Connecting Europe Facility 2014-2020

TRANSPORT CALLS FOR PROPOSALS 2019 MAP

APPLICATION FORM

PART D

Technical and financial information

Title of the proposed Action	**New East-Cost Line ,a railway study for a 40 km long section of double track between Gävle-Kringlan**
TENtec number	**28946443**

1. GENERAL DESCRIPTION OF THE GLOBAL PROJECT INCLUDING NEEDS, OBJECTIVES AND FINANCIAL INFORMATION

1.1. General description of the global project, including needs and objectives

The Global project: **Double track on the section Gävle-Sundvall on the East Coast Line**
Construction period: 2018-2029
Cost: **€ 27 000 000 (price level 2015)**

The East Coast Line, a 402-km long railway in Sweden, linking together the cities of Stockholm, Uppsala, Gävle and Sundsvall and also the smaller cities along the section. The Global project is a part of the East Link, the railway section between Gävle and Sundsvall, is 220 km long. The single-track East Coast Line between Gävle and Sundsvall is a weak spot in the Swedish railway network. One of its main challenges has always been how to overcome the long distances and the East Coastline is one of the longest and most heavily congested stretches of railway in Sweden. The line passes through several cities, which are home to some of the nation's most prominent industries such as, SCA Graphics, Iggesund Paperboard, and Billerus/ Korsnäs. They are depending on freight transport on the railway. The north of Sweden is a large provider of natural resources to Europe. Sweden is a world leader in the production of iron. Each day, the equivalent of the steel of one Eiffel Tower is shipped to manufacturers in countries all over the continent. Sweden is heavily depending on its export industry. The East Coastline forms the backbone for transport of forestry and industrial products with a catchment area that covers the northern part of Sweden.

Figure 1: The Core network in Sweden with the East Coastline marked in orange

The current East Coast Line has steep inclinations and sharp curves, limiting cargo weights and low speed, which leads to frequent delays. This is one of the reasons why many companies prefer the use of other transport methods such as trucks and semi-trailers. The East Coastline was extended to double track between Stockholm and Uppsala as early as in 1906. Since 2017, the line has been equipped with four-tracks between Stockholm and Arlanda. North of Gävle, the line consists of single track with lower speed.

On March 23, 2017, the Swedish Transport Administration (in this application named by the Swedish name Trafikverket) was commissioned by the Government to draw up proposals for the national overall transport plan for development of the transport system for the period 2018-2029. The plan is based on transport policy goals, innovative solutions for strengthening competitiveness and sustainable development. Six priority societal challenges have been prioritized:

1. Switching to one of the world's first fossil-free welfare countries
2. Investments for increased housing construction
3. Improving conditions for business
4. Strengthening employment throughout the country
5. Raising and utilizing the effects and opportunities of digitalisation.
6. An inclusive society

The East Coastline is a part of the CEF defined corridor Scandinavian-Mediterranean that is proposed to be extended from 2021 with the Bothnian corridor. The Bothnian corridor unites the Northern Axis and the Nordic Triangle and, in a Nordic / European perspective, provides positive system effects through connecting Northern Sweden, Northern Norway, Finland, Northwestern Russia with the European continent. The tracks are important for achieving a coherent and better functioning network for freight transport.

By building this double-track railway, people will be able travel in a safely, reliably, and environmentally friendly manner. A sustainable rail network will help to connect the extensive east coast north of Stockholm to the rest of Europe. Expanding the 220 kilometre long single-track railway to a double-track railway would allow for an increase from a mere 70 trains a day to well over 200.

Several new meeting stations, partly co-financed by CEF, have been built in recent years to increase capacity. Double track overall East Coastline would provide a reliable and safe way of delivering goods to the rest of Europe, vital for the future growth of the European economy. And at the same time relieving the E4 highway of over 1500 carbon dioxide emitting trucks — every day. The goal is to have the railway completed by 2032.

Objectives

The main objective for the East Coastline is to be the best transport alternative in the northern Sweden by offering good accessibility for citizens and the business community as well as ensuring fast, sustainable and reliable transports.

The special project goals for the extension of the East Coastline between Gävle and Sundsvall are:

1. High punctuality, railway safety and no interference.
2. Promote access to strategic places along the coast, fast attractive travel, and shorten travel times Provide the railway with increased capacity and robustness, increased competitiveness and a well-functioning port and industrial connection.
3. Be designed concerning the environment and adapted to the surrounding landscape, urban environment, housing environment and health.

The goal is to have the railway completed by 2032.

Problems

Over the past 10 years, traffic on the East Coastline has almost doubled, which has contributed to a constantly growing capacity shortage. The possibility of developing today's railway system is very limited. The traffic situation in the Gävle-Sundsvall section is complicated. Three different types of trains with different speed limits are using the track, fast trains, regional trains and freight trains. Mixed traffic results in a traffic structure with large speed differences and major and growing capacity problems. The estimated maximum permissible speed for the regional trains is 200 km / h, 250 km / h for high-speed trains and 100 - 160 km / h for freight trains.

Many parts of the line have a low speed standard, which means long travel times and the risk of severe delays. Robust traffic systems with safe delivery times are an important prerequisite for the industry to be able to deliver its products without costly inventory. The East Coast railway line has today difficult to respond to the industry's need for long-distance transports in a robust transport system. The current East Coast Line has steep inclinations and sharp curves, limiting cargo weights and limit speed. This is one of the reasons why many companies prefer the use other transport forms such as trucks and semi-trailers. Vehicles goes on the parallel E4 highway, a route that will get their products to their destination, but at the cost of greater environmental impact.

Trafikverket investigator various alternatives for an expansion of double tracks along the East Coastline between Gävle and Sundsvall. The line is divided into 12 sections. The Action is one of the sections, Gävle Central to a point of the railway called Kringlan.

Timetable

The Global project, the section between Gävle and Sundsvall on the East Coastline will be developed during the period 2018-2029.

Costs

Double-track on the section Gävle-Sundsvall is estimated to € 27 million (price level 2015). Following sections of the Global project are financed in the National Plan;

1. Section Gävle – Kringlan (39 km), the Action, € 500 million (price level 2017)
2. Dingersjö meeting station (3 km), € 56 million (price level 2017)
3. Sundsvall – Dingersjö (14 km), € 215 million (price level 2017)

The section Gävle - Kringlan (at Axmartavlan) is one of the sections that has received funding in National Transport Plan 2018-2029.

Further, 9 other sections have not been financed in Trafikverkets National Transport Plan for the period 2018-2029 but will be prepared for upcoming in the National Transport plan.

Associated stakeholders

Trafikverket is responsible for the development, operation and maintenance of the state railway network. Associated stakeholders for the Action are both the municipalities along the East coastline, as well as the inhabitant, visitors and the industries in the northern part of Sweden. An important organisation is the promoting company Ostkustbanan AB, owned by the Region Gävleborg, Region Västernorrland and the municipalities of Gävle, Söderhamn, Hudiksvall, Nordanstig, Sundsvall, Härnösand, Kramfors and Örnsköldsvik.

Management structure
For ongoing sections on the East Coast Line, there are separate organisations and project managers established.

Current state of play
A feasibility study for Gävle- Sundsvall was ready in 2010. The result was two possible corridors, one following the existing railway and one more west following the road E4. Works, planning and construction are ongoing on following sections:

Section	Km	Current stay of play
Gävle – Kringlan (the Action)	39	Financed in the National Plan for the period 2018-2029. The work with the railway plan has started, the construction phase is planned to start 2025.
Kringlan – Ljusne	27	The choice om alternative study is ongoing and will be finished 2020
Ljusne- Söderhamn	11	A feasibility study has been established. The location of the doubletrack will be where todays single track are.
Söderhamn-Losesjön	13	A feasibility study has been established. The location of the doubletrack will be where todays single track are.
Losesjön-Enånger	17	A feasibility study has been established. The location of the doubletrack will be where todays single track are.
Enånger-Idenor	20	Investigation ongoing with study of alternative localisations/corridors, Railway plan, consultation document.
Ideonor-Stegskogen	19	Investigation ongoing with study of alternative localisations/corridors, Railway plan, consultation document.
Stegskogen-Bäling	20	Study of alternative localisations/corridors, Railway plan, consultation document is ready. A decision on the choice of corridor will be made in 2020.
Bäling-Tjärnvik	14	Corridor was selected in the feasibility study. Railway plan is drawn up
Tjärnvik-Njurundabommen	20	Study of alternative localisations/corridors, Railway plan, consultation document is ready. A decision on the choice of corridor will be made in 2020.
Njurundabommen - Dingersjö	3	Construction of doubletrack is ongoing and will be finished 2020
Dingersjö -Sundsvall	14	Financed in the National Plan 2018-2029. Planned to start 2021.

Expected results
Expanding the 220-kilometer-long single-track railway to a double-track railway would allow for an increase from a mere 70 trains a day to well over 200, integrating it fully with the already existing state-of-the-art Bothnia line to the north of Sweden. Also, the expected travel times would be cut by half. See table below.

Relation	Type of train	Travel time today	Expected travel time after extension to double-track
Stockholm-Sundsvall	Fast train	~3h 35 min	~ 2h
Sundsvall-Gävle	Fast train	~2h 10 min	~ 1h
Sundsvall-Gävle	Regional train	~2h 10 min	~ 1h

This would help bring the already expanding cities along the east coast closer together, thereby expanding the area where people work and in turn change how they do business.
The East Coastline shall be robust and safe, with minimal risk of disruptions and high reliability for train traffic.
A completion of the Global project will increase punctuality. The East Coastline should be an attractive transport alternative and be designed regarding protected and valuable environments.

1.2. Financial information about the global project

SOURCES OF FUNDING/FINANCING	Financial contribution (in euros)
1. CEF Transport financing	4 057 844
2. Applicant's own resources	
3. EIB loan	
4. Other loans	
5. State budget(s)	22 942 156
6. Regional/local budget(s)	
7. Income generated by the global project	
8. Other EU grants (e.g. TEN-T, Marco Polo II, ESIF, FP7, H2020, etc.)	
9. Other sources	
Total	**27 000 000**

2. DESCRIPTION OF THE PROPOSED ACTION

2.1. General description of the proposed Action, including needs and objectives (consistent with the application form part A1)

Start date: 2020-03-01 **End date: 2023-12-15**

Costs; € 5,9 Million

The Action is a part of Trafikverket´s planning process in order to establish a railway plan for double-track expansion between Gävle – Kringlan, an approximately 38 km long section.

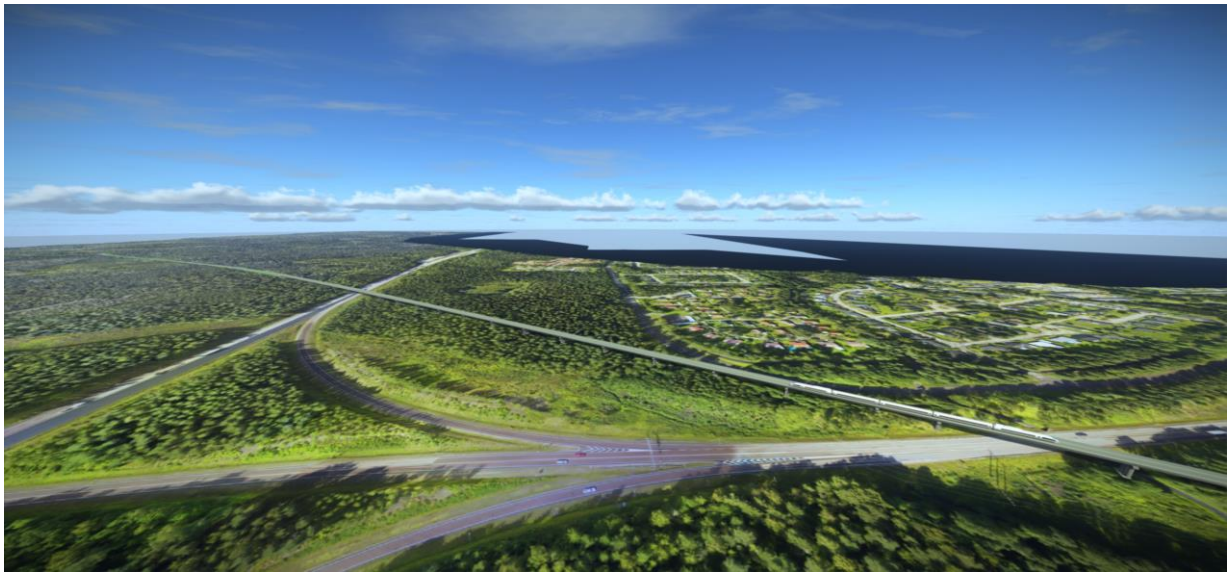


Figure 2: Picture over the new railway section

The Scope

The Action is a very important investment in linking the East Coast Line, the Northern Main Line, the Bergslags Railway line and the Port of Gävle in a way that benefits the entire national transport system. By designing a new double track with strategically placed bypass tracks, capacity increases while the travel times reduce. The new straight railway track will be 20 km shorter than today's railway between Gävle and Sundsvall, which creates the conditions for traffic with trains at a higher speed than today's and eliminating of stops for train meetings.

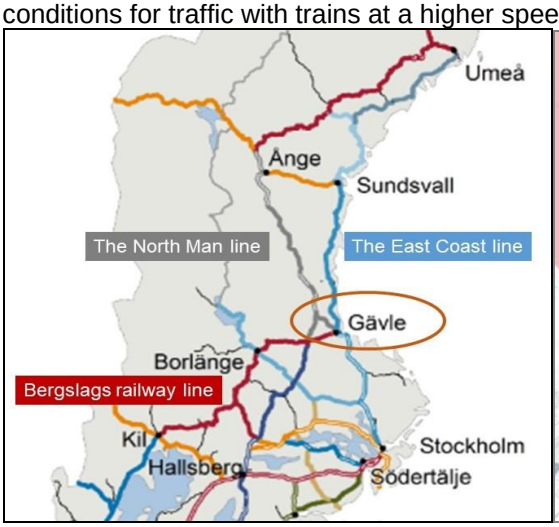


Figure 3: Location of the two planned railway stations I Gävle

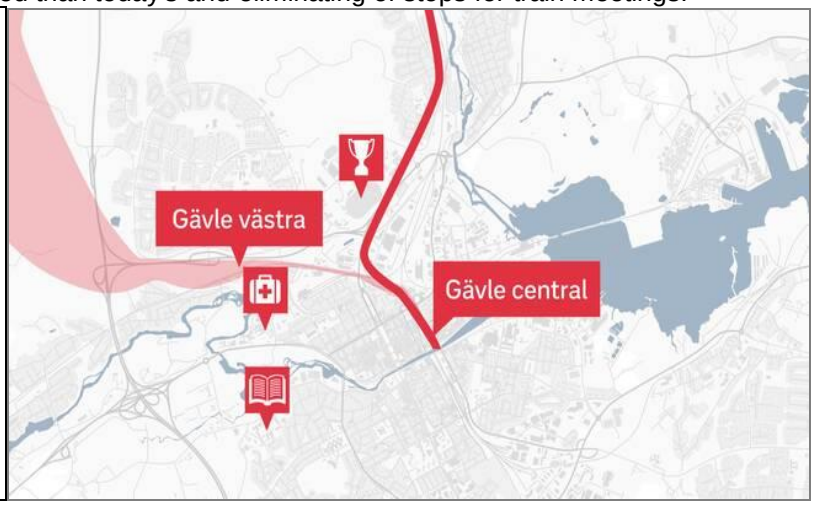


Figure 4: A Map over the railway lines I the northern part of Sweden

The Action consist of two railways plans (including EIA and Project design Document), for a completely new railway line with double tracks on the East Coast Line (the Global project) between Gävle and the train meeting point called Kringlan. The two railway plans concerns the sections Gävle Central - Gävle Västra and Gävle Västra –Kringlan. The project includes building tracks and platforms at a new regional train station named Gävle Västra, providing improved connection to Gävle Hospital and the University of Gävle . At the new established hub, all railways, the East Coastline, the Bergslags Railway line and the Northern Main line shall stop. Gävle strengthens its role as an important transport node in the national system.

