14 TRI-CITY GDANSK / SOPOT / GDYNIA

14.1 THE KEY ISSUES ADDRESSED BY THIS CASE STUDY

Tri-City is a term used to describe the urban area of Gdansk, Gdynia and Sopot. The key issues addressed by the Tri-City case study are the interconnections between long distance transport from outside the Tri-City metropolitan area with transport within the Tri-City network. This case study is somewhat different from cases where a single city is involved. The Tri-City consists of three major cities with number of smaller population centres. The specific situation of the area is that Gdansk and Gdynia could both be considered as the core of the network. As a result it is very difficult to address any particular gravity centre within the Tri-City area. Due to the geographic location of the Tri-City there are also a number of modes which play (or could potentially play) a key role in the transport network. Within this case study the following problems are discussed:

- **Improved links, interchanges and services**

  A majority of conducted and planned actions in the Tri-City area aim at better interconnectivity through new investments, because currently the transport system lacks basic infrastructure for good interconnections. Therefore infrastructure development is given priority in the Tri-City. Even if passenger interconnectivity is not the main reason for creation of new links (like better land access to ports) there can still be interconnectivity benefits.

  New links and interchanges concern almost all transport modes, but the most important investments take place (or will take place) in rail, air and sea / inland waterways modes.

- **Legal and organisational arrangements**

  The Tri-City, as the name suggests, is built around three major cities. But in reality there are at least 15-20 cities of different size involved. The problem with the area is that it lacks single city gravity centre and, because there is more than one city of importance in the region's centre (and rivalries are strong), they impact on the region differently. While considering geographical location this system is close to one-city agglomeration systems, but due to the equal rank of the cities, different intra-regional links are developed within it and interdependencies (administrative, ownership issues and legal considerations) are more complex.

  Legal and organisational arrangements influence the implementation process of solutions like metropolitan transport network or integrated ticketing.

- **Effective integration of transport services**

  There are differing aims of integration as perceived by Tri-City inhabitants and outsiders. The Tri-City population is mainly interested in seamless travel within three cities; Gdansk/Gdynia/Sopot while inhabitants of its metropolitan area, as well as travellers from outside the region, are most interested in accessibility. Obviously long-short distance solutions are those sought by the second group. This creates some tensions when tasks are chosen and financing from central/local budgets is involved.

- **Integrated ticketing and pricing**

  In the area of the Tri-City and its surroundings the integrated ticket seems to be a natural alternative for passengers, both local and tourists. However due to organisational and legal problems the implementation of common ticketing has been very difficult. The ticket existing at present can be considered as only a test and a first step for future development and extension. Problems in the allocation of revenues, resulting in a high price for the ticket, are addressed in the case study.

- **Information and marketing**

  Development of the metropolitan area network through integration of many modes calls for complex information for users. Within selected modes this type of common information service is

being designed in the Tri-City area. However this marketing of integrated services is rather fragmented and actions are separate for separate service providers.

14.2 GENERAL DESCRIPTION OF THE CASE STUDY

The Gdansk metropolitan area located in the Pomerania region is inhabited by 2.2 million people, representing 5.7% of Poland's total population. This area is more frequently referred to as the Tri-City (when one refers to Gdansk, Gdynia and Sopot), while the region is often described under the name of Pomorskie voivodship (voivodship is NUTS II administrative level in Poland). The term Tri-City metropolitan area or Tri-City agglomeration is casually used while considering three above mentioned cities plus urbanised area (smaller towns and villages) in the vicinity.

The economy of Pomorskie voivodship (Pomerania region) enjoys a favourable demographic structure compared with other areas of the country. The share of farmers in the working population is 12%, in comparison with the Polish average of 22%. High employment in the services sector, at 56% in Pomorskie voivodship versus the national 49% average, is yet another favourable factor. The most popular services sectors include financial intermediary services, IT, science, education and real estate. Unemployment in Gdansk, Sopot and Gdynia is also decreasing, currently being less than 5%.

The Tri-City and its metropolitan area has 55% of the region's population. Tourism is an important sector of the regional economy due to the area's natural features and rich cultural heritage, but the access to some tourist destinations is poor. The Euro 2012 football championship, which will be hosted by Poland and Ukraine and for which a new stadium is being built in Gdansk, will provide a particular challenge to the transport network and its interconnectivity.

The Tri-City is also sometimes referred to as Gdansk agglomeration or Gdansk metropolitan area; these terms result from Gdansk being the primary administrative centre in the region as well as the biggest urbanised unit. The agglomeration is an urban centre consisting of cities formed as a result of urbanisation and industrialisation processes over many years. The agglomeration is said to cover the area from the town of Wejherowo in the north to the town of Pruszcz Gdanski in the south. The cities of the Tri-City are situated adjacent to one other, in a row, on the coast of the Gdansk Bay of the Baltic Sea, in Eastern Pomerania (Pomorskie voivodship), northern Poland.

Three diverse cities, Gdansk, Sopot and Gdynia, with over 794,000 inhabitants, form the core of the Gdansk Metropolitan Area. The oldest of them is **Gdansk** (with 460,500 inhabitants), a city with an over 1000-year multicultural and hanseatic tradition. In 1945, during the war, Gdansk was nearly totally destroyed. It was rebuilt and restored in the following years. Today it constitutes the focal point of the Gdansk Metropolitan Area and is home to the most important offices and institutions of Pomorskie voivodship. At the same time, it remains a strong hub of the maritime industry (ports and shipyards) and a focus point of many modern and developing economic sectors: information technology, pharmaceutics, production, petrochemicals, service centres, research and development, etc.

Sopot (40,500 inhabitants) is a spa town well known throughout Europe. Every summer it becomes a centre of Polish and international entertainment, culture and sport. As a fashionable health resort it also hosts important international events, such as music festivals and the ATP Orange Prokom Open tennis tournament. Sopot plays a vital role in recreation, entertainment and sport in the Gdansk Metropolitan Area.

Gdynia (253,000 inhabitants) is the youngest city in the Gdansk Metropolitan Area. Established in 1926, in just fifteen years it had become a large and important Baltic port and today is an important centre of the most modern sectors of the Polish economy. The city, founded as it was on individual economic initiative and entrepreneurship, became the symbol of Poland's rapid transformation, with numerous sea-related investments, such as the container port and liquid fertiliser transhipment base and the large shipyard. Today, Gdynia remains a vital port of the Metropolitan Area, able to accept all vessels, even the largest of passenger ships but with development strategy oriented at becoming the main business and financial centre of the region (Memorandum of the Gdansk Metropolitan Area, 2006).

Source: http://www.trojmiasto.pl "Gdansk, Gdynia, Sopot" – virtual map of Tri-City

Figure 14-1 Tri-City on the map

14.3 SPECIFIC CHARACTERISTICS OF THE CASE STUDY

14.3.1 Modes and Infrastructure Involved

Development of the Tri-City was helped by the construction of the city rapid train (SKM), started in 1951. The backbone of the Tri-City is the inner highway that starts in Gdansk and goes through Sopot, Gdynia, Rumia and Reda to Wejherowo. It consists of 2-3 lanes in each direction. In 1975 the Tri-City bypass (Obwodnica Trojmiejska) was constructed. It starts in the vicinity of Pruszcz Gdanski and goes through the western districts of Gdansk to Gdynia-Chylonia.

Urban public transport

The current transport structure of the urban agglomeration has been formed by way of organisational changes which started in 1989. As a result of the transformation processes going on, the Public Transport Enterprise (WPK) in Gdansk was split up. Following the communalisation of the property of transport enterprises formed on the basis of WPK, the rendering of services in respect of collective public passenger transport was taken over by different units:

- Urban Public Transport Establishment in Gdansk (transformed into a budgetary establishment of the Gdansk Gmina - gmina is NUTS III administrative level in Poland - under the name Urban Public Transport Establishment of Gdansk) and
- Urban Public Transport Establishment in Gdynia (transformed then into a budgetary establishment of the Gmina of Gdynia – Urban Public Transport Authority, which uses different carriers to provide transport services).

The self governments started to operate in their own specific ways with the existing communal or private carriers. But still the inhabitants and tourists complained about problems resulting from the

disintegration of urban transport systems in the Tri-City. The problems were connected both with the area of operation and the system of fares for services. In 2008 the first stage of integration was completed with the introduction of metropolitan tickets for SKM and urban buses (for 24 hours, 72 hours or monthly tickets).

Railway transport

Tri-City is well connected with the rest of Poland through the railway network. The railway lines of major importance are the AGC/AGTC railway line to Warsaw and the railway lines to the west and the south west of the country. The railway network is managed by the infrastructure manager PLK, Polish State Railway Lines. The service providers are: PKP Intercity (long distance express trains), PKP Przewozy Regionalne (regional transport) and SKM (city trains). The SKM tracks are connected with long-distance tracks by means of turnouts and a contact line at many stations and stops. As a result of these connections long-distance rolling stock can quickly enter and leave the SKM routes. There are 10 SKM stations and 16 passenger SKM stops on the route from Gdansk Central to Wejherowo in the Tri-City.

The main railway stations for long-distance trains in the Tri-City are Gdynia Main station and Gdansk Central station. Long-distance trains stop also in Sopot railway station. Links with other transport modes should be considered from the perspective of the interconnection with public urban transport. The problems of interconnectivity between railway stations and urban public transport can be summarised as a lack of infrastructure, organisational and legal problems and insufficient information provision.

Additionally, it should be added that long-distance railway passengers also require good connectivity from the railway stations to the Tri-City surroundings by inter-urban bus services. These are mainly provided by PKS companies (inter-urban bus transport enterprises). Main bus stations are located near the railway station of Gdansk and Gdynia. Concerning data availability for the interconnectivity study from the railways perspective, it should be noted that railway operators, including SKM, and infrastructure managers do not collect data on transport nodes or interconnectivity; only general traffic information is available.

Inter-urban bus transport

To consider long distance interconnectivity by inter-urban bus transport requires examination of the state of local bus stations. The traditional setup here is that each city has its main bus station, which is usually run by the dominant bus service provider (e.g. in Gdansk it would be PKS Gdansk). But there are also many small bus transport companies which often use their own peculiar loading/unloading locations. However the dominant company usually provides a good example of network and service. To illustrate this PKS Gdansk runs more than 107 external connections with around 500 routes. The majority of routes are local (within Pomorskie voivodship) but there are also many links with other cities in the country. Additionally there are regular bus connections with foreign locations (e.g. Vilnius, Kaliningrad, Hamburg, London). Therefore a study of major service providers should be relevant and provide sufficient information. In regard to road transport interconnectivity, this is mostly prevented by inconsistent schedules between local and regional/international services, poor passenger service or poor information provision. Organisational issues like pricing could also be a barrier to good interconnectivity.

Air transport

Rebiechowo (Lech Walesa Gdansk airport) operates domestic connections to Warsaw and direct international links to European airports served by 19 airlines, including low-cost airlines, in 28 routes. Gdansk airport is the only international airport in the region and one of the four most important airports in Poland (next to Warsaw, Krakow and Katowice). With a number of available airline connections as well as favourable transportation conditions, Gdansk airport's range of impact exceeds the region's borders and comprises other regional centres in Poland: Elblag, Torun, Slupsk, Koszalin.

In the air transport strategy for the Pomerania region, another airport is planned in Gdynia–Kosakowo as a response to the year on year increase in demand for business and tourist trips. The number of

passengers at Gdansk airport in 1999 was 350,000 while in 2009 the number reached 1.9 million. Figure 14-2 below shows the area served by Lech Walesa Gdansk airport.

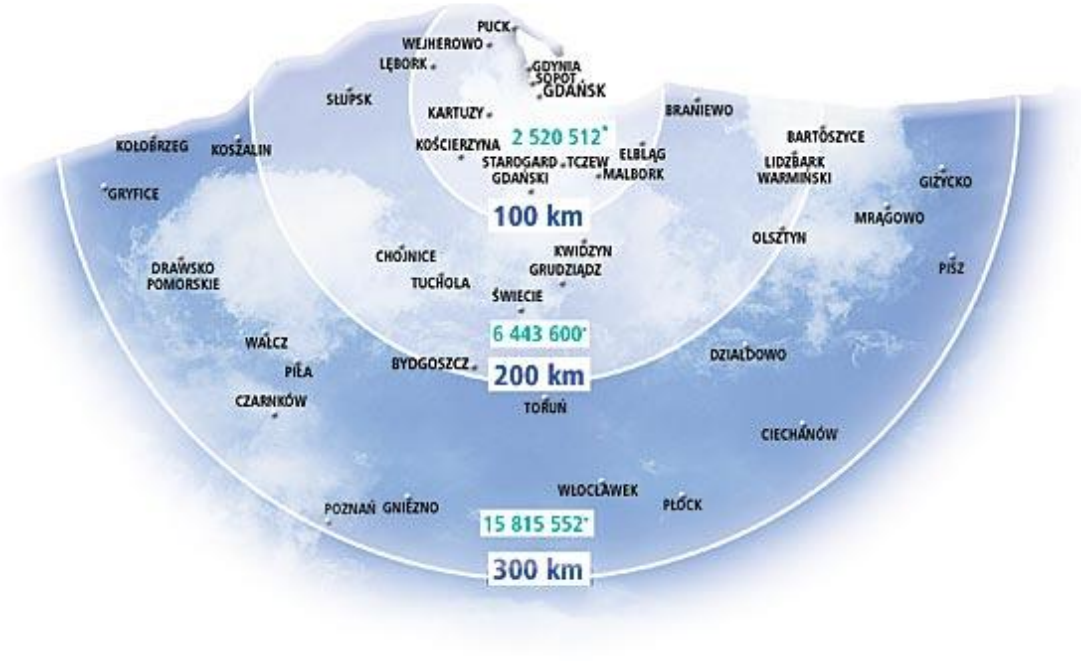


Figure 14-2 Population living in the catchment area of Lech Walesa Gdansk airport

Gdansk airport is located at a distance of about 10 km from Gdansk city centre, it is about 18 km away from the centre of Sopot and about 23 km from the centre of Gdynia. The close location of the airport to the Tri-City bypass road and to national roads number 1, 6 and 7 makes it accessible from areas located further away from Tri-City. The airport's location makes it possible for passengers to transfer from air transport to road, railway or sea transport for long distance trips and to use public urban and taxi transport to reach local destinations.

