

# Regional Impact Studies

## Socio-economic Impacts of Regional Railway Stops and Services

### Executive summary



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Client name	<b>RB Rail AS</b>
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# 1. Project introduction

The project was implemented under the authority of the contract signed between the RB Rail AS (The Client) and by the leading company Ramboll Denmark A/S, together with the project sub-contractors: Soini & Horto Architects and Realidea Ltd.

Currently, the RB project is comprised of a network of seven international passenger stations and thirty-four railway passenger regional stations in the Baltic States. The regional passenger stations are at different early stages in the planning and design processes. Within the current framework, the Client requested to develop a good understanding of the broad range of socio-economic impacts stemming from the RB Rail AS regional passenger stations and services. Selected by Ramboll and RB Rail AS examples of regional railway stations are used to identify potential developments of all regional stations along the RB corridor by their types (based on the RB Rail AS Guidelines) including their roles and services, which could support elaboration of the RB Rail AS international rail corridor, as well as synergy with cross-border regional connections and regional

mobility systems, freight and industrial developments outside the corridor. Following this scope this report summarises main outcomes obtained per topics:

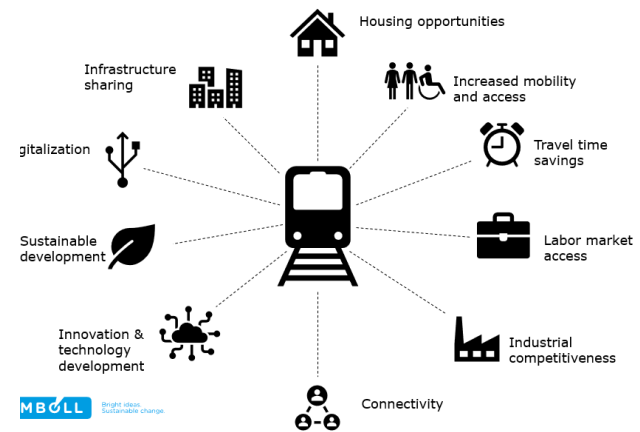
- **Regional railways stations and services engines of socio-economic development:**

The introduction or improvements in regional railway services plays a decisive role in regional economic growth and social and environmental sustainability. According to international experience, introducing regional rail services or connecting rural and suburban communities to a high-speed rail corridor, not only provides increased mobility and greater access to socio-economic activities to the individuals living in those areas, but it also promotes further economic development and growth through higher access to labour markets and opportunities for entire industries to expand and thrive.

- **Assessment of international experience:**

In recent years, a holistic approach to the development of railway regional

stations, including their surroundings, and services has gained momentum due to the potential of generating and capturing higher social and economic value.



**CONNECTIVITY OF A REGIONAL RAILWAY STATION WITH VARIOUS URBAN DEVELOPMENT ELEMENTS AND CATEGORIES (SOURCE: AUTHOR)**

Such value could be seen when commercial and housing developments are integrated as a mix of land uses, thereby effectively attracting employers, workers, shoppers, and other types of users and elements contributing to the creation of vibrant, dynamic centres of activity.

International experience showed how to maximize the socio-economic

impacts of regional railway projects, such as RB Rail AS regional services, where it is important focus is also to engage all project stakeholders during early planning stages to best understand the needs and expectations of different user groups, and clearly identify the potential to include other non-transport services during the construction. Within the context of maximizing economic and social benefits from new regional railway services, the international assessment identified regional station and their surroundings as one of the key components for achieving such benefits.

▪ **Best practices and lessons learned:**

The consultant has categorized the international best practices for maximizing socio-economic value from regional railways services into three categories:

**1) Station internal space usage and commercial opportunity**

This category explores the importance of simple and efficient but pleasant internal space and the opportunities for supporting commercial services within and around the station. The

concept is to create simple, versatile, and agile station designs focusing on functionality, sustainability, social placemaking, integration through traversability and universal accessibility, as well as focus on truly mixed-use commercial opportunities inside and around the stations.

**2) Regional mobility and Transit-Oriented Development (TOD)**

This category focuses on the integration between the stations and its surroundings, especially understanding the potential for improving multimodal connectivity and ensuring future development is carried out under the TOD. The key findings of the benchmarking analysis cover integration between stations, services, and station area mobility plans, station accessibility, regional freight logistic chain optimization, and densification.

**3) Integration with the local environment and effects on local and regional regeneration**

This category investigates the importance of the involvement of the private sector as well as the importance of the community participation. This section also raises

importance on ensuring financial sustainability of the system and the critical stakeholders that can be mobilized to strive towards efficiency. Lastly, Digital connectivity and freight and logistics strategies are some of the most important aspects that will ensure than any regional railway service provides large socio-economic benefits that will go beyond the railway line.

▪ **Applicability of international best practices to the RB Rail AS case:**

Following the identification of international best practices, **the study uses selected RB Rail AS regional stops as examples to provide policy recommendations** to the RB Rail AS case based on the international best practices. Topics covered by recommendations include regional cohesion, integration with local/regional freight logistics network, digital connectivity, population relocation, firms clustering, public transport and related facilities, short distance mobility, sustainable mobility services. Regional mobility system optimization, bike parking and passenger drop-off facilities.

## 2. Key areas to promote socio- economic impacts of regional railway stations

Under this chapter a review of international experiences and knowledge has been implemented focusing on the identification of the main catalytic impacts related to regional railway passenger stations and services. There were identified four key areas which create socio-economic benefits for future regional railway service and their urban environment:

### 1) Station location

Traditionally, stations have been positioned as central hubs within urban areas, but they may also be located outside urban areas where they can serve as central location in relation to regional travel patterns.

Whether located in an urban, suburban, or rural area, it is crucial that the station is easy to reach, universally accessible and that does not create a barrier to local mobility.

Regional railway stations have the potential to stimulate economic activities contributing to long-term economic growth and spatial

development of regions. Therefore, the location of the station should be chosen to promote accessibility to jobs, services, and potential economic activity and businesses along the railway system that could benefit from the access to the rail station access should be considered when evaluating site locations.

### 2) Integration with surroundings

The integration with surrounding areas refers to how to connect and integrate a railway station and services with the adjacent land uses and functions and with the broader regional system, and include the following aspects:

**Multimodal integration** refers to the integration between railway services with Public Transport and private mobility including shared and smart mobility. As a railway station per se does not offer door-to-door services to passengers, it is critical to provide convenient last-mile journey options that compete with the use of automobiles. This is particularly important for regional stations located

in sparsely inhabited areas with longer distances to surrounding settlements, as otherwise the use of private vehicles might result dominant.

A carefully planned regional station development contributes to the **development and regeneration** of suburban areas and regional towns, by incentivising new investment and attracting residents and employers in away from major national urban centres. Railway stations and services improve regional economy by increasing accessibility to employment, shopping, and housing opportunities to suburban population. These developments can also provide opportunities for value capture that may cover project capital investment costs providing additional streams for municipal finance.

The integration of railway regional services with the national mobility services results critical for the socio-economic integration of remote areas and have a crucial role in supporting process of **regional cohesion**. Furthermore, the carefully planned

functional integration of railways regional services with long-distance mobility services, including accessibility to international airport hubs, allows the access to international mobility to areas otherwise cut off from international mobility supply.

### 3) Stations design

User needs and preferences should be considered in the early stages of station planning and design. Whereas larger stations with high value-added indicators should be designed to allocate various facilities like shopping areas, eateries, and other commercial spaces, smaller regional stations should focus on a more functional design fulfilling essential needs, like protection from weather, climate control, lounge rooms and small shopping activities.

For regional stations located in suburban and rural areas, it is of great importance to provide a station design that enables a convenient last-mile journey to make multimodal journeys with a strong railway component a competitive alternative to private car. In this respect, park and ride, medium term commuter parking, and bicycle parking facilities and related services have a crucial role.

Furthermore, at locations where future ridership is uncertain, which can be the case for some remote regional stations, the stations design needs to have some flexibility to adapt to demand fluctuations over the lifetime of the facility.

### 4) Public participation

To maximize the socio-economic impacts of regional railway stations and services, it is important to engage all the different stakeholders during the early planning stages of the project to understand the needs and expectations of different user groups. The stakeholder list should include, but not be limited to, government authorities, users and users' categories, NGO/s, mobility sector operators, real estate agents, retail/commercial/trading groups, contractors, and other commercial players. Modern railway station planning stakeholder engagement also considers demographic perspectives, such as age, gender, and those with special needs. By taking these aspects into account at an early stage of the station development process, extra attention could be given to the fulfilment of needs to offer passengers the services they expect in return for their fares.



## 3. Analysis of identified international best practices and their lessons learned

### 3.1 Overview of categories to analyse best practises

To identify international best practices applicable to RB stops and services a three-step methodology was applied:

**Identification of the international best practices** through the benchmarking analysis of international stations selected among representative contexts for RB stops and services.

**Describing lessons learned** against **three categories**:

- 1) stations internal space usage and commercial opportunities;
- 2) regional mobility and transit-oriented development;
- 3) integration with local environment and effects on local and regional regeneration;

**Compilation of international knowledge and findings** by RB ALG type: Landmark, Basic and Platform. As a result, a summary of best practices from successful international examples is produced

The three categories of lessons learned have the next developing focus:



Regardless of the size and type of a station, critical conceptualization and design of internal space is required to:

- Ensure an optimal user experience (comfort, safety, pleasant waiting areas along walkways and platforms and other basic functionality);
- Provide commercial activities such as shops, stands, automatic vending machines, as well as entertainment and business-related services, on-the-go food and refreshments, grocery stores and other convenience shops;
- Travelling services, including

lockers, information stands, ticket machines or offices, customer care;

- Support local logistics services. This includes areas for smart boxes and e-commerce support services (e.g. parcel pickup and distribution services; distribution to delivery centres; last mile delivery; handling returns).

Such services and amenities require careful spatial planning and ultimately have a direct impact on the final station space allocation and user experience. They affect how the arrival space is utilized, in terms of service and communication zones and platforms. Smooth transitions between all these areas are an essential part of the design process and have a large impact on how people use the station.

The design of railways stations internal spaces must consider passengers movement and user experience especially: **building height**, the relation to surrounding infrastructure and buildings, **art and cultural installations**, and other **visual amenities** that along with supporting



station character must also support passengers, orientation, wayfinding, accessibility, and. Developing commercial opportunities around regional stations generates jobs in areas not as accessible in the past. Also, achieving good mixed-used development can provide mobility benefits by ensuring the housing/jobs ratio is balanced, travel distances are shorter, and different land uses are accessible.



## 2. Regional mobility and Transit-Oriented Development

Rail-based mass transport is often seen as the backbone of regional mobility and as an important driver for economic development. Providing access to rail services and enabling the surroundings to become a meeting place where people shop, relax, and it can provide users opportunities that

go well beyond mobility and functionally integrate the station with the adjacent community. A strong connectivity of a railway station with other transport modes starts from the station platforms through signage and wayfinding and continues through the station building (via the most direct route possible) to available mobility options to continue the journey. Station connectivity should be a fundamental element influencing station type, its complexity and functionality: from a high-density network at a larger regional station on one hand to a very simple system for stations in small towns, at greenfield or rural areas. It is crucial to develop adequate planning solutions to integrate current regional public transport services to the new or improved railway regional services including identifying potential multimodal journey solutions for including non-motorized transport modes and micro mobility, ride-sharing, or other Mobility as a Service (MaaS) offerings to address the “first and last kilometre problem.

Universal accessibility to regional stations must be guaranteed through pedestrian infrastructures such as multi-use paths and adequate

sidewalks, illumination to ensure safety and comfort regardless of time of day, green space installations. Adequate infrastructure and facilities for persons with reduced mobility or different abilities, including walking aids, tactile signs and aids, sound signals at intersections, sidewalk ramps, and other accessibility elements relevant to the environs in and around stations

To enhance the use of bicycle, dedicated infrastructures, including multi-use paths, grade-separated routes, dedicated unidirectional or bi-directional bicycle paths, and clearly defined bike routes and adequate and well-placed bicycle racks including covered parking, and lockers are needed. Intersections optimized to incentivize walking and biking by developing designs that reduce obstacles, ramps, and other walking impediments. including level crossings, paint markings, sign elements, installations to reduce speed and pedestrian-motorized vehicle conflicts. Strong intermodal interconnectivity with existing and future public transport networks and the regional railway services. Enhanced sustainable transport services, including car sharing and electric vehicles facilities. Parking regulation - special attention

should be given to parking regulation to incentivize public transport and sustainable mobility. Short-and-long term private cars parking should be provided in minimum quantity and based on pricing rules. and “flex zoning”.

Under the TOD schemes regional logistics could be supported by smart boxes for private/ business parcels services, assigning last mile delivery points, post offices, or other relevant small cargo logistics services.

The whole regional railway logistic chain would consist of a network of many small supply chains which are linked or integrated to varying degrees to the regional railway stop. Regional passenger trains could be utilized to transport small-size consignments , as far as the cargo could be rapidly exchanged at the stations.

