

Standards and norms for spatial planning of sport, that are already in force in developed countries of the EU Standards and norms for spatial planning of sport, that are already in force in Slovenia

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Table 1: Statistical indicators about Slovenia - census 1995

Table 2: Indicators on shares of sports areas per inhabitant and pupil

Table 3: Comparison of sports facilities and exercise grounds in 1975, 1982/83, 1991 and 1995 **Table 4:** Comparison of the 'Golden plan' (Germany) from 1980 and the situation in Slovenia in 1995 **Figure 1:** The share of all covered and uncovered sport buildings and exercise grounds per inhabitant in Slovenia in 1995 **Figure 2:** The structure of sports and recreation spaces

Figure 3: Application of the Steinitz-Rogers model for planning of sports and recreational buildings

Figure 4: Sport in School - Secondary Schools, the hierarchy of sports centres

Figure 5: Sports recreation, the hierarchy of recreational centres

Figure 6: Top-class and quality sport, hierarchy of sports centres

Figure 7: Top-class and quality sport, influential areas of the sports centres in Slovenia

For literature and sources see page 39.

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Building of the Slovenian Urban Village along Public Transport Routes

1. Introduction

The settlement of Slovenia is becoming more and more dispersed and inconsistent with the public interest, as well as the principles of sustainable development. Nor it is in compliance with the directions adopted 25 years ago by the Resolution on Major Purposes and Aims for Urban Planning defining that in the future new urban areas, production and other facilities should be developed mainly in concentrated settlements, connected by public transport, while revitalisation was to be limited primarily to the existing building stock. There are many reasons for the dispersed development of residential buildings and other structures in such a small and valuable territory as Slovenia. The same applies to the wasteful consumption of natural resources and aimless functional organisation of the settlement in our space. Such cases have been excellently presented and analysed by Mr. V. Drozg and others: undeveloped real reality market, deficient

land policies and regulatora mechanisms for directing urbanisation and urban management, urban design focuses on placement of particular buildings, rather than designing wider areas, incompatibility of taxation and financial policies, etc. One of the most important reasons is the "automobilization" of Slovenia and traffic policy, that allows unlimited use of individual cars.

The main objective of this article is to present recommendations/guidelines and best practices to manage these trends, more effectively and consistently, in compliance with the policy instruments of spatial development for settlements and traffic, on the basis of proven facts about the impact of motorisation, i.e. the effect of the use of cars on the settlement, and the impact of spatial development in Slovenia on the use of cars, and all related consequences resulting from the (un)sustainable development of Slovenia.

2. Automobilisation and the urban village

Since personal cars started to be used as a rather inexpensive and main traffic mode for the purposes of commuting, "the delivery" of children to schools and kindergartens, shopping, and other uses, it is no longer essential to live in a town or settlement just to be in the vicinity of a work place, school or department store etc. A personal car and a relatively well-developed road network allow us to live anywhere in the countryside providing good conditions to travel quickly and comfortably, to run errands to the nearest town or settlement. The number of people building houses on a plot inherited or purchased at a very low price outside the town has been increasing. If the documents are not obtained legally, then the construction is completed without a building permit since the liberal policy of spatial planning and market economy permit this irregularity. A personal car makes a dream come true to the majority of Slovenians (approx. 85 %): to live in their own house in the country, far from the hustle and bustle of a town. On the other hand the decrease, by the same percentage, accounts for the development of towns and settlements that have been foreseen by the polycentric development policy of Slovenia as the centres and main pillars i.e. the generators of a more co-ordinated economic and social regional development. As a rule, these towns and settlements have stagnated in development and growth. However, in their place, the gravitational rural hinterland is being anarchically urbanised. Slovenia is becoming an "urban village" or a "rural town".

Some believe this does not cause any harm since the living conditions are better than in town, and the landscape is not "ugly when dotted with nice houses". However, analyses based on common, public interest and demand indicates that the consequences of such a laissez-faire development of dispersed settlements and towns may be fatal (Drozg). With a dispersed settlement not only valuable land/space, energy and time (for commuting), unpolluted environment (due to traffic pollutants, inadequate facilities of communal infrastructure and long transmission lines) are lost, but also valuable potential for the development of a socially effective network of urban centres as well as development poles of individual regions.