The airport is still only connected by road with the city centre. The public transport connection is currently very limited and consists of only the bus number 110 which runs to Wrzeszcz railway station every 30 - 60 minutes. This service takes an average of just under 30 minutes. It is supplemented by a single bus which runs in the direction of Gdynia. The need for improved access links is recognised. The investment project called 'Gdansk airport - construction of second passenger terminal including its infrastructure as well as extension and modernisation of airport infrastructure' which is qualified for VI Priority Axes 'Road and air network TEN-T' aims at the improvement of the functions of the airport, increasing its capacity as well as improvement of the airport safety and accessibility. The planned airport development requires extension and strengthening of transportation connections with the road system of the Tri-City metropolitan area and includes railway transport services. In the "Regional strategy of transport development in Pomorskie voivodship for 2007-2020" from 2008 the construction of the metropolitan railway line is predicted as one of the priority, this is also important in the context of EURO 2012. The project assumes the construction of new lines and the use of existing segments of lines and railway sidings to connect Gdansk airport and the planned Kosakowo airport to Gdansk and Gdynia main railway stations. The metropolitan railway line will be connected to the planned Kaszubian railway line and in this way will also serve regional interconnections. The main goal of the airport-railway connection is to ensure the trip to Gdansk and Gdynia centres will take less time than the trip offered by road.

Maritime transport

Interconnectivity in the Tri-City area with regard to the maritime mode should be assessed by measuring links between both major seaports – Gdansk and Gdynia - and rail and road modes. Forecasts estimate future passenger traffic in the Port of Gdansk at 0.7 to 0.8 million passengers in 2010 and in the Port of Gdynia at 1.1 to 1.3 million passengers. The majority of these passengers

should be carried by ferries but both ports stress the importance of chartered ships and other irregular connections in their future development strategies. Maritime transport interconnectivity problems within the Tri-City area could be attributed to three main factors: congestion, insufficient service and inadequate interchanges. Links between maritime and other modes have to be considered in two directions: ports - internal city transport networks (thus the role of interconnection with public transport should be stressed) and port - long distance network, allowing for extended journeys to other locations in Poland.

For both ports (Gdansk and Gdynia) internal connectivity requires regular passenger bus or tram services between ferry terminals and city centres. This could be achieved in two ways: new infrastructure projects and increased frequency of services.

The passenger terminal in Gdynia port has limited capacity, which creates infrastructure constraints with regard to the strategic plans of both the Port of Gdynia and the Polish government (as stated in governmental maritime strategy till 2015) to increase passenger traffic. To alleviate this barrier new investment is envisaged (in co-operation with the City of Gdynia and shipping companies) for a ferry passenger terminal in the eastern part of the port with the aim of creating a universal terminal for passenger services integrated with land-based infrastructure. This (accordingly to the Strategy of City of Gdynia Development) should also facilitate traffic within the VI TINA corridor. The situation of the Port of Gdansk is different in that passenger traffic could be served at the new Westerplatte Ferry terminal.

Outside the direct port investments there are a number of other relevant projects aiming to improve the city communication network, as they impact on port accessibility and modal changes for ferry passengers. Those priority city projects in case of Gdynia are:

- Kwiatkowski Way (direct link between the port and national road network bypassing city internal roads) and further connecting with motorway A-1 (on north – south axis).
- Wisniewski Street extension – allowing for direct access from the ferry terminal to the Kwiatkowski Way) – this is a good example of co-operation among differing stakeholders; although it is city responsibility port has declared 50% contribution to construction costs.
- Rebuilding road connections of Wendy – Wisniewskiego sector allowing for better interconnection between the city and ferry terminal.

Currently the main vehicle for overcoming the infrastructural barrier is provision of adequate financial support. In the case of the Port of Gdynia this requires co-financing by government, port authority, city and also includes utilisation of EU funds (for example the role of the SEBTrans-Link programme should be considered). Rail infrastructure modernisation is oriented mainly at investments within the port (financed almost exclusively by the port authority) and at the so called “miedzytorze area” (connecting area between port and main rail line). This will allow for passenger traffic directly from the port to the main rail station in Gdynia, thus removing the required transfer by bus or taxi services if ferry passengers would like to continue their journey to other Polish cities.

In the case of the Port of Gdansk the situation is better in that the major problem is provision of external accessibility. Apart from new or improved links, improved interchanges would also require additional investments at railway and bus stations, increasing their capability to service additional passengers coming from or to the port.

Another area of the case study is information integration. Ports, road companies and rail service providers use separate information systems both traditional and electronic. Data for the study in general is accessible: information on passenger traffic, countries of origin and destinations, for different transport modes. No data is available on interconnectivity between transport modes. Data on infrastructure, pricing, and ticketing is available.

14.3.2 Intermodal and Interconnection Opportunities

Three levels of integration are pursued within the Tri-City area. Firstly, internal integration for the core area (Gdansk, Gdynia and Sopot); secondly, integration of the Tri-City external area network with the

core network (roughly the area of Pomorskie voivodship); a third level of integration combining air, maritime and long-distance rail services with internal city transport is considered.

The Tri-City case study currently shows some degree of interconnection in practice only in one dimension: city public transport and rail services. There are advanced plans which will bring an integration of air and maritime mode into network but so far they are still in the planning/early adaptation stage. Therefore currently there is little or no cohesion between:

- Rail and air mode (if the southern link of rapid city rail is developed as planned cohesion between rail and air modes should be achieved).
- There is also potential for strengthening city transport and air transport cohesiveness which at the moment is rather poor.
- Maritime – land based transport. Here some steps in order to improve cohesiveness have already been made, such as relocation of the ferry terminal of the Port of Gdansk to the Westerplatte area, which provides for better accessibility from road and rail modes. But so far it is a one-sided effort not accompanied by development of road and rail connections.

The need for improved interconnection is recognised by society, local and central authorities. There are several plans already being introduced, aimed at improving the current state of affairs. There are also many planned solutions envisioned. The potential for different interconnectivity solutions exists in:

- **Rail – air:** With plans to develop the southern city rail link to the Rebiechowo (Gdansk airport) integration of air and rail modes should be achieved. This rail link is designed especially to provide better access to the airport. Furthermore there are plans for development of a second airport in the Tri-City area in Gdynia, which should also be linked to the planned rail line. Current advancement of this integration is at the planning phase.
- **Air – city:** The internal metropolitan city transport system is currently connected to Gdansk airport. However the existing connection is poor with few buses serving passengers with long gaps between services and poor route choices. There are some investments ongoing which might improve this type of interconnection – mainly road investments that aim at reduced travel times to/from the airport. Investments are ongoing and should be completed by 2012. A major incentive for these projects is the planned EURO 2012 tournament to be held in Gdansk. Also, if the southern rail link is developed it will create extended possibilities to further integrate travel to/from the airport by use of rail-city transport interconnections to extend area coverage for seamless travel for airline passengers.
- **Rail-city:** This type of integration is the most advanced so far in the Tri-City area. Tri-City is an interesting case where almost all types of city transport are used: tram, bus and trolleys. There is no subway but its role is taken by surface rail – the so called Tri-City Rapid Train (SKM). Further integration of those two modes is possible – in fact even now the majority of users moving from one city within Tri-City to another use a combination of bus/tram/trolley as a mean to get to the SKM station and SKM to move along main traffic axis. Tri-City geography with its spread of cities along rather narrow corridor facilitates this type of behaviour. Nevertheless there are still strong organisational, legal and operational problems preventing better integration. SKM is not part of the city-managed transport system but a railway company which belongs to national rail holding PKP Group. On some routes SKM and city public transport actually compete for passengers. All this makes full integration difficult.
- **Rail/road/city – maritime.** Ferry traffic from both Gdansk and Gdynia links Poland with Scandinavia. The access to both ports is currently hampered d by poor land-based infrastructure and lack of prioritisation. Furthermore ferry services have been long treated as services for the local population only, as a consequence there is no adequate rail connection to ferry terminals which might attract passengers from outside the region. The recent actions (especially by ports) show some incentive to change this situation. There are plans for better interconnection with road/rail modes through new infrastructure.

14.3.3 Stakeholders Involved

There are strong interest groups whose aims might be contradictory. It is to some degree a paradox that while the majority of them aim for integrated passenger transport within the concept of transport network development, they will often differ in their opinion on the adoption of particular solutions. Additionally, apart from directly involved entities, there is a multitude of indirect stakeholders. There are important power groups not directly involved in transport development but nevertheless interested in some aspects of the overall transport network. These indirect stakeholders (the press, environmental groups) sometimes have a strong impact on network design. Conflicting objectives of different groups can hinder development of integrated transport. The list of main stakeholder groups is given in Table 14-1 below.

Table 14-1 Tri-City main stakeholder groups

Stakeholder group	Identified stakeholders
Government - central	• Ministry of Infrastructure, Ministry of Regional Development – responsible for transport networks and for new investment sponsored from public and EU funds
Local self-governments	• Marshall Office of Pomorskie Voivodship, City of Gdansk, City of Gdynia, City of Sopot, other significant cities involved: Wejherowo, Puck, Reda, Rumia, Tczew, Pruszcz Gdanski, Hel
Ports	• Port of Gdynia and Port of Gdansk
Airports	• Gdansk airport (Rebiechowo)
Railways	• PKP PLK (infrastructure manager), PKP Intercity (long distance rail services), PKP Przewozy Regionalne (intra-regional railways), SKM (internal Tri-City railway)
Municipal public transport companies	• ZTM Gdansk, ZKM Gdynia, MKS Wejherowo, Związek Metropolitalny Zatoki Gdanskiej (Metropolitan Transport Network of the Bay of Gdansk)
Construction companies	• Companies selected to build motorway A1, some internal city road links, new rail line to air port, new airport terminal, new port ferry station
Personnel	• Employees in transport sector
Environmental activist groups	• Interest groups acting in relation with infrastructure investments
Press	• Impacts public opinion on transport network integration
Financial sector	• Credit providers for infrastructure investments
Business	• All companies involved in transport provision and support of this function, indirectly – other companies benefiting from increased people mobility
Users/Society	• Local population of the Tri-City and its metropolitan area, indirect – other population of Poland/other countries (transport users)

14.3.4 Current Cohesiveness of Multi-modal Networks

Provision of integrated networks and services

The common ticket idea for the Tri-City agglomeration is based on a political declaration of March 28, 2007 on the “Tri-City Card”. In practice there are two different ticket integration policies for the internal and external area. The internal area (Gdynia – Sopot – Gdansk) has a common train ticket with separate tickets for bus and tram services for Gdynia and Gdansk. Sopot does not have its own service provider. Transport services are conducted by both Gdansk and Gdynia municipal companies designated to the task. The external area to be integrated into the common transport system reaches as far as Slupsk / Wladyslawowo / Hel to the North and Tczew to the South. Its largest length is about d160 km. The idea for integration of the Tri-City transport network has been discusses since the 1970s. However due to Gdansk and Gdynia competition (both are ports and this creates rivalry) has not materialised until recently (2007).

The current system is considered only the first step towards common ticket introduction and it has at present many limitations. There are a number of types of common tickets. The first option is a “all non – rail systems” ticket allowing users to travel via bus, trolley and tram within Gdansk, Gdynia and Sopot. Then there is a so called “ticket of two operators” which could be SKM (rail rapid transport) on the section Luzino-Cieplewo – so effectively covering all of Gdansk, Gdynia, Sopot and additional sections north and south plus any one of the three Gdansk or Gdynia or Wejherowo municipal providers (each of them for all means: bus, trolley and tram). The third option is broadest and consists of SKM plus all three city operators.

There are many different fares applicable. The 24-hour ticket for example costs for the first option 12 PLN (about € 3.10), for the second option costs 15 PLN (about € 3.90) and for the third option costs 18PLN (about € 4.60). Similarly the monthly ticket cost is differentiated at: 120 PLN (about € 31) for option one, 170 PLN (about €.44) for option 2 and 200 PLN for the third option (about €. 51). No other differentiation (like weekly or 2-day ticket) is available. This greatly reduces the possibility for choice. In fact use of the common ticket is also hindered by the fare amount. In reality for this tariff to be competitive against purchase of separate tickets for all operators, the customer has to change provider at least 5-6 times per daily trip which is seldom the case for a majority of area inhabitants. Most daily commuter travel follows a pattern of use of 2 operators (which sums up to four trips per day).