Density should be planned so that building sizes increase closer to the TOD station, where the activity and passenger volumes can justify the additional development. The street network should be planned so that vehicles speeds are controlled passively via narrow carriageways. All vehicle-based activities (including

loading, taxi stands, etc.) are planned outside the pedestrian corridors, so that the flow of pedestrians to and from the railway station is unimpeded by these activities. Alternatively, in places where there is little to no existing development, the TOD strategy allows establishing a new centre of activity and it is strongly recommended that station development and urban planning efforts work together to create or incentivize a new thriving and compact community where walkability, micro-mobility, and public transport are the primary ways of getting around, from and to the station.



### 3. Integration with local environment and effects on local, regional

Regional railway lines could be utilized to serve as corridors for digital

connections. When improving the digital network infrastructure at the same time as the railway line is built, connectivity is provided to rural and remote areas while the effect to the environment is minimized. The service roads for the railway line can be utilized if any repairs for the network infrastructure needs to be done.

Tight connection between land-use planning and improvements on railway regional services has been highlighted in several cases both on urban and suburban areas. Accessibility and connectivity have been recognized as key elements to attract people to move and work in new housing and job districts. Regional railway services are an opportunity to develop land-use also on suburban and inter-urban areas, as there are no such space limitations as in dense urban areas.

Stakeholders cooperation is crucial to provide effective integration with local environment. Stakeholders include among other decision-makers (including those who can also finance infrastructural development, take decision on land-use, give rights for any new construction) such as private companies.

### 3.2 Best Practices: summarised lessons learned

This sub- chapter includes summaries of identified lessons learned from 44 international best cases (the long list of these station overview is attached in the Annex I). The description below is divided per categories described in the previous chapter.

#### LESSONS LEARNED: KEY FINDINGS FROM INTERNATIONAL BEST PRACTICES

### Stations internal space usage and commercial opportunities

#### “Versatile station design”

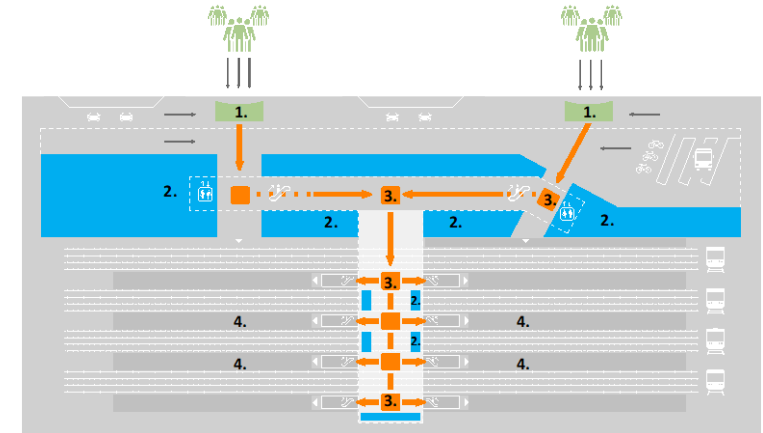
**Keywords:**  
Internal space functional, Interactions between users and space

**International best cases:**  
Tikkurila, Barneveld Noord

**Summary:** A typical regional railway station layout consists of:

- 1. Arrival area:** priority should be given to walking, cycling and public transport users
- 2. Service area:** provide services to travelers. Primary functions include ticket sales, information desk, traffic information, W.C. and waiting areas with seating
- 3. Communication zone:** connecting arrival area and the platform. Visual clarity, lighting, daylight, generously sized stairways, elevator, and escalators are critical.
- 4. Platform:** Safe and sheltered waiting spaces with good views towards the tracks. Accessibility, security, and clarity are key parameters.

Effective transitions between these zones should be well planned and have a gradual functionality.



TIKKURILA STATION, SCHEMATIC ZONING DIAGRAM (TYPE II STATION)

#### “High level urban integration”

**Keywords:**  
smooth integration in urban fabric, interaction between users and space passenger flow through the station

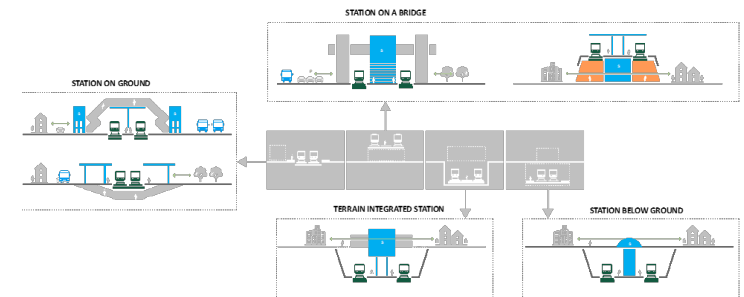
**International best cases:** Mikkeli, Växjö, Lysaker, Barneveld Noord, Nordmaling, Triangeln, Leinelä

**Summary:** a station’s location in relation to its surroundings determines its ability to provide accessibility, character and function.

**Typical station locations are:**

- **Ground level:** typical for Type III, IV;
- **On a bridge:** increasingly common (Type II);
- **Terrain integrated:** increasingly common (Type II);
- **- Underground:** common for Type I, II stations in dense central location;

Planning accessibility to station platforms is a crucial topic for regional stations. Best practices try to avoid excessive grade separation to ensure direct and comfortable pedestrians access.



STATION SECTION DIAGRAM – STATION TYPOLOGIES

Different station types offer different levels of urban integration and potential for commercial activities. In central and sub-central locations an obstacle-free city fabric and a high level of station integration into its surrounding are beneficial.

**“Mixed-use entities”**

**Keywords:**

*Internal space usage, commercial opportunities and use around the station*

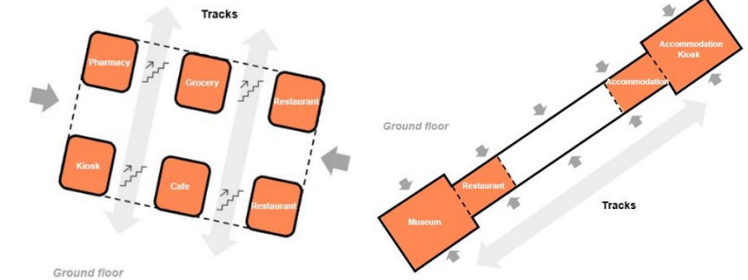
**International best cases:**

Växjö, Bayerische Eisenstein, Lysaker

**Summary:** Stations internal space can work as a prime location not only to access transport services, but also for local businesses. At the same time, a station building can be a meeting place and a useful location for obtaining everyday products, serving travelers and the whole community around.

The most common commercial activity inside a regional station (or platform) is a single store kiosk, café or a combination of both. International best examples show that this low levels of commercial activity can be increased.

Station underpass and connected retail premises can form a functional station where almost all of the indoor spaces at the station have a large potential for generating income (rents).



**COMMERCIAL PREMISES IN LYSAKER AND BAYERISCH EINSTEIN STATION RESPECTIVELY**

**“Social placemaking”**

**Keywords:**

*social interaction places*

**International best cases:**

Solec Kujawski, Korja – Kohta train stop shelters, Iittala, Landskrona, Barneveld Noord,

**Summary:** The concept of placemaking has become important to promote social, commercial and vibrant activity, creating a sense of place in the community. Thriving communities also attract more town dwellers, which in turn can have a significant effect on city/town success.

**International best practices show that some lessons learned from social placemaking can be applied to RB Rail AS station types II, III, IV as follows:**

1. Establish an interwoven relationship between public transport provider and community groups
2. Include a process that allows the community to make a meaningful impact and create a sense of place
3. Avoid the character of a non-place, create a placeful station
4. Go beyond the common unified design guideline and create a “light-house” for the region. Most important in special locations with touristic interest

**“Green station – leading the way to carbon neutral”**

**Keywords:**

*Sustainability-oriented design and maintenance*

**International best cases:**

Assen, Kerpen-Horrem

**Summary:** The growing urgency around climate change and the move towards net-zero building approaches has also arrived at railway projects.

Green station recommendations applicable to station types II, III, IV, including:

- A compact open-accessible station with integrated emission free public transport, bikes and car sharing schemes;

- Energy saving building technique, LED lighting, natural light, natural ventilation;
- Low carbon construction materials with long maintenance cycle and possibility for disassembly;
- Building adaptability allows to use and modify spaces in the long term;
- Regenerative energy production and rainwater capture;
- Maximum biodiversity through green roofs, gardens, living/green walls;

**“Sustainable railway stations offering new mobility services”**

**Keywords:**  
*Integration between stations, services, and regional mobility plans*

**International best cases:** Altötting station, Korneuburg, Ludwigsfelde, Kivistö

**Summary:** Future sustainable mobility at regional railway stations is not only public transport, but also environment friendly sharing services that could be easily booked via smartphone apps. Moreover, a strong focus of rail and new mobility services lies at offering a door-to-door journeys to and from railway stations.

**New mobility services could be presented by:**

- Sustainable carsharing;
- Bike sharing;
- E-scooter sharing;
- On-demand transportation;

**Supporting facilities for the above-mentioned services are:**

- Parking areas for free floating and station-based services;
- Charging infrastructure both for cars, bikes, and e-scooters;
- Repair shops;

In order to assure convenient use of sharing services, regional railway stations have special free Wi-Fi zones, which are close to exchanging nodes (also to public transport station). For railway stations, which are located in “greenfield” areas and might have a poor mobile network, this service could be a great asset to attract more travellers.

**“Achieving sustainable mobility through non-motorized transport and rail”**

**Keywords:**  
*Integration between stations, services, and regional mobility plans*

**International best cases:** Alingsås, Triangle, Vordingborg, Bahnhof Altötting

**Summary:** Biking and walking should be prioritized and incentivized to connect to regional railway stations. The increase of intermodal trip chain offers could improve railway operational efficiency and attract more users.

**Factors which could promote the use of non-motorized modes around railway stations include:**

- Easy access to the railway station by walking or using bicycles/micromobility;
- Relative low costs to allocate and construct parking facilities for private/shared bicycles with minimum land dedication;
- Developing bicycling and pedestrian networks connecting to regional railway station;

- Allocation of bicycle rental and repair services;

One of the most important recommendations for regional stations is to designate space close to platforms for most of the bicycle parking (outdoor) and another strategic covered parking house. For planning any walking/ pedestrian zones, attention should be paid on accessibility to the railway station building and platforms, walking time, allocation of some rest areas, and creating a navigation system (signs).

**“Strong connections of public transport at rail stations”**

**Summary:** Traditionally, for most of urban trips to a railway station users seeking an alternative to private car options which generally would have a choice of a relatively low-cost for a public transport service to a

**The most important user factors for establishing strong and attractive public transport connections are:**

- Traveling time to a railway station;

**Keywords:**

*Maximizing access to and from station*

**International best cases:**

Winterberg and Bad Bentheim railway stations, Nordmaling, Vordingborg

higher- cost, like comfortable taxis, or on- demand transport providing door-to-door services. Nevertheless, in more urban areas, public transport is seen as a more reliable option. Furthermore, in non-urban areas public transport connectivity may not be as optimal as compared to large cities, which brings extra focus on public transport improvements.

- Physical connection of PT station with railway platforms;
- Operational integration and sufficient service hours;
- Availability of tickets services of vending machines;
- Designed points with multimodal operational information at stations;
- High safety and security;
- Diversity design;
- Availability of special services for reduced mobility travellers

### “Regional and urban logistics at railway stations”

**Keywords:**

*Regional freight logistic chain optimization*

**International best cases:**

Ludwigsfelde station

**Summary:** Regional railway stations could have an important impact on improving and solving regional and urban logistics, which could offer allocation of urban logistic points with efficient freight distribution and mitigating externalities such as congestion and emissions.

At the benchmarking stations, the typical logistic service was quite limited. However, typical logistic services at regional railway stations are small smart boxes for parcels, some services for last mile delivery points, and post offices (national and international), which might be connected to small rail containers (for regional deliveries).

### Establishment and optimization of a regional freight logistic chain at regional railway stations could include:

- Select the most relevant logistic services to be located at a railway station tailored to the regional characteristics;
- Choice of the most efficient from users and suppliers access point of view location;
- Smarter and targeted infrastructure/ facilities;
- In case of cooperation with several stakeholders, a strong interaction between stakeholders and interfaces between different supply chains should be established;

### “Integration of railway station into everyday life”

**Keywords:**

*TOD around the regional railway station*

**International best cases:**

Rottenbach, Ludwigsfelde

**Summary:** Summary: A railway station and the area surrounding it could have a role of a physical heart of a community, creating hubs for arts, education, fun places, volunteering, healthy living, and social interaction. Such a concept generates pride and interest in the railway from the community, enhancing stations, and providing a warm welcome for rail passengers.

### Ideas and creative solutions of a community concept:

- Organize weekend markets offering local and regional foods sold by local farmers
- Open special cafe places with organised social activities

- Assign space for open museums and local artists
- Use open railway station areas for official city celebrations
- Attract volunteer projects for supporting local developments
- Use the railway station as a start point for marathons where publicum can in the meantime enjoy the station area and use services provided by station cafes.

As seen on international practice, regional stations (all types and size) could have a positive contribution into regeneration of stations can make to communities, terms of social inclusion and engagement, economic regeneration, and wellbeing.