Activities and Cost

Table 1: Cost per year and activity — Exchange rate November 2019 = 1 SEK= 0.09258 Euro

Activity	2020	2021	2022	2023	Total €
Activity 1: Project design document section Gävle Central station to Gävle Västra (a new station)	300 000	600 000	600 000	500 000	2 000 000
Activity 2: EIA, section Gävle Central - Gävle Västra	50 000	100 000	100 000	50 000	300 000
Activity 3: Railway plan, section Gävle Central - Gävle Västra	100 000	400 000	400 000	100 000	1 000 000
Activity 4: Project design document section Gävle Västra - Kringlan	-	500 000	900 000	900 000	2 300 000
Activity 5: EIA, section Gävle Västra- Kringlan	-	100 000	300 000	100 000	500 000
Activity 6: Railway plan, section Gävle Västra - Kringlan	-	200 000	500 000	300 000	1 000 000
Summary	450 000	1 900 000	2 800 000	1 950 000	7 100 000

Objectives

The overall objectives are the same for the Action and the Global Project. Se point 1.1. The East Coastline should be the best transport alternative by offering good accessibility for everyone and ensuring fast, sustainable and reliable transport to enable a positive social development.

Goals for traffic on the East Coastline
Extension should be done with as little traffic interference as possible A safe and robust railway, with minimal risk of interference and high reliability High punctuality and high traffic safety
Goals for passenger transports on the East Coastline
Promote a growing education and labour market, a competitive business life and increased access to qualified community services as well as entertainment and leisure services Fast attractive travel Short travel time Gävle-Sundsvall in 1 hour Regional train Gävle-Sundsvall <90 minutes Attractive station locations Access to strategic places as hospitals, universities / colleges, workplaces, commercial and public services, tourist destinations and major leisure and cultural facilities
Goals for freight traffic on the East Coastline
Increased capacity and robustness Well-functioning port and industrial connections Increased competitiveness
Goals for reduced environmental impact on the East Coastline
The design of the railway is adapted to the surrounding landscape, urban environment as well as the housing environment and health The railway is designed regarding protected and valuable environment
Goals for equal accessibility on the East Coastline
The location of travel centres / stations should enable good accessibility and be an effective exchange point

Objectives	Indicators	Means of verification
Improved accessibility	Reduced and more predictable travel time, Increased redundancy Increased accessibility for disabled	Actions will be proposed in the Railway Plan. The effects are estimated in the CBA
Fast and reliable travel	Increased travel and labour Reduced road traffic	Measurements and statistics
High quality and sustainable transports	Increased reliability in the railway system Operations security will be reduced	Measurements and statistics Effect after construction
Implementation safety technology Improved safety	Harmonisation of signalisation by equip the railway with ERTMS	Policy documents and audits
Meet Sweden's climate goals	Development and implementation of innovative safety technology, Reduced emissions of CO2 and noise from road traffic	Measurement of emissions, statistics on the number of passengers

Objectives	Indicators	Means of verification
National expansion	Increased commuting Increased productivity, possibilities to work, studies and leisure activities Reduced unemployment	Official statistics and surveys
Ensure good cultural environment and accessibility for everyone	Consideration of the water source Valboåsen I Gävle.	Policy documents and audits.
Higher capacity in the railway system	Less delays Reduced congestion Reduced and more predictable travel time Increased redundancy	Measurements. Measurements. Timetable
Modal shift from road to train transports	Increased interoperability Increased number of passenger travels by railway Reduction of heavy freight traffic on roads	Measurements. Measurements.

Problems and Needs

The single-track railway is vulnerable and sensitive to interference resulting in long travel times and delays. A large problem for both freight and passenger traffic.

The possibility of developing today's railway system is very limited. The traffic situation in the Gävle-Sundsvall section is complicated. Three different types of trains with different speed limits are using the track, fast trains, regional trains and freight trains. An increased need for freight transport cannot be met with existing infrastructure.

Problems solved by the Action are:

- Lack of capacity in the railway network
- Obsolete interlocking system cannot be adapted for conversion
- Existing signal technology not compatible with ERTMS
- Obsolete and "curvy" (provides low speed) railway system
- The railway is not redundant today
- Unprotected groundwater body (associated drinking water plant constitutes national interest in water supply) under infrastructure.
- Today's railway facility is disruptive to residents along the railway
- Unprotected / poorly protected road crossings / level crossings
- Interlocking systems of Gävle C and Kringlan will be changed to computerized interlocking system.
- Groundwater protection
- Several large bridge structures, as well as complicated traffic interchanges

Technical specifications

In the railway investigation, two alternative solutions for double tracks from Gävle to the meeting point called Kringlan were presented. After completion with the study of location alternatives (the first part of a Railway plan), the western alternative has been chosen.

The decision is partly based on conducted consultations. The alternative includes an extension of the railway west from Gävle Central, adjacent to the existing track, the Bergslags railway line, up to the location of the new regional train station, Gävle Västra. The station will be established at Tolvfors (Gävle Hospital) and will become a new hub for regional traffic on the Bergslags Railway line, the East Coast Line and the Northern Main line. From Gävle Central and about 12 kilometres north the Action, the Northern Main line and the Bergslags Railway line use the same track.

A closer analysis of the new railway corridor has shown that there is a need for eight or possibly nine railway bridges and six road bridges in order to avoid disturbance of the existing road network. By using four-track stations instead of the usual three-track stations, capacity will increase then trains at different speeds will not disrupt traffic flow.

There should be no level crossings along the double-track. Crossing roads must thus pass either above or below the railway. New noise procetions will be built along the new track.

At Bergby, the new railway passing the E4 on a bridge and then connects to the existing track on the East Coastline at the Kringlan operating site. The tracks will have a maximum slope of 10 per mile. The radius curves shall be at least 3000 meters. Existing track will be demolished.

ERTMS is being introduced throughout the East Coastline. The interlocking system at operating site Kringlan will be

exchanged from interlocking system relay 59 to a modern digital interlocking system which is a prerequisite for implanting the EU-standard ERTMS. The catenary systems and signal systems must be adapted for speeds

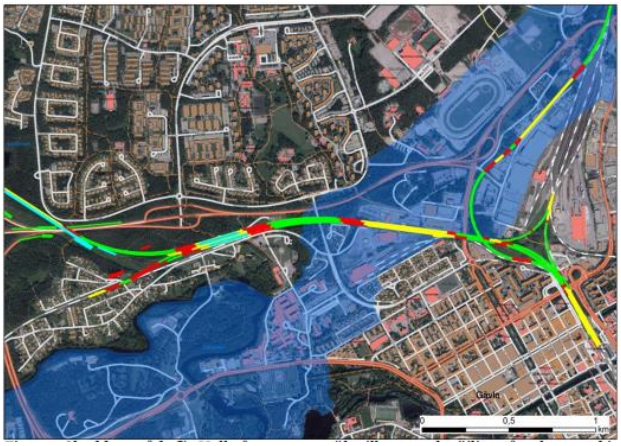


Figure 5: The selected corridor
Figure 6: The railway passing over the water supply

up to 250 kilometres per hour. Therefore, foundations for catenary are in prefabricated concrete.
By building a new section of the East Coast line, it is possible to implement the agreement between the National

Negotiation on Housing and Infrastructure, Gävle municipality and the County Council of Gävleborg on housing construction on the business by a future move of Gävle estate to the Tolvforsskogen logistic centre.

Environment
The new railway crosses Gävle-Valboåsen, the groundwater source for Gävle municipality. It is defined as a water protection area and represents national interest in the drinking water supply. Trafikverket has methods to minimize intrusion into the Gävle-Valboåsen water protection area, both during the construction period and at the future operation and maintenance phase.
The chosen rail west section is considered to have a minor impact on the environment compared to the other studied alternative. After the railway crosses the E4 the railway passes a Natura 2000 area at the Testeboån.

Half of the corridor where the existing railway runs consists of stable ground conditions. The second half, the area along the lake, the ground consists of mud / clay. Here, stabilization measures will be carried out if the new railway is placed in this area.

Examples of environmental measures are:
- Measurement of valuable natural and cultural environments that must not be harmed.
- Protective measures against soil and water pollution.
- Measures for the management of soil masses.
- Noise reduction measures, limitation of disturbance.
- Procedures for handling chemicals, fuels, residual products and hazardous waste.
- Plan for restoration of temporarily used areas for circulation, revenue and more.

The expansion of the railway also meets Gävle municipality's goal of reducing travel and the negative impact of transport on the environment. In 2025, the goal is that Gävle municipality should have reduced the mileage by 6,000 km per inhabitant per year. Travel by public transport should have increased to 15 million per year by 2025 and by the same year, the number of trips by bicycle should also be doubled. The goal for 2030 is fossil-free travels and transports.

Stakeholder
Trafikverket is responsible for the expansion. Consultants will be contracted for implementation. Also, the municipality of Gävle, the County Administration Board, the energy company Gävle Energi, residents in the area and industries are dependent on the expansion. An active part of the marketing of the project, both among decision-makers and the general public, is the lobby organisation the “Bothnian Corridor” and organisation the East Coastline.

Justification for EU support

The Action together with the Global project is a long-awaited project, as the route has long been, a bottleneck in the Swedish rail network between Stockholm and Sundsvall, which is part of the Scandinavian Mediterranean corridor. The East Coast Line is a very important link in Sweden's rail system, both for national and regional passenger traffic as well as for international freight traffic coming by boat to the ports along the Bothnian Corridor. These routes handle most of the land-borne transports from Central Europe via Germany in the south and from Russia and Eastern Europe via Helsinki in the east. This railway section on the East Coastline is important for business in the Nordic countries and for competition with other EU countries. However, it is also important for people who live and work in the smaller municipalities.

An increase in capacity is necessary to improve transport quality and to enable an increase in rail transport. Without this capacity expansion, a major bottleneck on the East Coast Line will prevent other major infrastructure investment, for example in the ports, to be fully utilized.

This is connected to the project in Port of Gävle (2019-SE-TA-0004-W Gävle Port – New electrified railway connection) which has given EU-support.

By adapting the East Coast Line between Gävle and Kringlan for passenger traffic and improving the accessibility of freight traffic, the project contributes to the removal of a bottleneck in the Scandinavian-Mediterranean corridor and is in line with: "COMMISSION IMPLEMENTING DECISION of 16.10.2019 amending Implementing Decision C (2014) Establishing a Multi-Annual Work Program for financial assistance in the field of Connecting Europe Facility (CEF) -Transport sector for the period 2014-2020".

Milestones

No	Milestone description	Activity	Date	Means of verification
1	Signed contract for section Gävle C-Gävle Västra	1+2+3	2020-05-11	Contract
2	Decision track solution, section Gävle C-Gävle Västra	1	2021-01-20	Decision document
3	Signed contract for section Gävle Västra-Kringlan	4+5+6	2021-03-20	Contract
4	Decision on the design of groundwater protection Gävle C-Gävle V	2+3	2021-06-18	Decision document
5	Draft version of the project design document Gävle C-Gävle V	1	2021-11-14	Report
6	Decisions track solution, section Gävle Västra-Kringlan	4	2022-01-20	Report
7	Consultation meeting EIA Gävle C-Gävle Västra	2	2022-04-28	Consultation report
8	Consultation meeting Railway plan Gävle C-Gävle Västra	3	2022-05-13	Protocol
9	First version of the project design document section Gävle Västra-Kringlan	4	2022-11-11	Report
10	First version of the project design document Gävle C-Gävle V	1	2022-11-14	Report
11	Consultation meeting Gävle Västra-Kringlan	5+6	2022-11-29	Consultation report
12	EIA-approval by the county administrative board Gävle C-Gävle Västra	2	2023-08-16	Decision document
13	EIA- approval by the county administrative board Gävle Västra-Kringlan	5	2023-08-30	Decision document
14	Projekt planning dockument ready, Gävle C-Gävle V	1	2023-10-06	Report
15	EIA Approved Gävle C-Gävle Västra	2	2023-10-18	Decision document
16	Review report railway plan Gävle C-Gävle Västra	3	2023-10-26	Report
17	EIA Approved Gävle Västra-Kringlan	5	2023-10-30	Decision document
18	Public review railway plan and EIA Gävle Västra-Kringlan	6	2023-12-07	Consultation report
19	Railway plan ready Gävle C-Gävle Västra	3	2023-12-15	Report
20	Preliminary design document ready Gävle Västra-Kringlan	4	2023-12-15	Report
21	Railway plan ready Gävle Västra-Kringlan	6	2023-12-15	Report

Expected results

The vulnerability will decrease and the punctuality will increase. Today the travel time from Sundsvall to Gävle is about 2 hours and 10 minutes by express train and the goal is to reduce the travel time to 1 hour.
The new railway shall:
Enable a growing education and labour market to promote a competitive business sector.

- Strive to meet national environmental quality objectives by increasing competitiveness between modes of transport and increasing the proportion of rail transport and minimizing the environmental impact of the railway.
- Make the transport system more accessible and meet the transport needs equally for all people.
- Through more straighten tracks, the speed could be higher.
- Increase the capacity on the railway, which give positive effect on the development of society, i.e. due to shorter travel time for commuters.
- The overall purpose is to be the best transport alternative by offering accessibility to all and ensuring fast, sustainable and reliable travels and transports.
- Travel times are shortened and commuting opportunities throughout the region, including inland, are significantly improved.
- The project enables a new regional train station, Gävle Västra, which would provide improved connection to, among other things. Gävle Hospital and the University of Gävle. The regional train station Gävle Västra would serve both the East Coastline, the Bergslags railway line and the Northern Main line.

This is a very important investment in linking the East Coastline, the Northern main line, the Bergslag railway line and Port of Gävle together in a way that benefits the entire national transport system. The investment also means that commuting along the coast and inland will be significantly improved.

Current state of play
All necessary decisions for implementation of the two railway plans have been taken, consultant procurement is underway to start work on the railway plans, the first at the end of February 2020 and the second March 2021.
In September 2019, natural value inventories in the field started. The purpose is to identify and delineate the geographical areas of the landscape, which are of positive importance for biodiversity, and to document and assess these natural values. The work is carried out according to a standardized method for natural value inventory (SS 199000: 2014). The result will be used in the continued work on planning for a new double-track between Gävle-Kringlan.
Until February 2020, all studies that form the basis of a railway plan have been developed and approved (see question 4.3 and 5.3). The route for a new railway has been chosen and consultations have been carried out.
Following studies:

Localisation Study, Gävle - Kringlan	2020	Detailed measurement of existing railways	2019
Consultation document, status selection of location	2019	Laser scanning Gävle - Kringlan	2019
Inventory of natural values	2019	Capacity assessment	2018
Cultural History Analysis	2019	Pre-study new double track Gävle-Sundsvall, completed	2010

Next phase
Next phase after the railway plan is the construction phase, which begins with detailed planning and construction documents.

Management
For the various parts of the expansion of the East Coast Line there is a designated project manager. These works together to ensure that the measures are carried out in a joint schedule and action plan.

Risks
The chosen railway corridor entails increased risks in the construction phase when building the bridges and close to the sensitive parts of Gävle-Valboåsen. The locations of new interlocking systems will be outside the water protection area. Overall, no activities under the groundwater surface are deemed necessary, which minimizes the risks of, for example, turbidity during the construction period. This is done through careful risk management and the necessary safeguards are taken.
A plan for handling contaminated masses should be established at an early stage.

2.2. Contribution of the proposed Action to the global project and expected results

Infrastructure investment is a key prerequisite for growth, especially in areas depended on an open and export driven economy like the northern part of Sweden. Connecting the logistic chains of the northern European regions even more to the TEN-T network will enhance the flow of goods in Europe, benefits the European economic growth and strengthens the development of the EU's internal market. A developed new main line between Gävle and Sundsvall is essential for the development for both passenger and freight transport. Furthermore, the travel times for travellers and commuters will be significantly shorter which stimulates residents to choose rail instead of road.

The objectives of the passenger traffic in the national and regional plan are:

- High capacity and reasonable travel time
- Effective and attractive commuting
- punctuality and security for both freight and passenger transport

In addition to the increase in transportation capacity, the expected travel times would be cut by half. With the double-track railway in place you would be able to travel from Stockholm to Sundsvall in just two hours, compared to four hours at present. This would help bring the already expanding cities along the East coast closer together, thereby expanding the area where people work and in turn change how they do business.