The fare is so high mainly due to internal problems with division of revenues between the service providers involved. In fact there is no system which records usage of particular mode therefore it is hard to arrive at an exact share of revenues which should be allocated to the companies in question. Nevertheless this system is considered only the first stage of ticket integration and amendments to the system are planned. The first 2-3 years were, from the start, considered a testing period which should provide answers about the efficiency of the system. Currently, apart from need for better schedule interoperability there are plans for extension of this system to reach as far as Slupsk in the north-west and Tczew in the south (“extended” Tri-City area of length of 160 km) and plans for integration of water trams into the system (thus extension to Hel: in straight line distance Gdansk – Hel is 33 km across the Bay of Gdansk).

Co-ordination of providers

Co-ordination of providers within Tri-City is handicapped by the administrative division of the area. Each gmina within Tri-City has its own local self-government. A legal act dated 8 March 1990 about local governments (Polish Official Journal no 16, pos.95) constitutes that the organisation of urban transport belongs to the duties of municipalities. However the act also anticipates the possibility of setting up (e.g. within urban agglomeration) inter-municipal unions. There are no legal obstacles against forming integrated transport systems within the public municipal subsystems of Tri-City member gminas. This integration received a legal basis on 28 March 2007, with declaration of commitment by the three key cities of the region (Gdansk, Gdynia and Sopot) announcing the will to co-operate and avoid unnecessary internal competition. One of the main issues of the declaration was the creation of integrated metropolitan transport.

However due to local rivalries not much has been done in practice. A common ticket (in form of tariff only integration - without institutional integration) has been introduced under the Metropolitan Transport Network of the Bay of Gdansk. Under this organisation currently four service providers: ZTM Gdansk (city transport provider), ZKM Gdynia (city transport provider),MZK Wejherowo (city transport provider) and SKM (railways) offers a single ticket for the Tri-City area. This integration is only in regard to a common ticket, while at the same time regular (separate) transport services by all providers are also conducted.

Additional problems exist with the inclusion of the rail mode into the system. While SKM is really a regional rail operator it belongs to the PKP Group, which includes all state-owned railway operators. As such its policies are guided by centralised group management. This leads to sometimes suboptimal decisions. For example SKM was forced to cease its connections to cities outside Pomerania voivodship due to being too competitive against another company of the PKP Group. Furthermore, formerly existing cross-acceptance of tickets between members of PKP Group has been discontinued. As a result a traveller from outside with a ticket for travel to Gdansk has to get off the train in Gdansk

and buy a separate ticket for SKM to any of the local stations. Under the former system the ticket allowed passengers to switch to SKM without additional costs.

The only co-ordination which takes place between different modes (and in limited way only) is integration of SKM and bus/tram timetables.

Co-operation between authorities and providers

In Poland there are no official governmental documents regarding transport policy in metropolitan areas nor specific documents addressing interconnectivity. Problems of interchange and interconnection between long distance modes and city public transport remain the responsibility of local self-governments, mainly gminas.

There are some recent initiatives within government. For instance. from the beginning of 2010 there are consultancy works being carried out in the Ministry of Internal Affairs on the law on cities and co-operation of local self-governments which aims - among others objectives - at setting directions for the possible integration of transport. The planned law will address the policy in regard to metropolitan areas with the responsible government branch – Ministry of Regional Development. The law is supposed to bridge the gap in existing legislation, defining the role of different levels of administration in regard to transport provision, degree of regulatory power on the part of authorities, conditions for co-operation between cities and rural areas and defining what functions the metropolitan area has to realize.

As to the current administrative setup in provision of integrated services, there are no legal obstacles against joint service provision by different gminas in regard to public transport (road/tram/bus – short distance). For long distance the general rule of the free market is in operation with exclusions in rail/air as established in European Treaties. In effect both in air and rail sectors Poland is on the brink of transition to open sky and open rail market principles in regard to passenger transport

14.4 SOLUTIONS ALREADY IN PLACE

These are solutions as found in the INTERCONNECT draft toolkit; if there is a solution found that is not yet in the toolkit, then the toolkit will be amended with this solution.

14.4.1 Overview

The following solutions are going to be analysed in this section.

- City terminal of the Gdansk airport
- Water-tram connecting Tri-City and Hel Peninsula
- City Card in Gdansk

Table 14-2 provides a summary of the main parameters related to the “criteria of success” matrix.

Table 14-2 Assessment of solutions against success criteria – existing solutions

ID	Title	Cost	Technical feasibility	Financial feasibility	Organisational feasibility	Acceptance by users	Political acceptability	Door to door travel time	Door to door travel cost	Comfort and convenience	Improved safety	Increase personal security	Increase regional prestige	Access for low-income users	Access by disabled users	Modal shift	Congestion reduction	GHG emissions
14.4.2	City terminal of the Gdansk airport	€	V	0-X	V	V	V	0	0	VV	0	0	0-V	0	0	0	0	0
14.4.3	Water-tram connecting Tri-City and Hel Peninsula	€	V	V	0-X	VV	V	V	0-X	V	V	0	0-V	0-X	0	V	V	
14.4.4	City Card in Gdansk	€	0	XX	X	V	V	0-V	0	0-V	0	0	0-V	0	0-V	V	V	V

14.4.2 City Terminal of Gdansk Airport

City Terminal is intended for both international tourists and Tri-City inhabitants. It was opened in August 2008. The City Terminal provides the following facilities:

- Check-in 24 hours prior to travel and on the day of departure:
  - 3 hours before the scheduled departure for passengers travelling with checked baggage
  - 1.5 hours before departure for the passengers travelling without checked baggage
- Ticket office and travel agency
- Tourist Information
- Comprehensive business service
- Car rental

Passengers from City Terminal have an opportunity to use a comfortable shuttle bus operated by MPA Poland Transport on the route:

- Gdansk airport to
- City entre (the bus stops outside the Mercure Hevelius hotel opposite City Terminal)

The cost is 9.90 PLN per person (taxi cost is about 60 PLN).

Problems addressed

City Terminal brings the airport closer to people through distance, time and accessibility. Check-in luggage is located in the city centre. City Terminal serves Tri-City habitants and also those from local cities as: Slupsk, Malbork, Koszalin. The aim of City Terminal is to give passengers an opportunity to leave their luggage the day before or even the same day, and to allow them not to waste their time on waiting for the flight but sightseeing, or holding business meetings without worrying about their luggage. City Terminal also offers regular tourist services and this area is going to be developed.

Performance against main toolkit criteria

Cost and feasibility

Detailed cost information is not available. This solution was implemented with no significant technical problems. The main technical challenge was to ensure luggage security. The solution was initiated by the terminal authorities but it was also strongly recommended and supported by the city of Gdansk. No financial information is reported by the airport authority. But the solution in view of interviews does not seem to be profitable. There is no additional payment for use of City Terminal (with exception of the shuttle bus).

City Terminal was opened in August 2008 and all organisational and legal issues were solved at the beginning. Form the organisational point of view there have not been significant problems. The solution is highly accepted by users because it provides a possible alternative to poor public transport connections for passengers going to the airport.

Impact on users' door to door travel cost

This depends on mode used previously; there are considerable savings using the City Terminal shuttle bus against the cost of a taxi, but no impact on passengers previously using public transport.

Initial impact on comfort or convenience

City Terminal is a very convenient solution, especially for tourists.

Users' safety and personal security

The use of City Terminal has no significant impact for safety and security. Only one aspect of the potential impact can be added. If an alternative would be the use of public transport then the risk of luggage lost arises, and the risk of theft is always more probable in public transport modes with comparison to taxi or other specific transport (as in the case of the special shuttle bus to the airport from City Terminal).

Region's prestige

City Terminal in Gdansk is one of the first such a terminals in Europe and positively influences the region's prestige. In 2010 the Gdansk airport was honoured with the European Medal due to its innovative and user friendly initiatives (including mainly City Terminal). The Polish European Integration Committee, Business Centre Club and European Economic and Social Committee award a prestige prize (European Medal) to enterprises selling the best products or services in the European market.

Access for people on low incomes

Generally not used by people of low incomes – due to their sporadic use of air mode.

Access for people with physical disabilities

There is no problem with use of City Terminal for people with physical disabilities. On the contrary direct transfer to the airport from city centre could be considered as an improvement.

Mode shift, congestion and GHG emission

No impact for modal shift, congestion and GHG emission can be noticed.

Transferability of findings

The solution is transferable in large urban areas, especially in the city centres intensively visited by tourists. They can spend some time without worrying about their luggage before leaving the city for the airport.

14.4.3 Water-Tram Connecting Tri-City and Hel Peninsula

Water-tram can be treated as a solution towards solving the problem of the road and railway connections of the Hel Peninsula. The road link has insufficient capacity while the railway link is not very convenient.

Water-trams are operated by Gdynia and Gdansk urban transport companies. Additionally in Gdynia a free bus from the city centre to the water-tram terminal is offered.

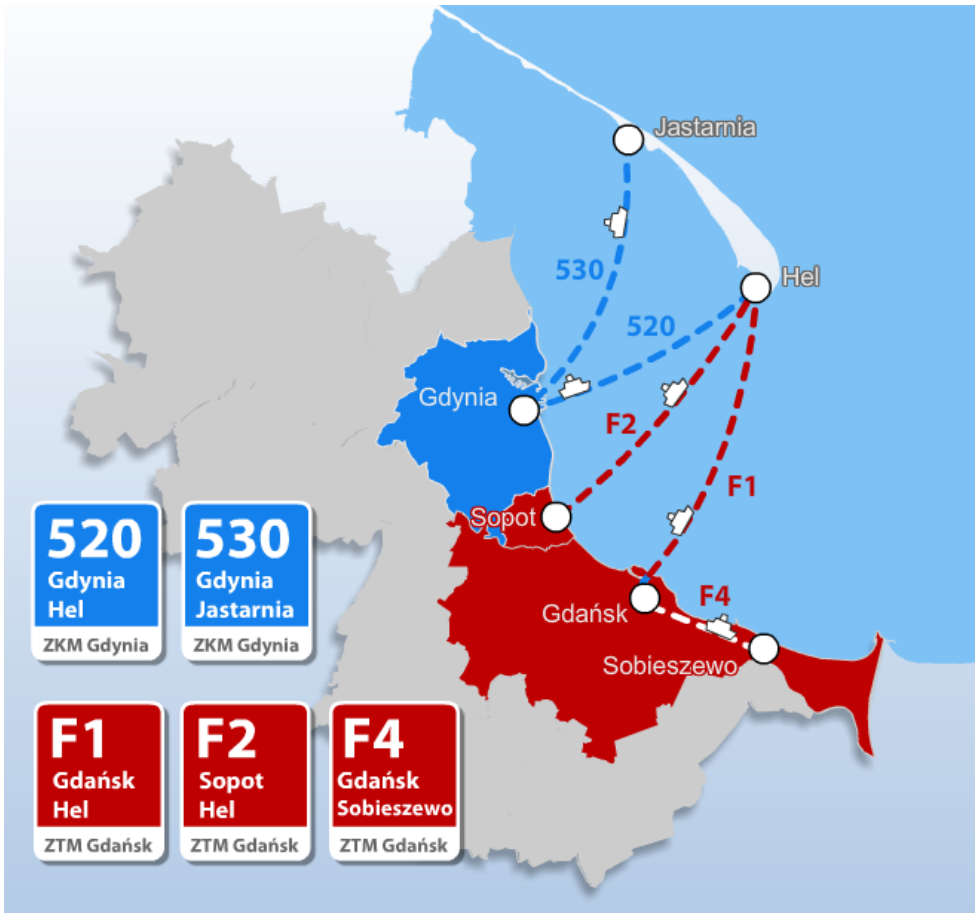


Figure 14-3 Water-tram connecting Tri-City and Hel Peninsula

Water-trams, in addition to offering a good alternative way to connect the Tri-City and Hel Peninsula, are also perceived as a very attractive product for tourists and citizens wishing to visit Hel, e.g. for a weekend. Water-tram stops are located in the centres of Gdansk, Sopot and Gdynia.

Figure 14-4 Water-tram in the centre of Gdansk

Figure 14-5 Timetables of water-tram services in Pomerania for 2010

For water-trams special tickets are available. There is no integrated ticket available for public transport and these ferries.

Figure 14-6 Water-tram tickets for Hel-Gdansk link

Problems addressed

Hel Peninsula is located on the opposite side of the Bay of Gdansk. The connection of the Tri-City with the very attractive tourist location on the peninsula is difficult due to infrastructure constraints. Existing road connections are very congested and the railway link is not very convenient for passengers.

Water-trams improve these connections and, together with public bus transport, could serve as a good solution for connecting centres of the cities (Gdansk, Sopot and Gdynia) with Hel.

Performance against main toolkit criteria

Cost and technical and financial feasibility

Detailed cost information is not available. From the technical point of view the are no problems. Irregular tourist ferries functioned on this route before the introduction of water-trams. The financial profitability of the operation is assessed as high. The demand for ferries is very high.