The tendency of people to live in their own house in the countryside, or in the suburb, and not in the town itself (especially not in blocks of flats or multi-storey buildings) will

undoubtedly increase in the future. Suburbanisation as well as "rurbanisation" will continue unplanned and unorganised if no measures are taken to improve the situation. Owing to negligence, space will degrade even more, emission of traffic pollutants into the atmosphere will increase, etc., all in contradiction with the adopted international declarations and conventions. Our commitment (by the Kjøt Protocol) to reduce the emission of gases causing the greenhouse effect by 8 %, from 1986 until 2008, will not be feasible due to the increased car traffic resulting from the expanded dispersal of settlements. Therefore it is essential and high time that public interests and demands (also of our descendants) be protected. The principles, conditions and incentives for the future settlement are to be directed to spatially, environmentally, economically and socially more sustainable structures of towns and settlements. This is required since we are bound by several international conventions and declarations that we adopted as a state and on the levels of local communities (Rio Agenda 21, Carigrad Agenda Habitat, Vienna Declaration of UN on the Traffic and Environment, Declaration of the Central European Incentive on the Sustainable Traffic, Kjøto Protocol, OECD and ECE Directions, etc.)

Good proposals of measures to be taken for more efficient directing of trends related to the development of settlements are stated in the already quoted results obtained by the research on the dispersed building. In addition to the stated proposals, it is essential to add the principle, strongly emphasised and adopted in all current international conventions and declarations of the United Nations and the European Union: the principle of planning the spatial/urban development of towns and settlements, integrated with planned public transport - since it represents the most important part of the overall traffic system in the country considering sustainable development of settlement, reduction of emissions caused by the traffic, consumption of energy and land use, its cost-effectiveness and its social aspect. This paradigm dictates the necessity to plan further development of towns and settlements with a priority given to accessibility and their interconnection by means of public transport (bus, railroad), rather than planning towns and other settlements merely on the basis of accessibility by personal cars, as has been common practice up to the present. To be more specific, with financial, tax and other incentives, the development of new residential, production and other buildings is to be directed more or less toward the settlements within a radius of 5-8 minute walking distance from public transport - bus or railway station. A large number of the existing dispersed settlements will remain outside the existing "infrastructure" of public transport. These settlements should not be allowed to develop new buildings and facilities (except for the needs of local inhabitants). An exception is to be made for settlements that meet the conditions and capacities to develop into a locally well-regulated and compact settlements along the new public transport line, in compliance with the adopted (regional) spatial and transport policy of the municipality (area/region).

3. Public transportation

Inhabitants of settlements serviced by public transportation will be using it for commuting more and more frequently, provided the level/standard of public transport services are substantially improved (frequency of rides, co-ordinated timetable, joint ticket, convenient connections between different means of public transportation, comfort); the access and

parking of personal cars at the end of travel destinations limited, especially in centres of towns; tolls introduced for the use of highways for inner regional, local and suburban rides by a personal car. All these are in accordance with the policy of sustainable traffic development explicitly accepted by the Vienna Declaration and SEP Declaration on Transport and Environment. The open road system that is being introduced within Slovenia with numerous connections between towns and settlements with highways, have resulted in the unlimited use of highways in the regional transport system, which encourages the use personal cars for daily journeys into work centres and at the same time encourages further urban spread and dispersed settlement. Additionally, the harmful pressure of personal motorisation on the overburdened town centres and settlements has increased, as well as the competition of between personal cars and public transportation. All this makes an attempt to introduce an effective public transport system more difficult. The development of the above in co-ordination with community development is extremely important for a sustainable environment, economic and social development we respect. It is also a prerequisite for joining the European Union.

The principle of integrated planning of the spatial/urban development and public transportation systems has been established in some European countries for a long time, not only in the near vicinity of the suburban or underground railway stations in bigger towns but also around bus stations in the countryside (Sweden, Netherlands, Great Britain).