The north of Sweden has the potential to attract even more European tourists. With a double-track railway between Gävle and Sundsvall visitors can board a comfortable train at Stockholm Central Station or Arlanda Airport and within a few hours they could experience the breath-taking High Coast north of Sundsvall, the highest coastline in the world.

The proposed Action is a study prior to start the implementation of the works on the Global Project, which of the Action is a natural part. The Action will:

- Contribute to national and regional economic development
- Improve conditions for all categories of local, regional, national and international rail and road users
- Increased capacity on the established railway lines.
- Reduced emissions of air pollution and noise in surroundings and in cities.
- Improve conditions for freight and passenger traffic by reducing travel times, congestion and accidents.

Based on traffic forecasts and demands for vehicles and fuels, emissions will remain at about the current level by 2030. If no further measures are taken, emissions will then increase until 2050.
The national climate goals can be achieved in the region when first the Actions and later the Global project is in operation.The main lines will meet the growing need for business and commuting in an efficient way by direct train to one of Europe's central airports and beyond.

Table 2: Ongoing works on the East Coast line

	Feasibility study	Study of localisation alternatives	Complete railway plans incl EIA	Construction
Gävle – Kringlan	ready	ready	ongoing	2025-
Kringlan – Ljusne	ready	ongoing	x	x
Ljusne- Söderhamn	ongoing	x	x	x
Njurundabommen-Dingersjö	ready	ready	ready	finished 2020
Dingersjö - Kubikenborg	ready	ready	ready	2024-2028
Kubikenborg - Sundsvall C	ready	ready	ready	2022-223
Sundsvall– Dingersjö	ongoing	x	ongoing	x

The next step to finalize the two ongoing parallel studies that constitute this Activity is apply for permissibility and to complete the Railway plan including both planning design document, CBA and EIA. A complete Global project, including new railway line (the Action) will help to eliminate a bottleneck in the important rail traffic between Gävle Central station to Sundsvall and northwards on the Bothnian corridor. It is of great importance both for inhabitants and for the local, regional and internationel freight transport to and from the northern part of Sweden.

2.3. Description of the activities of the proposed Action, including their interdependencies

Activity 1: Project design document, section Gävle Central station to Gävle Västra (a new station)
Starts; 2020-05-11 ***Ends:*** 2023-10-30 ***Costs:*** € 2 000 000

A project design document is part of the Swedish planning process for development of the transport infrastructure and a part of a complete railway plan. The pre-planning confirms the following steps: Fulfilment of system requirements, description of the facility, constructability, calculation and required land claims. The project design document develops the design described earlier in the railway investigation and then provides further details on the chosen solutions regarding design of technical systems and construction. It specifies the construction of the railway tracks and stations as well as technical systems based on several investigations, inquiries and studies. It includes description and preparation of all essential functional, technical, economic, environmental engineering, architectural and organisational solutions of the project. It will be used in continued planning and construction. *The documentation also called Installation Requirements and Prerequisites for the Railway Plan* (AJP) are divided into different subject areas. The contents are to develop requirements for the completed installation and to develop design prerequisites, dimensioning criteria etc. for the railway link. The technical systems will be specified, in

accordance with technical, environmental and traffic requirementsAlso, the need and extension of land use for the Action is included. The Project design document is included in a complete Railway plan but is established in parallel. The upcoming procurement includes project design document, Environmental Impact Assessment (EIA) and complete railway plan, that is, all three parts are executed in the same contract by one and the same consultant.

The coordination, i.e. various subject areas of technology (see below), will be handled in an efficient way during the planning. The project manager for Activity 1 and 4 will coordinate, summarise and report the stipulated technical systems and construction requirements as well as conditions from the consulting assignments into a systematic requirement database of the project. They will also lead coordination meetings concerning issues related to technical systems, construction requirements and conditions. Issues concerning construction and technical systems are coordinated in co-operation with the railway plan including EIA and project design document. These requirements and conditions will be applied in both the system document and the railway plan.

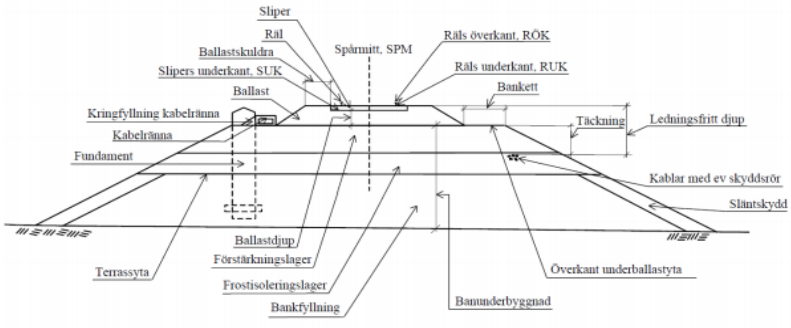
The Scope
A project design document shows as described above how the railway system will look like. An entirely new track is being built along the existing track and at the same level as the tracks of Bergslag railway line. The track passes on a railway bridge over the present East Coast Line and immediately after on a bridge over Norra Kungsgatan. The new railway is planned to be located near the water supply of Gävle, Valboåsen, on a short section in central part of Gävle. The position is more detailed description, after the railway on a bridge passing over existing East Coastline and just west of the road Skånebergsleden. However, a deeper study of status needs to be explored to determine what future measures may be necessary. If the buoyancy is at the desired level, an excavation is not neccessary and the track substructure can be minimised.

The proposal also includes a fifth track for freight traffic from Gävle Västra up to the Gävle freight yard. A fifth track secures the capacity for freight traffic and thus reduces the disruptions to other traffic along the East Coast Line and the Bergslags railway line.

Milestones

No	*Specification*	*Date*	*Means of verification*
1	Signed contract for section Gävle C - Gävle Västra	2020-05-11	Contract
2	Decisions track solution, section Gävle C - Gävle Västra	2021-01-20	Decision document
5	First version of the Project Design Document Gävle C-Gävle V ready	2021-11-14	Report
10	Draft, the project design document, section Gävle C-Gävle V	2022-11-14	Report
14	Project design document ready Gävle C-Gävle Västra	2023-10-30	Report

Objectives
The goal with the planning document is to in detailed describe design of the railway and other measures for the construction of a new railway, section Gävle Central to the new station Gävle Västra. The design of platforms and tracks at the new station is included. The Project design documents include specifications for the procurement and production.



Figur 3.1-1 Järnvägstekniska benämningar – bank.
Figur 3. Konstruktion bank

Technical specification
The extension of the railway west from Gävle C consists of two new tracks placed adjacent to the two existing tracks for the Bergslag railway line.

Figure 6: Design drawing – the railway embankment

The new station is being built near Gävle Hospital, at Tolvfors. The new station will be a new hub for all railway lines in the area. Specifications to be handled in the project design document are:

1. The new double-track must be designed as followed;
   - straight rail track with curve radius of at least 3000 meters in order to keep the speed as high as possible.
   - a minimum track distance of 4.5 meters and 6 meters for every two pairs of tracks.
   - maximum permissible slope shall be 10 per mille, i.e 10 meters height difference per kilometre.
   - In stations locations there should be no slope at all
   - the track area shall be at least 15 meters width

2. At station locations
   - at least two platforms, 225 meters long
   - the tracks into platforms should be straight for at least 500 meters
3. The overhead management and signal systems must be adapted for speeds up to 250 km/h
4. There should be no level crossings along the double-track.Crossing roads must thus pass either above or below the railway
5. Train switches shall be placed on straight rail tracks.

A new hub, a commuter station, Gävle Västra will be investigated whether the track superstructure can be carried out with a slab-track or concrete troughballast-free track. Ballast-free track has higher stability and reduced maintenance which provides a safer track (used for high speed tracks, among other things).Special consideration is given to how the tracks are to be built over the water supply Valboåsen. The prerequisites are that a stable bank is built on which the tracks are laid. The design to the right has been outlined in previous studies.

Management structure
Theres is an organisation set for the
whole Action. The work is divided in two
section with a project manager with a project team for each section. See section 6.3 for a more detailed description.

Current stay of Play
The procurement documents are starting to be produced I June 2020.

Interdependencies between the activities
The Activity 1 and 2 are part of Activity 3 and must therefore to be finished before Activity 3 is finished, however, work is ongoing on activities 1,2 and 3 in parallel.

Stakeholders: Trafikverket, the electricity company Gävle Energy and Vattenfall, Gävle Water Company "Gästrikevatten", The community Gävle, The County government,The region of Gävleborg, road associations, properties and companies concerned, public transport companies.

Activity 2: EIA section Gävle Central - Gävle Västra
***Starts*: 2020-05-15** ***Ends*: 2023-10-30** ***Costs:* € 1 000 000**

The scope
Issues to be handled in the Environement Impact assessment (EIA) for the area Gävle C-Gävle Västra is the environmental aspects and impacts of the Action. In the overall assessment, the aspects have been sorted into four focus areas; climate, landscape, health and quality of life and resources available to people. The scope is adapted to the activity and the environmental conditions in sections Gävle C and Gävle Västra. Special requirements are the urban environment and the drinking water supply, Valboåsen, that the railway will pass.
The rail track should be designed in such a way that water supply is not threatened. Gävle has no reserve water supply.

Objective
The goal with an EIA is to integrate environmental aspects in the railway plan so that sustainable
is promoted. The EIA aims to report the effects and consequences caused by the proposed railway and how these affect people and the environment.

Milestones

No	*Specification*	*Date*	*Means of verification*
1	Signed contract for section Gävle C - Gävle Västra	2020-05-11	Contract
4	Decision on the design of groundwater protection Gävle C-Gävle V	2021-06-18	Decision document
7	Consultation meeting EIA Gävle C-Gävle Västra	2022-04-28	Consultation report
12	EIA-approval by the county administrative board Gävle C-Gävle V	2023-08-16	Decision document
15	EIA Approved Gävle C-Gävle Västra	2023-10-18	Decision document

Technical specification
The rail track should be designed in such a way that water supply is not threatened. Gävle has no reserve water supply. The residential area east of the road named Skånebergsvägen, in the central part of Gävle, is the most critical part of the railway line, especially during the construction phase. Necessary measures will be taken to protect the groundwater. The important function Gävle-Valboåsen fulfils as drinking water supply motivates that extra precautions are taken not to risk Gävle's water supply. Appropriate measures will be developed in future planning. The cost calculation includes groundwater protection of the new tracks at the intersection EIA is part of the planning process and is developed in accordance with good scientific practice and is carried out with appropriate methods

and techniques. The EIA document is a formal decision basis that provides guidance in the choice of alternatives and for the determination of the railway plan. The figure to the right shows the cornerstones of EIA.

The steps are adapted to the needs of the current planning stage. All relevant prerequisites and conditions concerning environment and surroundings will be investigated, clarified, described and specified. These specifications will be used as a basis for the formulation of the requirements in order to keep the installation's overall impacts within the set prerequisites. Results from the earlier Railway investigation and the localisation study will be complemented by results and findings from further environmental investigations, inquiries and studies. This will form an important and crucial input in the construction plan and the construction works. The activity will investigate, clarify and describe the following subject areas:

- Cultural environment
- Parks and Natural environment
- Contaminated areas
- Noise and Vibrations
- Air quality
- Excavated material
- Product choice and Resources
- Impact from a socially perspective
- Electromagnetic fields

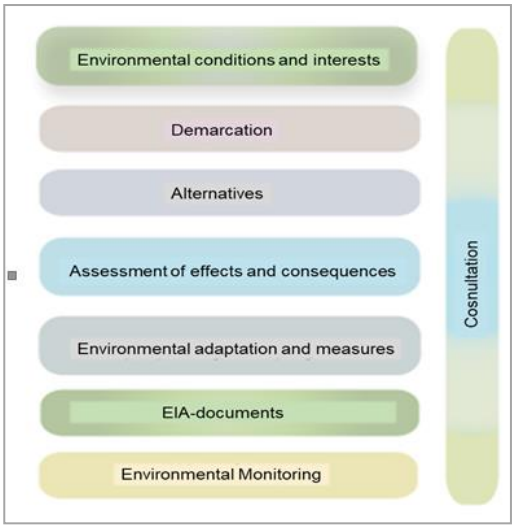


Figure 7: The EIA process

The results and findings from the subject areas above and the earlier Railway study will also form a basis to develop a framework and method to the Environmental Impact Assessment (EIA) process of the Railway plan. The activity will be both controlling and supporting the future contractors in that legislation must be met as the Environmental code and the Heritage Conservation Act.

Consultation is carried out and contributes for good quality in EIA, and To ensure that knowledge, views and values are utilized in a proper way. Trafikverket has the formal responsibility for consultation.
Consultations conducted are documented in a consultation report describing all consultations that have been held and with whom, what views have been expressed and how these have been taken care of. The County Administration Board approves the EIA document based on the Environmental Law before the report or plan is presented. The special conditions to be illustrated in the EIA for section Gävle C - Gävle Västra are the choice of design and working method is crucial for constructing of the railway track in the area near the water supply.

Interdependencies between the activities
The Activity 1 and 2 are part of Activity 3 and must therefore to be finished before Activity 3 is finished. however, work is ongoing on activities 1, 2 and 3 in parallel
The EIA process is going to be done place in parallel Activity 1 and 3.

Management structure: See Activity 1.
Stakeholders: See Activity 1

Activity 3: Railway plan section Gävle Central – Gävle Västra
Starts: 2020-06-01 **Ends: 2023-12-15** **Costs: € 1 000 000**

The scope
Railway plan is developed to give a detailed description of the new section Gävle C-Gävle Västra. The Railway Construction Act requires that a railway plan be drawn up and approved before construction can begin. The report sets out the conditions for the work on road and rail planning**.** The report is applied internally in the Swedish.


Figure 8: The new railway passing over the road E4

Transport Administration for handling the planning process. When the plan is complete, it must be exhibited, to give the public possibilities to submit comments and appeals. The railway plan is carried out in co-ordination with the Gävle municipality's detailed development plan. Furthermore, the main scope is to deliver a complete Railway.

Description of the work with the Railway Plan
The *Railway Plan* assignments are divided in installation components within geographic areas.

The content of the assignment is to define and provide an account of the installation complying with the formulated requirements. This includes the protective measures that are needed with due consideration to the impact on the surrounding area. The Railway plan document develops the design outlined earlier in the railway investigation and localisation study and gives further details about the chosen solutions concerning design of the construction and implying the need and extension of the project's land use. It specifies the construction of the railway tracks and the station Gävle C and the new station Gävle Västra and its location in detail based on several investigations, inquiries and studies. It also describes and prepares how to handle the land use availability and possible land acquisition. Also, the impact and consequences on railway traffic, travelling, environment, risk and security are described. It includes preparation of implementation as well as all essential functional, technical, economic, environmental measures, architectural and organisational solutions of the project. It will be used in continued planning and construction. A more in-depth going Environmental Impact Assessment than in the localisation study will be carried out as a part of the railway plan including exhibitions and consultations with parties concerned giving opportunities for transparency and influence.
The railway plan provides results to the project design document (see Activity 1), and the project planning document will give new input to the railway plan. Since the two studies affect each other they will be established in parallel. This part will carry out studies preparing and compiling the necessary material including public consultations to complete the railway plan.
Activity 3 covers all the issues required to secure and regulate the detailed localization and design as well as technical solutions of the railway facility including proposed protective measures and action programmes concerning the metropolitan location and environmental impact of the railway.
Information, exhibitions and public consultations with parties concerned will be on-going during the planning. The new track start at Gävle Central an goes in a corridor west along the existing railway line, the Bergslags line. A track connect to the Gävle Rail Yard. This track i passing under the East Coastline and connect to the Bergslags line in a place called Lexe.
The track will pass the water source at Valboåsen, the water supply for the city Gävle. This water source is covered by environmental quality standards. Gävle-Valboåsen's drinking water source also constitutes of a national interest for the drinking water supply. At the hospital in Gävle a new regional railway station will be established. The station is planned to be a new hub for commuting, a station where three railway lines meet. This Activity also includes demolition and relocation of Gävle Energy's electricity station, which is now located where the new tracks will go.

