Interreg CENTRAL EUROPE

Co-funded by the European Union

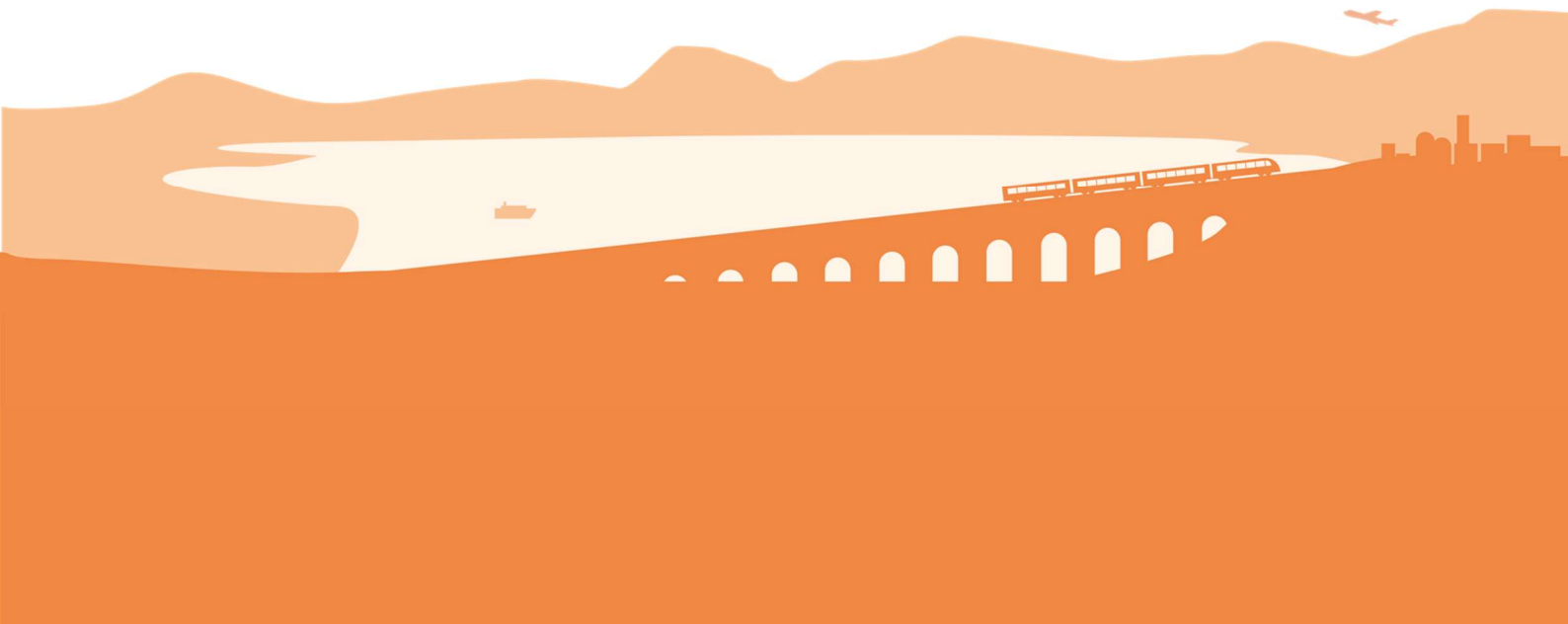
Rail4Regions

Guideline for the revitalization of branch and feeder lines

D 2.4.3

Version 1

6 2025



A. Introduction

In contrast to major European economic centres, which benefit from extensive connectivity to existing freight transport corridors, rural regions often face the challenge of longer transport distances to the nearest rail freight connections. This disparity is primarily due to the sparse rail network and the lack of adequate branch and feeder lines that connect rural areas with the main freight transport corridors. Consequently, a significant volume of goods that should ideally be transported by rail is instead transported by road. This situation not only increases transportation costs but also negatively impacts the carbon footprint of companies and their products.

This document outlines a solution structured into a three-phase approach designed to revitalize branch and feeder lines in rural areas. The approach aims to facilitate occasional freight traffic (phase 1), support regular freight services (phase 2), and ultimately enable combined passenger and freight operations (phase 3).

B. Objective

The primary objective of this document is to provide a strategic framework for the revitalization of branch and feeder lines, ensuring their effective transformation to meet current and future transportation demands. The three-phase approach aims to:

1. **Ensure Basic Operability and Safety**: Implement minimal repair measures to maintain basic structural integrity and safety for occasional freight traffic with minimal investment.
2. **Enhance Operational Capabilities**: Conduct extensive route upgrading to support consistent and reliable freight services through comprehensive track refurbishment and modernization of signaling systems.
3. **Enable Combined Passenger and Freight Operations**: Invest substantially in infrastructure upgrades to create dual-purpose corridors that efficiently handle both passenger and freight traffic, enhancing service frequency, safety, and comfort.

Additionally, it addresses the key challenges and requirements, involving community and environmental considerations, financial planning, material and technology needs, regulatory compliance, and political support.

C. Description of solution

The process of revitalizing branch and feeder lines is complex, since it depends on the existing operational quality of the feeder lines, and the level and type of traffic that need to be accommodated. As a result, the solution developed is divided into three distinct phases, each addressing specific measures, to ensure a certain operational level of feeder lines. These three phases are as follows:

Phase 1: Minimal Repair Measures

The first phase involves minimal repair measures and investment to facilitate occasional freight traffic with reduced operational quality, which is expressed in a low line speed (at least 30 km/h). The main objective is intended to ensure safety to regain the operating license and to achieve continuous drivability up to the loading points. Example actions in this phase include:

- Track clearance maintenance:
  - Remove any vegetation or obstructions within the designated clearance zones to maintain safe and unobstructed passage for trains
- Structural inspections and repairs:
  - Inspect tracks, bridges, tunnels, and other structures for wear, damage, and stability.
  - Conduct necessary repairs and replacements to maintain optimal condition.