Figure 2 gives an example from the English guidelines for planners/designers of communities and transport. It provides a concrete solution of how to plan the development of the dispersed settlements in conjunction with public transport infrastructure.

According to these guidelines, besides the priority given to the rehabilitation and refurbishment of the existing settlements, the development of new residential buildings and workshops (for "domestic use" - local dwellers), if in compliance with strict criteria, is to be allowed only in those villages and settlements in the countryside that are already connected (or the connection will be feasible by providing a frequent and comfortable bus line) to the regional centre i.e. the centre providing services, work posts and social activities.

The development of new residential buildings, production facilities, shopping centres, etc., in settlements exceeding a 5- 8 minute walking distance from the bus or railway is not to be permitted station (as in Slovenia on the basis of the present spatial planning conditions). New housing development should be "deconcentratedly concentrated" only in smaller towns or settlements with the intersection of several bus lines or better where (at the same place) a bus and railroad station are interconnected (location B) within a maximum radius of 1500 metres (where the land is flat and considerably less in a hilly country) from a public transport station. The scheme indicates that in principle a new settlement or "urban" activities will be possible to develop exclusively next to a new railroad station (location Z).

In Slovenia such a development would be feasible along the new railway line Murska Sobota- Hodoš.

Figure 3 taken from the same English guidelines for developers/urban designers and transport planners illustrates how

to plan a new settlement on the outskirts or in the suburbs of the existing towns and larger settlements. New housing development and other urban activities are to be connected within walking distance of public transport stations that are linked to the new public transport spine (reserved only for urban bus and rail service) at the edge of the existing urban zone. Along public stations "local high streets" are to be foreseen particularly along the junction of two or more lines of public transport (locations marked with B). Access by personal cars is to be provided from the peripheral road (See Figures 3 and 4). Similar solutions could be feasible in Slovenia, e.g. joint planning of the foreseen railway line Lendava- Murska Sobota and spatial planning of the settlements Beltinci, Odrance, Črešnovci, Hotiza, Kapca, Gabrje.

4. Public transportation, a planning guideline for Slovenia

In Slovenia the principle/criterion that defines the development of settlements and towns to be planned to enable walking distance accessibility to a public transport station for all the inhabitants (including 50 % of the population unable to use the car), has still not been recognised, notwithstanding the fact, that the very same criterion has been acknowledged and recommended in foreign planning, practice and project policies for more than 25 years.

In Slovenia the first consistent design of a settlement that was elaborated on the basis of a principle according to which a settlement is to be built in the vicinity of the public transport station, was awarded the first prize in a project as part of the Yugoslav Invitation to Bid for Programme, Urban and Architectonic Conceptual Design of the settlement Žu- sterna III at Koper in 1978. The building plan was elaborated on the basis of the awarded project and projected individual "neighbourhoods" to be connected within a few-minute walking distance to the nearest bus station located on a special, local bus route running through the neighbouring centres and centres of settlements linking them with the towns of Koper and Izola.

The second, promising and recent attempt to connect further development of present towns and other settlements in to hinterland with public transport was made in a conceptual study of a regional system for sustainable transport and settlement in the Slovenian coastal area. Spatial development in this area is a particularly crucial issue and it is imperative that the present methods related to the management of coastal regions be radically changed since the coast is an exceptional public place of national importance. The coastal area of towns Koper, Izola and Piran with approx. 80,000 inhabitants and 26,000 jobs is classified as one of the most perspective urban areas of the state from the development point of view. Taking into account the Port of Koper considered as one of the Slovenia's key of public transport terminals, its littoral zone and border vicinity, the coastal region is ranked as a highly attracting area to boost economic growth and development of public transport. Additionally, Piran together with Portorož represent the biggest Slovenian tourist asset/potential since the area holds the capacity to accommodate the majority of tourist guests in the country itself. In this respect, the number of accommodations in Koper and Izola also exceeds the average. Consequently, the density of traffic has excessively increased and the settlement itself causes the traffic (mainly car traffic) to be above the avera-