Milestones

No	*Specification*	*Date*	*Means of verification*
1	Signed contract for section Gävle C - Gävle Västra	2020-05-11	Contract
4	Decision on the design of groundwater protection Gävle C-Gävle V	2021-06-18	Decision document
8	Consultation meeting Railway plan Gävle C-Gävle Västra	2022-05-13	Consultation report
16	Review report Gävle C-Gävle Västra	2023-10-26	Report
19	Railway plan ready Gävle C-Gävle Västra	2023-12-15	Report

Objectives
The aim is to define and account for the construction of the railway fulfilling the formulated requirements.

Technical specification
The preliminary study for this railway indicates a track radius of 3000 m and track distance of 4.5 m as a minimum, (the standards in Sweden). The new track must be designed for the high-speed train. The maximum permissible slope shall be 10 per mile. At speeds between 250-320 km / h, technical requirements are set according to TDOK 2014: 0159 Technical system standard for high-speed railways. Se Activity 1 and 2 for more details.

I**nterdependencies between the activities**
The Activity 1 and 2 are a part of Activity 3 and must therefore to be finished before Activity 3 is finished. however, work is ongoing on activities 1, 2 and 3 in parallel.
Activity 3 will coordinate the process of the Environmental Impact Assessment (EIA) and Project design document as parts of the railway plan covering all environmental aspects and consequences of the construction and operations.
Management structure : See Activity 1
Stakeholders: See Activity

Activity 4: Project Design Document, section Gävle Västra-Kringlan
***Starts*; 2021-03 -01** ***Ends:* 2023-12-15** ***Costs:* € 2 300 0000**
Activity 1 for description of a Project Design Document
The Scope
The construction of double-track in a new section enables a faster and shorter railway which enables traffic at higher

speeds than today. Furthermore, the new stretch contributes to reduced barrier effects and that fewer residents are exposed to disturbing noise from the railway.

Objectives:
The goal with the planning design document is in detailed describe design of the railway and other measures for the construction of a new railway, section Gävle Västra to Kringlan. In the Planning design documents, created specifications for the procurement and production.

Milestones

No	*Specification*	*Date*	*Means of verification*
3	Signed contract for section Gävle Västra - Kringlan	2021-03-20	Contract
6	Decisions track solution, section Gävle Västra-Kringlan	2022-01-20	Report
9	Draft, the project design document section Gävle Västra-Kringlan	2022-11-11	Report
20	Planning design document Gävle Västra-Kringlan ready	2023-12-15	Report

Management structure
An organisation is set for the whole Action. The work is devided in two section with a project manager with a project team for each section. See section 6.3 for a more detailed description.

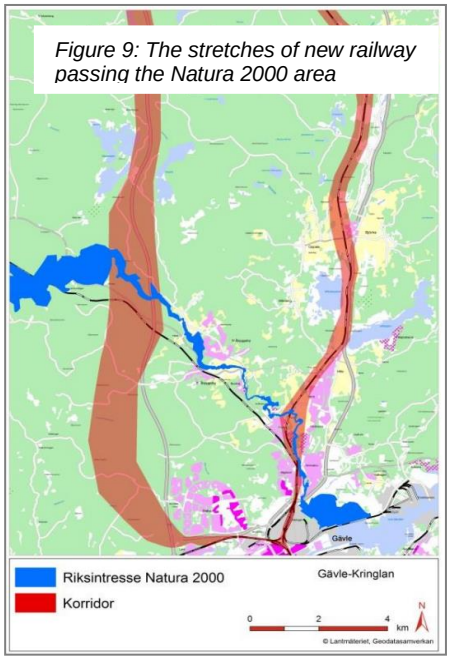


Figure 9: The stretches of new railway passing the Natura 2000 area

Technical specification
The section Gävle Väst-Kringlan starts after the new station Gävle Västra and goes north in a new stretch, first on a bridge over the road E4 and further north in new landscape. Se map to the right. To be able to connect the railway to the existing East Link further north and the slope to be no larger than the specified 10 pro mille, two roads must be lowered, the Hamnleden and the E4.The Bergslag line continuing southwest after the new station. The new railway reduce the barriar effect compared to the single track of today. Also, the noise problem from the railway will reduce when the new railway is in operation, fewer residents will be affected by the new route and to new noise protections. The technical design of the track is the same as described in Activity 1. Special environmental and landscape issues to consider are:

- The railway runs mainly through woodland and does not affect the agricultural industry.
- The landscape the East link will pass through is at first flat but, the terrain becomes hillier in north. There are a number of key biotopes covered by general biotope protection and 2 biotope protection areas in the corridor
- There are six lakes of different sizes in the corridor, some of which means narrow passages for prospective double-track.
- The corridor has about 30 watercourses of different sizes to cross, where Hamrångeån and Testeboån (a Natura 2000 are) are the largest. Hamrångeån is of national interest in the natural environment.
- In the northern part of the new track, two additional water protection areas are affected; Lössenåsen and also Hamrångefjärden's water protection area.
- A number of major thoroughfares passes through the railway corridor in the Gävle area.
- The corridor has about 30 watercourses of different sizes to cross, where Hamrångeån and Testeboån are the largest
- The Testeboån is covered by the Nature Reserve, a Natura 2000 area. Also, Hamrångeån is of national interest in the natural environment
- There are six lakes of different sizes in the corridor, some of which means narrow passages for prospective double-track
- In the northern part of the new track, two additional water protection areas are affected: Lössenåsen and also Hamrångefjärden's water protection area
- Several major thoroughfares pass through the railway corridor in the Gävle area.
- The soil is mainly of moraine and in some places there is boulders. Several larger and smaller peat and moss areas with unknown depth are passed within the corridor.

Current state of Play
The procurement documents are starting to be produced in June 2020.

Interdependencies between the activities The Activity 4 and 5 are a part of Activity 6 and must therefore to be finished before Activity 6 is finished. However, work is ongoing on activities 4, 5 and 6 in parallel.

Stakeholders
Trafikverket, the electricity company Gävle Energy and Vattenfall, Gävle Water Company "Gästrikevatten", The community Gävle, The County government, the region of Gävleborg, road associations, properties and companies concerned, public transport companies.

Activity 5: EIA, section Gävle Västra-Kringlan
Starts; 2021-03- 01 **Ends: 2023-10-30** **Costs: € 0,5 Million**

Se Activity 2 for description of an EIA.

The Scope Issues to be handled in the Environment Impact assessment (EIA) for the area Gävle Västra to the point Kringlan is the environmental aspects and impacts of th Action. In the overall assessment, the aspects have been sorted into four focus areas; climate, landscape, health and quality of life and resources available to people. The scope is adapted to the activity and the environmental conditions in section Gävle Västra to the point Kringlan. Special requirements are lowering of the two roads and Teseboån, the Natura 2000 area. The environmental impact description describes the environmental impact of the proposed plan. Environmental assessment is a process that takes place in parallel with the work of drawing up the plan proposal. In the overall assessment, the aspects have been sorted into four focus areas; climate, landscape, health and quality of life and resources available to people. The scope is adapted to the environmental conditions in section Gävle Västra -Kringlan.

Objectives
The goal of an environmental assessment is to integrate environmental aspects of the rail plan so that sustainable development is promoted. The EIA aims to report on the effects and consequences caused by the proposed railway and how these affect people and the environment.

Technical specification
The special environmental conditions to be illustrated in the EIA for section Gävle Västra - Kringlan are described in Activity 4.

Management structure
An organisation is set for the whole Action. The work is divided in two section with a project manager with a project team for each section. See section 6.3 for a more detailed description.

Milestones

No	Specification	Date	Means of verification
3	Signed contract for section Gävle Västra - Kringlan	2021-03-20	Contract
11	Consultation meeting Gävle Västra-Kringlan	2022-11-29	Consultation report
13	EIA- approval by the county administrative board Gävle V-Kringlan	2023-08-30	Decision document
17	EIA Approved Gävle Västra-Kringlan	2023-10-30	Decision document

Current state of Play
The procurement documents are starting to be produced I June 2020.

Interdependencies between the activities
The Activity 4 and 5 are a part of Activity 6 and must therefore to be finished before Activity 6 is finished. However, work is ongoing on activities 4, 5 and 6 in parallel.

Stakeholders: Trafikverket, the electricity company Gävle Energy and Vattenfall, Gävle Water Company "Gästrikevatten", The community Gävle, The County government, the region of Gävleborg, road associations, properties and companies concerned, public transport companies.

Activity 6: Railway plan for the section Gävle Västra – Kringlan
Starts: 2021-03-01 **Ends: 2023-12-15** **Costs: € 100 000**

In Activity 3 describes whats included in a railway plan.

The Scope
The scope is to build a new double-track railway in a new and shorter stretch in an area with few residents that can be disturbed by the railway.
With double-track, capacity increases and travel time decreases. Furthermore, the main scope is to deliver a complete Railway Plan.

ObjectivesThe aim is to define and account for the construction of the railway fulfilling the formulated requirements

Figure 10: The type of landscape the new railway will pass

Milestones

No	*Specification*	*Date*	*Means of verification*
3	Signed contract for section Gävle Västra - Kringlan	2021-03-20	Contract
11	Consultation meeting Gävle Västra-Kringlan	2022-11-29	Consultation
18	Public review Gävle Västra-Kringlan	2023-12-07	Report
20	Railway plan ready Gävle Västra-Kringlan	2023-12-15	Report

Technical specification
The aim is to define and account for the construction of the railway fulfilling the formulated requirements. The preliminary study for this railway indicates that a track radius of 3000 m and track distance of 4.5 m is a minimum, which is the standard distance in Sweden. The new track must be designed for the high speed train. The maximum permissible slope shall be 10 per mile. At speeds between 250-320 km / h, technical requirements are set according to TDOK 2014: 0159 Technical system standard for high-speed railways. See Activity 4 and 5 for more details.

Management structure: Se Activity 1
The Activity 4 and 5 are dependant of Activity 6 and must therefore to be finished before Activity 6 is finished. However, work is ongoing on activities 4, 5 and 6 in parallel.

Stakeholders: See Activity

Interdependencies between the activities
The Activity 4 and 5 are dependant of Activity 6 and must therefore to be finished before Activity 6 is finished. However, work is ongoing on activities 4, 5 and 6 in parallel.

2.4. Description of the location of the proposed Action

Please see map in GIS tool in the eSubmission module. The Action is the section in the beginning of the core network, The East Coastline in south, from Gävle and north to a meeting point called Kringlan.

2.5. Planning overview of the Action

Section on the Global project	Included int the National Plan for development of the transport infrastructure for the year 2018-2029	Planned to be financed under the National Plan 2018-2029
Gävle-Kringlan	Start to produce the railway plan in 2019	Planned to be finished 2027
Kringlan-Hudiksvall	Studies are ongoing	Planned to start
Hudiksvall Dingersjö	Construction work ongoing	Plan to start operation 2020
Dingersjö-Sundsvall	Construction works starts 2021	Plan to be operating in 2027

A Gantt chart showing the activities of the Action including milestones and the critical path is found in Annex 1.

3. RELEVANCE: CONTRIBUTION OF THE PROPOSED ACTION TO THE TEN-T POLICY OBJECTIVES AND EU DIMENSION

3.1. Contribution of the proposed Action to TEN-T network (Core and/or Comprehensive) or classification as a project of common interest

The Global Project including the Action is of common interest according to Article 7 of the TEN-T Guidelines. The Global Project including the Action is of common interest, located on the core network and is a part of the proposed extions of the Scan-Med corridor, as an essential step in linking the Nordic countries of Sweden, Denmark, and Finland and their capitals to each other and improving passenger and freight transport from the region to southern . Europe and Russia. Also, the Global Project, including the Action, demonstrate European added value by

contribute the development of the trans-European transport network through the creation of new transport infrastructure in compliance with Chapter II and Chapter III TEN-T Guidelines No 1315/2013, by eliminate a large bottleneck on the core network, more specified on the Bothnian corridor which connect Sweden to Finland and further south to Russia and the Baltic countries (see map to the right, "*TENT Guideline, ANNEX I, maps of the core networks, map 0.4. Core Network: Roads, ports, rail road terminals (RRT) and airports EU Member States, section Scandinavia)".* The Action contribute to the objectives falling within all four of the categories set out in Article four, TEN-T Gudielines, see detailed description in point 3.2. This Action results in increased capacity, safety, improved opportunities for commuting and improvements for industrial freight transport. Thereby, is the Action contributing to TEN-T goals by creating good connections to neighbouring countries with faster travel times for the passenger and increased capacity for transport for freight. The Action is proposed under *"*MULTI-ANNUAL WORK PROGRAMME 2014-2020 CEF TRANSPORT 2019 - GENERAL ENVELOPE ON THE BASIS OF THE COMMISSION IMPLEMENTING DECISION C(2019)7303 OF 16 OCTOBER 2019 – ANNEX I, Pre-identified projects on the Core Network. Objectives purposed by this work program and the funding priorities: Funding Objective 3, 3.1: Actions related to the funding objective "removing bottlenecks, enhancing rail interoperability, bridging missing links and, in particular, improving cross-border sections".
The line will be operated by train with speeds of up to 200-250 km/h. Reducing travel times between densely populated metropolitan areas is important and stimulate development in the regions between the largest metropolitan area.

Figure 11: Gävle-Kringlan on the core network Corridor on the East coast of Sweden

The Global Project and the Action reduces bottlenecks, enables smooth, safe and sustainable travels for passenger and Sundsvall transport mobility of goods, ensuring accessibility and contributing to increased economic growth and competitiveness in a global perspective. The socio-economic impacts are positive for transport quality, capacity, safety, accessibility, climate and the environment. The Action will have a network effect as it contributes to safer, more reliable and environ-mental connections for the immense freight flows between continental Europe and Sweden. The first step towards realization of upgrading of the railway to double-track between Gävle and was taken when the Swedish government included the section Gävle-Kringlan in the National plan for the transport system for the period 2018-2029.
The Global Project and the Action is a project of common interest by:

- Address the four objectives for TEN-T categories set out in Article 4 (Se 3.2) in TEN-T Regulation (EU) No 1315/2013.
- Address measures to reach in Article 7.2 a and c, Regulation (EU) No 1316/2013.
- Be eligible for Union financial assistance under the instruments available for the trans-European transport network.
- Trafikverkets planning process
- Increase mobility and sets high safety standards as well as contributing to increased freight transports by rail
- instead of trucks. (chapter III Article in TENt-T Regulation).

3.2. Contribution of the proposed Action to TEN-T and CEF priorities

The Action addressed the TEN-T and CEF priorities by eliminating a large bottleneck and increase the intermodality as described in Article 4 of the TEN-T Guideline (see table below).
Article 4 in TEN-T-Guidelines. The Action address all (a-d) where 4 b(iii), 4 c(i)and 4d (ii) are the most tangible.