Organisational/legal feasibility

In the case of water-trams the responsibilities are divided between two public transport authorities: Gdansk and Gdynia. That means links from Gdynia to Hel and Gdansk to Hel are administered by different public transport administrations. This does not create any serious problems at present because embarking/disembarking points for both are located in different cities..

Acceptance by users

There is very high acceptance and water-trams are very popular.

Other aspects of political acceptability

No problems from city authorities nor maritime offices as long as ferries comply with technical requirements as set in maritime codes.

Impact on users' door to door travel time

In comparison to the congested road link the water-tram link shortens the trip significantly. The car trip from Gdansk to Hel in rush hours and congested periods during holidays could take as long as four hours. By water-tram it is a two-hour trip.

Impact on users' door to door travel cost

Ferries are more expensive than trains for the same distance. The ferry is also likely to be more expensive than road transport.

Initial impact on comfort or convenience

Water-trams are not very modern nor comfortable. But the trip is more convenient than by highly congested road.

Users' safety

Positive impact on overall safety since the road link from Tri-City to Hel Peninsula is exposed to a high accident risk.

Personal security

Does not have an influence on security.

Region's prestige

This solution can be perceived as one of the elements improving region's attractiveness for tourists and this can be also considered as the region's prestige factor.

Access for people on low incomes

Water-trams are relatively expensive in comparison to other transport modes

Access for people with physical disabilities

Generally ferries are accessible for people with physical disabilities.

Mode shift, congestion and GHG emission

Even taking into consideration the high attractiveness of the solution there is no significant impact on modal shift. The frequency and capacity of water-trams are minimal in comparison to the overall traffic to Hel Peninsula. Therefore no significant impact on GHG emission can be noticed.

Transferability of findings

The solution transferable in the specific geographical areas characterised by competing land/sea access routes and high tourist traffic.

14.4.4 City Card in Gdansk.

In 2007 the Metropolitan Transport Network of the Bay of Gdansk was established. This is a unit dealing with the problem of public transport integration, which will eventually take over the management of public transport within the metropolitan area. Integrated operation is one of the most important factors influencing the quality of service in public transport. There are two types of integration in public transport:

- Integration of tariff / ticket (partly integration)
- Organisational and functional integration (full integration)

Metropolitan municipalities consistently seek to integrate public transport. The first step is the integration of tickets. Standardised forms and types of season tickets and single tickets in Gdansk and Gdynia were introduced as the first step of these activities. Another significant service provider in the area – Wejherowo City Transport Company - in January 2010 made small tariff changes to bring tariffs into line. Since then in the Tri-City Metropolitan Area there are the same prices across the metropolis; this enables standardisation of the media for fare provision, which in the case of Gdansk is an electronic card.

Further integration planned by the Metropolitan Transport Network of the Bay of Gdansk objectives are: to harmonize tariffs, to introduce free and concessionary travel, and to police regulations throughout the metropolitan area, which will offer a more attractive and simplified ticket. The target of the metropolitan fare clearly promotes use of electronic tickets - when they are purchased a discount is granted. One example of such solutions is the City Card.

City Card is a contactless chip card. It was first introduced for public transport in Gdansk in July 2006. The card was made using modern microprocessor technology (commonly called an electronic card or in technical language: non-contacting proximity card). There are two types:

- Registered card
- Card to the bearer

From 13 December 2009, passengers holding the metropolitan tickets in form of City Card (24-hour, 72-hour and periodic), can travel by city public transport and by regional trains (excluding trains designated interREGIO) on the section from Reda-Rekowo to Reda (within the railway line Gdynia-Hel) and from Babi Dol to Gdynia Main (within the railway line Gdynia- Koscierzyna). The new offer in particular helps to improve the accessibility to and from frequently accessed locations outside the Tri-City, such as Pruszcz Gdanski.

Problems addressed

Integration of tariff and ticket enables passengers to buy a single ticket, valid on transport operated by two or more carriers (the organizers). An additional advantage is the ability make a trip using various

modes of transport, such as regional bus, suburban rail, urban tram. Electronic cards improve ease of travel, and electronic city cards offer less trouble to the passengers because they do not need punching before every trip.

Performance against main toolkit criteria

Cost and technical/financial feasibility

There is a requirement to buy checking equipment. The cost per unit is ca. 8,000 PLN (€ 2,000). Technical means are available – the of appropriate electronic devices is troublesome but it is single action. The problem of a common electronic ticket system lies in the various concessionary systems used by ZKM Gdynia, ZTM Gdansk and SKM. Students or pensioners receive a 50% discount in bus/tram/trolley, while in the SKM they have only a 37% discount. The introduction of a standard 50% discount would necessitate the increase of subsidies to the activities of SKM.

Organisational/legal feasibility

Implementation of the City Card requires some institutional changes, close co-operation between stakeholders, and public support. There are some legal problem concerning the SKM. It is not municipal property. It is owned by PKP and government is co-owner of the PKP. A takeover by Gdansk, Gdynia, Sopot and provincial government of all the shares in SKM would require paying high subsidies to the activities of the carrier, which today come from the central budget.

Acceptance by users and other aspects of political acceptability

In general City Card is highly accepted by transport users. There are no problems with political acceptability at the local level. The City Card system in transport could be even treated as a transport policy measure to be implemented with the support of all public authorities. The current institutional setup of railways has to be changed and this requires a law change – thus political tensions on central level might be expected.

Impact on users' door to door travel time and cost

City Card reduces boarding time. The metropolitan ticket should be cheaper than a sum of individual tickets for individual sections of trip.

Initial impact on comfort or convenience and on region's prestige

City Card facilitates ease of use of the public transport system. It can be assumed that using City Card would help a region to project a "modern image"

Users' safety and personal security

No impact in those areas is expected. City Card could be stolen while its price is considerably higher than that of single ticket. On the other hand there is no need to constantly buy tickets reducing exposure to pick pocketing.

Access for people on low incomes

No impact overall as the price will not be significantly different from the price of separately bought tickets.

Access for people with physical disabilities

Fewer problems involved with ticket purchase.

Mode shift, congestion and GHG emission

If the City Card attracts users who formerly used to travel by car or taxi, there could be resulting reductions in congestion and GHG emissions. Introduction of City Card type solutions in other cities

has brought positive results in terms of facilitating the usage of public transport and increasing the attractiveness of its services for users. This resulted in improvements in the cities as regards congestion and the environmental impacts of private car traffic

Transferability of findings

Experiences are similar to those found in other cities which successfully introduced city cards.

14.5 SOLUTIONS ALREADY ENVISAGED

These are solutions that are either already under construction, or for which there are at least pre-feasibility studies. Solutions that may just have been discussed somewhere by somebody, but for which no serious planning has been started, would come under "potential solutions"

14.5.1 Overview

The following solutions are going to be analysed in this section.

- Southern rail link to the airport
- 2nd stage of Tri-City Metropolitan Transport Network of Bay of Gdansk
- New passenger terminal at Lech Walesa airport
- Westerplatte Ferry Terminal

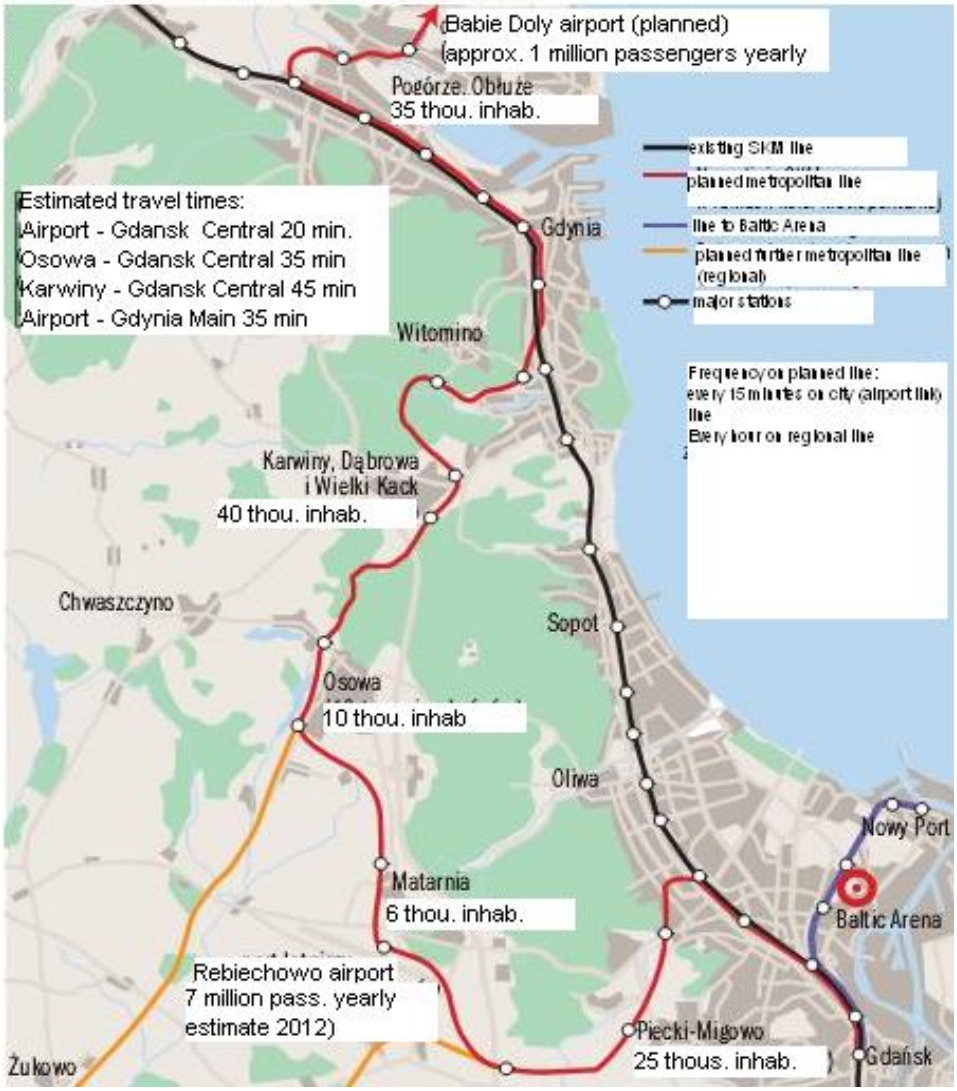
Table 14-3 provides a summary of main parameters related to criteria of success matrix.

Table 14-3 Assessment of solutions against success criteria – envisaged solutions

ID	Title	Cost	Technical feasibility	Financial feasibility	Organisational feasibility	Acceptance by users	Political acceptability	Door to door travel time	Door to door travel cost	Comfort and convenience	Improved safety	Increase personal security	Increase regional prestige	Access for low income users	Access by disabled users	Modal shift	Congestion reduction	GHG emissions
14.5.2	Southern rail link to the airport	€€€	0-X	X	0	VV	V	V-VV	0-V	V	0-V	0	0-V	0	0-V	V	V	V
14.5.3	2nd stage of Tri-City Metropolitan Transport Network of Bay of Gdansk	€€€	X	X	X	VV	X	V	0-V	V	0	0	0-V	0	0-V	0	0-V	0
14.5.4	New passenger terminal at Lech Walesa Airport	€€€	V	V	V	VV	V	0	0	VVV	V	V	V	0	V	V	V	0
14.5.5	Improved links to Westerplatte Ferry Terminal	€€€	X	X	0	V	V	V	0	V	V	0	V	0	0	V	V	V

14.5.2 Southern Rail Link to the Airport

The Tri-City region is currently served by Gdansk Lech Walesa airport (Rebiechowo). Access to the airport is provided by public city transport (bus). Creation of a direct rail line connecting the airport with the main rail line going beyond the region could facilitate interconnectivity in two ways: 1) between the air mode and long distance rail mode and, 2) between the air mode and short distance rail mode. In the second capacity the rail line should allow reduced travel times between the airport and various parts of the Tri-City. In the first example seamless travel will be available for all passengers from the region (but outside the Tri-City inner area) and for passengers accessing Rebiechowo airport from outside the region (no need to use city public transport between arrival in Tri-City on rail/bus and departure by air mode). Furthermore the new rail line is intended to connect to the second airport in the Tri-City area planned (but recently suspended) in Gdynia with expected capacity of 1 million passengers annually.



(source: own based on "Gazeta Wyborcza")

Figure 14-7 Tri-City metropolitan rail and major inhabited areas alongside

red – planned metropolitan railway
black – existing city rail (SKM) line
orange – planned extended regional rail
dots – major stations

Problems addressed

Current access to and from the airport is rather poor ,with a single road which connects to the Tri-City bypass highway. This road crosses the bypass and then continues to the centre – it is heavily congested in the peak and often also in off-peak hours. The public transport system (bus) uses this congested route. Moreover, the frequency of bus departures is rather low and one of the two lines servicing Gdansk takes a detour through a suburb built near airport. In the direction of Gdynia there is only one bus line operating to and from the airport.

Performance against main toolkit criteria

Cost

The cost of construction is rather high at around € 170M.

Technical feasibility

The technical feasibility is not problematic due to the use of earthworks already in place (there was a rail line there which cased to operate in the 1950s). Obviously all other infrastructure components are to be constructed. Technical feasibility might become an issue depending on the final variant adopted (e.g. airport station considered as turn-around point or through traffic point which calls for building some sections from the scratch). Also, new housing has already been built in some districts next to the old line which may complicate technical aspects. The recent idea of dual use of the part of the line within Gdansk boundaries (for rail and tram) adds to the complexity of the project.