ge (apart from the entry roads to Ljubljana, the freeway Sr- min- Koper-Izola is the busiest in Slovenia). However, the augmented density of car traffic is not only the consequence of coastal economic development, inhabitants themselves use their personal cars far more frequently if compared with their use of other means of public transport (the ratio between the rides in personal cars and public transport amounts to 84:16, which is the worst in Slovenia and clearly points out at asymmetrically and irrationally developed traffic system). This generates even bigger difficulties that coastal region and its towns have to cope with. The exaggerated use of personal cars is choking more and more the development potentials of this area and it stands as the main obstacle to development, since a personal car is becoming the main reason for the inaccessibility, poorer environmental, living, working conditions in coastal towns (Piran is dying); while on the other hand it further encourages the dispersed development and socially affects the dispersed settlement in their rural hinterland which will result in a degradation of the Istrian landscape.

The objective of the study was to disclose the long-term consequences affecting the valuable coastal region of Slovenia should the present "strategy " directing the development of settlement and transport continue in the same direction. Furthermore, the comparison is made with the concrete long-term solutions and development strategy in compliance with the European principles supporting the sustainable development of settlement and transport based on the up-to-date and efficient system of public transport which represents a "spine" of the settlement while a personal car, coastal and maritime transport, cycling and walking are only supplementary.

The study reveals that the continuation of present trends would result in the constant expansion of more important urban and suburban roads and, above all, the extensive building of parking places (at least 7800) in town centres and at their edges would be required. As already known, these measures would bring about only a temporary improvement followed by the problem of inaccessibility, which would again necessitate new expansion of roads and parking places. Such direction of development would cause the "americanization" of the coastal region as the towns would degrade into the "image of freeways", in addition, it would further impose the dispersed settlement with a low building density, large use of space, expensive communal facilities and would not be rational in terms of energy consumption. In addition, social, safety, urban-architectonic and environmental detrimental consequences are also not to be neglected.

The alternative strategy presents the introduction of a technology and public transport system that would assure such a high standard of transportation as to be competitive to the personal car (primarily in the area of the central development line on the coast). It means a gradual construction of a light rail system connecting the towns of Koper, Izola, Portorož/Piran and Sečovelje that would operate as a light urban railroad in towns and as a suburban railroad outside towns. Via comfortable stop-overs located at the stations of (suburban railroad, the central public transportation line on the coastal area should be connected with all other means of transport, which would represent an integrated system offering complete services of all interrelated transportation means (bus lines connecting the settlements in the hinterland, access by personal cars to the "park and ride" loca-

tions, cyclists, shipping traffic, all closely connected via joint stations/platforms with (sub)urban railroad lines). This strategy would require higher building density concentrated around selectively chosen stations of light (sub)urban railroad on the coast and bus stations in the hinterland. On one hand it would favour the settlement in selected, rural districts provided with the public transport system, which would facilitate the development of some quality space in coastal towns, while on the other hand it would substantially abate social, safety and environmental issues. The study indicates that such a network of public transport and the appropriate settlement would enable approx. 94 % of all population and 96 % of work places in three municipalities/region on the coast to reach the area of public transport within five minutes. The majority would start using public transportation provided the level of public services in this system meets the demands. Research proves that, in towns and regions providing the combination of rail and bus system, the inhabitants use public transportation 4-5 times more frequently than in towns offering merely bus service. The comparison of mobility by public transport in 54 West-European towns shows that mobility in towns with a rail system is 50 % higher than in towns providing bus service as the only means of public transport.

5. Conclusion

The presented cases clearly illustrate how spatial planning and urban designing are to be developed, indispensably in cooperation with traffic planners and taking into consideration the principles of sustainable development, further development of towns and other settlements integrated with public transportation and in conformity with the strategy adopted for the entire traffic system of the country, regions and individual municipalities.

For the implementation of "joint " projects related to the development of settlements and public transport, e.g. as designed in a study of public transport and settlement in the coastal region, it is necessary to find financial means for the development of public transport. In Slovenia this financing policy is still not in accordance with the standards of developed countries that encourage the development of urban and suburban public transportation systems by financing and co-financing the development of public transport infrastructure.