## “Parking and drop off zones at a regional railway station”

### Keywords:

*Maximizing access to and from station*

### International best

**cases:** Assen, Mäntsälä, Flintholm

**Summary:** Parking solutions for private cars, or drop off zones (also known as kiss-and-ride stations), at regional railway stations provide residents of low-density suburbs and rural areas with a convenient and flexible access mode and reduces congestion on arterial roads.

In low density regions the use of private automobiles to get to a railway station is common, especially in regions where public transport services are limited. In such cases it is important to plan for adequate parking at a convenient location next to the station.

From benchmarking cases it is seen that the organization and allocation of Park-and-Ride area offers quick and

direct access to railway building entrance or areas and usually the parking is separated from pedestrian flow or does not have any crossings with public transport stations.

Some of the most important concepts for designing parking services near stations include:

- Adequate parking wayfinding
- Ticketing machines at parking areas
- High security and lightning systems
- Waiting areas
- WC facilities

Electric Vehicle charging ports could also be provided

## Integration with the Local Environment and Effects on Local and Regional

## “Public-private & community participation”

### Keywords:

*Public-Private Participation, stakeholder participation, community engagement and participation*

### International stations:

Espoon Keskus

**Summary:** To achieve the provision of commercial and other services in and around the station, it is important that the design of the station and services is carried out with maximum amount of public, private and community participation to understand the needs of each stakeholder.

### Legal and Regulatory Frameworks

Clear responsibilities in terms of ownership, financing, operations and management of a station must be established at an early stage. The legal and regulatory frameworks need to be in place before any contracts are designed between public and private entities.

### Careful programming & planning

Even in small regional stations (type III-IV) it is very important to plan services and understand contracts with different stakeholders with enough time to make the necessary adjustments if needed.

### Public-Private participation

It is extremely important to understand the extent to which public-private participation can be developed in terms of the operation and service provision of a railway station. The success of such relationship will be achieved if there is clear understanding of the contractual arrangements and if the risks of the operation is assigned to the party with the best position to mitigate it.

### Community participation

During both the programming and planning of regional stations, it is critical to organize community participation workshops to i) inform the wider community of the plans for developing the station, ii) understand needs and wants from the community in terms of services around the station and to understand how contracts should be set up in order to ensure the maximization of the potential benefits to the community.

		<p>Any service development at railway stations requires a strong cooperation between a station operator and stakeholders, whose services are to be allocated at the station.</p>
<p><b>“Ensuring financial sustainability”</b></p> <p><b>Keywords:</b> <i>Local authorities and broader stakeholders together to ensure financial sustainability</i></p> <p><b>International stations:</b> Landskrona</p>	<p><b>Summary:</b> Seamless railway station planning and integration with its surroundings to include available services are factors that combined, creates an attractive railway station and contributes towards financial sustainability.</p> <p>To achieve a higher rate of rail usage, the last-mile journey for individuals throughout the region have to be optimized in terms of travel time, cost, and convenience. Well-integrated bus services in combination with the provision of new mobility and other ancillary services would encourage travellers to visit and use commercial and transport connection services at the railway station and thus contribute to its financial sustainability.</p>	<p>In rural areas particularly, the provision of e.g. shopping possibilities, grocery stores, post office, car rental, or logistic and freight services could bring more visitors to the station as they can run several errands in combination with their train ride.</p> <p><b>Financial resources for station operations and maintenance</b> Resources used to operation and provide maintenance to the stations require at least the following revenues:</p> <ul style="list-style-type: none"> <li>▪ A portion of the fares (through contractual agreements)</li> <li>▪ Non-fare revenues i.e. advertising, commercial and land development</li> <li>▪ In some cases subsidy payments</li> </ul>
<p><b>“Digital connectivity strategy”</b></p> <p><b>Keywords:</b> <i>Digital connectivity, capacity reliability, rail performance for passengers and freight, train control</i></p> <p><b>International stations:</b> General analysis developed based on all listed stations</p>	<p><b>Summary:</b> Over the past decades, digital connectivity has proven itself to be a major driver of both local and regional development, with the potential to increase economic productivity, generate job opportunities, promote cross-sectional innovation, and increase socio-economic wellbeing.</p> <p>Digitalization along a high-speed railway means that the planning of the high-speed and regional services must take into consideration at least the following aspects:</p> <ul style="list-style-type: none"> <li>▪ Necessary digital infrastructure to be laid out during the construction/renovation of tracks and that would be necessary for digital connectivity of the current and future rail network e.g. signalling and train control technology</li> <li>▪ Digital infrastructure that could be shared with other sectors such as housing and commerce</li> </ul>	<ul style="list-style-type: none"> <li>▪ The provision of high-quality connectivity services (3, 4 and/5G, LTE) to ensure seamless connectivity with minimal disruption for rail services and beyond</li> </ul> <p>By providing universal digital connectivity and access, individuals and business throughout a region are given the possibility to connect to each other, to different markets, and to other social and economic opportunities.</p> <p>When developing a new regional railway line, it is recommended to develop a Digital Connectivity Strategy. Such strategy could contribute to the “Dig Once” strategy to gain economic and environmental benefits through shared infrastructure. This concept is particularly beneficial in the construction of greenfield stations and improvements in trackwork.</p>



## “Freight logistics at regional railway stations and multimodal package sharing”

### Keywords:

*Urban Freight logistic network improved access, development of freight and parcel strategy*

### International stations:

General analysis developed based on all listed stations

**Summary:** Freight and small-scale parcel logistic at large urban railway stations has been consolidated in the last few decades in different stations in European railways. However, these are still at a developing phase within small or medium size cities, where a railway station could play an important role in consolidating and delivering small-scale parcel using regional rail services.

### Components to ensure small-scale parcel/package delivery could operate in regional railway services:

- Logistics and distribution centre facilities near the station
- Storage facilities at the station to consolidate packages
- Adequate space for transporting parcels inside rail cars
- Lockers at destination stations

- Logistics operators to manage delivery of the parcels.
- Multimodal connection between distribution centres and station (delivery vehicles, electric cargo bicycles)

Furthermore, the proposed regional stations to be used as parcel consolidation centres (or adjacent facilities) should have the supportive facilities to ensure the operations are effective and efficient (parking, drop off/pick up spaces).

In order to ensure an efficient planning of resources within regional railway services, it is recommended that a freight and parcel strategic plan is developed during early stages of the planning of the regional rail series. It is also recommended, that even in small stations (type III-IV) space is planned for potential future parcel services (when applicable).

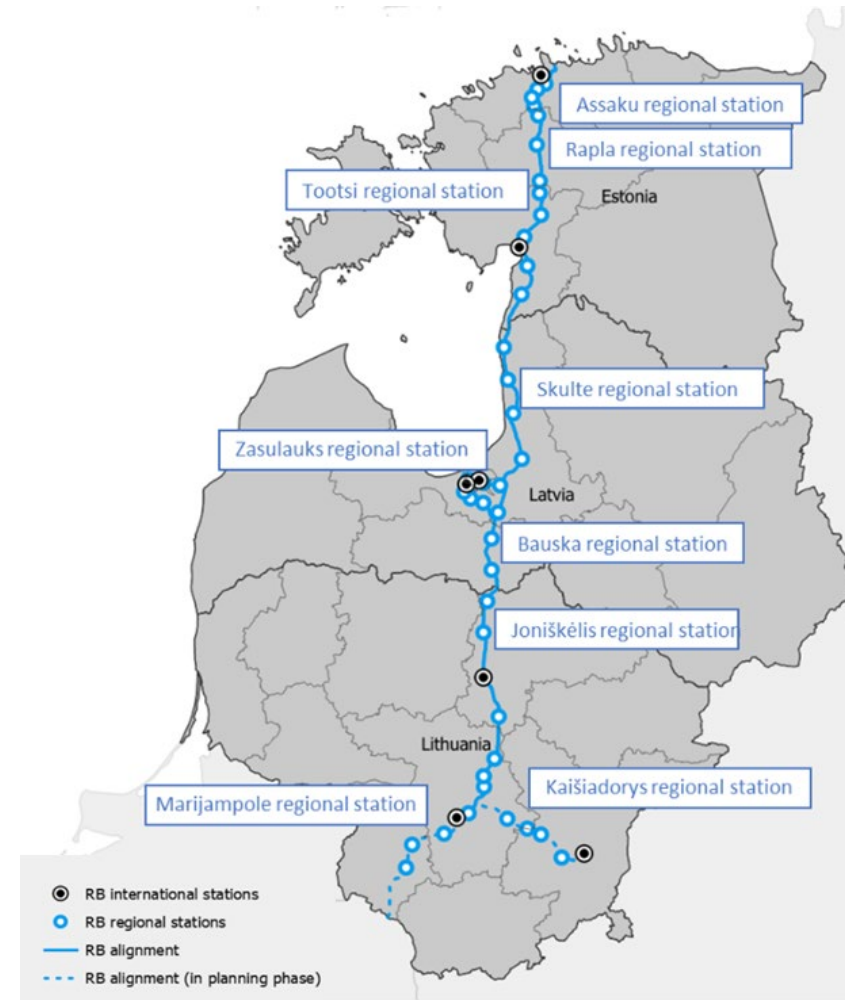
## 4. Critical analysis of selected examples of RB regional railway stations

Under this chapter, the consultant presented the results of the evaluation of the selected RB stations (as a basis for developing more global recommendations for the RB rail corridor) and summarized their key recommendations to be considered when designing stations and services. At this stage, recommendations were determined at a high level that will help RB Rail AS create the basis for the development of the railway corridor, considering regional and local aspects in the Baltic countries.

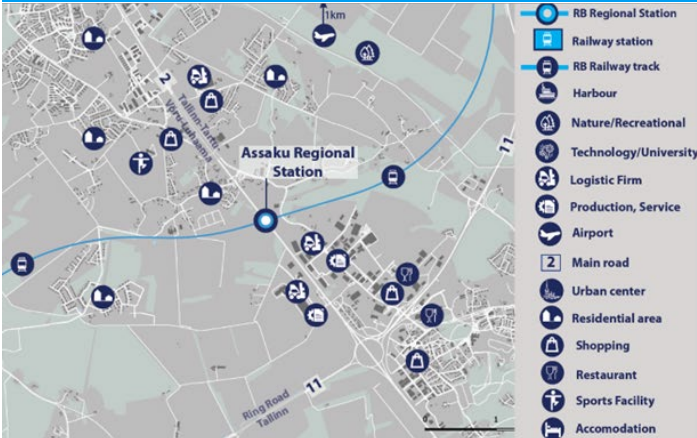
All presented in the chapter recommendations are connected to forecasted regional changes in population and economic activities. Based on international practice, the consultant utilized assumptions that good, accessible, and quality railway connections could directly impact on population relocation toward small cities and rural areas and therefore promote their population growth.

Following international experience, new railway infrastructure and services will connect regional small- and medium-sized cities with larger, economically important urban agglomerations by fast and convenient railway commuter services offering faster travel times, simplified border crossing procedures, and improvements in trade between Baltic States. Such organisation could offer residents access to better working opportunities via railway transport for daily commutes and other travel purposes for over 200 km.

To develop future mobility services, a focus included understanding of potential demand of various station users (commuters, daily visitors and tourists). Additionally, city sizes, incomes, distance to residential areas, existing infrastructure and regional developments (trends), existing regional (national) road access and connectivity were considered.



### ASSAKU REGIONAL PASSENGER STATION



<b>Station ID</b>	Os060
<b>Location</b>	Greenfield
<b>Population (r=3km)</b>	8,200
<b>Nearest large urban area</b>	Tallinn, 8.5 km
<b>Nearest airport</b>	Tallinn international airport, 5km
<b>Relevant road connections</b>	Järveküla-Jüri local road; Estonian national road No. 2

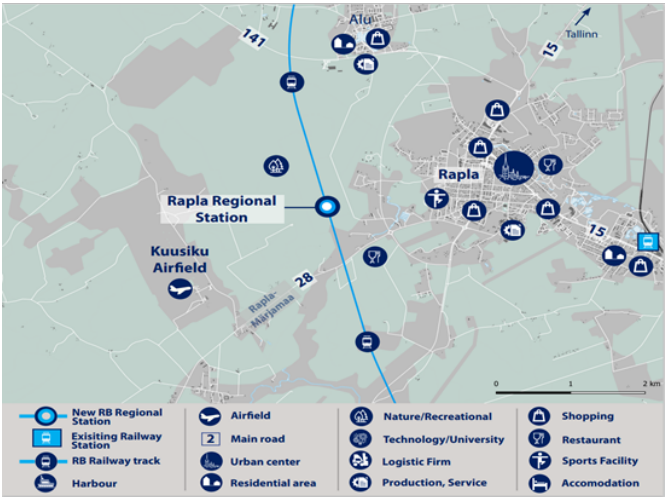
Assaku located in the Rae municipality, in the region of Harjumaa. The future RB regional station is situated in a rural area approximately 600 meters south-east from the town of Assaku, which is the nearest urbanized area consisting of primarily low- density housing and some industrial land uses.