Financial feasibility

This depends on the future ticket price and division of revenue between participating cities.

Organisational/legal feasibility

There are many entities involved: SKM Railway Company, PKP Railway Group, cities of Gdansk and Gdynia, Ministry of Transport. Although there is directly-expressed good will to finish the project, some tensions seem to be unavoidable. The recent demand of Gdansk for an additional feasibility study to include the option of tram use on some sections of the planned rail line is illustrative in that regard. However there is also strong political will to complete the project.

Acceptance by users

The acceptance by rail users willing to transfer to the airport is going to be very high. The acceptance of the Tri-City populace, for which it creates a long sought direct link between southern districts of Gdansk and Gdynia will be also very high.

Other aspects of political acceptability

Compromise design is necessary due to different policy objectives of the two cities benefiting from the rail link (Gdynia and Gdansk). Moreover Gdynia is launching plans for its own airport which may reduce its interest in this project.

Impact on users' door to door travel time

For users, the change of trip time may be important, especially compared to the present situation of using bus public transport on a congested road. For airport access expected time travel reductions, depending on starting points, are estimated at between 25% and 70% as compared to current public transport options.

Impact on users' door to door travel cost

This is difficult to assess at present as it depends on the final ticket price. A reduction of cost for users currently using taxis is expected. For those using bus services a monetary value of time has to be taken into account.

Initial impact on comfort or convenience

A significant increase in comfort is expected if the trains are less overcrowded than buses or trams. Additionally, directness of travel is huge asset.

Users' safety

Limited impact on safety assuming that rail mode has lower accident ratio than road mode.

Personal security

Doesn`t have an influence on security.

Region's prestige

Improves region's prestige slightly with a positive "first impression" for arriving passengers.

Access for people on low incomes

No impact as they are using bus services currently.

Access for people with physical disabilities

Some positive impact because the new infrastructure is projected with all necessary facilities for ease of movement for disabled passengers.

Mode shift, congestion and GHG emission

There is an expected shift of users from car and taxi to the rail mode and as a result there should be reduced road congestion and emissions.

Transferability of findings

The project not implemented so its transferability is unknown.

14.5.3 Second Stage of Tri-City Metropolitan Transport Network of Bay of Gdansk

The Tri-City metropolitan area internal city network consists of Gdansk, Gdynia and Sopot. This core creates a very strong centre of gravity for all other cities and towns in the Bay of Gdansk area. Moreover, due to the unique touristic advantages of many locations in the Tri-City and Bay of Gdansk, in summer a significant number of outside tourists visit the region.

Integration of metropolitan and regional networks is therefore very desirable for increased ease of travel, better information, directness of routes and time savings. From the authorities' point of view integration should increase the economic efficiency of the system. These goals are to be achieved through the Metropolitan Transport Network of the Bay of Gdansk, which integrates various public transport providers within the area. In fact similar integration (excluding railways) was in place until the 1990s under the former socialist economy. This integration was dismantled with the transition to a market economy and because of new laws which made gminas (territorial unit in Poland) responsible for the provision of transport services in their territory. As a result all gminas which belong to the Tri-City area have been fulfilling this task separately. It must be noted that the integration which existed before the 1990s was neither efficient in an economic sense nor comprehensive in terms of offered services. New integration started from 2007 and aimed at first at partial integration (common ticket) with the possibility for full functional integration at later stage.

The first stage of integration has been implemented in regard to four service providers: ZTM Gdansk (city transport provider), ZKM Gdynia (city transport provider),MZK Wejherowo (city transport provider) and SKM (railways). Including water trams to Hel Peninsula, the area serviced covers 160 km.

Problems addressed

The second stage is planned to achieve following goals:

- Single tariff for the whole area
- Co-ordination of different modes including building of switch points for easier interchange
- Co-ordinated timetables.

Functional integration will merge city public service providers into one body. Railway operator will still remain independent. There is also a possibility to integrate beyond the core Tri-City area, including rail connections to Kaszuby region (region next to the Bay of Gdansk bordering the Tri-City to the west) and possibly to Elbląg in the east. The second option has already been tried by SKM but due to

political pressure SKM had to withdraw from the offer (it was too competitive against regular rail companies and currently SKM is still part of a capital group including those other companies).

Performance against main toolkit criteria

Cost

This depends on the final variant adapted. The estimate made in 2006 by the railway research institute CNTK calculates the cost at € 170M (calculated under the assumption that € 1 = 3.6 PLN). However more recent variants add further works to the project (like the dual tram/rail section in Gdansk) which will need additional financing.

Technical feasibility

The technical side of the project is difficult due to the huge number of investments in network quality improvement, in vehicles and in switch points. Significant parts of infrastructure already exist but in many cases this is outdated and in need of renewal. Given the confined city space, new investments to replace old infrastructure objects can be an engineering challenge.

Financial feasibility

Not estimated yet.

Organisational/legal feasibility

There are many entities involved: SKM Railway Company and city public transport companies are those directly involved. But there are other entities who are influenced by further integration: City authorities, Marshall Office of the Pomorskie voivodship, Ministry of Transport, other railway companies from the PKP Group to which SKM belongs. Local rivalry between Gdansk and Gdynia might also hinder the success of the project.

Acceptance by users

The acceptance by users will be very high. There is a common perception that Tri-City needs improved public transport in the inner area. This also applies across the region as integration will certainly improve regional cohesion and improve access to Gdansk and Gdynia, which are local employment and business centres as well as administrative centres. Moreover, better internal access significantly impacts external access. The Bay of Gdansk and Baltic coast attracts many tourists. Tourists and visitors from outside the region are not only interested in direct access to their final destination but, as studies show, while staying in the area they travel extensively.

Other aspects of political acceptability

Stakeholders agree as to the overall objectives but different variants are supported by different participants (City of Gdansk prefers a dual tram/rail line while Gdynia prefers a rail-only solution).

Impact on users' door to door travel time

There will be significant travel time reductions after timetable co-ordination and the building of switch point facilities.

Impact on users' door to door travel cost

This is difficult to assess at present as it depends on the fare structure implemented.

Initial impact on comfort or convenience

Significant increase in comfort is anticipated through directness of travel plus the use of new equipment (modern rail cars, buses, trams).

Users' safety

Better safety due to installation of TV cameras on stations during rebuilding is anticipated.

Personal security

Better security due to installation of TV cameras on stations during rebuilding is anticipated.

Region's prestige

Enhancement of the region's prestige will be achieved. According to a recent study, Tri-City is considered as the place with the highest traffic jams in Poland (more than Warsaw), so an efficient integrated transport system will improve perception of the region.

Access for people on low incomes

This will depend on the tariff structure and so is difficult to assess at present.

Access for people with physical disabilities

There will be improved equity for this group of users because new vehicles and renewed stations will offer special facilities for handicapped.

Mode shift, congestion and GHG emission

There is an expected reduction in private cars use with resulting reduced congestion and emissions.

Transferability of findings

The solution is not implemented yet so its transferability for other locations not fully known.

14.5.4 New Passenger Terminal at Lech Walesa Airport

A new passenger terminal in Gdansk airport is planned and should be ready by June 2012. Together with the existing terminal this means that overall capacity will be raised to 5 million passengers per year at Gdansk Lech Walesa airport.

The new terminal (as Phase II of the investment project) is being constructed west of the existing terminal and parallel to the designed access road and the existing airstrip. The building will be constructed as a hall with two functional zones – for airside and landside facilities. The two terminals will be joined via a connecting passage on the first floor level.

The functional system of the T2 Terminal features a modern solution that fulfils the requirements for international airports with regard to operational and functional standards. It takes account of the special requirements of passenger check-in in compliance with the Schengen agreement and applicable Polish regulations of the Civil Aviation Office in this regard. The building has been designed so as to enable its use by the disabled and parents with children. Special entrances to the building, and door handles at 70-120cm above the floor, safety glass and toilets for the disabled have been incorporated in the terminal design for these groups of users.

(source: http://www.airport.gdansk.pl/#/investments/new-terminal-t2)

Figure 14-8 Planned Terminal 2 at Gdansk airport

Figure 14-9 Construction works for Terminal 2 at Gdansk airport

As well as the new Terminal 2 an new taxiway and apron are also under construction. The new apron is related to the construction of the T2 Terminal as it will enable the servicing of additional aircraft. The apron will be connected to the existing apron with a new taxiway and the new Terminal 2. As a result, Gdansk airport will gain nine new parking spaces for aircraft of the C code in a line in front of the passenger terminal and six spaces for airplanes of the C code in a second line, as can be seen in Figure 14-10 below.

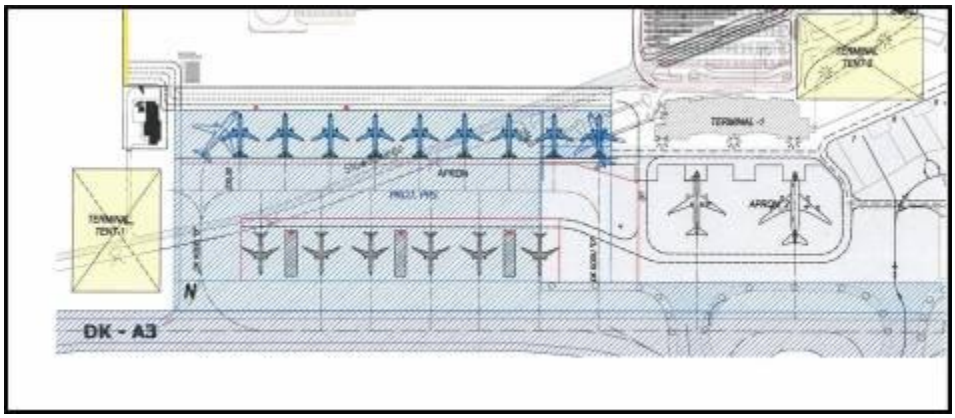


Figure 14-10 New apron design at Gdansk airport

Moreover, an internal taxiway will be created on the apron and the apron will be adapted for the parking and taxiing of 'C' code planes and two 'D' code planes in designated spaces. The estimated area of the apron is approximately 68,000 m2.

The total number of newly-created parking spaces associated with the new terminal thus amounts to 17. Part of the area is dedicated to roadways for technical vehicles and pavements for passengers and technical operators. These new constructions will increase the operational capacity of Gdansk airport from 12 to 30 air operations per hour.

The taxiway has been designed as an asphalt pavement of the strip 23.0m wide with reinforced shoulders on both sides, 7.5m wide each, and a length of 2,599 metres. The taxiway will be parallel to the runway and they will be connected with six link roads. Out of the six link roads, four will be constructed and two fast exits will be modernised. The axial distance from the airstrip will amount to 182.5m north of the existing runway. The area of the taxiway with the exit roads and reinforced shoulders will amount to 126,502 m2.

Figure 14-11 New taxiway planned at the Gdansk airport

This investment is closely related to achieving the operational capacity that will enable the service of new planes of the D code and, sporadically, of the E code (the length of wings from 52m to 65m, the total spacing of external main undercarriage wheels from 9m to 14m).

Problems addressed

Capacity of the existing passenger terminal is not sufficient. The new terminal will guarantee the development of the airport and of air connections for the Pomerania region of Poland with other, mainly international, locations.

Performance against main toolkit criteria

Cost and feasibility

Terminal T2 construction investment value totals PLN 450 million (€ 117M) and this includes all terminal construction as well as the new apron and parking space construction, the new taxi-way, de-icing pad, and noise monitoring system. Investments are co-financed with EU funds of PLN 169 million.

There are no important technical problems with the implementation of the solution.

From an organisational point of view no major problems are encountered, indeed the terminal is already under construction.

Acceptance by users

High user acceptance is expected.

Other aspects of political acceptability

The new terminal is accepted by central and local governments alike, largely due to EURO 2012 needs.

Impact on users' door to door travel time and costs

The new terminal could potentially reduce terminal waiting time for passengers compared to the current situation because the existing terminal is overloaded. Taking into consideration overall airport

services and existing regulations and requirements on this, there is no expected impact on door to door travel time.

Initial impact on comfort or convenience

The new terminal will considerably improve passenger services.

Users' safety and personal security

The investment will contribute to the enhancement of traffic safety. The investment will bring some security improvements.

Region's prestige

The new passenger terminal at the airport may be considered an element of prestige.

Access for people on low incomes

No impact for people on low incomes can be noticed.

Access for people with physical disabilities

Improved access for people with physical disabilities is incorporated into building design.

Mode shift, congestion and GHG emission

Significant modal shift is not expected. Nevertheless, the increase in the potential of the airport would increase its attractiveness in the region and in the long term may stimulate air transport demand.

Transferability of findings

New terminal construction is very expensive. So only in cases where the airport and air traffic development is at the required level can such a project can be developed.