This is mainly due to the fact that local communities and towns are financially too weak to finance the development of the infrastructure on their own. The financial back-up offered by the government ranges from 30 % to 100 % of the total infrastructure value in different countries. Taking into account the circumstances in Slovenia, the estimated financial support provided by the government should cover 70 % of the total infrastructure value for urban and suburban public transportation. However, at the moment the government does not provide any financial assistance and towns and municipalities are left to their own resources. It is imperative that a new law be passed to regulate this question in conformity with the standards adopted by the European Union and in accordance with the directions that have been accepted in principle by the Agenda Habitat, and explicitly by Vienna Declaration on Environmentally Sustainable Transport as well as Declaration by Central European Incentive of Sustainable Transport.

However, the local communities are to cover the partial amount of costs for the infrastructure, equipment and vehicles. Normally, these costs overextend the amount of regular financial resources, therefore special, earmarked and temporary funds are provided for the implementation of such systems. In France and in Vienna companies deduct from their profits 0,5 - 2 % of gross personal income to the appropriated funds for the development and streamlining of the public transport system (in order to enable their employees to commute with environmentally- friendly public transport). In Vancouver - Canada and in Houston, Los Angeles - USA, a tax on increased profits has been introduced for shops, restaurant and

entertainment premises due to their location providing better transport accessibility. In fact, this is a kind of town annuity collection to be created with the assistance of (sub)urban rail construction. Since these projects relate primarily to the protection and improvement of the environment (substantial reduction of emissions caused by the greenhouse gases that are primarily originating from car traffic), a large part of funds for the implementation of these projects could be obtained from the funds and support programs that European Union allocates for this purpose. As this means breaking fresh grounds, it will be necessary to regain our consciousness and put a lot of effort to meet the appropriate legal, institutional, employment conditions and to establish the basic elements to implement the sustainable rather than destructive development of the urban village Slovenia.

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Figures and explanations:

Figure 1: Population mobility in settlements in Slovenia from 1991 to 1996

The map clearly indicates the stagnation of the population growth in all bigger towns in Slovenia - encircled white spots on the map (growth index 97,1-102.0) and the growth of urban sprawl particularly in the nearest suburban areas (growth 102.1 and more). In eight regional centres, i.e. Ljubljana, Maribor, Celje, Kranj, Koper, Novo mesto, Nova gorica and Murska sobota, the index growth in the period from 1991-1996 amounted only to 99,10, while in other Slovenian towns with less than 5000 inhabitants the index growth is 101,67.

Figure 2: Rural concentration and a "necklace of settlements"

Public transportation (bus and railroad) is to be the key element to solidify rural settlements. New residential buildings and urban activities should be concentrated primarily in smaller towns/settlements around the stations (railway) of public transportation. These are to be arranged so as to enable quick and easy changes between trains and buses (joint platforms, combined tickets and co-ordinated time table). Car parking ("park and drive" system) and access to bicycles (bicycle sheds) are to be easy, free of charge, and located along the railway station itself. Further settlement in small rural villages on the "brink" of towns connected to the local and other centres via a regular and enough frequent public bus line is to be limited; development of new buildings should be allowed only for the needs of local dwellers. The

expansion of other settlements/dispersed development outside the range of public transport lines should not be permitted any more and is to meet very strict criteria.

Figure 3: Examples of corridor principle

Along the new "spine" of public transport (bus or suburban/road rail) at the edge of the existing settlement or suburb, the new development is to be intensified around new stations, local centres, within the corridor of public transport.

Figure 4: The principle of a scheme for a series of residential neighbourhoods located around the stations of public bus lines

Figure 5: The layout of a bus route through a residential neighbourhood and the main "service" pedestrian street

Figure 6: A model scheme of a series of residential neighbourhoods designed on the principle of accessibility primarily to public transportation - the bus

Figure 7: A layout model of public transportation through centre of a residential area - transversally to the "service" pedestrian street (Aleš Šarec, Master's degree on Kungliga Konst Hogskolan, Stockholm, 1968, Johnson's Fund Award, Published in Arkitektur 3-1968)

Figure 8: Perspective of a conceptual design of a new town Bogesund, for 70,000 inhabitants, connected to the underground rail station in the vicinity of Stockholm.