Initial evaluation of the regional characteristics and potential developments at Assaku regional station:

- High density mixed land uses around the station and surrounding areas may increase the attractiveness of the area to people studying or working in Tallinn, consolidating a suburban location with sustainable transport options and establishment of RB services;
- Due to future station location close to Tallinn, the area has a high potential for strong urban redevelopment (including industry/economic activity and housing);
- The density of industry and commercial services in the Assaku shows potentials for expansion and consolidation utilizing the RB station and services as a catalyst for development;
- An important digital network access point could be available at the Assaku station to provide access to 5G connections for the nearby community and to allow cargo carriers to reliable connect to network services, as well as enhance the signal along the track for deploying digital connectivity to the trains and other ITS applications;
- The public transport network in the Rae Municipality is quite developed and connects all villages located within the municipality, including Assaku area. There is an important potential to build a municipal multimodal transport mobility network, where road transport, P+R parking, bus traffic (local and regional), light traffic, etc. will meet. Hence, Assaku station could be developed as a local multimodal hub;
- Assaku regional station is expected to be approximately 600 m from the closest urban area, which is considered suitable walking or biking distance;
- A connection of on-demand mobility could in the future be implemented;

TOPIC	RECOMMENDATIONS
<b>Population relocation</b>	<ul style="list-style-type: none"> <li>▪ Development of integrated land use planning around the station including residential housing, educational and commercial;</li> <li>▪ Based on close location of the station in a sub-urban area, to develop working spaces (offices) and business centres in the area;</li> </ul>
<b>Regional cohesion</b>	<ul style="list-style-type: none"> <li>▪ Developing the areas as a functional suburb for Tallinn;</li> <li>▪ Maximize the utilization of the rural/greenfield station to establish a strong passenger hub, also providing transport connectivity to other nearby villages;</li> <li>▪ Consider the consolidation of a specialized industrial park taking advantage of the land availability around Assaku station;</li> </ul>
<b>Regional freight logistics</b>	<ul style="list-style-type: none"> <li>▪ Developing urban logistic services at the station. This could be presented by smart parcel boxes installed at platforms or within the station building;</li> <li>▪ Consider the development of a railway corridor-wide strategic freight logistics plan that includes Assaku station as a potential important distribution centre, as well as synergies with Soodevahe station (East of Assaku);</li> </ul>
<b>Firm clustering</b>	<ul style="list-style-type: none"> <li>▪ Develop industrial land use planning supporting existing activities. Consider development of a technology or industrial park within a 1-3 km of station along the north-west corridor towards Tallinn;</li> </ul>
<b>Digital connectivity</b>	<ul style="list-style-type: none"> <li>▪ Provide 5G network access point to connect nearby communities and businesses;</li> <li>▪ Provide transmission grid support/ renewable generation support via railway substations to e.g., bus/car charging facilities;</li> <li>▪ Potential to adapt Neutral Hosts to enable convenient internet access throughout the region. Promoting the Neutral Host model could be a great opportunity to provide internet access in areas with low population density and a high cost-to-customer ratio for regular telco providers.</li> </ul>
<b>Public transport &amp; facilities</b>	<ul style="list-style-type: none"> <li>▪ Development public transport rail-bus integration and infrastructure plan;</li> <li>▪ Establish covered bus station in front of the railway entrance with direct and prioritised pedestrian connectivity (including PRM) with operational information ;</li> <li>▪ Potential development of on-demand services during non-peak time,</li> <li>▪ Designing taxi parking zone, preferably in front of the railway station entrance;</li> </ul>
<b>Short distance &amp; new mobility</b>	<ul style="list-style-type: none"> <li>▪ Development of protected multi-use (walk/bike) path between station and the surrounding urban settlements;</li> <li>▪ Development of parking and charging spaces for e-scooters and e-bikes;</li> </ul>
<b>Regional mobility</b>	<ul style="list-style-type: none"> <li>▪ Ensure planning bus services to/from the east side of Harjumaa county to the railway;</li> <li>▪ Investigate the possibility to implement on-demand services to connect adjacent rural settlements;</li> <li>▪ Development of a transit plan to adapt existing bus services and introduce new bus services;</li> <li>▪ A direct access to the T2 national road is not allowed. To get to the railway station it is recommended to use nearby roads (for example the Järveküla-Jüri road). The quality road connections must be high and allow direct accesses to parking zones at the railway;</li> </ul>
<b>Bike, Kiss, and Park +Ride</b>	<ul style="list-style-type: none"> <li>▪ Provide bike parking station (preferably covered) at the station close to railway platforms and station building;</li> <li>▪ Allocation of sufficient P+R where number of parking slots could be determined based on potential demand from wide catchment area (3-5 km);</li> <li>▪ Based on demand introduce shared LEV with respective charging infrastructure;</li> <li>▪ Establishing Kiss &amp; Ride area with short time parking rules;</li> </ul>

**RAPLA REGIONAL PASSENGER STATION**



<b>Station id</b>	05170
<b>Location</b>	New/ Greenfield
<b>POPULATION (R=3km)</b>	6.300
<b>Nearest large urban area</b>	Tallinn, 55 km
<b>Nearest airport</b>	Tallinn International Airport, 57 km
<b>Relevant Road Connections</b>	2 km south of Road No. 141 Rapla-Varbola, 1 km north of Road No. 28 Rapla-Märjamaa, and 20 km east of National Highway No. 4/European Road E67.

Rapla regional station will be located approximately 2.5 km from the Rapla City centre in the district of Sulupere. Rapla is located near several important national and international transport nodes such as the ports of Paldiski and Pärnu. One of the most notable advantages of Rapla is the proximity job markets both in Tallinn-Harju to the north and Pärnu in the south. It means that future RB stop could have an important role for providing commuting trips.

The neighbouring areas to the RB Rapla station are connected by a few bus routes, which run through Rapla. Their operational routes pass along Road 28 at the south from the proposed station location. Rapla is also a mid-stop for several medium and long-distance bus routes, including connections to Tallin and Tartu. Currently, there are no short distance mobility services that exist within the area of the planned RB station.

Along with several manufacturing companies including SMEs as well as production units of large international companies like Lallemand (Canada), OI Production (USA), Lindström (Sweden), possible railway freight logistic services could be associated in the future to Märjamaa Treff Logistics & Industrial Park situated on the Tallinn-Pärnu-Ikla highway, covering a total of 70,000 sqm where multimodal connections with a rail component could be created. Furthermore, there are a few large post & logistics delivery companies, namely DPD (delivering and distribution) centre, national post services organised by Omniva (which also allocates packet station kiosks in the city), and Rapla Postkontor Omniva who provides a drop-off and pick-up post service for private users, or small private companies.

Rapla county is already location for several industrial as well as cultural clusters, including: (i) manufacturing (including Rapla Metall OÜ and wood industry companies), small furniture producers, metal and car workshops, fabric, handicraft, refurbishing), (ii) local small production companies (including agricultural and animal products processing companies), (iii) educational (including the planned new Rapla State High School which could serve 360 students), culture and tourism, with companies that provide for local tourism, offering local green attractions.

TOPIC	RECOMMENDATIONS
<b>Population relocation</b>	<ul style="list-style-type: none"> <li>▪ Developing a long-term integrated land use plan around the station supporting housing and commercial development incentivising population relocation from other regions in northern Estonia;</li> </ul>
<b>Regional cohesion</b>	<ul style="list-style-type: none"> <li>▪ Maximize the utilization of the RB stop greenfield area to develop an institutional hub where community centres and other government institutions could place offices and offer services;</li> <li>▪ To connect the existing 1520mm rail station served by Tallinn – Viljandi route to the RB Rapla station to provide comfortable interchanges between systems and increasing accessibility from/to different areas;</li> </ul>
<b>Regional freight logistics</b>	<ul style="list-style-type: none"> <li>▪ Consider the development of a corridor-wide strategic freight logistics plan, where Rapla Station could potentially play a role of distributing small regional manufacturing products;</li> <li>▪ Consider the creation of a regulatory framework that incentivises companies to locate within the area of the station;</li> </ul>
<b>Firm clustering</b>	<ul style="list-style-type: none"> <li>▪ Establishment of possible freight railway supply to Logistics &amp; Industrial Park due to the strategic positioning of Rapla station between Tallinn and Pärnu</li> <li>▪ Consider the development of a freight/industrial/trade special zone to attract firms and talent ;</li> </ul>
<b>Digital connectivity</b>	<ul style="list-style-type: none"> <li>▪ Improve digital connection in the area to offer quality internet access to local communities, including schools, medical facilities and local administration as well as supporting remote working;</li> <li>▪ Due to the station’s location, the “Dig Once” concept could be implemented ;</li> <li>▪ Potential to adapt Neutral Hosts (collaboration third party infrastructure provider and telco) to enable convenient internet access throughout the region. Promoting the Neutral Host model could be a great opportunity to provide internet access in areas with low population density and a high cost-to-customer ratio for regular telco providers;</li> </ul>
<b>Public transport &amp; facilities</b>	<ul style="list-style-type: none"> <li>▪ Development of a plan to integrate Rapla county PT existing services and RB rail services ;</li> <li>▪ Locate a taxi station near the RB stop building ;</li> <li>▪ Developing the offer of mobility services in a TOD concept integrating the RB station with Rapla city and county ;</li> </ul>
<b>Short distance &amp; new mobility</b>	<ul style="list-style-type: none"> <li>▪ Designing the station with focus on guaranteeing universal accessibility (including PRM) to the RB stop and platforms ;</li> <li>▪ Develop protected multi-use (walk/bike) paths connecting the RB stop with the surrounding communities as part of a multi-use paths broader network;</li> <li>▪ Ensure the presence of parking spaces for e-bikes;</li> <li>▪ Ensure there is a development plan that connects the regional station with downtown Rapla and the nearby the airfield prioritizing public transport, cycling and shared use vehicles;</li> </ul>
<b>Regional mobility</b>	<ul style="list-style-type: none"> <li>▪ Ensure there is access connecting roads that lead to the station and from both station sides;</li> <li>▪ Potentially design a grid of streets to connect future medium-density land uses;</li> </ul>
<b>Bike, Kiss, and Park + Ride</b>	<ul style="list-style-type: none"> <li>▪ Ensure the presence of P+R facilities;</li> <li>▪ Introduce Shared EV (e-bikes) charging infrastructure;</li> <li>▪ Introduce K+R in front of the station building with clear parking rules;</li> </ul>

## TOOTSI REGIONAL PASSENGER STATION



RB Tootsi stop will be situated in a rural area approximately 1.5 km south-east of the town of Tootsi, approximately 100 km south of Tallinn. Tootsi might have potentiality for growth, as RB services will provide fast and reliable connections to Pärnu, so making Tootsi an attractive location for displacement, especially in mixed remote/office work conditions. Additional opportunities for potential area redevelopment might come from expansion of existing touristic activities (the area has important natural reserves and protected areas), from increasing housing development and related residential services.

Currently, there are no logistic services in the area. To improve urban logistics in the area, the RB stop could offer an opportunity to provide regional logistics services, for instance providing pick-up and drop-off parcels services. In this case it a relevant cooperation with logistic companies to be established.

To support good digital connections and achieve the goal of 5G connectivity along transport corridor, Tootsi station could provide access to 5G for the nearby community of Tootsi and other settlements up to 40 km from the access point. Due to its rural location and low population density, inhabitants might face difficulties in terms of 5G deployment as individual telecommunication companies would face a high cost-to-customer ratio to provide its services to just a few users per node. Hence, the concept of neutral hosts could be an option for this area, provided the business model of third-party hosts.

Public transport access at Tootsi is quite limited. A bus stop located just around 500m at south of the planned RB stop offers commuter services to Pärnu and regional services to Rakvere and to the north-eastern Estonia. The local and regional PT services must increase their future operational frequency and be integrated with the RB stop to improve regional mobility and accessibility. Moreover, to enhance the regional mobility improved station access is required in the form of new and better road connections especially to National Road 5.

The RB stop is located 1.5 km from the village, therefore at a functional distance for biking and other short distance mobilities. Due to low population, the demand for new mobility services is relatively low.

To encourage commuters to utilize the station, sufficient long-term and short-term parking possibilities must be provided in direct connection to the station. As Tootsi Station will be developed in a greenfield area, an optimal location of parking areas and drop-off/pick-up areas could be chosen based on local and regional travel patterns.