4a) Cohesion through	
(iii)	*for both passenger and freight transport between Gävle and the cities along the coast up to Sundsvall, interconnection between transport infrastructure sea to rail on long-distance traffic as well as regional and local traffic*
(iv)	*Double track on the East Coast line reflects the need in the region and stimulate both commuting and long-distance travels.*
4b) Efficiency through	

(i)	*The Action will, by building a robust double-track network, eliminate existing bottleneck on the East Coast line. The East Coastline will become a more effective and safe connection för travels over the border to Finland. The East Coastline is defined as another section of the core network due to the bottleneck and the missing link between coastal cities*
(ii)	*The Action will contribute to interconnection and interoperability of national transport networks*
(iii)	*The new station (Gävle Västra) being built will be a new railway hub för all railway lines in the regions well as the buses in the public transport system.*
(iv)	*The Action will promote a more economic growth and competitiveness by offering high-quality transport.*
(v)	*With a new double-track on the section between Gävle amd Kringlan the conditions are assessed for a more efficient use of the rebuild existing infrastructure.. An area west of the railway that so hasn´t have access to any train traffic will, with the new stretch of railway, gain access.*
4c) Sustainability through	
(i)	*By devlope new doubletrack railway Trafikverket will ensure a transport network that is sustainable and economically efficient in the long term.*
(ii)+ (iii)	*More travels with train instead of car contribute to low greenhouse gas emissions, low-carbon and clean transport and support reduced CO2 emissions.*
4d) Increasing the benefits for its users through	
(ii)	*The Action will ensuring safe, secure and high-quality standards, for both passenger and freight transport by building the new railway with a standard that at least meet the standards of previously TEN-T supported railway lines in the regions (e.g. Bothnia Line).*
(iv)	*The Action will contribute to safety and security, which will ensure quality, efficiency and sustainability of transport services.*

3.3. Contribution of the proposed Action to the objectives of the priority/sub-priority under which it is submitted

The Global Project and the Action are crucial projects and meet the goals and funding priorities in the Multi Annual Work Programme 2019- General Envelope, on the basis of the commission implementing Decision C(2019)7303 of 16 October,3.1 Actions related to the funding objective “removing bottlenecks, enhancing rail interoperability, bridging missing links and, in particular, improving cross-border sections”**.** The Action is located on the Core Railway Network on the pre-identified Stockholm-Gävle -Sundsvall on the Scan-Med corridor as stipulated in Annex I, Part I, point 2 of the CEF Regulation.
It is organised according to the following funding priorities in line with the CEF Regulation as supplemented by the Delegated Act of 8 July 2016 concerning the CEF transport funding priorities:
1. The objective of bridging missing links, removing bottlenecks, enhancing rail interoperability, and, in particular,
2. The objective of ensuring sustainable and efficient transport systems in the long run.
3. The objective of optimising the integration and interconnection of transport modes and enhancing the interoperability of transport services.
The Action meet the definition in Article 2(5) CEF . "Works" means the purchase, supply and deployment of components, systems and services including software, the carrying-out of development and construction and installation activities relating to a project, the acceptance of installations and the launching of a project.

The Action contributes to the general priorities set up in Article 4 (see 3.2) and Article10 (b-e) and specifically 10 (c and d) by removing a bottleneck, which will have a big positive impact passenger and freight traffic on the whole. The Action will also contribute to optimization of the existing infrastructure as it can be used more effective.

The project manager team for this application will ensure that work on the Action follows what is stated in Chapter III (Core Network) of the TEN-T Guidelines and with the provisions of Directive 2008/57/EC of the European Parliament and of the Council and of Directive 2016/797 of the European Parliament and of the Council1. Support will not be granted to railway stations, except for railway infrastructure components.

The Action will also help in increasing multi-modality, sustainably shifting from cars to softer modes (public transport, cycling, walking) for freight and/or passengers, shifting from fossil to alternative fuels (electricity for the railway).

3.4. Contribution of the proposed Action to the internal market, the cohesion policy and promoting growth and jobs creation in line with the Europe 2020 strategy

The EU2020 strategy for growth and competitiveness, the economic growth and the creation of jobs also depends on international competitiveness, which needs to be supported by good transport connections. The strategy

promotes smart and sustainable growth to address the structural weaknesses in the European economy, improve competitiveness and productivity and support sustainable social market economy. The Action, leading to an elimination of a bottleneck in the core network, will contribute positively to both economic growth and regional development and attract investors and residents. It is likely to, through the provision of an efficient and intermodal transport system, lead to spin-off effects and attract other investments (apart from the infrastructure investments in this proposal), which will have significant positive effects on regional and economic development.

Also, the Global Project and Action contribute to the goal in Europe 2020 strategy concerning energy sustainability, employment and innovation. The Action will help to increase multi-modality, sustainably shifting from cars to softer modes (public transport, cycling, walking) for freight and/or passengers, shifting from fossil to alternative fuels (electricity for the railway).
Regarding to the Cohesion Policy, the Action will improve access to markets throughout Europe by remove economic, social and territorial disparities across the EU as well as making the Gävle region more competitive, fostering economic growth and creating new jobs. It will also contribute to make the city regions more attractive to investors and residents by improving accessibility and provision of an intermodal and efficient transport system.

The Action will promote growth and employment both within and across regions in a manner that is fully consistent with the objectives of sustainable development. A better, more reliable, faster and easier railway will enable people from other parts of the country to work in the region which will have a positive effect on employment. Furthermore, as the use of railway transport is made more attractive and energy conservation is attained which will have a positive effect on climate changes. Increased use of railways also makes the goals of environmental protection more achievable by leading to the general promotion of sustainable development.

Employment. An efficient new equipped new generations railway system and efficient access is important for sustainable growth. The Action will promote growth and jobs both within and across regions in a manner that is fully consistent with the objectives of sustainable development.

Climate change/ energy. The new generations line is an important step to reduce emission of greenhouse gases and reach the goal towards Europe Strategy 2030. More sustainable transportation is crucial to reach this goal and new railway will significantly increase the number of passengers travelling by rail and reduce the number of people travelling by car or bus. It will stimulate change of modes to rail both for the short as well as the long distance travels both in Sweden and further out into Europe.

Expanded rail is important for the economic growth. Realisation of the global project also aims at causing less negative environmental impact. Removal of the bottleneck will contribute to safer, more reliable and environmentally-sound connections of the rail traffic to continental Europe mainly through the TEN-T links in Scandinavia. Action will likely have positive effects on the whole corridor south of Sweden.

3.5. Cross-border section

3.5.1 Is the proposed Action located on a section which ensures the continuity of a project of common interest between the nearest urban nodes, as specified in Article 3(m) and 3(p) of the TEN-T Guidelines, on each side of the border of two Member States or between a Member State and a neighbouring country, or does the proposed Action ensure, via a neighbouring / third country, continuity of a Core Network Corridor between two Member States?

☐ Yes
☒ No

If yes, provide justification for classifying the proposed Action (or part of the proposed Action) as cross-border, indicate which Member States and, if applicable, neighbouring / third country(ies) are directly concerned and which activities each of them will be carrying out in the framework of the proposed Action. Please indicate which Core Network Corridors are addressed, if applicable.

N/A

3.5.2 Have the Member States and, if applicable, neighbouring / third country(ies), concerned concluded a written agreement at appropriate level relating to the completion of the cross border section, in accordance with Article 7 (2) of the CEF Regulation?

☐ Yes
☒ No
☐ N/A

If yes, describe the main elements of this agreement and attach a copy of it in annex.

N/A

3.5.3. Have the Member States and, if applicable, neighbouring / third contry(ies), made other joint commitments regarding the proposed Action?

☐ Yes
☒ No
☐ N/A

If yes, clarify and detail, as appropriate, and attach copies of the related documents, if applicable, in particular legally binding agreement(s).

N/A

3.6. Bottleneck

Does the proposed Action addresses improving a bottleneck in the sense of Article 3 (q) of the TEN-T Regulation?

☒ Yes
☐ No

If yes, indicate which bottleneck will be improved and which activities of the proposed Action will facilitate this.

The Action, creating new infrastructure or substantially upgrading existing infrastructure, address the Article 3(q) of the TEN-T regulation be eliminate a physical, technical or functional barrier on the Eats Coast Line, which will increase the traffic flow and stimulate the use of rail for passenger and freight on long-distance and cross-border travels and transports.
This Action addresses a bottleneck on the Scan-Med corridor in Sweden that affects freight flows both in Sweden and cross-border as defined in Annex I, part I, point 3 (Other sections of the core network Stockholm-Gävle-Sundsvall) of the CEF Regulation.

4. MATURITY OF THE PROPOSED ACTION

4.1. Approval of the proposed Action to commence the planned activities (at government, regional local level, including environmental approvals)

Based on the directives and conditions given from the Swedish Government, Trafikverket has responsibility for the development of the national plan for transport infrastructure. Before the planning process for an infrastructure project is commenced, a long term financial plan for the transport system (road, railway, maritime and aviation) is conducted in the National Transport Plan. The National Transport Plan is passed by the Swedish Government and spans over ten years. This is done in collaboration with the County council, the County Administrative Board and other stakeholders.

Level	Level or type of approval	Status	Deciding authority
Regional	Localisation study	2017-03-24 Rev 2019-01-23	Trafikverket
Regional/ National	Consultation rewiev dubble-track Gävle-Kringlan	2017-03-24 Rev 2019-01-23	Trafikverket
National	National Transport Plan for 2018-2029. The railway section Gävle C-Kringlan is included in the plan	Approved 2014-09-12	The Swedish Government
National	Construction work - start decision	Approved 2017-04-05	The Swedish Government
Local	Investment Decision	Decision 2019-03-19	The Municipality of Gävle

Table 2:Approval

4.2 Political commitments to the proposed Action (and global project)

The Action as a part of the Global Project is included in the National Transport Plan for the years 2018–2029 decided upon by the Swedish government. See Annex 2, Swedish Government decision - the National Transport Plan, 2018-2029. The Swedish government as well as Trafikverket has a high political commitment and has been deeply involved in the development of the TEN-T networks, green corridors and the development of the Scandinavian Mediterranean Corridor for both passengers and goods. This commitment is based on the acknowledgement that International partnerships are needed for a successful development of sustainable transport corridors to and from the Nordic region. Trafikverket has been commissioned by the Government to investigate the requirements of increased railway according to the National Plan. The Action is located on the Bothnian corridor. Sweden, together with Finland, has proposed to the EU Commission an extension of the existing core network corridor "Scandinavia - Mediterranean" up to the Swedish-Finnish border at Haparanda and further along the west

coast of Finland. In Sweden, an extension is also proposed via Örebro to Oslo (Norway). At a joint meeting between the Committees on Industry, Research and Energy (ITRE) and Transport and Tourism (TRAN), the negotiated agreement on the next CEF Regulation, CEF 2., was adopted. Core network corridors are extended to include the Botanical corridor. The next step is an approvement by the full house of the Parliament and the Council of the EU.
Projects in the corridor for the East Coastline which has previously received CEF financing are:
2019-SE-TA-0004-W Gävle Port – New electrified railway connection
2013-SE-91030-S, Bothnian Corridor - Double Triangle Supporting Sundsvall's Logistics Park
2011-SE-93045-P,Bothnian Corridor - East Coast Line - increased capacity – Meeting stations
2011-SE-93035-S,Bothnian Corridor - East Coast Line - increased capacity - Study new line Stångån-Dingersjö

4.3 Public consultation(s)

Public consultations are important during the entire planning process. The stakeholder in the Action are contacted, both separately and jointly. Discussions with authorities, municipalities, organizations and the public to receive opinions and gain knowledge.

The general consultation plan for all railway and road projects in Sweden
The consultations are conducted in open meetings, special meetings with landowners, open houses, seminars, information and dialogue through publications and on the internet. The opinions from the consultations are published in a consultation description including a description of what the project has done to meet the different suggestions and opinions received.
At the start of a project, the work that will be carried out is described; at what times, in what form and with whom the partners plan to have consultations. The description is updated regularly during the project.
The dialogue between Trafikverket and municipalities, county administrative boards and affected citizens is very important.

The consultation addresses the location, the design and the environmental impact of the planned infrastructure. During the consultations, suggested solutions, environmental impact and impact on single properties (for example the need for noise protection) are discussed.

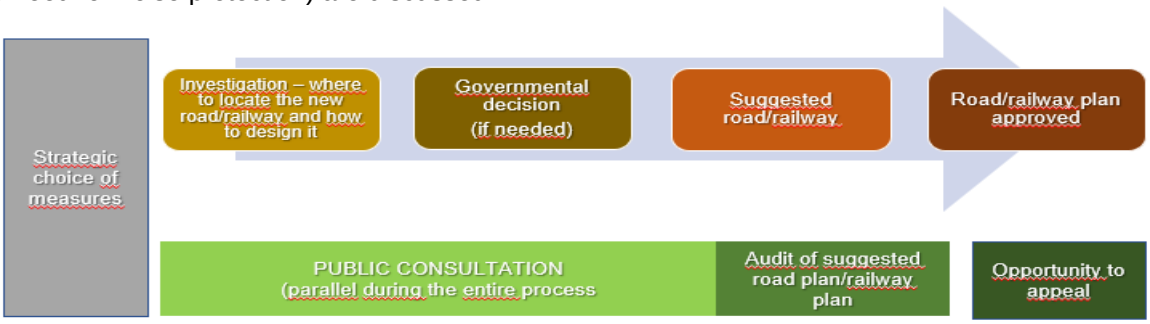


Figure 12: The planning and consultation process

Finalising a road or railway plan
The suggested plan includes a description of which consultations have taken place before the plan is made public (including which opinions have been considered and how they have influenced the Project as well as motivation for why some opinions have been disregarded). After the public review, the plan is submitted to the county administrative board for their opinion.
If the county administrative board approves the plan and if there is financing for the construction, the plan is submitted for approval at which point the project's impact on environment, health, intrusion and inconveniences are considered all together.
The plan is approved by Trafikverket if it finds that the advantages for the public exceed the inconveniences for single interests. The decision can be appealed at the government level.

The public consultations in the Action
The project is divided into two projects and each of these have design consultants working with railway plans in different sections.

The Action
Information meeting has been held with the County Administration Board, the community of Gävle and Gävle Vatten (responsible for the water resource) .Public meetings are planned in the process of developing a railway plan. During the period with the work with feasibility study, a public consultations meeting was held in 2016.

4.4 Readiness / technical maturity of the proposed Action

The Preparatory studies and the first part of the Railway plan, the study of alternative localisations for the Action are completed. The current status for Activities are:

Activity 1-3:

- Tender documents have been prepared and are advertised and available in the procurement system. Tenders will be submitted at latest March 24, 2020.
- Measurement of existing track on the railway line The Bergslag railway line is ongoing.
- Investigation of relocation of the station for Gävle Västra is ongoing.
- Archaeological investigations have been procured through the County Administrative Board, the result being a basis for Activity 2-3.

Activity4-6:

- A Consultant conducts a study of the status of the railway network in order to develop a basis for procurement of activity 4-6. The study focuses on the problems along the route, other parts will be handled more briefly. The two focus areas are:
  - Crossing between rail and road at the Gävle Norra traffic area.
  - Design of passages over existing Northern Stambanan and new East Coast Line parallel to E4 near natural 2000 area Testeboån.

4.5 Building permits

Subject of building permit procedure	Date of award of building permit	If relevant, foreseen date of award of building permit	Foreseen start date of works
N/A(the Action is a study)			

4.6 Procurement

4.6.1 Procurement in general

The acts are based on EU Procurement Directives and thus several fundamental EU principles must be observed for public procurement in the EU. It means that all suppliers must be treated in a similar and non-discriminatory way and procurement must be carried out in an open process.

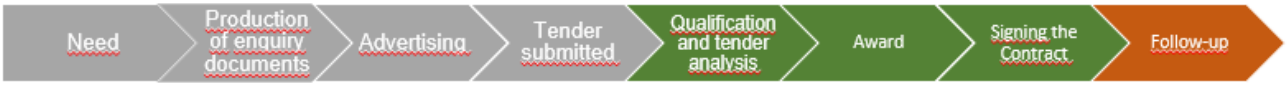


Figure 13: Procurement process

The contract is followed up continuously during the duration of the contract. Procurement regarding the two Railway plans (the project design document and EIA for each of them are included) is ongoing. The procurement form is turnkey contracts.

By law The Swedish Transport Administration must advertise its procurements in a publicly accessible database. The advertised procurements can be found website.

Need

A need for a product, service or contract arises within one of the partners. The need is defined in the tender documentation.

Preparation of tender documentation

The tender documentation describes what is to be procured, what requirements are placed on the tenderer and the subject of the procurement, as well as how the tenders will be evaluated.

The tender documentation consists of several documents, e.g. procurement regulations, administrative regulations, technical specifications of requirements, a contract proposal, appendices that may have to be filled in, and standard conditions.

Advertising

Procurement opportunities are advertised in a publicly accessible database. Procurements of low value (so called known as direct procurements) do not have to be advertised. A prequalification system is used for procurements over the threshold values and for procurements in accordance with LUF. These types of procurements also do not have to be advertised.

Tenders submitted

The supplier sends in their tender. It is important for the tender to arrive at the right time to be valid.

Qualification and tender evaluation

Tenders are evaluated in accordance with the evaluation criteria set out in the tender documentation.

Contract award

Notification is sent to all tenders setting out which supplier(s) has (have) been awarded the contract. The contract can be signed ten days after the award notification has been sent.

Signing the contract

The contract is signed with the winning supplier(s).