Phase 2: Extended Route Upgrading

The second phase should be activated when the traffic demand for occasional rail freight has stabilized and there is potential for further growth. This can be achieved by expanding the existing freight services and by incorporating new goods from existing or additional companies located near the loading point.

This phase involves more extensive route upgrading to meet the operational quality and efficiency of the line, increasing the average line speed to a level of 50 km/h, needed to support consistent and reliable freight services. Key actions in this phase include:

- Implementing automated control systems for better traffic management.
- Renovation measures for the substructure and track superstructure
- Conducting corrosion prevention measures

Phase 3: Reactivation for Combined Passenger and Freight Traffic

Compared to phases 1 and 2, the final phase aims at reactivating the lines to meet higher operational requirements for combined passenger and freight traffic. This

phase involves substantial investments to transform the railway lines into dual-purpose corridors that efficiently handle both types of transport services. Key activities in this phase include:

- Integration of advanced signalling and control systems to manage mixed-traffic operations.
- Reopening or relocation of the stations
- Construction of new stops
- Expansion of reloading stations to enhance the efficiency of freight transport operations.
- Purchase of rolling stock for line operators

D. Challenges and requirements

In the context of revitalizing branch and feeder lines, challenges and requirements refer to the various obstacles and conditions that must be addressed to successfully implement the solutions. These challenges and requirements ensure that the approach is feasible, sustainable, and effective in meeting the needs of freight and passenger services.

The challenges and requirements can be studied from various aspects, such as political, environmental, financial, and regulatory considerations as well as strategic framework related to project execution.

1. **Community and Political aspects**

    - Identify key players, define the communication needs and clearly convey the project's benefits with them.
    - Resolve stakeholder conflicts of interest by negotiating agreements. It is necessary to reach agreements with landowners, infrastructure owners, rail operators and public entities.
    - Individuate beneficiaries and supporters and address political acceptance engaging media support.

2. **Strategy and planning Alignment**

    - Coordinate the plan with local, regional and national strategic studies and transport systems to ensure alignment with broader developmental goals and investment programs.

3. **Environmental considerations**

- Consider EU guidelines for transportation investments, focusing on environmental impact, land development changes, buffer zones, and protection of endangered zones.
- Implement a comprehensive system to measure and assess environmental impacts, ensuring sustainability.

4. **Financial aspects**

- Accurately estimate all project costs (investment, maintenance and operation costs).
- Ensure secure initial funding from national, regional and private sources and obtain commitments from them.
- Identify external funding sources such as Regional Operational Program, National Reconstruction Plan, Cohesion Fund, European Funds for Infrastructure, Climate, Environment (2021-2027), and the Connecting Europe Facility (CEF).
- Prepare a financial plan to address potential deficits.

5. **Regulatory Requirements**

- Adhere to necessary safety regulations (considering infrastructure, Energy and Control system structure) to obtain operability permission by the railway infrastructure manager.
- Establish operational rules by railway infrastructure manager to optimize rail traffic services and ensure compliance with safety regulation.
- Obtain environmental approvals to assess and mitigate impacts.
- Implement adequate train control system suited to service types, from simple to complex systems.
- Set appropriate conditions for the placement of transport routes in relation to residential areas and special zones.

6. **Strategic Framework for Project Execution**

- Evaluate the viability and cost-effectiveness of proposed railway projects.
- Adopt implementation strategies that align with project priorities and objectives.
- Assemble specialized teams with focused expertise for distinct project segments.
- Oversee budgets and resources to ensure efficient operation.
- Execute the project in stages and ensure timely project execution.

E. Authorities and stakeholders

The key authorities and stakeholders to be involved in revitalizing feeder lines, along with their responsibilities, are outlined below. Their involvement is essential to ensure regulatory compliance, secure support, and address the concerns of all affected parties:

- **Ministry (Council of Ministers)**
  - Planning, management and regulation of transport and infrastructure
  - Development of financing and environmental Protection strategies
- **Infrastructure Owner/Provider**
  - Investment in infrastructure
  - Coordination with other stakeholders
- **Transport Operator**
  - Development of logistics services
  - Coordination with infrastructure and regulatory bodies
- **Federal or National Railway Authority**
  - Granting the operating licenses
- **Regional/Local Administration**
  - Financial and political support
  - Development and implementation of suitable concepts for local public transport
- **Industrial producers**
  - Conversion of logistics chains
  - Commitments to use
- **Population and business activities owners**
  - Support for improved accessibility
  - Participation in environmental and climate protection efforts promoted by the project

F. Recommendations

A key role in adopting the solutions developed within the Rail4Regions initiative for revitalizing feeder lines lies with national and regional decision-makers. These authorities have the opportunity—and responsibility—to design strategic investment frameworks and allocate well-structured financing aimed at upgrading feeder lines and fully integrating them into the regional and national freight transport systems.

Regional planners, in turn, are encouraged to develop tailored action plans that identify and prioritize feeder lines with high potential. These plans should be grounded in a strategic vision that aligns with broader regional development goals and supports the creation of a cohesive freight network.

Effective revitalization of feeder lines requires a deep understanding of the needs, expectations, and constraints of local stakeholders — including logistics operators, municipalities, industries, and rail service providers. This understanding enables the design of context-specific solutions, facilitates alignment among stakeholders, and ensures the long-term sustainability and success of upgraded freight routes.