TOPIC	RECOMMENDATIONS
<b>Population relocation</b>	<ul style="list-style-type: none"> <li>▪ Introducing an integrated land use plan in the area increasing housing development and related residential services;</li> <li>▪ Exploiting the new RB service in support to reliable and comfortable commuting as catalyst for population relocation;</li> </ul>
<b>Regional cohesion</b>	<ul style="list-style-type: none"> <li>▪ Maximize the utilization of the greenfield station within the land uses permitted to establish potential agricultural/small industrial service mainly with a regional delivering focus;</li> <li>▪ Potentials for Tootsi and the regional station to be part of attractive regional green tourism;</li> </ul>
<b>Regional freight logistics</b>	<ul style="list-style-type: none"> <li>▪ Exploring the possibility to develop synergies with Pärnu intermodal terminal;</li> <li>▪ Development of local logistics services at the RB station;</li> <li>▪ Developing cooperation framework with logistic companies ;</li> </ul>
<b>Firm clustering</b>	<ul style="list-style-type: none"> <li>▪ Establishing small urban logistic service and relevant to this sector firms cooperation;</li> </ul>
<b>Digital connectivity</b>	<ul style="list-style-type: none"> <li>▪ Improve the attractiveness of the region as a place to live, where sufficient digital connections facilitate the combination of remote working at home and working in Tallinn and Pärnu;</li> <li>▪ Developing “Dig Once” concept to provide shared digital infrastructure to reduce investment costs and spur regional cohesion/information accessibility;</li> <li>▪ Potential to adapt Neutral Hosts to enable convenient internet access throughout the region;</li> <li>▪ Potential to adapt Neutral Hosts (collaboration third party infrastructure provider and telco) to enable convenient internet access throughout the region. Promoting the Neutral Host model could be a great opportunity to provide internet access in areas with low population density and a high cost-to-customer ratio for regular telco providers;</li> </ul>
<b>Public transport &amp; facilities</b>	<ul style="list-style-type: none"> <li>▪ Relocate the bus station close to the RB station with a safe and direct pedestrian access to boarding areas;</li> <li>▪ Develop functional integration of local PT network and RB rail services;</li> <li>▪ The stations should provide a sufficient digital information on bus/railway operation and potential interchanges in the region;</li> <li>▪ Increase frequency of regional bus services connecting RB station and surrounding land uses;</li> <li>▪ Integrate mobility to/from RB station from nearby communities such as Tori, Jõesuu, and Suigu;</li> </ul>
<b>Short distance &amp; new mobility</b>	<ul style="list-style-type: none"> <li>▪ Guaranteeing universal accessibility (including PRM) to the RB station boarding areas and services;</li> <li>▪ Develop protected multi-use (walk/bike) paths between RB station and the town of Tootsi as well as from the station to the Mõrdama hoivuala natural area;</li> <li>▪ Development of parking spaces for e-bikes for day use;</li> </ul>
<b>Regional mobility</b>	<ul style="list-style-type: none"> <li>▪ Integrate existing bus services running on roads 271 and 270 with RB railway services;</li> <li>▪ Integrate commuter bus services running between Tootsi and Pärnu at RB station;</li> </ul>
<b>Bike, Kiss, and Park +Ride</b>	<ul style="list-style-type: none"> <li>▪ Provide sufficient bike parking slots next to the station supporting commuting mobility;</li> <li>▪ Provide drop-off and pick-up areas close to the boarding areas of the RB station;</li> </ul>



## SKULTE REGIONAL PASSENGER STATION



<b>Station id</b>	OS330
<b>Location</b>	New/Greenfield
<b>POPULATION (R=3km)</b>	800
<b>Nearest large urban area</b>	Riga City Center, approximately 69 km
<b>Nearest airport</b>	Riga International Airport, approximately 79 km
<b>Relevant road connections</b>	The proposed station could have access to the Highway P53 the distance of which is approx. 1 km to the East. The Saulkrasti Bypass running from Lilaste to Skulte was opened in September 2007 and it is used for important cargo transfer

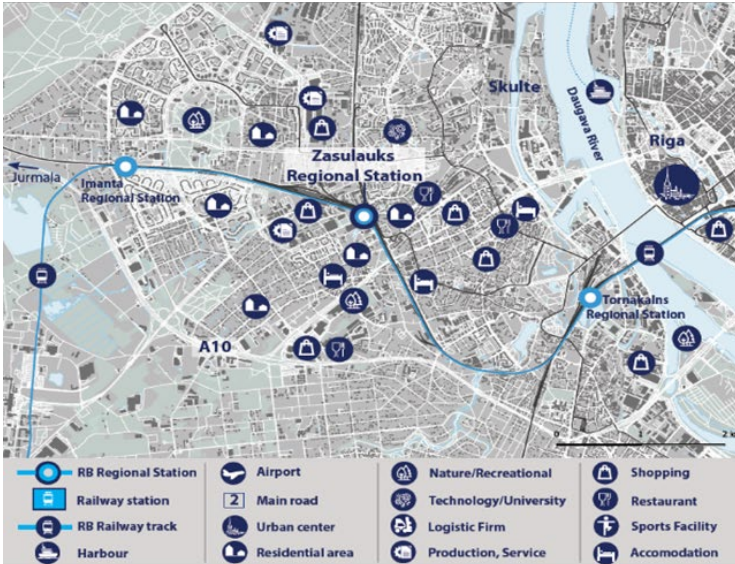
Skulte is located in Limbaži municipality. The future RB regional station is situated in a rural greenfield area located approximately 5 km from the nearest urbanized area - Skulte town - and north-east of the existing 1520 Skulte station. The surrounding area is primarily made of forests and agricultural land. Due to its coastal location, one of the main focuses in the region is shipment services and fishery products. Today, Skulte is the northernmost endpoint of the 1520 mm Riga suburban rail network. The existing rail services runs along the coast via Saulkrasti and Carnikava.

Additional regional assessment outcomes :

- Skulte population density is currently low. However, due to its close location to Riga and strong industrial development, the area has high potential for population relocation from Riga urban area and economic developments;
- Logistics services in Skulte include number of international transport and forwarding companies. That creates significant potential to integrate railway service into regional (national) logistics;
- Existing commercial and business economic activities could be potentially connected with the railway station (only 7 km away);
- Strategic land use will allow to develop a strong industrial site connected with multimodal logistic services with a strong railway component;
- There is the potential to integrate Skulte port and its logistic services with RB Rail AS services
- The RB infrastructure maintenance facilities planned in Skulte potentially should be used also for construction logistics during the RB infrastructure construction phase;
- Due to close location to Riga, Skulte area could be redevelop as new urban zone providing some business services (also for offices and sharing places for start-up companies);  
The existing natural resources around Skulte could be used to increase the potential for developing attractive tourism services;

TOPIC	RECOMMENDATIONS
<b>Population relocation</b>	<ul style="list-style-type: none"> <li>▪ The proximity to Riga creates the opportunities for population relocation provided reliable commuting services are provided;</li> <li>▪ Development of integrated land use in the catchment area of the RB stop including residential housing and services to the population;</li> </ul>
<b>Regional cohesion</b>	<ul style="list-style-type: none"> <li>▪ Exploiting the potential of RB stop to become the touristic access point for the natural reserves present in the area;</li> <li>▪ Develop touristic oriented services at the RB stop including information point, bicycle rental ;</li> <li>▪ Given the low-population density in the area land use developments may focus to support commercial, manufacturing, and productive agricultural activities that can support local population as well as attract more residents;</li> </ul>
<b>Regional freight logistics</b>	<ul style="list-style-type: none"> <li>▪ Establishment of regional railway freight services linked to the industrial side at the Skulte Port to integrate the Skulte port and its services into RB Rail AS ecosystem. This is however a subject for a detailed separate feasibility study;</li> <li>▪ Establishment potential cooperation to serve future Skulte LNG Terminal providing regional railway freight services;</li> <li>▪ Development of urban logistic services accessible for Mandegas, Ziemeļblāzma and Dūči communities;</li> </ul>
<b>Firm clustering</b>	<ul style="list-style-type: none"> <li>▪ Potential to develop business cluster providing more areas for offices and administrative buildings;</li> </ul>
<b>Digital connectivity</b>	<ul style="list-style-type: none"> <li>▪ Improve digital connections to facilitate remote working at home from bigger urban centres;</li> <li>▪ Due to the station's greenfield location, there is an opportunity to utilize the concept of "Dig Once" to deploy shared digital and energy infrastructure;</li> <li>▪ In areas with low population density, the Neutral Host model (collaboration between third party infrastructure provider and telco) could be an option to promote equal access to internet throughout the region;</li> </ul>
<b>Public transport &amp; facilities</b>	<ul style="list-style-type: none"> <li>▪ Development of public transport services to connect RB stop to local communities (Mandegas, Ziemeļblāzma, Dūči, Salzemnieki, etc.) ;</li> <li>▪ Railway interchange development vis-à-vis the 1520mm Riga-Skulte line to make RB stop an interchange station serving both RB Corridor and existing Skulte – Saulkrasti – Riga line ;</li> </ul>
<b>Short distance &amp; new mobility</b>	<ul style="list-style-type: none"> <li>▪ Development of parking spaces for bikes and e-bikes;</li> <li>▪ Design potential places for a charging infrastructure (both for cars and bikes) ;</li> <li>▪ Development of bicycle connection and integration with the Eurovelo 10 route (also for tourism) ;</li> <li>▪ Introduce bicycle shared system and allocate required facilities (for LEV) and charging infrastructure (benchmarking is presented in the annex 3) ;</li> </ul>
<b>Regional mobility</b>	<ul style="list-style-type: none"> <li>▪ Provide long-distance regional bus stops at the station ;</li> <li>▪ Integrate bus and railway operational plan;</li> </ul>
<b>Bike, Kiss, and Park + Ride</b>	<ul style="list-style-type: none"> <li>▪ Allocation of sufficient P+R t places for at least 30 vehicles;</li> </ul>

## ZASULAUKS REGIONAL PASSENGER STATION



<b>Station id</b>	OS445
<b>Location</b>	New/Urban environment
<b>POPULATION (R=3km)</b>	158 000
<b>Nearest large urban area</b>	Riga City Center, approximately 6 km
<b>Nearest airport</b>	Riga International Airport, approximately 6 km
<b>Relevant road connections</b>	Access to highway A10 approx. 2 km away from the station

Zaslauks regional passenger station is located 3.5 km west of Riga city centre across the Daugava river. The station is located close to the Pauls Stradiņš Clinical University Hospital, 4.5 km west of Riga-Pasažieru railway station and 5 km north-east of Riga Airport. The station is an important connector between 1520 mm services to Jūrmala and (planned new 1520) Bolderāja 1435 mm.

Zaslauks RB station has a great potential to provide services to the communities around the station as well as to bring mobility services for commuters travelling to Riga, so becoming an important TOD oriented urban mobility hub strongly connected with surroundings Zaslauks, Šampēteris and Āgenskalns suburban areas and Riga central area.

A new bridge, equipped with bicycle lane connecting both parts of the river, will be constructed next to already existing railway bridge, which will enhance station access but also promote sustainable mobility also following the Riga strategic development plan 2030.

Due to the urban location of the RB station, there is a great opportunity to implement new mobility services including shared services of e-scooters and e-bikes as a light mobility mode could be an attractive option for last-mile choice, also for visitors looking for a fast and affordable way to travel around.

Already existing public transport services serving the area routes and frequencies must be integrated with RB services and adjusted in line with future expansion plans to create an attractive, efficient, and reliable public transport network. It is essential to provide adequate multi-use sidewalks, illumination, and green space installations.

The population density and employment activity for this Riga suburb are high, and Zaslauks RB station will be in a strategic position to become a small urban freight logistics or distribution centres to serve closely located sub- and urban districts area (including Šampēteris, Pleskodāle, Zolitūde, Torņakalna, Dzirciems, Imanta).

TOPIC	RECOMMENDATIONS
<b>Population relocation</b>	<ul style="list-style-type: none"> <li>▪ Developing integrated land use plan around the station based on TOD strategy;</li> <li>▪ Developing housing strategic plan that integrates with land use and provides affordable housing for local populations and incentivises regional movement from nearby regions in Latvia. Reasons for people moving to the area may be quick access to the central area with lower housing prices. The number of vacancies and the potential for business development in and around the station area are additional attractive factors. In addition, the future station will provide access to the less populated area of Šampeteris;</li> <li>▪ Integrate the station design into Zaslauks park to the south of the tracks. The attention could be given at developing sustainable station design being attractive for business located there, and provide well design access (especially for NMT);</li> </ul>
<b>Regional cohesion</b>	<ul style="list-style-type: none"> <li>▪ Maximize the utilization of the station area to establish a strong passenger transport hub but also a strong institutional hub where community centres, hospitals and other government institutions could place offices and service centres</li> <li>▪ Developing a TOD concept and commercial development;</li> <li>▪ Create attractive commercial activities (for example for quick purchases) for visitors coming from other small districts or villages;</li> <li>▪ Moreover, the existing railway station could be rebuilt using a mix of existing historical design and innovative solutions. As an idea Vilnius station, Kiel railway station, could be reviewed;</li> </ul>
<b>Regional freight logistics</b>	<ul style="list-style-type: none"> <li>▪ Take advantage of RB station location to organize a distribution point for the Zaslauks district (developing on available urban logistic services);</li> <li>▪ Utilize current industrial locations near RB station to develop a small business area</li> <li>▪ Transit cargo from the Latvian regions and abroad could arrive at the port of Riga on the left bank of the River Daugava. The Eastern main road and potential stage I of the Northern corridor could be used on the left bank of the River Daugava;</li> </ul>
<b>Firm clustering</b>	<ul style="list-style-type: none"> <li>▪ Future potential is seen in developing industrial clusters, which could also be served by railway services (fast train courier services) ;</li> </ul>
<b>Digital connectivity</b>	<ul style="list-style-type: none"> <li>▪ Utilization of potential digital networks to be built in connection with RB Rail AS to improve regional connectivity with fixed network technologies (main fibre connections) to improve space efficiency in the urban area rail corridor;</li> <li>▪ Development of a digital connectivity strategic plan to understand the potential to maximize digital connectivity in the Riga metropolitan area;</li> <li>▪ Potential to adapt Neutral Hosts (collaboration third party infrastructure provider and telco) to enable convenient internet access throughout the region.</li> <li>▪ Potential to provide emergency transmission grid and function as a local renewable energy resource by allowing third-party operators to connect to the railway substations</li> </ul>
<b>Public transport &amp; facilities</b>	<ul style="list-style-type: none"> <li>▪ Integrate existing PT services, both urban and regional, serving the RB station area;</li> <li>▪ Creating taxi stations close to the RB station accesses;</li> <li>▪ The entire design of Zaslauks RB station should be based on a barrier-free concept, and the station should offer additional assisting services for PRM;</li> </ul>
<b>Short distance &amp; new mobility</b>	<ul style="list-style-type: none"> <li>▪ Guaranteeing universal accessibility (incl. PRM) to the stations are and to the RB station</li> <li>▪ As part of a connected and direct bike infrastructure network of multi-use paths, develop protected multi-use (walk/bike) path between the RB station and the surroundings;</li> <li>▪ Integrate the planning by the Riga city bicycle routes with the RB station and provide direct access to the building and boarding area;</li> </ul>

