay capacity.

The objective of this WP is to complete all required studies which will lead directly to the next phase of the Project – the construction works on the quays in the terminal of L'Ortye. This WP is expected to prepare the EIA and other environmental studies, CBA, business case and strategy studies, design and engineering studies, a Pilot study on compacting, storing and shipping waste volumes, study into sustainable and circular infrastructure development and construction practices, to obtain all necessary permits and to complete procurement procedures for construction works. Several feasibility and ex-ante studies have already been finalised outside the scope of this WP.

This WP will determine the following specifications of the foreseen future works at the terminal of L'Ortye:

• Basic water-side infrastructure: expansion and/or upgrading of current quays, jetties, pavement;

- Transhipment and storage facilities and equipment for waste including a mobile crane, warehouse and waste baling and storage area);
- Explore the possibility of establishing a container terminal with annual transshipment capacity of 10,000 TEU at the site;
- determine if L'Ortye will become a satellite site for Chemelot (WP2 MODAL SHIFT).

**WP5 VenIo:** This WP concerns the northern area of IWWP of VenIo, on the Juliana Canal. VenIo is the primary port in the region of northern Limburg and has a vital role as a multimodal IWW hub with IWW, rail and road connections. Freight volumes in the port of VenIo are set to increase from 190.000 TEU/yr in 2023 to around 300.000 in 2030. In order to accommodate the increasing freight volumes, a new IWW terminal on the norther part of the port of VenIo will be constructed following the completion of this preparatory studies WP. As a result of the capacity increase, multi-modal transhipment will be further boosted. The northern area of the port of VenIo will serve both long-distance transport as well as last-mile transport for a multitude of industrial and logistical parks in the direct vicinity. It will serve as an important transhipment area between IWW vessels, trains and trucks. IWW vessels and trains will be used to facilitate low-CO<sub>2</sub> long distance transport whereas trucks will be used to serve several nearby industrial and logistical parks.

The objective of this WP is to complete all required studies which will lead directly to the next phase of the Project – the construction works on the northern area of the port of Venlo. This WP is expected to prepare the infrastructure design, CBA, PPP and Engineering studies, EIA, study into sustainable and circular infrastructure development and construction practices, to obtain all necessary permits and to complete procurement procedures for construction works. Several feasibility and ex-ante studies have already been finalised outside the scope of this WP.

This WP will determine the following specifications of the foreseen future works on the northern area of the port of Venlo:

- Broadening of the waterway that provides entrance into the IWWP (after the current marina has been relocated (outside of the scope of this Project);
- Construction of new basic water-side infrastructure (quays, pavement exact specifications will be determined during the current Project);
- Construction of a new IWW terminal;
- Construction of a new multimodal terminal and its connection to the existing nearby railways;
- Repurposing of the nearby road (Grubbenvorsterweg) to allow for access for trucks to the multimodal terminal this is currently a low-capacity (single-lane) rural road that lies between a regional road and part of the port area (south) and the nearby rural area (north);
- Requirements for water-side infrastructure on the southern shore directly across the northern shore area.

**WP6 Tilburg:** This WP concerns Loven, which is an IWWP and logistical and industrial park located in the port of Tilburg on the part of the Wilhelmina canal (between the Midden-Brabantweg and the Gelrebaan bridges). Tilburg is the primary IWWPs of North Brabant and is well-connected by IWW, railway and road. In the last few years, IWW transport container freight volumes to and from Tilburg have increased by a much larger margin than expected and the growth in demand is set to continue until 2050, due to the large number of logistical and manufacturing companies in the direct vicinity. A preliminary CBA has shown that over the period 2019-2026 volumes via IWW are set to increase from 150.080 TEU to 251.862 TEU, via rail from 84.409 TEU to 123.764 TEU and via road from 60.230 TEU to 90.850 TEU. Without the current Project and ensuing works after the completion of the project, this would lead to drastic increase in road freight volumes.

The objective of this WP is to complete all required studies which will lead directly to the next phase of the Project – the construction works in Loven. This WP is expected to prepare the infrastructure design, CBA, contracting plan, EIA, business case, stakeholder activation and relocation studies, engineering studies, study into sustainable and circular infrastructure development and construction practices, to obtain all necessary permits and to complete

procurement procedures for construction works. Several feasibility and ex-ante studies have already been finalised outside the scope of this WP.

This WP will determine the following specifications of the foreseen future works in Loven:

- Upgrade of the final section (length of approximately 4km) of the Wilhelmina canal to allow for accessibility for larger (preferably CEMT IV) vessels. This requires raising the height of three bridges.
- Development of a trimodal container terminal at the end of the waterway of the IWWP of Loven with an envisioned annual transhipment capacity of 160.000-180.000 TEU. The terminal will occupy approximately 3,5 ha and requires:
  - Filling in the current turning basin with soil to create additional space;
  - Basic water-side infrastructure of the newly created plot consisting of 185m of new quays and pavement of the new terminal area (exact length, surface area and dimensions to be determined during the current Action);
  - Expansion of the railway network to reach the trimodal terminal and provision of accessibility for 740m trains the extended part will consist of a stretch of approximately 750m single track;
- Revitalisation of the industrial port of Loven, which requires:
  - Development of basic water-side infrastructure to facilitate the increase in bulk freight volumes through IWW transport (quays and new waterborne plots pavement);
  - Adjustment of the waterway (approximately 1,5km) in the port of Loven to allow accessibility for larger vessels;
  - o Relocation of companies unsuited to the new infrastructure and intensifying waterborne logistics;
  - Upgrading road access into the IWWP area.

The Rhombus UPSIDE project will result in a completion of all foreseen studies which will lead directly to the next phase of the Project - construction works in all five IWW ports.

Included below are several images to visualise the locations and/or envisioned works of / following this Project.

Image no 1. Current and future extent of the Rhombus area. Legend:

- Red lines: current extent of the network;
- Dotted lines: future extent of the network (e.g. Seine-Scheldt canal);
- Blue lines: main IWWs;
- Purple areas: Dutch Freight Corridors (GVC / Top Corridors);
- Gray lines: TEN-T Corridors (please note that these overlap with the purple lines);
- White dots: major multi-modal nodes on the network;
- Thicker light grey lines: IWWs;



Image no 2: Project areas for WP2 (Stein; PORT = Haven Stein; MMC = Multimodale Corridor (possible connections to loading and unloading zones indicated by blue arrows); satellite sites (MODAL SHIFT) will be established elsewhere:

Thin light grey lines: major roadways.

•



Image no 3: Project areas for Port of Roermond (WP3): quays to be upgraded are highlighted in yellow:



Image no 4: Project area for WP4 in the IWW port of Maastricht:



Image no 5: Port Vision of Venlo (WP5).



Image no 6: Port Vision of Venlo (WP5). Northern shore area:



Image no 7: Project areas for WP6 in Tilburg. The purple line indicates the section of the Wilhelmina canal that is currently being upgraded (outside of the scope of the Project) and the orange line indicates the current Project area. The orange circles indicate bridges that will have to be upgraded to allow for passage of ships. The inland port of Loven is located at the end of the orange section (right). The current turning basin for IWW vessels (to be filled in with soil and developed as terminal during the ensuing works of this Project) is indicated by an orange square.