(Design: Aleš Šarec, Detailed design of regional space of Stockholm; Stockholms Regionplanekontoret, Stockholm 1969; Published in Dagens Nyheter Nordost, March 5, 1970)

Figure 9: The conceptual design of the settlement Žusterna III in the vicinity of Koper on the route of a public bus transport through the settlement

Figure 10: Building plan of Žusterna III, I. phase (Source: Aleš and Lučka Šarec, Urban Planning Institute of the Republic of Slovenia, October 1979)

The design proposes a special bus line, reserved for public transport only, running through local centres of residential neighbourhoods, designed with smaller "Istrian" squares/market places and expansions as "local high street". Access by personal cars, except for urgent cases, has been proposed only as far as parking platforms, located at the edge of the settlements, via lower and upper peripheral roads on the slope of Markovec.

Figure 11: Model of the entire settlement Žusterna III

In the right corner of the picture the coastal road Koper-Izola can be seen with the proposed coastal arrangements. From Moleto centre on the coast, the main centre of Žusterna III was foreseen to be developed toward the slope of Markovec. On the right and left side of the settlement centre, between the existing settlements of Žusterna and Semedela, the completed, residential neighbourhood units were to be developed, on the "backs" and between the ravines of the slope, through the centres indicating a public bus line running on the special route towards Koper, past the hospital located on the hill, in the direction of Izola. Individual motor traffic and parking areas were planned at the upper and lower edge of the settlement. From here onwards, the streets and squares would be intended only for pedestrians. Unfortunately, the implementation of the building plan was not carried out in conformity with the design. Without knowledge and consent of the project designers, the building company illegally erected some units by 2 to 3 floors higher and at a smaller interval as specified in the detailed design. Moreover, the contractor chose their own architect (a

very bad one), who did not follow the UN obligatory directions for the typology and architectural designing of units, and as the consequence, the internal squares and yards foreseen for the playgrounds and pedestrians were embedded with concrete and turned into parking places for cars. Since the contractors did not build according to the adopted design but they favoured a rather conventional "slum" building of blocks of flats, only a small part of the entire settlement has been built on the lower side of the projected bus line which today is used for car parking. During the project implementation, a fresh design of a settlement turned into the opposite of projected - an example how settlements should not be built.

Figure 12: The design of public transport system and settlement in the coastal region

Light (sub)urban railroad from Piran to Sečovelje and from Valdoltra to Bertoki is to connect the most vital areas on the coast with its route running through the centres of coastal towns and settlements. From Lucija to Bertoki (with the node running past the railway station in Koper) a double-track railroad is to be conveyed while from Piran and Portorož a single-track railroad is projected with three bypasses. A single-track railroad would suffice from Lucija to Sečovelje and from Bertoki to Valdoltra. The (sub)urban railway, between the railway stations from Koper and Bertoki, is planned to operate on tracks of Slovenian Railway. Suburban bus lines running from the settlements in the coastal hinterland are to be connected with the platforms at the interchange stations of a suburban railway. Along these stations parking areas for cars ("park and drive") and bicycle sheds (within the network of new cycle tracks) are foreseen to be built. Maritime transport is to provide the additional offer and is to be connected with (sub)urban railway via interchange stations. Only 1.200 instead of 7.800 parking places are planned to be built in the areas of town centres.

The development of new residential and other buildings is to be directed into the areas being within 5-8 minute walking distance from the bus or railroad stations (on the map they are schematically designated with circles).

Minibus services are to be provided for those urban areas of Koper, Izola, Piran and Strunjan Bay left outside walking distance to urban railway. The area of Žusterna and hospital is to be connected to the (sub)urban railway via slanted elevators.

On the route from Portorož to Bertoki approx. 20.000 passengers are foreseen to travel per day into one direction and 40.0 passengers per day into both directions until 202, which is an average number of passengers for the technology of double-track (sub)urban railroad (In Germany traffic load for such systems range from 20.000 to 100.000 passengers per day).