Follow-up

The same procurement method has been and will be used for all parts of the proposed Action.
Trafikverket will follow up on the environmental measures carried out and ensure
that standards are followed. This is done through environmental protection in the Project, as well as the preparation of action plans, control programs and risk analyses during construction time as well as follow-up in the operating phase. All legislation governing public procurement rests on five basic principles.
The provisions in the procurement acts should always be interpreted with these considered.

Non-discrimination

The principle of non-discrimination entails a prohibition on discriminating against suppliers/service providers because of their nationality, for instance through citizenship or country of establishment or operations. The contracting authority may not impose requirements that only Swedish companies will be familiar with or able to fulfil. Candidates and tenderers from other locations shall be treated in the same way as enterprises from within the local municipality.

Equal treatment

The principle of equal treatment means that all suppliers/service providers should be subject to the same conditions. For example, all suppliers/service providers must get access to the same information at the same time, so no single supplier/service provider gains an advantage.

Transparency

The principle of transparency means that procurements should be characterized by transparency and predictability. Information relating to the procurement may not be kept secret, the procurement is to be published publicly and the suppliers/service providers that have taken part in the tendering procedure are to be informed of the results. Procurements are to be public and the procurement documentation must be predictable, i.e., clearly worded and include all the requirements made.

Mutual recognition

The principle of mutual recognition means that reports and certificates issued by the authorities of any member state shall also be valid in all other EU and EEA states.

Proportionality

The principle of proportionality means that the requirements and conditions in the procurement should be reasonable in proportion to the object of procurement. Measures taken by the contracting authority may not go.

4.6.2 Contracts already awarded and procedure(s) applied

No contract has been awarded.

4.6.3 Procurements planned during implementation

Two procurement will be done during implementation:

- Railway Plan Gävle C-Gävle West. Sending out tender documents 2020. **Cost:** € 1,8 - 4,6 Million
- Railway plan Gävle Västra-Kringlan. Sending out tender documents 2020.**Cost:** € 1,8 - 4,6 Million

4.7 Pending legal/administrative/technical issues

There are no pending legal, administrative or technical issues that remain to be settled at the time for the activities of the Action can start.

4.8 Financial maturity

4.8.1 Envisaged finacing model

The costs for the Action are secured by the applicant's (Trafikverket) own resources through public funding, which is the common way of financing the national infrastructure in Sweden. The Action is approved and included in the Swedish National Plan for the Infrastructure 2018-2029.

4.8.2 Evidence on the status of securing the financial commitments for all funding and financing sources of the proposed Action

Generally all infrastructure in Sweden is financed by the Government; state, region or municipality. Revenues to the project are composed of increased revenue from fuel taxes, plus the maintenance and replacement subsidies for the increased costs of operations. This action is seen as a prolongation of the already TEN-T financed actions in the corridor for the East Coastline:
2019-SE-TA-0004-W Gävle Port – New electrified railway connection, € 101 400
2013-SE-91030-S, Bothnian Corridor -Double Triangle Supporting Sundsvall's Logistics Park, € 308,444
2011-SE-93045-P,Bothnian Corridor - East Coast Line - increased capacity - Meeting stations, € 2,292,000
2011-SE-93035-S,Bothnian Corridor - East Coast Line - increased capacity - Study new line Stangan-Dingersjo, € 1,356,000

5 IMPACT

IMPACT OF THE PROPOSED ACTION

5.1 Impact of the studies as a decision-making tool and/or in terms of policy-making and developing best practices

The output of the study will be used on different levels in the decision-making process. However it is first and foremost a basis for decision-making on a national level.
Being a large and special infrastructure project of crucial importance, the output will be used in other similar large infrastructure projects. However, the study will also be important as a decision-making tool on the regional and local level. Local and regional planning must be in line with and depend upon the national planning.
A railway plan is legally binding and a prerequisite for the future work. However, all parts of the study will serve as basis for future decision-making. They will be used during the whole project process, a period of 15-20 years.
The results of the studies are also highly relevant for cost and benefits in the future. Rigorous planning documents are crucial for successful and timely implementation. Unnecessary delays due to lack in the planning phase can be costly and affect the socio-economic benefits negatively. Therefore, it is important to put the costs for studies and planning in relation to delays and what negative consequences that it might have on the economy.
For the development of new double-track on the East Coast line between Gävle and Sundsvall, the studies described are a prerequisite for success (listed in point 5.3). The study process will consider the policy context and make use of existing similar best practice. Benchmarking with other projects will be carried out and engaging of expertise in all areas to develop the know-how of the project. The project also runs an expert advisory group which contributes with experience from other large infrastructure projects.

In order to secure spreading of best practice and the new knowledge gained during the process and concerning the new technique, the project will be presented on conferences, in relevant networks etc.

5.2 Demand analysis

In 2015, National Housing and Infrastructure Negotiation developed a method for calculating utility analyzes for infrastructure investments. The mandate for the national housing and infrastructure negotiation was to enable the projects to be implemented faster, to propose financing principles and a development strategy, and to identify route and station alternatives in and around cities. The method is based on the traditional socio-economic calculation. The following data for the East Coast line is based on the 2015 calculations.
Double-track on The East Coast line for the calculation period (60 years) would provide a total benefit of about SEK 36 billion for passenger traffic. Travel time benefits for travellers amount to just over SEK 28 billion and the benefits for transport companies to about SEK 7 billion. During the period 2031-2040, the accumulated business value will be SEK 2.4 billion and the contribution to the GDP will be just over SEK 4 billion.

Table 3: Travel time benefit for communities along the East Coast Line for the year 2030.

Communitis On the East Coast Line	Year 2030		
	Total € Million	Regional Travel time Benefit € Million	National Travel time Benefit € Million
Sundsvall	8,9	1,0	1,8
Hudiksvall	2,8	1,2	1,6
Gävle	4,4	1,7	2,8

The infrastructure expansion leads to an increased supply between Gävle and Sundsvall from 21 trains per day to 48 trains per day, and between Sundsvall and Härnösand from 14 trains per day to 40 trains per day.

The truck flows on the E4 between Gävle and Söderhamn (100 km north) are expected to increase with 25-40

percent by 2040, from 1900 trucks per day to approximately 2.300-2-600.

Table 4: The travel time today and estimated travel time after new the East Coast line is in operation

	Travel time with car - today	Travel time with rail - today	Travel time with extended East Coast line
Gävle-Sundsvall	2h 20 min	2h 7 min	0 h 58 min
Stockholm-Sundsvall	4 h 00 min	3 h 31 min	2 h 3 min

Table 5: The number of freight train and Million goods for the year 2016 (Samgods april 2016)

	Basic scenario 2030		Nya East Coast line	
Gävle-Söderhamn	22 train/day	1,8 Mton/year	27 train/day	2,7 Mton/ year
Söderhamn-Hudiksvall	32 train/day	3,4 Mton/ year	50 train/day	4,8 Mton/ year
Hudiksvall-Sundsvall	32 train/day	3,5 Mton/ year	41 train/day	4,2 Mton/ year

Travel times by train and car are estimated in a socio-economic calculation from 2016 to be significantly shorter by trains with extended East Coast line. Significantly shorter than traveling by car.

According to Trafikverket, approximately 2,500 trucks operate the southern Norrland coast every day. If nothing is done, this figure will increase by 40 percent by 2040.

Table 6: Key figure for the year 2030

	Year 2030		
	Situation today	Investigation options	Difference
No of cars travels	2 993 700 000	2 991 800 000	- 1 900 000
No of travels with public transports	365 800 000	369 100 000	+ 330 000
No of traveler kilometer, total	34 373 000	36 377 000	+ 2 004 000
No of traveler kilometer, regional	1 641 000	2 103 000	+ 643 000
No of traveler kilometer, national	32 732 000	34 274 000	+ 1 541 000
No of train kilometer, total	2 373 858	2 404 131	+ 30 273

5.3 Alternative options considered to achieve the Action's objectives and feasibility

Trafikverket has investigated two location options for double-tracks on a approximately 40 km stretch of Gävle – Kringlan. Either double-track in new section, mainly co-located by road E4 (Western alternative), or extension to double-track in connection with existing railway (Eastern alternative).
In the table below some important studies regarding the framework of the Action are presented:

Table 7: Studies carried out

Study	**Year**
Inventory of natural values and cultural-historical analysis	2019
Statement regarding choice of location alternatives, the East Coast Line, double-track Gävle - Kringlan	2019
Capacity investigation	2018
Consultation report regarding choice of location, the East Coast Line, double-track Gävle - Kringlan.	2017
Railway plan, part 1 Choice of location including EIA, the East Coast Line, double-track Gävle - Kringlan Consultation document	2016
Constructability Investigation, the East Coast Line, double-track Gävle - Kringlan	2016
Report, Coordinated planning for the railway between Gävle and Sundsvall, Cooperation process between the municipalities, Sundsvall, Nordanstig, Hudiksvall, Söderhamn and Gävle, and Region Gävleborg and Trafikverket	2015
Action selection study, study of increased capacity on the East Coast line, The analysis was carried out according to the four-step principle.	2013
Action selection study, the transport node Gävle	2015
Feasibility study double-track Gävle -Sundsvall	2010
Concept study, Development of double-track in section Gävle – Sundsvall,	2008
Concept study, the East Coast line – Regional analysis of the function and development of the railway	2006

Ongoing studies and analysis pertain to detailed measurement and laser scanning for the section Gävle West (west) to Kringlan but also operational study for Gävle Central Station.

The planning follows the Swedish Transport Administraions process for infrastructure development. The process is more detailed describes in point 6.4. The planning process starts with a studie following “the four step principle”. The four steps are defined in the following way:
Step 1: Means to affect transport demand and mode choice. Includes planning, pricing as well as regulation, the purpose being to transfer transport to safer and more sustainable modes.
Step 2: Means to provide for more efficient use of existing infrastructure. Includes planning, pricing as well as regulation, the purpose being to use infrastructure in a more efficient, safer and more sustainable way.

Step 3: Reconstruction. Includes improvements of existing assets.
Step 4: Investment. Includes the construction of new infrastructure that makes use of new land.
Below the most important studies regarding the East Coat Line and the section Gävle -Kringlan are shortly desbried:

The concept studies
An idea study was conducted in 2006 to show what capacity and travel time improvements a double-track extension along the East Coast line would entail. This idea study was followed by an in-depth idea study in 2008 with the aim to see how a double-track extension should be implemented by dividing the extension into sections. Development sections were prioritized regarding best efficiency, capacity and travel time gains.

Feasibility studies
The study was ready in 2010 and presentad possible corridors for a future expansion. Along different sections of the track, two or more corridors have been designated as possible for a future double-track. On the stages between Ljusne and Enånger, the existing track was so good in terms of design that there was no western corridor but only a corridor along the existing track with room for curve corrections and double tracks. For the Bäling – Tjärnvik stage, the existing track was such a detour that it was eliminated in the feasibility study and only new distance remains as an alternative. The next step was initiated in 2014 when the investigators continued to obtain a decision basis for the choice of a corridor for a future double-track.
The work has been carried out within the framework of coordinated planning together with the relevant municipalities, regional bodies and county boards.
Conclusions from in-depth idea study:

- Double-tracks on the entire Gävle -Sundsvall route are required for the required number of trains to be performed in 2020.
- To meet the transport needs when expanding in sections, a combination of meeting stations and double-tracks is needed.
- In terms of travel time and capacity, it is more advantageous to have a few long double-track section than more short ones.
- To achieve shorter travel times for high-speed trains, double-tracks are needed in new stretches.

The conclusion in the study is that a double-track are required to meet future traffic needs. A double-track extension from Gävle and Sundvall, respectively, is a top priority from a traffic and capacity point of view. Several alternatives were rejected in this study. The most important reason was the difficulty in achieving the goals regarding high transport quality for both freight and passenger traffic. Construction costs (topographical conditions - sharp slopes) and intrusion into housing environments as well as other valuable areas have also been considered when alternatives were rejected. The alternatives were:

- New stretch west of Lake Mårdängssjön entails widespread conflicts with existing buildings.
- Alternative stretching from existing railway at Forsby north and south along Testeboån has been studied but rejected due to the large barrier effect that the alternative creates.
- Connection from the western stretch (along the E4 road) to the existing track at Hamrångefjärden has been rejected due to heavy slopes and large intrusions into the buildings.
- Connection from the existing track south of Hamrångefjärden to a western stretch along the E4 road past Bergby has been rejected due to unmotivated long distance.

Railway Plan – Part 1 Localisation study
The railway plans to which this application applies constitute decision basis for the choice of corridor on the Gävle - Kringlan section.
In May 2009, the Swedish Government approved the proposals for a new target structure in the Transport Policy Bill Objectives for Future Travel and Transport (Prop. 2008/09: 93). The overall objective of the transport policy "is to ensure a socio-economically efficient and sustainable transport supply for the citizens and the business community throughout the country". The planning for the new railway line follows the process that is regulated in accordance with the Swedish Railway Act (SFS1995: 1649).
In the study of alternative locations two options were compared, the west and the east. The western alternative is recommended as it provides:

- Less impact on the environment compared to the Eastern alternative.
- The best conditions for achieving technical target standards regarding speed and thus contribute to reaching set travel time targets.
- Minimal interference with train traffic during construction.
- Conditions for continued development of the railway and freight terminal in Gävle.
- Positive effects both for freight and passenger traffic.

Indicators used in the ex-ante evaluation in choosing the western alternative

Objectives	Impact
Safety	
Positive impacts	Reduced risk of accidents (no level crossings), new signalling system ERTMS. Reduced road traffic and reduced risk of accidents on roads.
Negative impacts	May cause problems with increased traffic flows on roads in connection with the new bus stop in Gävle - need for renovations / redevelopments.
Security/Assecibility	
Positive impacts	High technical requirements. Offers operators passenger and freight networks solutions to enhance the security.Interference sensitivity decreases and reliability increase. A more reliable rail system benefits both women and men. Good opportunities to create a new commuter station in Hagsta (Gävle Västra) which can lead to good commuting opportunities, better access to the rail traffic and good connection to one of the largest employers in the municipality.The suburb of Sätra in Gävle with about 10,000 inhabitants will have access to a new regional station.
Environment/Emission of air pollution	
Positive impacts	Higher frequency of traffic per hour, higher speed and more passengers. More freight on the main railway lines. Reduced road transport, both passenger and freight. Very limited impact on the development outside Gävle. Making access to land areas where the existing East Coast Line is located today. Opportunities to build new for housing and business.
Negative impacts	Negative emission of air pollution during construction. Increased disruption to housing along existing Bergslagsbana / N Stambana due to increased traffic - noise, transport of dangerous goods, etc. Need for land for new station Gävle Västra, impact on existing construction and infrastructure.
Climate change target	
Positive impacts	Noise in housing areas is reduced. Reduced barrier effects.Increased capacity enables the transfer of passenger and freight traffic from road to rail, which has great positive effects for the climate. Better adaptation to the Port of Gävle by coordinating the East Coast line with the The Bergslag railway line.
Negative impacts	Impact on nature and cultural environ-mental values and the cityscape in Åkarp.Temporary Negative impact on the environment during construction

“Planning and Implementing description”
The Municipality of Gävle performed a “Planning and Implementing description” for the development of new freight railway to the Port of Gävle in 2012.
No financial support from EU has been awarded for this evaluation.

5.4 Economic and social effects of the proposed Action (congestion, modal split, interoperability, traffic management, safety and security, accessibility, service quality, health, environment and CO2 emissions) time saving

In preparation for the East-Coast link a first comprehensive assessment of the proposed alternative was carried out in 2015, which shows the following effects on climate and health in 2040 based on the proposed alternative. The monetary effect relates to carbon dioxide plus NOx, VOC, SO2 and particles. The assessment is based on the entire route. For travellers in Gävle, the expansion will have a great effect by building a new commuter station. The Action is considered positive for passenger transport by rail, for commuting as well as for long-distance travel to and from the cities along the East Coast line.It will also increase long-distance travel from Stockholm northwards. The project is positive for an expansion of freight traffic - both regional, long-distance and cross-border. The project contributes to regional development. The project contributes to regional development - by reduces congestion on the core railway network.
Carbon dioxide accounts for most emissions.