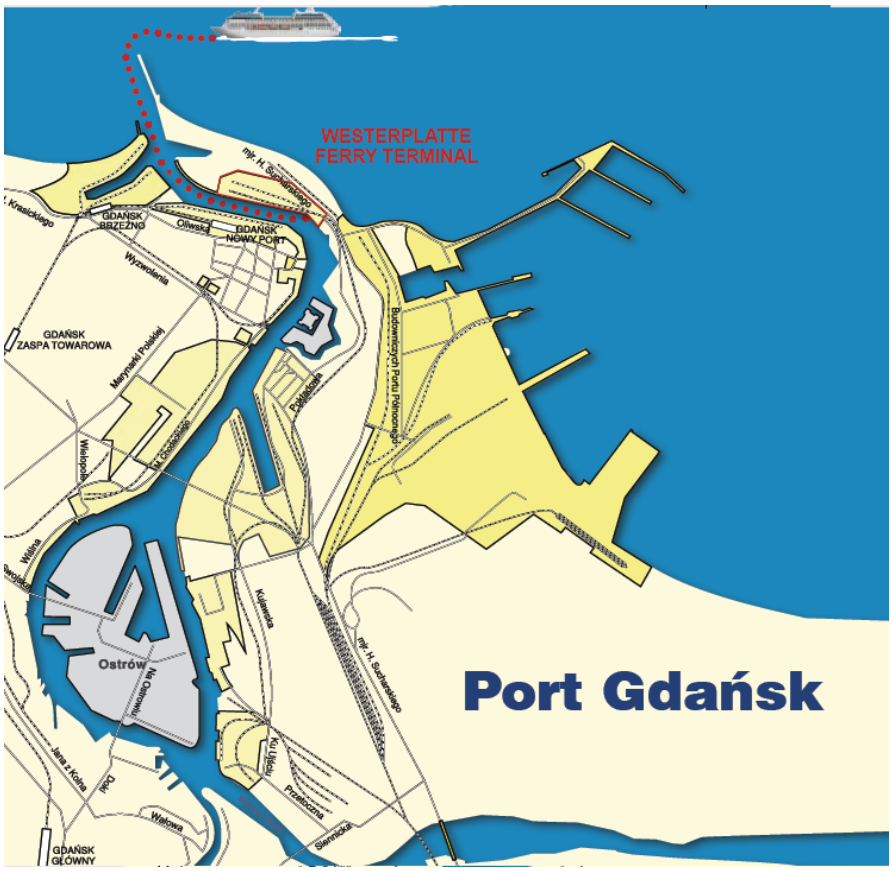
14.5.5 Improved links to Westerplatte Ferry Terminal

The location of the Port of Gdansk at the intersection of northern Europe's major transportation routes makes it particularly predisposed to fulfil the role of distribution hub focusing on the Baltic Sea countries as well as those in central, eastern and southern Europe. The Port of Gdansk is the key link in the Trans-European Corridor No. 6, which connects the Nordic countries with southern and eastern Europe.

The Westerplatte ferry terminal is situated in the inner part of the Port of Gdansk, along the Dead Vistula River, within 1,500 metres of the port entrance. Port water regions remain ice-free year-round. The Westerplatte Ferry Terminal offers:

- services to ro/ro vessels, passenger ferries, cruise liners and car carriers
- services to rail cars
- handling of passenger traffic
- loading / discharge of passenger cars, heavy duty vehicles, trailers and semi-trailers
- storage of goods and vehicles
- customs clearance and border control of vehicles and freight

Annual throughput capacity of the terminal is 0.6 to 1 million passengers, 0.18 to 0.4 million passenger cars and 0.15 to 0.35 million heavy duty vehicles.



(source: http://www.portgdansk.pl/o-porcie/mapa-portu)

Figure 14-12 Location of the Westerplatte ferry terminal

The Westerplatte ferry terminal provides the possibility for handling of vessels at three positions. Each of them is equipped with a ro-ro ramp. The passenger terminal has a total area of 2,050 square metres. All services are provided in compliance with the Schengen Treaty requirements. Characteristics of passenger terminal building show its modern design, for example:

- three-storey building (ground floor and floors 1 and 2) with a 155-metre pedestrian passage for passengers
- escalator and a lift to the pedestrian passage, 2 panoramic lifts within the terminal building (adjusted to the needs of the disabled)
- office premises with a total usable floor area of 512 m2
- ticket check-in stands and ticket office
- waiting lounge for checked-in passengers
- six desks for passenger check-in, including one desk adjusted for the needs of disabled passengers, and baggage check point equipped with dedicated X-ray devices for baggage screening
- information desk
- taxi rank in front of the passenger terminal building and public transport in the immediate vicinity of the terminal
- car park in front of the passenger terminal for 52 passenger cars and 8 buses

Problems addressed

The Westerplatte terminal has been created as an attempt to relocate passenger operations from the original cargo port location in order to reduce congestion. While this idea makes sense there are still some issues which have to be solved before the terminal can profit from its relocation.

The major problem of interconnectivity is that the connection to the A-1 motorway is not finished and travel to external destinations requires travelling through the city, which in peak hours might take more than an hour. Similarly there is no possibility for a direct passenger link from the ferry terminal to the main railway station.

Predicted port development requires development of transport infrastructure, both road and rail, in the port area and the city. It is envisaged that ultimately the external layout of the road linking the Port of Gdansk with Gdansk city and the national road network will be created as follows: in the north-south axis - Tri-City Bypass and motorway A-1 as part of the Trans-European North-South Motorway and in the east-west axis - the national road No. S7 (Gdansk - Warsaw) and the national road No. S6 (Legowo - Szczecin) as part of the Via Hanseatica.

Due to the key significance of the national road and rail connections between the port and its hinterland, further investments are planned for the improvement of access to the port. The most important projects to enhance the communication between the port and the modernised transportation network include the construction of a double-track railway bridge across the Dead Vistula, and the development of the Sucharski Route along with the tunnel under the Dead Vistula.

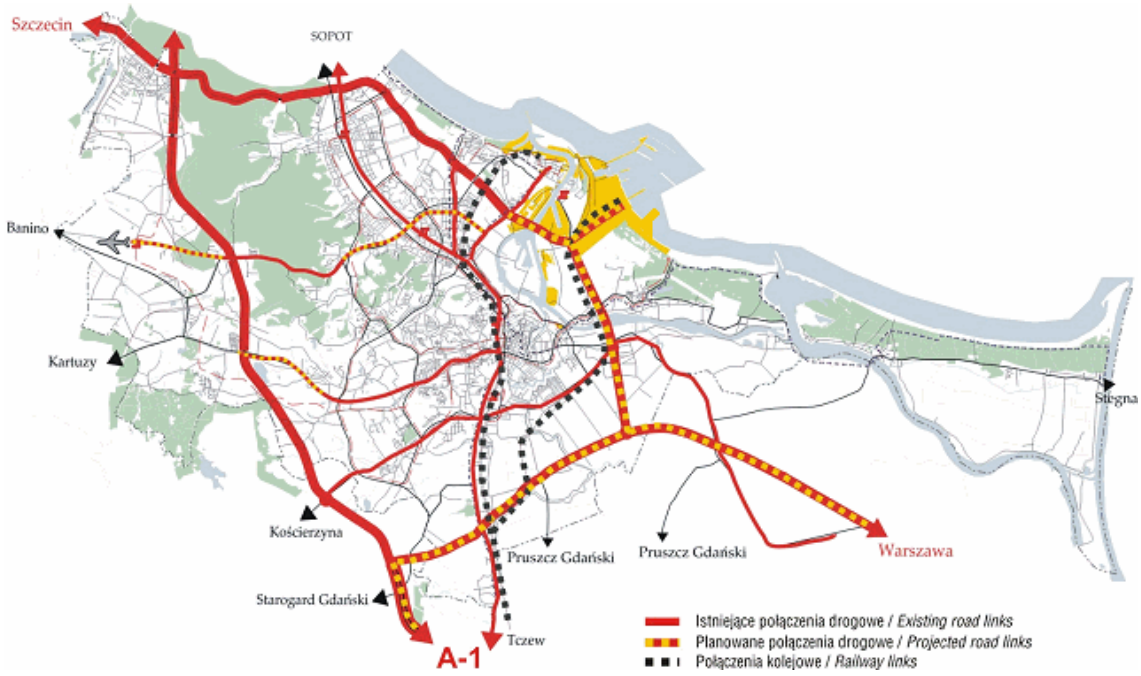


Figure 14-13 Land access of the Westerplatte ferry terminal to its hinterland

Performance against main toolkit criteria

Cost

The project of the Sucharski Route (land access to the terminal) construction was included in the indicative list of key projects that will be financed by the EU under the Operational Programme Infrastructure and Environment. The total cost of completing the project is estimated at PLN 0.8 – 1.25 billion. According to its schedule, the investment will be carried out in 2009-2011.

The agreement about construction of a railway bridge across the Dead Vistula was signed by PKP PLK and the port authorities in 2007. The total investment value for the bridge and double track

railway line is estimated at about PLN 426 million. The project will be financed with assistance from EU funds – about PLN 184 million within the Operational Programme Infrastructure and Environment.

Technical and financial feasibility

Concerning technical requirements it is necessary to build an underwater tunnel under the Dead Vistula. It will be necessary to carry out geological studies and to design special machines for tunnelling . Taking into consideration the financial aspect of improving quality and productivity of port services, implementing a wide-range multi-modal transport links should allow profits for the port operator.

Acceptance by users and other aspects of political acceptability

User acceptability is high when it makes travelling easier and cheaper. Furthermore, the increase of carriages in the Baltic Sea, including ferry and short sea shipping is in accordance with the policy of the European Union and is supported by central authorities.

Impact on users' door to door travel time and cost

In most cases improvement in road and rail links will substantially reduce travel times and cost.

Initial impact on comfort or convenience and user's safety

More comfortable travel and the increase in traffic safety in road transport, especially in the foreground and on approach roads is expected.

Other Impacts

There will be economic activation of port areas in the region of the Dead Vistula. This will be achieved through the creation of the conditions for the transfer of traffic from land border crossings between Kaliningrad region and Poland to the sea line Gdansk - Kaliningrad, with the possibility of further extension to St. Petersburg and other Baltic countries.

Mode shift, congestion and GHG emission

Construction of the Sucharski Route will improve traffic conditions and safety, reduce its cost and will reduce the negative impact of traffic on the environment throughout the city.

Transferability of findings

Exact transferability analysis could only be done after project is completed.

14.6 PROBLEMS STILL TO BE SOLVED

14.6.1 The Existing Institutional and Regulatory Barriers

The current situation of Polish transport calls for integration of long and short distance modes. At present the generally poor quality of public transport services are accompanied by poor interconnections during changing of modes. For instance no Polish airport is currently linked to regional or long distance rail, railway stations and long distance bus stations do not have parking areas for passenger cars or bicycles, timetables are not integrated and tariffs are fragmented. These problems result from inefficient regulations:

- There are no regulations in regard to public city transport that are fully compatible with EU law (Regulation 1370/20007 and Directive 2009/33/WE). In Polish law the term city public transport is defined only in the Law on road transport of September 6th, 2001. Provisions of Law on transport are not best fitted to the practical situation in Polish cities – for instance problems of relation between transport boards and service providers are missing. The only regulations in law apply to service providers.

- Functional, ticket and technology integration of transport is blocked by this lack of legal basis for division of competences between public and commercial transport operators.

Central government has no right to organize or influence local systems of public transport provision. Between 1989 and 2010 public transport witnessed many attempts to create a more efficient system. As a result of these often failed actions, three solutions seem to predominate in Poland:

- Management boards of city transport
- City service providers
- Integrated management boards

The first solution objective is to create a management body separate from service provision. The Management body is an organizer – it contracts companies (public and private) for certain services.

The second solution applies to all cities which organize and provide public transport by means of only a public special utility company. This company manages, organizes and provides services at the same time.

The third solution is similar to the first with the difference that the management body is created by multiple self-governments.

The most important projected changes are proposed in the law on mass public transport (the project first proposed on 15.10.2009 has been under consultancy within government). The most important provisions could be summarised as:

- Introduction of regulation regarding the organisational setup of public transport service provision with a clearly defined role of managing institution and subsidies policy
- Completive regulation of local and regional transport systems including regulations for local self-governments in regard to multiregional agreements for provision of integrated transport solutions
- Increased competence of Marshall Offices of particular voivodships (NUTS 2 level) over gminas (NUTS 3 level). This should strengthen the integration principle.
- The organising of integrated public transport could be moved to the central level (Ministry of infrastructure) if such a solution would improve service provision. The term “public transport organizer” will be introduced and could be given to any level organiser (a change from the previous legal situation where it was within gminas competence).
- Introduction of the term “public transport operator” applicable to all companies providing public transport services either public or commercial (government could buy certain amount of services from them and make them “public services”).

The law will introduce a necessity for provision of a “balanced transport plan” by all gminas with at least 50,000 inhabitants, or for gminas co-operatives of at least 80,000 citizens.

14.6.2 The Gaps and Inconsistencies in Strategic Planning Processes

The analysis of government documents

In 2010 the Polish government decided to put in order all approaches included in hitherto existing development strategies. Actions undertaken in this respect aim at a reduction of the number of existing and developed strategic documents, including the development strategy adopted by the Council of Ministers. Reduction in the number of these documents will allow for greater transparency in the process of strategic programming and more effective spending of funds from the state budget. In consequence the implementation of national development objectives in the medium and long term will be more effective. In the document titled "Plan for Arrangement in Development Strategies" a restriction on the number of development strategies and policies is proposed - from the current 42 documents of this type - to the 9 new development strategies, implementing medium-and long-term

strategies for the country's development, constituting "other strategies for development" within the meaning of the Act of 6 December 2006 on the principles of development policy[68].