TOPIC	RECOMMENDATIONS
	<ul style="list-style-type: none"><li>▪ Provide parking and charging spaces for e-scooters and e-bikes;</li><li>▪ Ensure the good connectivity (above rails) between both sides of the station;</li><li>▪ Introduce Shared LEV infrastructure and services;</li></ul>
<b>Regional mobility</b>	<ul style="list-style-type: none"><li>▪ Ensure efficient functional integration of urban and regional mobility services complementary to RB services;</li><li>▪ Development of a transit plan to adapt existing bus services and provide new PT routes</li></ul>
<b>Bike, Kiss, and Park +Ride</b>	<ul style="list-style-type: none"><li>▪ Provide covered bike parking either at or next to the RB station;</li><li>▪ Introduce K+R stations in front of the station building with clear parking rules;</li></ul>

**BAUSKA REGIONAL PASSENGER STATION**



<b>Station id</b>	0S570
<b>Location</b>	Greenfield
<b>POPULATION (R=3km)</b>	1 800
<b>Nearest large urban area</b>	Riga City Center: 72 km, Riga Airport: 81 km
<b>Nearest airport</b>	Tallinn International Airport, 57 km
<b>Relevant road connections</b>	Bauska station is approximately 2 km east of Highway A2/E67

Bauska is a town in the Zemgale region (southern Latvia) located 66 km from the Latvian capital Riga and 20 km from the Lithuanian border. The future RB station will be in a greenfield area between the city center (approximately 5,6 km), rivers Mūsa Mēmele, about 5 km east of Bauska, and approximately 2 km to the nearest housing district Mūsa. The area has rich nature resources and famous touristic destination in Latvia. The distance to Riga central station is about 67 km. The next regional station in the neighbouring country is Vaškai, with the distance of 46 km and planned travel time of 8 min.

A logistic area, planned to serve agriculture productions, eco productions, warehouses, and logistics services, will be located between the planned RB station and the national Road A7. RB services could be integrated into the future logistics network (only about 5 km from the passenger station).

For developing digital access it would be possible to implement a “Dig Once” strategy to provide shared transport, digital and energy infrastructure at the station and along the railway track. Improved digital connectivity would be beneficial to local population as well as to the new logistic centre. Furthermore, being located than 20 km from the Lithuanian border, Bauska RB station also creates opportunities of deploying high bandwidth cross-border networks (terabit/s), which could bring significant economies of scale to the region.

The proposed station area is currently not served by public transport. Instead, the RB station must be connected through local and regional PT services to develop a multimodal (cross-border) mobility hub. To enhance the access it is proposed to consider improving the road connectivity to the station and developing multi-use sidewalks/bicycle paths connecting the station with the local residential areas. Convenient access to the station from Highway A2/E67, Mūsa, and Bauska is essential to attract more commuters. Moreover, the distance to close living areas creates opportunities to establish strong bicycle connections. Facilities that offer safe, affordable, and secure parking as well as charging infrastructure at the station for e-bikes to be located at Bauska. Parking and drop-off/pick-up areas could be chosen based on regional travel patterns.

Due to the low population density, the potential for establishing new shared mobility services is low.

TOPIC	RECOMMENDATIONS
<b>Population relocation</b>	<ul style="list-style-type: none"> <li>▪ Bauska could be attractive for future population relocation. It is recommended to develop an integrated land use plan around the station that clearly provides incentives building housing and commercial/industrial areas;</li> <li>▪ Developing housing strategic plan that integrates with land use and provides affordable housing for local populations and incentivises regional movement from nearby regions;</li> </ul>
<b>Regional cohesion</b>	<ul style="list-style-type: none"> <li>▪ Maximize the utilization of the greenfield station to establish a functional passenger multimodal hub supporting local as well as regional mobility so to increase physical access of connected areas ;</li> <li>▪ Develop attractive touristic offers (green and agriculture) to make the station area more attractive for various group of users (also allocate hotels and relevant commercial service);</li> </ul>
<b>Regional freight logistics</b>	<ul style="list-style-type: none"> <li>▪ Consider the development of a railway corridor-wide strategic freight logistics plan that includes Bauska Station as a potential important distribution centre not only for regional purposes, but also for international especially to Lithuania ;</li> </ul>
<b>Firm clustering</b>	<ul style="list-style-type: none"> <li>▪ Establishment freight railway services for the planned logistic area, also considering the strategic positioning of the RB station close to the border with Lithuania;</li> </ul>
<b>Digital connectivity</b>	<ul style="list-style-type: none"> <li>▪ Provide network access point to provide access to 5G connections for the nearby community and businesses, especially for future logistics services;</li> <li>▪ Deploy "Dig Once" strategy to provide shared digital infrastructure/energy infrastructure in the region;</li> <li>▪ Potential to set up high speed cross-border network between Bauska and the Lithuanian border for significant economic of scale;</li> <li>▪ Potential to adapt Neutral Hosts (collaboration third party infrastructure provider and telco) to enable convenient internet access throughout the region. Promoting the Neutral Host model could be a great opportunity to provide internet access in areas with low population density and a high cost-to-customer ratio for regular telco providers;</li> </ul>
<b>Public transport &amp; facilities</b>	<ul style="list-style-type: none"> <li>▪ Introduce PT routes to connect RB station to near and medium distance areas and integrate PT and RB services also from an operational perspective;</li> <li>▪ PT stops should be in front of the station entrance with prioritised pedestrian flows (including PRM) and should provide (digital) information on integrated transport operations;</li> <li>▪ Introduce separate regional and local bus stops closely located to the railway station building, providing operational information;</li> </ul>
<b>Short distance &amp; new mobility</b>	<ul style="list-style-type: none"> <li>▪ Develop protected multi-use (walk/bike) path between the RB station and surrounding residential areas;</li> <li>▪ Develop regional wide bicycle network being used for commuter and touristic purposes;</li> </ul>
<b>Regional mobility</b>	<ul style="list-style-type: none"> <li>▪ Development of a transit plan to adapt existing bus regional services or provide new services using the RB station as infrastructural and service hub;</li> <li>▪ Since Bauska is located close to the border, the attention should be paid on developing cross-border services. It means that the station could assign special services for tourists (bike renting, weekend trips to the city, fast access to hotels), special commercial activities for example local shopping offering to visitors regional souvenirs, also offering local produced food;</li> </ul>
<b>Bike, Kiss, and Park +Ride</b>	<ul style="list-style-type: none"> <li>▪ Provide bike parking station with preferably be located directly at the railway station building and with easy access to platforms;</li> <li>▪ Allocate K+R in front of the station building with clear parking rules;</li> </ul>

## JONIŠKĖLIS REGIONAL PASSENGER STATION



<b>Station id</b>	OS6200
<b>Location</b>	Suburban, connected to detached house district
<b>Immediate population</b>	1700
<b>Nearest large urban area</b>	Joniškėlis – 0,32 km; 15 km to Pasvalys
<b>Nearest airport</b>	Between Kaunas International Airport-146 km, and Riga RIX – 141 km.
<b>Relevant road connection</b>	The city is located at the crossroads of the highway Nr. 150 and national road Nr. 2904 connecting Joniškėlis with close located villages.

Joniškėlis is a small town located in the Pasvalys district municipality (approximately 17 km west of Pasvalys and 40 km south to Panevėžys). Current population statistics show about 1026 inhabitants. The majority of the population of Joniškėlis works in commercial (25%), education sectors (14%), public administration (9,3%) and in some small and private construction industries (in the region)<sup>1</sup>. Some of residents are working in more economically developed cities, like Pasvalys, Panevėžys, Kaunas and Vilnius.

Potentially the future station could operate as an important transportation hub to the whole region providing strong high- speed rail services to commuters. When creating a transport connection with the railway station, one of the main attention should be paid to connect a number of nearby villages (Katkūnai, Lepšynė, Lukštyinė, Meškalauskis, Narteikiai, etc. within a radius of 5 km from the city border) and expanding their opportunities to access various labor markets along the RB corridor .

Moreover, to integrate the station with other services, a larger network access point could be available at the Joniškėlis station to provide 5G connections for the nearby community of the city and other nearby settlements up to 40 km from the access point. A concept of neutral hosts could be an option for this area, provided the business model of third-party hosts is accepted by local telcos.

The Pasvalys district municipality is not characterised by any strong industrial or freight logistics development. Due to very limited urban logistic services in Joniškėlis it is recommended to explore this sector and establish pick up and drop off services at the railway station.

Due to station rural location, there are no public transportation. The future focus is to establish strong bus feeder services, bringing travellers also from close located villages. The operational time to be integrated with railway service. In addition, safe and priority access for bicycles must be guaranteed.

<sup>1</sup> General statistic overview for Business Distribution by Industry in Joniškėlis. Source: <https://www.cybo.com/LT/joni%C5%A1k%C4%97lis>



TOPIC	RECOMMENDATIONS
<b>Population relocation</b>	<ul style="list-style-type: none"> <li>Develop integrated land use plan around the station to build housing and commercial areas and provide seamless connection to the existing urban areas of Joniškėlis;</li> <li>Develop housing strategic plan that integrates with land use and provides affordable housing for local populations and incentivises regional movement from other regions in north Lithuania;</li> </ul>
<b>Regional cohesion</b>	<ul style="list-style-type: none"> <li>Maximize the utilization of the greenfield station to establish a strong commuter passenger hub;</li> <li>Develop a TOD concept and commercial development;</li> </ul>
<b>Regional freight logistics</b>	<ul style="list-style-type: none"> <li>Developing urban logistic service directly at the railway station;</li> <li>Potentially, establishing warehouses and logistic areas for e-commerce services in the region;</li> </ul>
<b>Firm clustering</b>	<ul style="list-style-type: none"> <li>Integrating railway station with existing hospitality and tourism services;</li> <li>Creating a strong concept for commuters and travellers, who comes to the town for study purposes;</li> </ul>
<b>Digital connectivity</b>	<ul style="list-style-type: none"> <li>Improve the attractiveness of the region as a place to live, where sufficient digital connections facilitate the combination of remote working at home and working in Panevėžys, Kaunas, Vilnius and Riga;</li> <li>Due to the station's greenfield location, utilizing the "Dig Once" concept to provide shared digital infrastructure could reduce investment costs and spur regional cohesion/information accessibility;</li> <li>Potential to adapt Neutral Hosts to enable convenient internet access throughout the region. Promoting the Neutral Host model could be a great opportunity to provide internet access in areas with low population density and a high cost-to-customer ratio for regular telco providers;</li> </ul>
<b>Public transport &amp; facilities</b>	<ul style="list-style-type: none"> <li>Development of attractive and reliable public transport connectivity, as well as required infrastructure plan to identify bus and rail reorganization needs and infrastructure construction needed to bridge gaps in physical connectivity;</li> <li>Establishing public transport stations in front of the railway entrance with direct and prioritised pedestrian access. Stations should be weather protected, provide place for PRM and allocate digital information on transport operation and travel timing;</li> <li>The whole station area should consider barrier free design and concept;</li> <li>Regional buses to be allocated at the railway station;</li> </ul>
<b>Short distance &amp; new mobility</b>	<ul style="list-style-type: none"> <li>Develop a station with a design focusing on accessibility. All infrastructure leading to the boarding areas should be at level with minimum steps or barriers installed;</li> <li>As part of a connected and direct bike infrastructure network of multi-use paths, develop protected multi-use (walk/bike) path to Joniškėlis station and other close located villages;</li> <li>Design parking spaces for e-bikes;</li> </ul>
<b>Regional mobility</b>	<ul style="list-style-type: none"> <li>Develop of a transit plan to adapt existing bus services to the station;</li> </ul>
<b>Bike, Kiss, and Park + Ride</b>	<ul style="list-style-type: none"> <li>Provide both non-covered and covered bike parking at or next to the station;</li> <li>Allocation of sufficient P+R zone for no more than 30 vehicles. The number of parking slots should be determined based on a calculation using identified catchment area (close located villages – less than 15 km);</li> <li>Introduce bicycles rental service, which potentially could be used for touristic purposes;</li> </ul>

**KAIŠIADORYS REGIONAL PASSENGER STATION**



<b>Station id</b>	OS710
<b>Location</b>	Urban environment
<b>Immediate population</b>	4 000
<b>Nearest large urban area</b>	Kaišiadorys, 0-2 km (depending on final location)
<b>Nearest airport</b>	Kaunas International Airport, 45 km, Vilnius International Airport, 70 km
<b>Relevant road connections</b>	Kaišiadorys is on the A1 (E85) highway, which connects Lithuania's three largest cities. The A1 also directly connects with the Via Baltica highway, which links Eastern Europe with Western Europe and Scandinavia.