Climate	CO2 equivalents	The effect in 2040 in kton refers to carbon dioxide from External effects, other traffic and Interchange with diesel locomotive.	0,76 kton/year
Health	Air	NOX	0,900 ton/year
	Air	VOC	1,100 ton/year
	Air	SO2	0,000 ton/year
	Air	Particles PM2.5	0,000 ton/year

Calculated effects

Affected effect		Assessment	weighted assessment
Environment	Climate	Negligible	Positive
	Health	Positive	
	Landscape	Negative	
Other	Travelers	Negligible*)	Positive
	Freight transports	Negligible	
	Passenger transport companies	Positive	
	Traffic security	Negligible	
	Other	Negligible	
Weighted effects not included in the present value			0

CO2 emission
The effect in 2040 in kilotons refers to carbon dioxide from external effects, other traffic and switching with diesel locks. The monetary effect refers to carbon dioxide plus NOx, VOC, SO2 and particles from External effects, other traffic and Exchange with diesel locks. Carbon dioxide accounts for most emissions. - 0.76 kton / year.
As this is a study, a railway plan, a CBA has not yet been developed. The work to produce a railway plan includes updating of the existing socio-economic calculation, which then is used to produce a CBA.

Sustainability
The Action contributes positively to ecological sustainability through the transfer of passenger and freight transport from road to rail. However, a small negative contribution in the form of intrusion into the landscape. The Action contributes positively to socio-economic sustainability through faster, safer and environmentally friendly transport for people and companies. The Action is most positive for residents through reduced noise, while the biggest negative effects affect the intrusion into the landscape, and the barrier effect.

Also, the Action contributes positively to ecological sustainability by modal split from road to rail, which reduces greenhouse gas emissions, i.e. CO2 emission.

Objectives	Impact
Traffic Management	Higher departure frequency, shorter travel times and improved punctuality Fewer travel by car, trucks and flight.
Congestion	Significantly reduced risk for congestion with double-tracks. Reduced risk for congestion on the roads as a result of less traffic (modal shift road to rail)
Modal split	Increase in rail transport, both passengers and freight. Reduced road transport, both passenger and freight.
Optimization	Faster and more frequent transports.
Interoperability	The Action will comply with the EU technical specifications for interoperability.
Service quality	Higher frequency of traffic per hour, higher speed and more passengers More freight on the main railway lines. Reduced travel time will make it possible commute on longer distances.
Safety	Reduced risk of accidents (no level crossings), new signalling system ERTMS Reduced road traffic
Security	High technical requirements

5.5. Other considerations (e.g. competition, regional and local development, land use and climate resilience)

Currently the East Coast line is a physical and visual barrier. Thereby, the goal of the new stretch of the East Coast line between Gävle and Kringlan is to reduce the barrier effect. Below are briefly assessed effects of planning, construction and when the railway is in operation.

Regional impact
The Action will support this modal shift further by ensuring the capacity on the railway by upgrading from a single track to a double-track. The expansion of the railway is an important step to meet future demands for increased capacity. It contributes to transferring freight transports from road to rail, which will improve and contribute to the

sustainable and safe transportation of goods. The positive effects will, according to established economic models, result in increased passenger and freight volumes, some of which will be shifted from road to rail. A new railway hub, the new station Gävle Västra will stimulate commuting by train, stimulate the labor market in the region and contribute to fewer trips by car, which contributes to a better environment through reduced emissions.

National impact
This Action will eliminate one of the last hinterland bottlenecks in the freight transport system to and from southern parts of Sweden and neighbouring countries, thus ensuring the competitiveness of Swedish and Nordic industry on the international market.

Land value
The Global Project and Action will enhance the effectiveness of the land use. It will facilitate the construction of environmentally friendly high capacity transport opportunities. This will have a positive impact on the local development in the region between the cities of Gävle and Sundsvall.

Figure 14: The Testeboån Natura 2000 area

Climate impact
The measure takes precautions to prevent health and environmental disruption and inconvenience, both during construction and when the railway is in operation. This applies to both contributions to reducing emissions and reducing noise.

Landscape and design
The new railway is placed as close to the existing barrier E4 as possible in order to best preserve the existing landscape image.

Testeboån, which constitutes Natura 2000's national interest and nature reserve, is located within the new railway corridor. Given the safeguards that will be taken, the measures are not considered to have any significant environmental impact in the Natura 2000 area. A decision from the Water Court will be required as well as approval from the county administrative board.
The rail crossing over the Testeboån will study in detail, with special regard to access to the beach. A solution with increased bridge width and with free beaches under the bridge is sought.
The intrusion into the Natura 2000 area is reported to the County Administration Board through the consultation that has been conducted. In next stage, the County Administration Board needs to decide if a Natura 2000 permit is required. Trafikverket's assessment is that such is not required as the railroad is scheduled to be drawn as close to road E4 as possible.

In the feasibility study area, there are also several antique memorabilia objects. According to the County Administrative Board's conservation program for the cultivation landscape (1996), there are three conservation interests in the area. This applies to the cultivation landscapes with varying characters in Trödje, Björke and Hamrångebygden.

Health and safety
Consequences arise for residents in the vicinity of construction sites and along streets that get increased traffic. People will periodically be disturbed by high levels of noise, structure-borne noise and vibration. In order to reduce the consequences Trafikverket works with measures such as protection, adaptation of the work and ultimately temporary evacuation of affected homes, kindergartens and schools. During operating phase, the impact is assessed as low. With measures, guidelines on noise and structure-borne sound will be achieved. Vibration levels are not changed and guideline values can be met.
The track area will be fenced to prevent access and jumping on the track. Level crossings are equipped with sound and light signal-controlled bars.
Special account will be taken to the Natura 2000 area Testeboån and to the water supply Valboåsen in the central part of Gävle. In September 2016, the Sea and Water Authority decided that Gävle-Valboåsen will become a new national interest in groundwater supply.

IMPACT OF THE CEF GRANT

5.6. Revenues and revenue potential

N/A

5.7. Financial viability before CEF and other financial obstacles

N/A

5.8. Funding gap rate

N/A

5.9. Effect of the EU financial support on the financial viability

N/A

5.10. Stimulating effect of the EU financial support on public and private investment and financial leverage

The grant and the investment in the railway East Coastline is a prerequisite for development of the industry and residents of the region. EU support will facilitate the timetable of the Action, thus ensuring that the goal of increased rail transport is achieved. These contributes to a more sustainable environment. EU support also will ensure the quality in implementation of the Action. This is of a great economically value. EU support for the Action will provide a positive impact on the new addition to the most northern part of the Scan-Med Corridor and the subsequent links to Finland and Norway. The Action thus contributes to a coherent and consistent implementation of the priority axes as a whole.

5.11. Impact of CEF funding on the commitment of the different stakeholders

The goal with the Action together with The Global Project is to increase the capacity on the East Coastline, both for passenger and freight, regional and north and south Sweden and further into Europe. By building a new railway station, Gävle Västra, all railway lines in the area gets a common station, a new hub in the rail network. This will contribute to increase commuting by train which also leads to reduced car travel. In addition, to stimulate the freight moved by trucks on the road to rail is an important prerequisite for regional growth and a sustainable urban and regional development. Ungraded railway link from single track on the main line to a new railway with to double-track will contribute to achieving the national and international goal to improve the efficiency in the core network Scan-Med Corridor and the Bothnian Corridor. Below the effect for each stakeholder is described.

Trafikverket
The Global project, the East Coast Line is included in the National Transport Plan for the years 2018-2029. The National Plan regulates the funding of various projects assigned to Trafikverket. There are many projects fighting to get a share of the available resources. The economic framework for development does not cover the costs for all designated projects. The project's progression determines whether the projects are awarded funding or if it is moved to the next planning period.

The Action is an expensive project. The granting of Community financial assistance under the CEF budget would reduce risks, contribute to realizing the Action as planned, and contribute towards the further high quality and timely implementation. The granting of EU support would bring high visibility to the Action integration of Sweden into Europe and raise the profile of the Scan-Med Corridor in Sweden. Support for the Action will contribute towards an integrated and coherent TEN-T network, which will spread benefits across the whole of Europe and improve conditions for Sweden and the core network Scandinavian-Mediterranean corridor as well as provide a positive impact on interoperability between modes.
Trafikverket has adopted the construction plan related to these documents. Support from the administrations, politicians and other parties and stakeholders who were affected have been secured gradually as the work progressed. This was achieved through dialogue, workshops and presentations. Political support for the Strategy has been built up incrementally. CEF-funding for this project will also contribute to establishment of a project pipeline of project (works) for the next CEF funding period of 2021-2027.

The Region of Gävleborg and the Municipalities
The Global Project including the Action is of great importance for the development of the region, both regarding business and housing. The regional goal for the Action is to increase capacity, improve punctuality, reduce noise disturbances and reduce the railways barrier effect. The capacity on the route will increase and disturbances in

rail traffic will decrease and lead to increase accessibility to the facilities such as jobs, education, housing and cultural activities in the municipalities.
The Norrbotniabanan, Ådalsbanan and Ostkustbanan are included as parts of the Bothnian corridor, which will be part of the Scan-Med corridor as of 2019. The Bothnian corridor unites Northern Axis and the Nordic Triangle, so the strike in a Nordic / European perspective gives positive system effects that link northern Sweden, northern Norway, Finland, north western Russia with the European continent. The various sections of the railroad are important for achieving a coherent and better functioning network for passenger and freight transport throughout the country and international transports. This is of strategic importance to Swedish industry and Europe's supply of raw materials. Western, Central and Southern Europe depend on enhanced transport opportunities for raw materials and processed products from Northern Europe. Southern Sweden is also dependent on these transports.

6 QUALITY OF THE PROPOSED ACTION

6.1 Breakdown of eligible costs per cost category

Activities	**Estimated total eligible costs**	**Contracts Consultants**
Activity 1 Project design document section Gävle Central station to Gävle Västra (a new station), Trafikverket	2 000 000	2 000 000
Activity 2 EIA, section Gävle Central - Gävle Västra,Trafikverket	300 000	300 000
Activity 3: Railway plan, section Gävle Central - Gävle Västra, Trafikverket	1 000 000	1 000 000
Activity 4: Project design document section Gävle Västra – Kringlan, Trafikverket	2 300 000	2 300 000
Activity 5: EIA, section Gävle Västra – Kringlan, Trafikverket	500 000	500 000
Activity 6: Railway plan, section Gävle Västra – Kringlan, Trafikverket	1 000 000	1 000 000
Total	**7 100 000**	**7 100 000**

6.2 Description and justification of the level of resources needed for implementing the Action

Decision on implementation of the Global Project includes an assessment on the granting of funds for implementation. The costs for the Action were decided in the implementation decision and are based on feasibility studies, see 5.2. The level of resources needed for implementation is based on the actual scope and needs of the proposed Action, market-based cost estimation and existing knowledge and specific experience.

For railway infrastructure projects, the planning process decided by Trafikverket is followed. The process is described in 4.3 and 6.4. The process follows the Railways act (1995: 1649). To carry out the work, a contractor is procured in accordance with the Swedish Public Procurement Act.

The Swedish Government and the Swedish Transport Administration have high demands on the contractors who get the assignment to plan and build railways. Requirements that in a procurement can lead to higher prices, but which ensure the working environment and quality during the contract period. Below this special demand are shortly described.

To ensure that public funds are used in the best way possible, and to safeguard competition in the market, authorities must observe certain rules when performing procurements. The rules on procurement are found in four legal acts: The Act on Public Procurement, the Act on Public Procurement in the Utilities Sectors, the Defence and Security Procurement Act and the Act on Public Procurement of Concessions. All legislation governing public procurement rests on five basic principles. The provisions in the procurement acts should always be interpreted with these considered. See point 4.6.
According to Swedish law, contractors must be able to handle, and in procurement documents, be able to demonstrate, an approach to ethical issues for employees. All those who work for Trafikverket shall observe this approach and follow the principles that form the basis of Trafikverket code of conduct.
Minimum conditions for employees to work on the project must correspond to the terms of a central collective agreement that is applied throughout Sweden for corresponding employees in the industry concerned. This applies to minimum wages - working hours - holidays.
Furthermore, the government has appointed Trafikverket, in public procurements, to work to achieve increased

employment for persons who have difficulty in entering the labour market and thus contribute to reducing unemployment. The model has been implemented nationally by Trafikverket with effect from 2016.

By law, the project is also to take responsibility for and manage any ancient monuments found when building a railway. The project will also bear the cost of the work.

The Swedish Competition Authority applies the EU's competition rules in close cooperation with the competition authorities within the European Competition Network (ECN). The Swedish rules concerning public procurement are mainly based on the EU-directives.

In addition to the conditions described above which ensure good quality, but which can lead to increased costs, more project-specific extra costs can also arise. Such risks are assessed and described in the procurement document. For the Action, the following considerations are costly:

Activity 1-3 - handling of the railway in connection with the water supply may lead to extra investigations and consultations.
Activity 4-6 - because it is laid on land not previously used for rail, can cause lengthy negotiations with landowners.

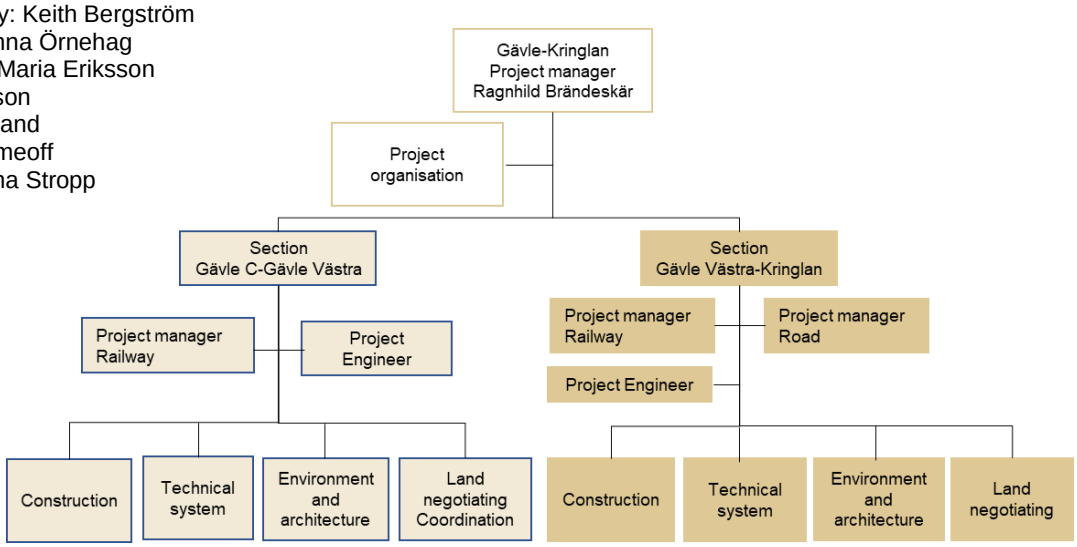
6.3 Organisational structure

Swedish Transport Administration is the national authority responsible for national transport infrastructure planning and investment. The planning is always done with consultation of concerned municipalities, since the municipalities are responsible for the physical planning of land use in their territory (Plan och bygglagen). Municipalities are also responsible for local transport infrastructure in cities, connecting roads, travel centres and multimodal terminals.

The projects also run an expert advisory group, which contributes with experience from other large infra-structure projects. The advisory group identifies and manages issues relating to local environment, analyses and manages project crises, and acts as a dialogue partner when strategic decisions are being taken. The role of the group is advisory, and meetings take place three to four times per year. The organization has been used before in the implementation of the Bothnia Line and has proven to be useful and effective. It should be noted that the organization and the persons included in the organization scheme could be changed over time.

The projects are coordinated by the project director, who is assisted by project managers and teams, working on common project issues. This means the organization of the project and the allocation of resources can easily be adapted to volume of work and necessary competencies, depending on the project phase.

The Actions are organized in accordance with Trafikverket guidelines, through a flexible organization. The organizational structure for the Actions is similar and is presented in the figures no 15 below.
Project manager railway: Keith Bergström
Project engineer: Johanna Örnehag
Project manager road: Maria Eriksson
Construction: Bo Carlsson
Technical: Björn Slagbrand
Environment: Carina Ameoff
Land negotiating: Helena Stropp



Figrure 15. The organisation structure for the project Gävle-Kringlan

The project manager is responsible for the project.
Decisions are taken in accordance with delegation.