Updated in 2010, the Transport Development Strategy (co-ordinator - Minister of Infrastructure) in point a) the road infrastructure provides the decision in the field of public transport (integrated traffic management systems, integrated transport nodes, development plans in urban transport, public rail transport, access to airports, access for elderly and disabled persons).

Local development strategies (province / city)

The urban transport aims are formulated very generally in the adopted 18 July 2005 Strategy for the Development of Pomorskie Voivodship. They are included in the section relating to the Strategic Objective No. 1 "Effective and safe transport system" as follows: *development and integration of passenger transport system, including the introduction of effective forms of transport management and the creation of an integrated regional public transport system in the metropolitan area*.

The Metropolitan Transport Network of the Bay of Gdansk (MZKZG) is an alliance of 13 communities bordering the Bay of Gdansk and its vicinity, established on the 16th of March, 2006 by the representatives of local authorities and registered on the 5th of June, 2007 by the Ministry of Internal Affairs and Administration. Establishment of the MZKZG revealed local rivalries. These differences have hampered for many years the integration of public transport in Gdynia and Gdansk. An example of such a controversy is the name of the Alliance association. According to the authorities of Gdansk, the agglomeration should be called "agglomeration of Gdansk". The Gdynia authorities prefer to keep in the name Tri-City. The compromise is the neutral name of the "Bay of Gdansk". The high price of the metropolitan ticket is also a matter of dispute. It is the result of very high price ticket adopted by the City Council of Gdansk and valid for the network of the Gdansk area. While working on the joint ticket the authorities assumed that the price of the metropolitan ticket should not be less than the price of a valid network ticket introduced by any of communication providers, who were involved in a joint bid. This can result in very little interest in the new ticket from the citizens of Tri-City. Therefore critics believe that the Metropolitan Transport Network of the Bay of Gdansk is a kind of propaganda activity rather than a real attempt at the integration of public transport.

In the "Regional transport development strategy in the Pomeranian region for the years 2007 to 2020" from the 29th of September, 2008, the major features of urban public transport in the Pomeranian region mentioned include: a high carrying capacity, differentiated services, an increasing share of environmentally friendly means of transport (expansion of tram traction in Gdansk, trolleys in Gdynia and neighbouring areas, and also attempt to apply pro-ecological fuel in buses). In practice there can be observed, however, a steady decline in demand for urban transport services in favour of private car transport. This is due to a lack of preference for the public transport vehicles on the road, especially in central areas, and poor integration together with failed pricing policy.

In the regional strategy, objectives in urban and regional transport sub-systems were identified as:

- Improvement in transport accessibility and in transport service quality as a component of the development of the settlement, with particular emphasis on the Tri-City and as factors that removes barriers to economic development in the region;
- Improvement in transport infrastructure to meet the new transport needs of Tri-City citizens;
- Prevention of road traffic growth through the creation of an integrated organisational structure, functional and spatial transport system in the region;
- Improvement of the coherence of the region by increasing accessibility to sub-centres;
- Increase in the transport accessibility of tourist areas in the region;
- Reduction of the transport impact on the environment;

[68] Plan for Arrangement in Development strategies, Ministry of Regional development 2010 - http://www.mrr.gov.pl/rozwoj_regionalny/Polityka_rozwoju/System_zarzadzania_rozwojem/Porzadkowanie_dokumentow_strategicznych/Documents/Plan_uporzadkowania_strategii_rozwoju_reasumpcja_decyzji_RM_10032010.pdf

- Creation of an integrated urban transport system in the Tri-City including SKM, in particular harmonisation of the tariff / ticketing system in urban transport;
- Actions to reserve land in spatial plans for parking lots and integration nodes in the vicinity of bus stops and train stations in order to develop park and ride, bike and ride and kiss and ride.

14.6.3 Lack of Investment and Failure to Innovate

In the case of Tri-City one should take into account that local and urban innovation strategies are created in a different manner than in the case of national transport systems. Regions would rather transfer new technology from other areas using best practices than create own innovative ideas. Additionally regions differ significantly in the range of implementation of innovative solutions in transport, from minimal implementation in economically backward regions to very high implementation in large and wealthy regions.

As a result the following needs for innovations in the Pomerania region and Tri-City can be identified:

- Full and real integration of urban transport in the Tri-City (including infrastructure, technology, organisation, information, ticketing),
- Modern links connecting the city centres with the Gdansk airport,
- Revitalised railway regional network through new technological solutions,
- Reduced congestion through introduction of new systems of traffic management, e.g. rational mechanised and non-mechanised traffic in the city centre (particularly historic area) and microbus systems (Call-a-Bus Services - Demand Responsive Transport - DRT),
- Radical shift in urban traffic through the reorganisation of public transport and transformation of the urban districts of cities, including urban lift-sharing services (car-sharing or cycle sharing) and new generation regional railways or TramTrains, as well as implementing ecologically clean city vehicles (electric drive, gas, the hydrogen, hybrid, compressed air) or low emission zones – LEZ,
- Microbus systems (e.g. Call-a-Bus Services - Demand Responsive Transport - DRT), optimised parking systems and /or modern parking possibilities (automatic parking facilities), integration of public transport with cycle traffic.

The majority of those possible investments cannot be made under current development strategies and there is a significant risk that modernisation of transport network in Tri-City will be primarily a quantitative rather than qualitative improvement.

14.6.4 Lack of Capacity or Infrastructure

Infrastructure demand in the future can be assessed in the Tri-City area based on the study “Transport forecasts in the Pomerania region for the years 2013 – 2020”.

General assumptions

Based on studies conducted within the abovementioned document and the earlier work "Regional transport development strategy in the Pomeranian region for the years 2007 to 2020", it is assumed that by 2020:

- There will be no significant transformation of the structure of the settlement, and therefore there will remain a high concentration of population and the band-nodal structure of the Tri-City Metropolitan Area;
- By 2020 the population of the Pomeranian province will increase by 1.0% to a total of 2.2 million persons, including a decrease of 5.1% in the cities and an increase of 13.8% in rural areas - these conditions do not substantially affect the acceleration of population growth in demand for transport services. The largest population growth is expected in the districts surrounding the Tri-City;
- A further increase in private transport is expected - the rate of car ownership will increase by 32% by 2020;

- The mobility of Polish society will increase, this trend will affect urban transport (an increase in the metropolitan area of about 20%) and intra-regional travel as well as travel between regions.

Road traffic forecast

Road traffic forecasts assume that the increase in the number of registered cars will take place at a pace much faster than GDP growth. According to a national forecast for 2020, the number of cars in Poland will grow on average by 50% to 19 million. For Tri-City this means:

- Increased mobility of Tri-City citizens in 2020 by 20% to 2.6 trips per person per day;
- An increase in the total number of car journeys by 2020 of 70%;
- The share of total trips made by passenger car in travel in 2020 will amount to 35-45%;
- The share of total trips by public transport by 2020 will amount to 35-45%

Table 14-4 Forecast for private vehicles index /1000 inhabitants

Area	private vehicles index /1000 inhabitants (moderate scenario)		
	2002	2020	% of increase
Gdansk/Gdynia (district)	238-404	450	11-89
Sopot	462	650	19
For other districts	191-313	400	28-109
Pomeranian Voivodships	289	380	32
Average for Poland	285	430	56

(source: The General Directorate for National Roads and Motorways, Gdansk Department)

Table 14-5 Traffic forecast for the most utilised rural national roads in Pomorskie voivodship

Road No	section	20005	2010	2020	% of increase 2005-2020
1	Gdansk-Pruszcz	18 360	21 961	30 116	164
	Pruszcz-Tczew	19 990	24 651	35 171	177
	Tczew-Czarlin	15 400	18 429	25 287	164
	Czarlin-Rudno	13 482	16 698	23 954	177
6	Wejherowo-Reda	32 298	40 021	57 445	178
	Reda-Rumia	29 349	35 528	49 501	168
	Rumia-Gdynia	35 781	44 391	63 816	178
	Gdynia-Osowa	31 513	38 604	54 885	174
	Osowa-Straszyn	31 134	38 139	54 225	174
7	Zukowo-Gdansk	11 121	13858	20 030	180
	Gdansk-Woclawy	16 614	20 674	29 832	180
	Woclawy-N. Dwor	15 007	18 913	27 713	184
	N. Dwor -Nogat	13 614	16 816	24 042	177
20	Zukowo-Chwaszczyno	12 267	15 425	22 543	183
	Chwaszczyno-Gdynia	15 650	19 712	28 865	184

(source: The General Directorate for National Roads and Motorways, Gdansk Department)

By 2020, daily traffic volume on the national access roads to Gdansk will have doubled. On road no. 1 on the section Gdansk - Pruszcz Gdanski traffic will increase by 90%. On the road no. 6 on the section

Rumia - Gdynia traffic will increase by about 80%, while on road no. 7 in the section Gdansk - Woclawy traffic will increase by 80% and traffic will increase in the section Gdansk - Zukowo by 80%.

At the same time, by 2020 daily traffic on the voivodships roads will have increased by 300% compared to 2000.

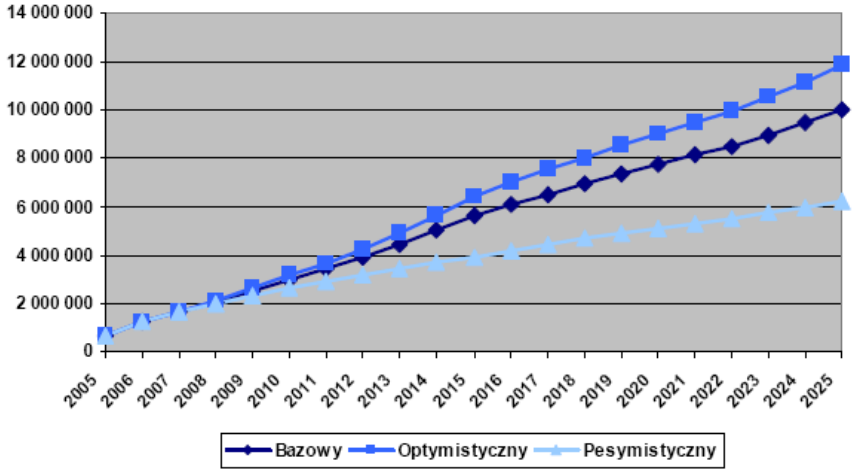
Rail transport passenger forecast

It is foreseen that in 2015 the number of daily rail travellers in Tri-City could reach 61,800. This implies an increase in the number of trains. A precondition to further increase in the volume of rail passenger transport in the region is devoting adequate financial resources to cover the deficit generated by railway transport during the period. The volume of demand for passenger rail services will depend on the quality and competitiveness of rail over other modes of transport.

An increase in rail transport will be expected after the construction of the Metropolitan Railway Line Gdansk - Gdansk airport - Gdynia, and linking it with the railway line to Kartuzy-Koscierzyna. It is estimated that a rail link from Gdansk airport will serve approximately 15-20% of all movements to and from the airport, regardless of travel for other purposes (e.g. passengers using the link to access outer districts of Gdansk and Gdynia located alongside proposed rail line).

Forecast for air passenger transport

According to "Study of the strategic development of airports in the province of Pomerania by 2025" an increase in passenger numbers during the years 2005 to 2025 can be expected. The results of passenger traffic forecasts are presented in Figure 14-14 below in the form of three scenarios: baseline, optimistic and pessimistic.



(source: Study of the strategic development of airports in the province of Pomerania by 2025, Price Waterhouse Coopers, Warsaw 2008)

Figure 14-14 The air transport and forecast in the Pomerania province for the years 2005 – 2025

The projections presented above assume that demand for air transport in the Pomerania province will increase by between 6.2 million and 11.8 million passengers per year, with the baseline scenario suggesting that the target year 2025 will witness 10 million passengers per year. The forecasts assume that growth occurs in all sectors of the market, but - in accordance with the broader trends in Poland and Europe - low-cost air carriers will be a key driver.

All scenarios assume that the primary source of growth in passengers numbers will be low-cost connections, where the number of passengers by the year 2025 will increase at a rate of 9% to 13% per annum from a relatively high base position. The fastest growth is predicted in chartered flights with an annual rate growth of between 16% and 21%. The rapid increase in charter traffic, although opposed to the prevailing trends in the European air transport market, reflects the trends on the Polish market.

Analysis of needs for transport infrastructure

Transport infrastructure in the Pomerania region is characterised by band configuration in east-west and north-south directions with transport nodes in seaports. The density of road and rail networks in the region corresponds to the pattern of population settlement, while the technical and functional characteristics of these networks do not meet the growing needs of transport.

Road transport

Total length of road network in the region is nearly 20,000 km. Network density is estimated at 63.3 km/100 sq.km. A total of eight national roads and 69 provincial roads run through the region. The overall condition of road surfaces can be described as being in need of modernisation.