Kaišiadorys is located between Kaunas and Vilnius. Such characteristic makes the location for the future RB station critical, in terms of residential relocation and potential economic development

Kaišiadorys city plans to extend the industrial zone in the area, located between the railway tracks and Vatyuto Didžiojo street. This could create potentials for developing multimodal logistic centres (3PL) and a better access to regional logistic networks with a rail component and fast and reliable connections to major centres like Vilnius, Kaunas, and Riga.

Kaišiadorys RB station should provide access to 5G connection for the passengers and neighbouring districts. As the station has a suburban location rather than a rural/greenfield location, the areas surrounding the station might already have sufficient digital connections. However, the railway line could still constitute a main fibre connectivity backbone offering the possibility for local communities, businesses, and industrial areas who could gain access to high-speed networks through local fibre extensions via access points.

The location of the planned RB station is currently not served by public transport and, furthermore, there is no sufficient road access. RB station in Kaišiadorys will provide fast and reliable direct connections to cities like Kaunas, Vilnius, Panevezys and Marijampole. Therefore access, should be guaranteed through, modern and reliable PT services for local and regional destinations.

Given the proximity to Kaišiadorys, it will be important to support NMT modes as one of the main options to access the station from the urban centre. Pedestrian sidewalks to and around the station should be designed, while a bicycle lanes network connecting to Kaišiadorys central areas should be built, for the last-mile mobility. Nevertheless, Park-and-Ride for this RB location would probably be needed due to the importance that the RB might acquire for regional level mobility.

TOPIC	RECOMMENDATIONS
<b>Population relocation</b>	<ul style="list-style-type: none"> <li>Develop integrated land use plan around the station to support a TOD oriented development in the area and full integration with the Kaišiadorys urban area;</li> </ul>
<b>Regional cohesion</b>	<ul style="list-style-type: none"> <li>Maximize the utilization of the greenfield station to establish a regional mobility hub guaranteeing accessibility to surrounding areas with current low levels of accessibility;</li> </ul>
<b>Regional freight logistics</b>	<ul style="list-style-type: none"> <li>Given the privileged location, consider the development of special zone to create an important freight logistics distribution centre;</li> </ul>
<b>Firm clustering</b>	<ul style="list-style-type: none"> <li>Establishment of possible freight railway supply from Kaišiadorys to Industrial logistic services in Kaunas and Vilnius;</li> </ul>
<b>Digital connectivity</b>	<ul style="list-style-type: none"> <li>Improve the digital connection in the area using the opportunities from the RB station and line construction in a "Dig Once" oriented approach;</li> <li>Develop a digital connectivity plan for the region that takes into consideration potential infrastructure sharing with the regional station and developing industries;</li> <li>Potential to adapt Neutral Hosts (collaboration third party infrastructure provider and telco) to enable convenient internet access throughout the region.</li> <li>Potential to utilize railway infrastructure (sub stations) as emergency transmission grids for local communities or businesses;</li> </ul>
<b>Public transport &amp; facilities</b>	<ul style="list-style-type: none"> <li>Develop PT services plan to and from the RB station including required infrastructures, including connecting nearby villages (Miežonys, Stasiūnai, Kriaučiškės, Gudzenka, Kalniškės, Vilkiškės);</li> <li>PT stops should be in front of the station entrance with prioritised pedestrian flow. Moreover, the station should be weather protected, provide place for PRM and allocate digital information on transport operation and travel timing;</li> <li>Allocate a taxi station preferably in front of the railway station building and provide passenger information (operational time, tariffs);</li> </ul>
<b>Short distance &amp; new mobility</b>	<ul style="list-style-type: none"> <li>As part of a connected and direct bike infrastructure network of multi-use paths, develop protected multi-use (walk/bike) path between the RB station and the centre of Kaišiadorys</li> <li>Design parking and charging spaces for e-bikes;</li> </ul>
<b>Regional mobility</b>	<ul style="list-style-type: none"> <li>Ensure good and frequent regional PT services connecting the RB station, the existing 1520mm station, downtown Kaišiadorys and other towns and residential areas in the region;</li> <li>Development of a transit plan to adapt existing bus services or provide new services to the station;</li> <li>Ensuring synergies with existing 1520mm services;</li> </ul>
<b>Bike, Kiss, and Park + Ride</b>	<ul style="list-style-type: none"> <li>Provide protected P+R area based on a wide catchment area for the station (due to its strategic location);</li> <li>Introduce shared LEV services, including parking and charging infrastructure;</li> </ul>

## MARIJAMPOLÉ REGIONAL PASSENGER STATION



<b>Station id</b>	OS870
<b>Location</b>	Urban environment
<b>POPULATION (R= 1-2.5km)</b>	20.000
<b>Nearest large urban area</b>	Marijampolė, 0 km
<b>Nearest airport</b>	Kaunas International Airport, 75 km
<b>Relevant road connections</b>	The city is located at the crossroads of two highways where the railway track is intersected by road No. A16 and at the east western part with the international E28 road which is also connecting Kaliningrad to Minsk.

Marijampolė is the capital of the county with the same name, located approximately 50 km from Kaunas in south-west Lithuania, bordering both Poland and the Russian region of Kaliningrad. The traveling time to the closest station in Poland Suwałki is 30 min., and to Ełk is 50 min. The regional station is situated close to the central area of Marijampolė. The majority of the population of Marijampolė works in light industry enterprises, including construction, transport, trade and other similar businesses. The city is also bordering with both Poland and the Russian region of Kaliningrad. The future RB regional station is situated close to the central area of Marijampolė, as well as it could be integrated with the existing station.

Summary of regional area and service evaluation:

- Marijampolė is a Free Economic Zone (or Baltic FEZ) which makes the city one of the more attractive places in Lithuania for local production and industrial business development. Hence, providing convenient rail access to the city and between the city and neighbouring areas in the region could attract workers to reallocate to Marijampolė and villages nearby;
- Marijampolė links the Baltic countries with the Western Europe and creates the potential for economic growth and business development, especially in the section to the Polish border;
- Marijampolė and region itself is a light industry oriented and provide logistic transport, and trade services. It is also one of the largest second-hand car markets in Europe. Developing this area and using a railway service for distributing cars to Poland and Russian over 1,520 mm-broad gauge, could bring valuable economic benefits to the region;
- Marijampolė municipality and the whole region are places of active international transit commercial activity, and this creates great opportunities for developing various mobility services;
- Marijampolė Industrial Park aims of diverting some of the industrial activities from larger regions such as Vilnius and Kaunas by providing tax incentives and prepared physical infrastructure;
- Public transport connecting central and regional area should be one of the key modes;
- Since the station is located close to a metropolitan area, the station could prioritize pedestrians and therefore promote walking as one of the main options for short distance mobility to close located living area;
- Due to the station's close urban location there is a great opportunity for establishing on-demand;

TOPIC	RECOMMENDATIONS
<b>Population relocation</b>	<ul style="list-style-type: none"> <li>Develop integrated land use plan around the station focusing on housing and commercial activities;</li> <li>Provide seamless connection to central areas of Marijampolė;</li> </ul>
<b>Regional cohesion</b>	<ul style="list-style-type: none"> <li>Maximize the utilization of the greenfield station to establish a strong passenger hub by establish well-integrated connections with the existing railway station and bus terminal;</li> <li>Establish a TOD concept and commercial development;</li> </ul>
<b>Regional freight logistics</b>	<ul style="list-style-type: none"> <li>Consider the development of a national corridor-wide strategic freight logistics plan that includes Marijampole Station as a potential important distribution centre in southern Lithuania;</li> <li>Developing railway service to support regional light industry and provide better railway access to logistics, and trade services;</li> <li>Integrate existing urban logistic services and delivering private packages by local trains at the future station;</li> </ul>
<b>Firm clustering</b>	<ul style="list-style-type: none"> <li>Establishment of possible freight railway supply to Logistics &amp; Industrial Park due to the strategic positioning of Marijampole station, that connects the Baltic Nations with the rest of Europe;</li> </ul>
<b>Digital connectivity</b>	<ul style="list-style-type: none"> <li>Provide network access point to provide/improve access to 4G/5G connections for the nearby community and businesses;</li> <li>Develop a digital connectivity plan for the region that takes into consideration potential infrastructure sharing with the regional station and developing industries;</li> <li>Potential to adapt Neutral Hosts (collaboration third party infrastructure provider and telco) to enable convenient internet access throughout the region.</li> </ul>
<b>Public transport &amp; facilities</b>	<ul style="list-style-type: none"> <li>Development of a public transport integration and infrastructure plan to develop a mass transit-oriented mobility network combining railway and bus services;</li> </ul>
<b>Short distance &amp; new mobility</b>	<ul style="list-style-type: none"> <li>Develop protected multi-use (walk/bike) path between station, the already existing Marijampole station and downtown Marijampole;</li> <li>Design parking spaces for e-bikes;</li> <li>Providing shared LEVs infrastructure and services ;</li> </ul>
<b>Regional mobility</b>	<ul style="list-style-type: none"> <li>Ensure reliable public transportation services connecting RB stop, existing railway station/bus terminal, downtown Marijampole and other towns in the southern region of Lithuania;</li> <li>Develop of a transit plan to adapt existing bus services or provide new services to the station;</li> <li>Bridging the gap between future RB Rail AS Marijampole regional station and existing Marijampole railway station to facilitate synergies with existing regional 1435 mm line;</li> </ul>
<b>Bike, Kiss, and Park +Ride</b>	<ul style="list-style-type: none"> <li>Provide both non-covered and covered bike parking close to platform access;</li> <li>Allocation of sufficient P+R. The number of parking slots should be determined based on a calculation using identified catchment area (close located villages – less than 15 km)</li> <li>Introduce Shared Light Electric Vehicles with respective charging infrastructure (benchmarking is presented in the annex 3);</li> </ul>

## 5. Conclusions and recommendations

Overall, the recommendations described in the present section are based on the lessons learned from the benchmarking of the international best experiences (Chapter 3) and on the knowledge stemming from the analysis of the RB regional stations and services examples (Chapter 4). Considering the broader regional socio-economic potential impact deriving from RB global project, and based on the international experience on regional railway station and services development, special attention in the planning and development of RB regional stop should be given to:

Definition of the **role of RB regional stops** and their **functionalities complementary to mobility**. Through RB regional services **rural areas** and **small towns** in the Baltics will experience increased **accessibility** which could be expected to lead to **population relocation** by attracting residents from metropolitan areas. In this case, **RB stops**, and **services must provide reliable commuting services** and create a **good interchange between rail and local and regional public transport**.

Development at the RB stops and in adjacent areas of **commercial services**, including small **retails** and **shopping** areas, **food** facilities, etc.

Provide **dedicated services** to regional stops located in areas with high (even if seasonal) **touristic demand**, including **tourist information points** and **temporary baggage deposit**.

Development of a **digital network** based on the “**dig-once**” approach. Service roads would be used for maintenance and upkeep of the access points. Co-deployment of FOC/ICT through **infrastructure sharing** among operators and across **multiple sectors** of the economy, i.e. telecom operators, IT providers, energy and **transport infrastructure**, could not only accelerate **digital connectivity** throughout regions along the corridor, but also narrow the **digital divide** between **urban and rural areas**.

**Promotion of sustainable regional mobility** with a **strong rail** component, including synergies with **smart regional and local mobility** solutions, provision of infrastructure and services for **bike** and **short mobility**, **shared mobility** and **on-demand mobility**.

Development of **local and regional logistics**. These services could include **full packing services at RB stops**, which would however require dedicated parking spaces and a separate room, or **simple smart parcel machines**. A service called **fast train courier** could be particularly relevant for **suburban areas**. For RB stops located near or within **industrial zones**, RB regional services could offer a **sustainable and reliable modal alternative**.

Guaranteeing universal **accessibility**, including **unobstructed connectivity** between **station facilities** and **various transport modes** and **parking zones**, good **lightning** system, clear **wayfinding** and accessible restrooms for **PRM**, **restrooms with babies** and accommodating passengers with bulky luggage.