The preparation of the grant agreement as well as the reporting to INEA (ASR, interim payment claims and final reports etc.) together with the Organisation of INEA's control visits will be carried out by a specially appointed officer

with experience pf CEF-funding in close cooperation with the Project and the Financial Coordinator of the Project.

Role	***Organisational placement***	***Responsibility***
Project manager	Reports to the project director	Responsible for the Action in the Project.
Deputy Project manager	Reports to the project manager	
Financial coordinator	Reports to the project director	Supports the project by continuously reporting, analysing the project finances, providing basic data for the projects funding, establish economic reports, routines
Coordination of operations	The design work is coordinated by technical coordinators.	Competence in legal matters, quality, environment, working environment, technique, architecture, traffic and information. Specialist in respective area of knowledge, support the consultants and participate
CEF-officer	CEF-coordinator in Trafikverket	Ensure that Trafikverket fulfils the GA requirements, Preparation of Grant Agreement, ASR, payment claims, final report, control visits of INEA, communications requirements

6.4 Control procedures and quality management during implementation

The planning of road and railway constructions follows a process in which both the infrastructure constructor and representatives for the community in general participate. The planning process is governed in the Road Law (väglagen 1971:954) and the railway construction Act (1995:1649) on construction of railways and it aims to connect the construction of transport infrastructure to other community planning and to environmental law. The process attaches the planning of roads and railways to the municipalities' planning and gives concerned parties good opportunities for insight and presenting opinions. During the process, the location and design of the road or the railway is analysed and described. Finally, the location and detailed design is established.

The Road Traffic Act and Railway Construction Act (1995:1649) contain explicit provisions on consultation and environmental impact assessments instead of referring to the Environmental Code. The period of validity for road and railway plans has been extended to two years.

The Government will decide which projects will be approved. This means that the Government must approve large and complex road and railways projects in accordance with Chapter 17 of the Environmental Code.

A new law (Förordning om byggande av järnväg, 2012:708) to make the physical planning process more coherent came into force 1st January 2013.The aim was to shorten the time needed for making plans for roads and railways. The purpose of the new legislation is to maintain the current level of quality and achieve:

- More efficient planning
- Shorter lead times
- Better collaboration

The new, coherent physical planning process also involves:

- One coherent plan instead of several stages
- The planning leading to a road plan or railway plan
- Fewer features of a formal character
- Increased opportunities for collaboration with municipal planning
- A preparatory study – that is, the choice of measures before the planning process begins.

Figure 16: The study of choice of measures

In this context, it is important to note that the choice of measures is not a part of the planning process. The choice of measures can be made in several different investigations, for example "choice of measure" studies or in a municipal Comprehensive Plan.
The choice of measures is based on the results of analysis according to the four-step principle. Sweden's parliament and its government have access to several means for implementing overarching policies, inter alia in the transport sector.

There is a broad consensus that the four-step principle should provide the basic logic for choice of appropriate

means for implementation of a policy, which is supposed to achieve political objectives at lowest costs to society. Se detailed description in point 5.3.

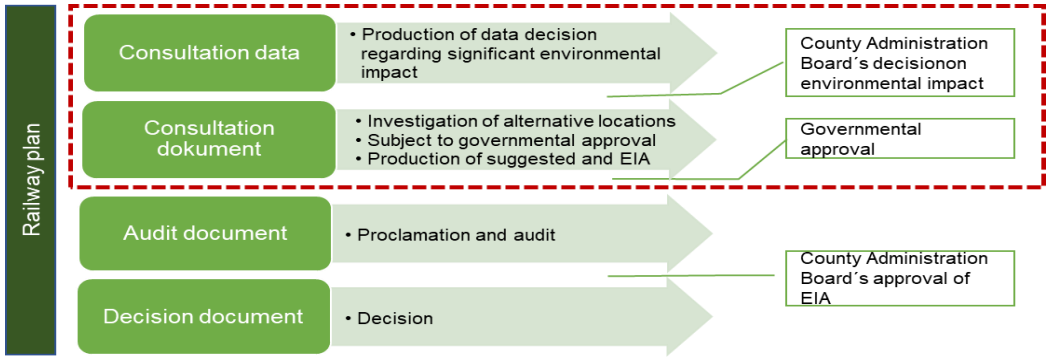


Figure 17: Planning process Railway plans

Planning of selected projects

A road or railway project must be planned according to a process governed by laws, and which finally leads to a *road plan* or *railway plan*. The process is called the *planning process* and the work on producing a road or railway plan is called *planning*. The planning process studies *where* and *how* the road or railway is to be constructed. How long it takes to get an answer depends on the size of the project, how many studies are required, whether there are alternate routes, what the available budget is and what that affected think. The results of the planning process and the design of the road or railway are described and reported in a road or railway plan.

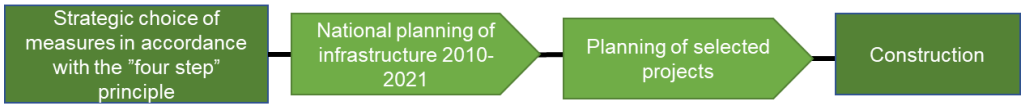


Figure 18: Planning process

The planning work shall initially specify the prerequisites and obstacles that can affect the opportunities for constructing the road or railway. The different activities of the consultation must be ongoing throughout the entire planning process, which will gradually lead up to designing and adjusting the details regarding the road or railway structure. This will be done in the road plan or railway plan that concludes the process. This form of planning also makes it easier for a municipality that actively makes use of the oversight-planning instrument to bring about planning and development of roads and railways that are properly coordinated with the municipality's physical planning.

The project director will be appointed to manage the project with assistance from a project organization. On a monthly basis, financial and objective follow-ups are conducted. A more thorough follow up is completed three times a year. Deviation between the plan and actual costs are noted and must be explained thoroughly. Suggestions to reduce costs are investigated. The results of the follow-ups are collected and reported to the central function Finance and Control of Trafikverket. In case of substantial cost increases, a report to the Swedish Government is also required.

The Action control procedures must follow these principles, to get the maximum benefit of the resources invested and considering relevant stakeholders' input and requirements. Control guidelines. A railway study project must be planned and controlled according to a process governed by laws and guidelines, and which finally leads to an approved and legally valid railway plan.

Measurement studies and the planning of a measure (for rail or road) are carried out for large passages, such as the entire East Coast Line. In carrying out the railway investigation and railway plan, the route is divided into smaller sections. An implementation plan is laid down, in which it is determined in what order the sections will be built. For each section, railway plans are developed in the order that the construction of the sections is planned. For each section, public consultations are conducted according to the model described in section 4.3. This process can be time consuming. For sections that cover longer distances, the risk of long-term consultation processes is higher. The construction of the railway will occur progressively as the railway plans are approved and established. This means that different sections of a passage of the railway can be at different stages in the planning process, and the relationship between them means that the construction of a certain sub-section must be completed before the construction of the next planned section can be started, if the sections are built directly adjacent to each other. If partial sections are built at different ends of a passage, this type of relationship does not exist and the sections are built independently.

Quality control procedures

The Contractor will follow the procedures and guidelines used by Trafikverket, The Port of Gävle and other major infrastructure implementation organisations. There will be an experienced quality control manager appointed that

will implement and develop procedures (and implement the procedures in calls for tenders and in contracts).
The following quality standards will be implemented during the Action:

Overall quality management	ISO 9001. Safeguards that the action meets the needs and demands from stakeholders. A quality director will be appointed. ISO 9001 involves Control of documents (4.2.3), Control of records (4.2.4) Internal audit (8.2.2), Control of non-conforming results (8.3), Corrective action (8.5.2), Preventive action (8.5.3)
Environmental management	ISO 14000. Improves environmental performance. There will be an environmental director appointed.
Risk management	ISO 31000. Risk assessment and management. A risk management manager will be appointed.
Information security	ISO 27001. Guidelines for information security. An information technology, communications and security officer will be appointed.

6.5 Risk management methods and procedures

Trafikverket follows the framework of ISO 31000 and the Port of Gävle is certificated by ISO 90001 and ISO 14000. Trafikverket´s risk management aims to create a uniform way of working, a condition for how Trafikverket will work with management as a support for business efficiency, proper management of the state resources and to meet the applicable requirements for risk management, internal control.

The overall objective of Trafikverket's risk management as well as the risk management for project int the Port of Gävle is to identify and - in a relevant and cost-effective manner - treat the risks and vulnerabilities that may affect conditions for achieving the goals. The fundamental principles for risk the management process;

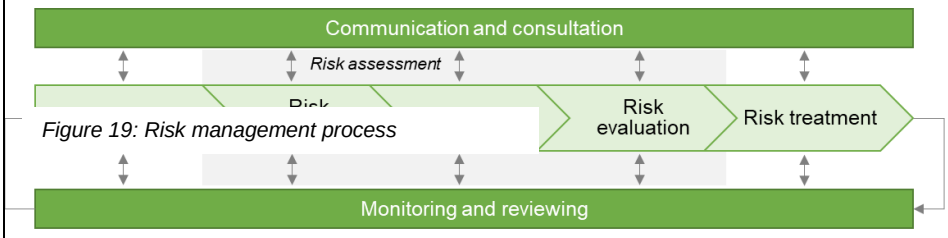
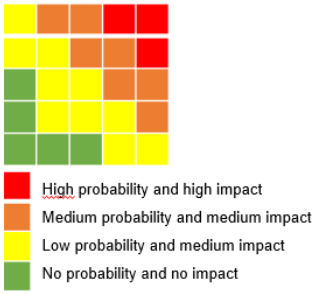


Figure 19: Risk management process



a) Creates value
b) Is an integral part of Organisational processes
c) Part of decision-making
d) Clarify uncertainties
e) Are systematic, structured and adapted
f) Based on the best available information
g) Tailored to processes / units
i) Is transparent and inclusive
h) Considers human and cultural factors
j) Is dynamic and receptive to changes
k) Facilitates continuous improvement and helps the Organisation develop further

Effective and functional operations require that project managers on all levels have relevant and accurate information to make decisions. Management, guidance and decision-making must take place when conscious of the potential risks and opportunities in the project. Risk management is an integrated part of project work and comprises the identification, evaluation and management of risks, which may affect upon the achievement of project objectives. In the project, risks and opportunities will be assessed at all stages of the Project. The Action, risks and opportunities are assessed to appeal against the purchasing and EIA. Risks are divided into project management risks and contractor risks.
The main risks to affect the groundwater are estimated to be during the construction phase. The possibilities of preventing these risks are also very good with quality assured construction methods and contract forms.
One risk that may arise during the construction phase is that the curves on the track may become too tight so that derailment can occur. The possibilities of preventing these risks are also very good with quality assured construction methods and contract forms.
When planning and designing the new railway, these risks are considered and managed. This is done through careful risk management and necessary protective measures are taken. With new tracks and new track support, better conditions are created to prevent accidents and minimize the consequences of an accident occur.
Project management risks are those risks and opportunities that are related to the Project Organization’s internal risks, such as organisational, financial and administrative risks and general risks relating to contractors. During the procurement process, the project management risks are handled according to Trafikverket’s recommendations and template for risk management. However, certain project adaptations may take place regarding to the project’s Organisation and purpose.

6.6 Ex-post monitoring and audit(s)

The Action is included in the National Transport Plan of Trafikverket.
At the completion of the Project, all costs and effects are followed up according to a specific program or method.
Internal audits are carried out according to plan each year by Trafikverket's Internal Audit Group.
The role of Trafikverket's Internal Audit Group is to inspect and propose improvements in the internal management and control. The efficiency, reporting and management of funds are assessed. In addition, Trafikverket must comply with legislation and fulfil the obligations resulting from being a member of the EU.
In addition to the internal audits, the Swedish National Audit Bureau externally audits Trafikverket every fifth year. The last audit was conducted in 2014, confirmed that Trafikverket's Internal Audit is operating in accordance with international guidelines for professional internal audit, and passed all aspects.

The evaluation of all Activities in the Action is described in the quality system for the Action and assessed regularly by Trafikverket. At the completion of the Project, all costs and effects are followed up according to a specific program or method.

6.7 Communication and visibility given to the CEF Transport co-financing

Trafikverket has established a routine for how to use the EU logotype. The routine also includes partners as the Port of Gävle. The routine specifies that the EU logotype must be included in:

- Information material (letters, advertisement, brochures, information boards, construction signs, movies or other material published and produced. This includes digital material)
- Information events (conferences, meetings, training, fairs, exhibitions, etc.)
- The project location

All information and activities released to the public must include the European Union badge and text explaining the fund. This information is important to show the public that the European Union takes responsibility for sustainable transports and infrastructure by financing different projects.

The logotype must be exposed on all types of prints and information material. A large, visible sign must be installed at construction sites. The sign must clearly state that the Project is partly financed by the European Union and in which area. If the total official support (national + EU) of infrastructure, construction or procurement of physical equipment exceeds € 500 000, a large, permanent plaque must be installed no later than six months after the completion of the project. All projects funded by CEF must implement the correct publicity to inform the public about the financial support from the EU.

The following information must be included in all information relevant for the specific type of distribution:

1) An explanation which states that the project/initiative has received CEF financing from the EU "The project X / Infrastructure X is co-financed by EU's TEN-T program".
   (Printed material only) A disclaimer clause in which the European Union renounce all responsibility concerning the content of the material. The following text below is placed on page 2 in reports or where feasible: *"The author is responsible for the content of this publication. The European Union takes no responsibility for how the content is used. "*
2) The EU flag

Samfinansierat av Europeiska Unionen
Fonden för ett sammanlänkat Europa

The placement of the EU logotype in different units of logotype / guidelines Type of communication	Placement of logotype / guidelines
Web pages	Same location on every page concerning the project
Brochures, newsletters, posters, information leaflets, etc.	At the back, above sender information Primarily on white background
Reports and internal publications	Cover page
Power Point-presentations	Bottom left corner
CD-ROM, DVD, Advertisements	On cd label or cover, Bottom left

6.8 Other information

N/A

7. ANNEXES

All relevant information for assessing the proposal must be provided in the application form. The purpose of annexes is to provide additional, supporting information. Annexes or their specific relevant sections should be referred to in the application's relevant parts.

Annex 1: GANTT-schedule including milestones
Annex 2: Swedish Government decision - the National Transport Plan, 2018-2029.
Annex 3: Ställningstagande val av korridor
Annex 4: Example Public Consultation

6.9 Risk Assessment Grid by activities

Activity N°	Risk	Impact	Likelihood	Control	Mitigating measure(s)
Activity 3	Difficulties in calculating track geometries at Gävle C, Gävle freight yard and across the harbour route regarding the profile of the rail.	H	H	U	Track Survey of the existing tracks as a basis for further work. Investigation phase at the beginning of the system action.
Activity 2	Estimated extent of groundwater becomes too small.	M	L	U	Investigation to minimize the impact on water supply / groundwater supply
Activity 2	Approved traffic noise levels in Gävle are difficult to reach	H	L	U	Begin noise investigation at an early stage to evaluate different solutions.
Activity 1	The relocation of a reception station in Tolvfors has not been completed before start of construction	L	L	U	Coordination with the electricity suppliers Gävle Energi and Vattenfall as well as the Municipality of Gävle and Gästrike Vatten (Gävle Water supply) to secure space for new location at an early stage
Activity 5	The proposed bridge solution is not permitted according to N2000 regulations.	L	L	U	At an early stage, check proposals for solutions for the railway against requirements in the N2000 regulations.
Activity 1	The railway plan, the part concerning The Bergslag railway line, is appealed by neighboring residents in Tolvfors and Lexe.	H	H	U	Quality assurance of the railway and the EIA to ensure that these are correct incl. formalities
Activity 4	The railway plan is appealed because of high traffic emitted noise levels.	H	L	U	Communication, open house for information about noise
Activity 6	Too small radius to achieve the desired capacity between the East Coast Line and the existing Northern Railway at Oslättfors	H	H	U	Investigation phase at the beginning of the work on system design document