Needs for development and modernisation of road network

There is a need to adapt the transport system of Tri-City to perform a role as a regional transport hub. A major step in this direction should be the construction of the A1 motorway (a section of 90 km was opened at the end of 2008). The motorway A1 is part of Corridor VI, to connect the north and south of Poland. In June 2008, the Kwiatkowski route, linking the Port of Gdynia and the Tri-City bypass was put into service. Another significant investment is the W-Z route, which connects Gdansk city centre with the bypass.

A significant part of the road network in the Pomerania province is still in a poor state of repair. Accordingly to a report by the General Directorate for National Roads and Motorways, about 12% of national roads and 50% of provincial roads are in need of urgent repair or technical improvements.

(source: A regional strategy for transport development in the Pomeranian province for the period 2007-2020, Marshal's Office, Gdansk 2008)

Figure 14-15 Road investments in the Pomeranian province

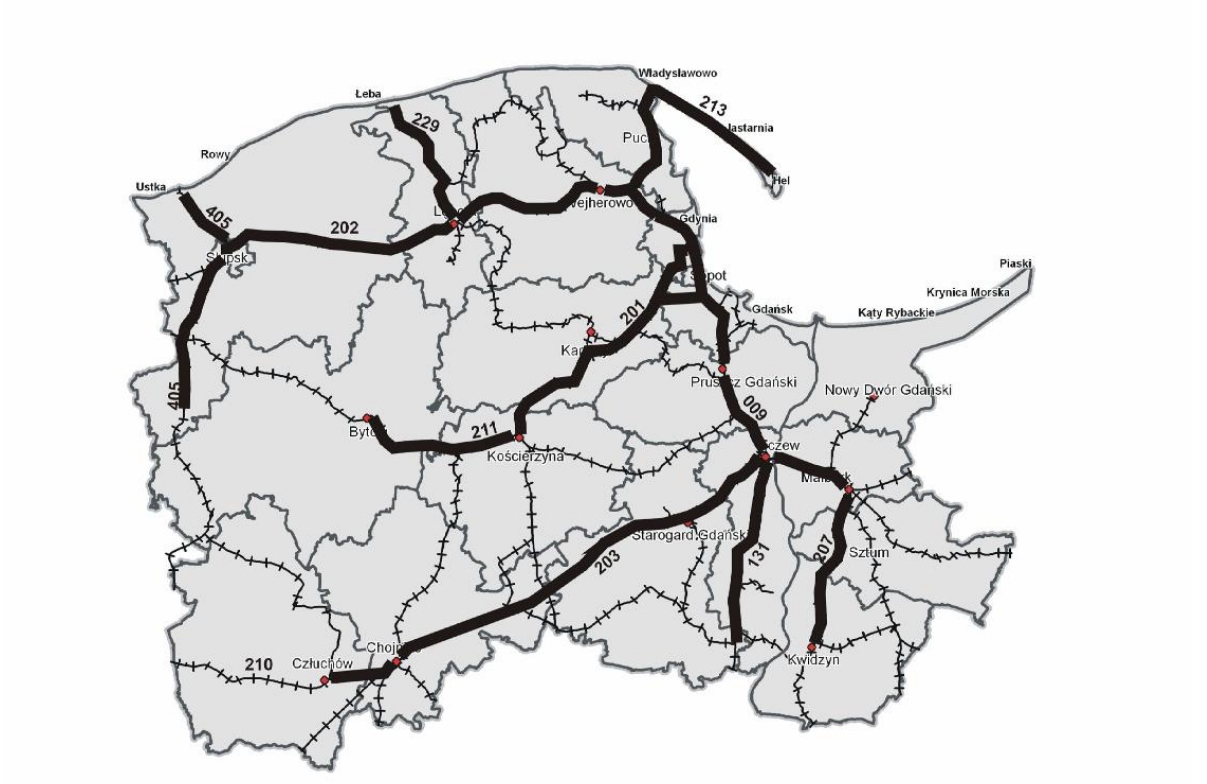
Railway transport

In Pomerania province there are 1,589 km of railway lines, including 684 km of line of national importance. PKP, Polish Railway Lines, manages the network. A second manager is the PKP Rapid Urban Railway in Tri-City, which is responsible for these lines, which serve suburban trains.

There are three railway corridors covered by international agreements AGC and AGTC running across the region. For international traffic, an important role is played by four lines: from Szczecin to Gdansk linking to the German border, from Gdansk via Warsaw and Krakow to the southern country border, from Gdansk through Bydgoszcz, Lodz and Katowice to the western border and from Gdansk through Olsztyn to Kaliningrad or to Bialystok and later on to Belarus.

Needs for development and modernisation of the railway network

The condition of rail infrastructure in the Pomerania is gradually deteriorating, which is reflected in the decreasing speed of trains. A speed of 40 km / h or less is forced over a length of 454 km (over 25% of the network). Deteriorating technical conditions are also observed on the trunk lines. PKP has reduced the length of railway lines on which passenger traffic runs. As a result, the population of the middle part of the province lacks access to rail transport.



(source: A regional strategy for transport development in the Pomeranian province for the period 2007-2020, Marshal's Office, Gdansk 2008)

Figure 14-16 Scheme of the railway lines particularly important for Pomerania region

Maritime transport

There are 12 sea ports, including two of national importance (Gdansk and Gdynia) in Pomorskie voivodships. Both have an advantageous geographical location and can operate as logistics and distribution centres. The port of Gdynia also supports passenger ships including large cruise ships. Other ports of the region are located in Ustka, Leba, Wladyslawowo, Jastarnia, Hel, Puck and Krynica Morska, Katy Rybackie and Piaski.

Short Sea Shipping plays an important role in the services of maritime tourism operations, primarily between the ports and the Tri-City and Hel Peninsula, as well as international services with the ports of Kaliningrad region or Sweden. A recent development worth mentioning is the initiative of the Tri-City self-governments concerning the creation of local cheap maritime transport to the port of Hel Peninsula, in order to relieve the roads leading to the peninsula. This has been met with great interest by tourists and citizens, while limiting the negative impact of traffic on the Hel Peninsula.

Air transport

Gdansk Lech Walesa International airport is located in the Pomerania province. Every year the number of passengers using air transport is growing. The airport is systematically being expanded. Two years ago the original passenger terminal was renovated. After this rebuilding its capacity is 2 million passengers annually. Work is also underway on a new terminal, which has the capacity to reach 5 million passengers per year.

Needs for development and modernisation of the airports

The airport in Gdansk is one of seven airports in the province. These are primarily military airports, which are planned to be converted into civil airports. Some of them will generate future airport traffic by acquiring low-cost carriers. In this respect, the region is the best equipped in Poland while Tri-City is the best equipped urban area in the aviation infrastructure in Poland. Three airports are located here:

- Rebiechowo (L. Walesa airport in Gdansk),
- Active military airport in Gdynia Oksywie - Kosakowo
- Active military airport in Pruszcz Gdanski.

High growth in air passenger traffic in the Pomeranian province points to the need for rapid modernisation and development of the airport in Gdansk as well as the future commercial use and transformation of other military airports.

Lack of travel information and harmonised pricing

In the Pomerania region insufficient integration of the subsystems of the transport system can be noticed, both at regional and metropolitan levels. As a result, there is no tariff nor regional co-ordination for scheduled buses, nor rail interchanges, nor functional integration at the metropolitan or regional and local levels. Transport users are not given opportunities to make a rational choice of routes and means of transport.

It is therefore necessary to take actions aimed at integrating the transport system in the region on both regional and metropolitan levels, including the promotion of a sustainable transport system and implementation of social needs transport. Integration of transport should be made through the integration of subsystems and integration between transport planning and land use planning.

The most tangible result of the integration of the transport system for the citizens of the Tri-City should be a reduction of travel time through the co-ordination of schedules, creation of conditions for faster movement and ensuring the availability of better public transport to facilitate modal shift. However, other important elements including frequency, punctuality, availability, security, ease-of-use, and reliability should be taken into consideration. Particular attention, especially in the initial period of integration, should be given to tariffs and appropriate information about public transport services[69]. The solutions should encourage users to treat public transport as a substitute for individual private car trips.

[69] G.Dydkowski, R.Tomanek: Ekonomiczno-finansowe uwarunkowania kształtowania usług zbiorowego transportu miejskiego, zbiór referatów z XXXI Krajowego Zjazdu Komunikacji Miejskiej „Kształtowanie oferty przewozowej", Wydawnictwo IGKM, Warszawa 2006, s. 56–57

Integrated urban transport requires co-ordination of decisions taken by local governments concerning:

- Extent of interaction and the role of particular transport modes in an integrated urban transport system (SKM, tram, trolleybus, bus, car)
- Integration of tariffs for the use of public transport and individual transport.
- Design of a common communication scheme taking into account the diverse needs of traffic patterns and resource allocation resulting from the location of housing, workplaces, cultural and educational institutions, administrative, public services.
- Increase in speed of travel by the specialisation of major traffic routes
- Environmental protection

Integration of tariffs is one of the most important activities of public transport integration. It should aim to establish a common and internally integrated tariffs for transport services and a common ticketing system.

In Tri-City tariff integration began with integration of urban transport in the Gdansk Metropolitan Area. An increasingly popular tool for implementation of a common tariff / ticket is a ticket in the form of a smart card – this is also a solution being introduced in Tri-City. In addition to the electronic ticket other applications can be added to the smart card, allowing use of other services within an integrated urban transport system. In this way an electronic ticket can serve as student card or a card allowing access to cultural facilities or services.

Tariff and ticket integration must be accompanied from the outset by integrated information and promotion of public transport services. Information should be comprehensive, informative, understandable, and continuously updated (dynamic). When providing information the use of modern technologies for their transmission and presentation is required. Moreover, introduction of the common information system should be designed as two-way channel, in an interactive way, so as to be able to retrieve information from passengers. In addition planned information system should be used to enable the integration of promotional activities to provide information about services. In respect to information provision it has to be said that currently there is no integrated service, although some preliminary works on electronic information boards are underway within Tri-City.

14.7 SUMMARY OF CONCLUSIONS

The transport system of the Tri-City area shows different degrees of integration of various services. Due to Poland's economy being a transitional economy, the advancement of transport integration has not progressed as far as in many countries where these processes were completed step by step over decades. The current situation resulting from this condition is not overly optimistic with only some integrated services mainly in short distance (city) routes. However this lack of established integrated networks could also be an asset if only experiences of more advanced systems could be utilised and many mistakes made by them in the process of their development could be avoided in the case of Tri-City. In this way, Tri-City could benefit from its "late-comer" status.

Tri-City is also an interesting area for the introduction of new integrated schemes for passenger transport because all modes are involved in city public transport with tram/bus/trolley, long-distance and city rail, (access to) air mode and ferries. This complicates the search for possible solutions as there are so many modes involved but at the same time there is a chance for the creation of a mutually supportive network. Tri-City is also a destination for many visitors from outside the region due to its unique touristic advantages both in the cities (especially Gdansk) and the region located at the sea and the lakes.

Integration of passenger services is currently one of the major objectives of local and central authorities. Careful analysis of the Tri-City case shows that although there is currently a system which cannot be described as anything other than a "bad practice example" it is rapidly changing for the better. Many of the proposed solutions are truly efficient and have the potential of turning the area into a well – planned and co-ordinated passenger transport network. In the process of modernisation of public transport in Tri-City the perspective of the sustainable transport development goals should be noted. This includes plans for development of the tramway network in Gdansk, introduction of new

modern buses etc.. Many projects and existing and envisaged solutions for improvement of interconnectivity include the objectives of sustainable transport development (modal shift, reductions of environmental impact, reduction of congestion or accidents risk), e.g. the metropolitan transport network, the southern rail link to the airport or improved links to the Westerplatte ferry terminal. Within this study the most significant of these developments are discussed and their impact on overall passenger transport is assessed.

The following main remarks can be formulated from the Tri-City case study:

- Passenger interconnectivity has long been neglected in Poland. It has never been a priority in transport system development and the little interconnectivity that existed before transformation was severed during the economic transition period. Recent development strategies both on central and local levels show increased interest in the problem of interconnectivity. In particular, local development plans for metropolitan areas call for this type of integration.
- Services offered have to be optimised in order to better serve the local population. In metropolitan internal integration is sought and in addition the integration of the city public transport system with external long distance links is necessary. The case of Tri-City shows potential for such an integration for improved tourists movements, and attracting people and investors to the region. But generally integration is considered because of local needs – integration of the region and improved mobility of people within the region are primary objectives in network integration.
- Integration is more easily achieved under one organisational structure. The Tri-City case shows that fragmentation of management and local rivalries are often crucial obstacles in integration policy. The integration level is also very mode sensitive. It is much easier to combine city public transport than long distance air and rail modes. This is particularly difficult for the creation of integrated timetables because the long-distance mode will as a rule not bend to the timetables of city public transport – the opposite will take place. It is also difficult to integrate the maritime mode with other modes due to its high dependence on port capabilities.
- There is universally high acceptance for integrated solutions among users.
- The Tri-City case study shows a number of barriers in integration of which the most important are financial (lack of infrastructure which has to be created) and organisational (different and contradictory responsibilities, inadequate legal framework).
- From the financial perspective the Tri-City case also proves that the financial support of the European Union through the Cohesion Fund and structural funds can be successfully used for the development of projects aiming at improved interconnectivity. Within several existing and envisaged solutions, these EU funds are one of the key sources of investment.