Implementation of a **Transit Oriented Development** planning approach, especially with respect to **land-use development**. A **modern railway station** should be **designed** as a place of **exchange between transport modes**, a living space providing different services becoming a **reference point for sustainable suburban** as well as **rural districts**

Implementation of most of the recommendations content of the present study require strong coordination actions and initiatives from different stakeholders depending on their administrative sphere of competence, and it is not solely, or in some case entirely not within the sphere of responsibility of RB Rail AS



STATION TYPOLOGY	POPULATION RELOCATION & REGIONAL COHESION	TRANSPORT & MOBILITY	FREIGHT & LOGISTICS
<p><b>TYPE II</b> <b>(600 PAX per day)</b></p>	<ul style="list-style-type: none"> <li>▪ Development of a railway interchange between 1520 mm and 1435 mm gauges in the respective areas/stations;</li> <li>▪ Developing land use areas with a focus on potential TOD that could attract people and businesses (corporates and start-ups) from nearby metropolitan areas (for example stations close to Tallinn, Pärnu, Riga, Kaunas and Vilnius);</li> <li>▪ Creating strong regional rail links to connect small cities and villages with metropolises, therefore providing to residents more opportunities for job;</li> <li>▪ Consider development of dense grid of streets around the station to ensure walkability and density of land uses ;</li> <li>▪ Integrate station within urban land uses – housing, commercial and parks and other public spaces ;</li> <li>▪ Ensure adequate access to both sides of the tracks with the least number of barriers to users (under and over passes and at least 2 elevators);</li> <li>▪ Accelerate digital connectivity by provide 5G access points at the station to strengthen the main fibre backbone and allow local communities, business, and institutions to benefit from high-speed internet access.</li> </ul> <p>Developing a strong cooperation with local municipalities to create special seasonal tourism offers (also for agriculture or green</p>	<ul style="list-style-type: none"> <li>▪ Establishing bus station with a direct and barrier free access to the railway building. The station should be weather protected and provide a special spaces for a traveller in a wheelchair. Digital screens with operation data to be installed and be in a real time;</li> <li>▪ Based on benchmarking urban bus stations need to be located at least within 100 meters of rail boarding area;</li> <li>▪ Establishing a taxi station close to the railway building entrance(6 cars). The area should include a taxi rank and clear operation rules and tariffs;</li> <li>▪ Providing of medium-sized automobile parking (30 vehicles). Car parking zones have to assign lots for PRM and family parking;</li> <li>▪ Consider building a car parking station under shopping centres or shopping areas. This could be only relevant for regional stations close to metropolitan areas. Such parking could be potentially built by private sectors;</li> <li>▪ Parking needs to have an optimal price to incentivise more sustainable transport modes and to ensure revenues are used to maintain or upgrade station components. In the case where parking spaces are owned by private owners, prices are governed by government policies and regulations;</li> <li>▪ Minimizing conflicts between bus and rail interchange as well as taxi or shared ride-drop off zones;</li> <li>▪ Establishing drop off and pick up zones (K+R) (at least 2 parking zones). The parking rules for K+R should include: clear marked zone, days when</li> </ul>	<ul style="list-style-type: none"> <li>▪ Establishing of potential multimodal logistics services for private and business users. Potentially create small urban logistics centers with access to the railway (for example, to serve e-commerce); This applies to stations in industrial areas with existing and high potential for hospitality; ;</li> <li>▪ Establishing fast train courier services delivering parcels (e-commerce) in the region or/and in the Baltic States (especially from Poland to Kaunas, Vilnius, Riga). Facilities to be located at regional station will depend on customer requirements. Nevertheless, a room for unloading and loading of small cargo should be organized within a railway station building or close to it;</li> <li>▪ Allow private logistic companies allocate their smart boxes at railway platforms or within a building hall. This is especially relevant for stations close located to urban areas;</li> <li>▪ Developing cooperation framework with logistic companies to provide urban logistic service at railway stations and potentially establish an offer of serving logistic storages and boxes;</li> <li>▪ Promotion of efficient low-noise and low-carbon urban freight delivery using last-mile connections to railway station (for example using freight bicycles) In this case, it is necessary to allocate parking spaces for off and unloading;</li> <li>▪ Establish railway logistic supply chain which could consist of a network of many smaller supply urban chains;</li> </ul> <p>For developing freight logistic especially in industrial areas (for example Skulte, Bauska, Vangaži, Järvakandi, etc.) it is important to establish rail connection to the existing</p>

tourism). The concept of attractive regional potentials to be considered;

- Setting a cooperation with industries to develop stronger offers of urban logistics;

parking is allowed, parking time (from 2 min. to 5 min), in some cases it should be clearly said that driver remain in his vehicle, information on penalties;

- Establishing comfortable spaces for bikeshare, scooter share services. This places should be station based and provide clear tariff and operational information;
- Developing direct, properly designed separate from car traffic bicycle routes to railway stations;
- Providing opportunities for third-party operators or local communities to utilize the railway substations as an emergency transmission grid or a source for local renewable electricity generation to e.g. charging facilities
- Allocating EV charging facilities. The recent EU directive "Fit for Fifty" recommends "15% of parking spaces of medium and large commercial properties in 2030 are fit fitted with public accessible chargers since these are the parking areas where cars are actually parked." While this directive helps to provide general guidance, it does not contemplate the specific needs and conditions of a P+R facility where drivers might leave their vehicles unattended for 8-10 hours or more per day. To support such use needs, clear assessment of demand patterns should be studied, and the minimum recommendations should likely be increased to at least 30% with a mix of fast chargers (e.g. Type 3, 150kw or higher) and slower chargers (e.g. Type 2, 50kw) that should be provided and priced to properly manage the longer periods of time cars are typically parked and unattended by their owners in these locations;
- Developing a comprehensive multi-use path (bike/walk) network that connects urban and industrial agglomerations to the station in a direct, safe and convenient way;

warehouses , dry ports and logistic facilities, as well as create overpassing points;

- All freight data should be integrated between all transport modes;
- Integrate close located ports and relevant logistic services into the RB ecosystem;



		<ul style="list-style-type: none"> <li>▪ Establishing covered B+R parking designed with simple Bike racks. Parking zones could provide places for freight bikes and charging facilities to e-bikes. Bike racks can be placed next to the station in order to ease the access of the cyclists to the station;</li> <li>▪ Future stations should be designed in a way of providing access to all types of station visitors and travellers. The whole area design should be barrier free oriented with special facilities for PRM;</li> <li>▪ Additionally, stations this type could potentially provide a special assistance services (PRM, elderly);</li> </ul>	
<p><b>TYPE III (300 PAX per day)</b></p>	<ul style="list-style-type: none"> <li>▪ Considering potential development of high-to-medium-density housing within 500 m from regional stations;</li> <li>▪ Considering potential development of shopping and other small commercial opportunities within 500-600 m from regional stations;</li> <li>▪ Depending on a station location (preferably close to urban areas) there is a possibility to create small business areas which could allocate government offices and other institutional land uses to create employment opportunities and increase population attraction;</li> <li>▪ Deploy the “Dig once” strategy to accelerate digital connectivity through infrastructure sharing and narrowing down the digital divide between urban and rural areas in the region;</li> <li>▪ Accelerate digital connectivity by providing 5G access points at regional stations to strengthen the main fibre backbone and allow local communities, business, and institutions to benefit from high-speed internet access;</li> </ul>	<ul style="list-style-type: none"> <li>▪ Establishing bus station with a direct and barrier free access to the railway building. The station should be covered and provide a special space for a traveller in a wheelchair. Digital screens with operation data to be installed and be in a real time;</li> <li>▪ Provide automobile parking that could potentially be converted into other land uses in future, conveniently placed next to the station (20 vehicles). Car parking zones have to assign lots for PRM and family parking;</li> <li>▪ Establishing a taxi station close to the railway building (4 cars). The area should include a taxi rank and clear operation rules and tariffs;</li> <li>▪ Establishing drop off and pick up zones (K+R). The parking rules for K+R should include: clear marked zone, days when parking is allowed, parking time (from 2 min. to 5 min), in some cases it should be clearly said that driver remain in his vehicle, information on penalties;</li> <li>▪ parking should have an optimal price to incentivise more sustainable transport modes</li> <li>▪ Parking lots should not take immediate space close to the entrance of the station as priority should be given to pedestrians, bikes, public transport (bus and MaaS vehicle stops).</li> </ul>	<ul style="list-style-type: none"> <li>▪ Creating a small urban logistic service at railway stations and allocate drop off and pick up facilities;</li> <li>▪ Consider allocation of smart parcel boxes or machines close or at railway platforms. The area should provide clear operating rules of machines and costs;</li> </ul>

	<ul style="list-style-type: none"> <li>Investigate the possibility of introducing a Neutral Host model in areas with low population density in order to attract e.g. telecom operators to provide services in areas which normally have high cost-to-customer ratio;</li> <li>Investigate the opportunity of initiating EU funded “Community Wi-Fi” projects for sparsely populated areas;</li> <li>Developing a strong cooperation with local municipalities to create special seasonal tourism offers (also for agriculture or green tourism). The concept of attractive regional potentials to be considered;</li> <li>Setting a cooperation framework with local industries to develop offers of urban logistics;</li> </ul>	<ul style="list-style-type: none"> <li>Bus station within 50 meters of railway station platform;</li> <li>Establishing comfortable spaces for bikeshare, scooter share services (number of vehicles will be based on region characteristic, distance to urban areas and demand). This places should be station based and provide clear tariff and operational information;</li> <li>Developing direct, properly designed separate from car traffic bicycle routes to railway stations;</li> <li>Establishing covered B+R parking designed with simple Bike racks. Parking zones could provide places for freight bikes and charging facilities to e-bikes. Bike racks can be placed next to the station in order to ease the access of the cyclists to the station;</li> <li>Future stations should be designed in a way of providing access to all types of station visitors and travellers. The whole area design should be barrier free oriented with special facilities for PRM;</li> </ul>	
<p><b>TYPE IV (150 PAX per day)</b></p>	<ul style="list-style-type: none"> <li>Ensure the development of an effective street network connecting to the station</li> <li>If no new streets are planned, ensure the local road has direct and adequate access to the station;</li> <li>Deploy the “Dig once” strategy to accelerate digital connectivity through infrastructure sharing and narrowing down the digital divide between urban and rural areas in the region;</li> <li>Accelerate digital connectivity by provide 5G access points at the station to strengthen the main fibre backbone and allow local communities, business,</li> </ul>	<ul style="list-style-type: none"> <li>Establishing bus station with a direct and barrier free access to the railway building. The station should be covered and provide a special space for a traveller in a wheelchair. Clear operation plan of other urban modes and network maps to be located at PT stations;</li> <li>Establishing a taxi station close to the railway building (2 cars). The area should include a taxi rank and clear operation rules and tariffs;</li> <li>Establish car parking zone for at least 12 vehicles. Car parking have to assign lots for PRM and family parking;</li> <li>Allow space for new mobility vehicles;</li> <li>Establishing drop off and pick up zones (K+R) in front of railway stations. The parking rules for K+R should include: clear marked zone,</li> </ul>	<ul style="list-style-type: none"> <li>To provide to residents an access to urban logistic it is proposed to allocate a small post office, which provides packing services. Moreover, a connection for freight bicycles to a railway station used for urban deliveries is highly recommended;</li> <li>Establish urban logistic connection with last mile providers;</li> <li>A railway station could be a place for selling local products (creating a market space). Therefore a cooperation with local farmers or small companies could create additional benefits for stations and improving its attraction;</li> </ul>

	<p>and institutions to benefit from high-speed internet access</p> <ul style="list-style-type: none"> <li>▪ Investigate the possibility of introducing a Neutral Host model in areas with low population density in order to attract e.g. telecom operators to provide services in areas which normally have high cost-to-customer ratio;</li> <li>▪ Investigate the opportunity of initiating EU funded “Community Wi-Fi” projects for sparsely populated areas;</li> <li>▪ Developing housing and some commercial density within 700 m from the station;</li> <li>▪ Developing a strong cooperation with local municipalities to create special seasonal tourism offers (also for agriculture or green tourism). The concept of attractive regional potentials to be considered;</li> <li>▪ Setting a cooperation with industries to develop stronger offers of urban logistics;</li> </ul>	<p>days when parking is allowed, parking time (from 2 min. to 5 min), in some cases it should be clearly said that driver remain in his vehicle, information on penalties;</p> <ul style="list-style-type: none"> <li>▪ Developing direct, properly designed separate from car traffic bicycle routes to railway stations;</li> <li>▪ Establishing covered B+R parking designed with simple Bike racks. Parking zones could provide places for freight bikes and charging facilities to e-bikes. Bike racks can be placed next to the station in order to ease the access of the cyclists to the station;</li> <li>▪ Car parking lots should not take immediate space close to the entrance of the station as priority should be given to pedestrians, bikes, public transport (bus and MaaS vehicle stops);</li> <li>▪ Future stations should be designed in a way of providing access to all types of station visitors and travellers. The whole area design should be barrier free oriented with special facilities for PRM;</li> <li>▪ Ensure at least one crossing over the tracks that is within 400 m from train boarding area (if relevant to a station location);</li> </ul>	
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