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THE NECESSITY OF FARSIGHTED URBAN PLANNING WITH HOLISTIC AS WELL AS DETAIL QUALITIES. THE ÖRESUND REGION AS AN EXAMPLE

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ABSTRACT

Urban planning needs more farsighted visions and holistic views. These problems are illustrated in the Öresund region, but also attempts to find more comprehensive and sustainable planning guidelines and aims. High-speed rail and extended inter-modality can improve the regional and local public transportation system, which can be a frame for high quality, sustainable urban development.

Key words: urban planning, sustainable development, cultural heritage, transportation system, holistic view.

1. CHAPTER

In this article some main issues of urban planning and their interconnections are discussed: Quality of urban environment, structure of urban growth, transportation system and protecting of open landscape. This discussion is illustrated in the Danish-Swedish Öresund region – Danish Zealand (2,25 million inh.) and Swedish Scania/Skåne (1,3 million inh.).



Fig. 1. The Öresund region today with larger agglomerations and railways shown. Thin lines: Freight lines, mostly with planned future passenger service. Map by the author.

2. URBAN DEVELOPMENT IS RELATED TO THE TRANSPORTATION SYSTEM

Urban planning is today often characterized by rather short-time aims and service to particular interests. Regional planning is to a large extent decided by national infrastructure plans, often of sectorial kind, lacking sufficient holistic views. In fact, urban development and planning is a huge and complex topic, where tendencies and policies at different levels interact with each other, give conditions for each other and form the concrete urban landscape and built environment. For sustainable and high quality development, it is nec-

essary to include a holistic view and understanding of the process. Urban development is to a great extent characterized by the following transportation issue:

Increasing car traffic leads to extension of the road system, which in the next turn promotes to increasing car traffic and demand for more extension of the road system. Pollution problems might be solved by new kinds of vehicles, but three main problems remain:

- Increasing land use for roads and parking areas.
- The urban areas are cut through by barrier-shaping roads.
- Urban sprawl along the main roads with high accessibility by cars.

Commercial development along the main roads lead to stagnation in existing urban areas that are less accessible by cars, such as several city centres and other old districts. Such areas loose diversity, mixed urban life and attraction. In central city areas, extended roads and parking areas also shreds and tatters earlier continuous urban environments and create visual and functional barriers. On the other hand, new commercial areas are mono-functional. They are lacking diversity and qualities of mixed environment and they are not attractive for strolling or relaxing.



Fig. 2. "Nova" hypermarket in the outskirts of Lund. Such facilities promote car traffic and contribute to declining old city centres. Photo from Lund municipality.

3. PROTECTING THE LANDSCAPE IN URBAN GROWTH REGIONS

Urban sprawl leads to more a sparse built structure, longer distances, increasing land use and transportation work / inhabitant, and an increasing dependence of cars. This also weakens the conditions for an effective and attractive public transportation.

A special issue concerning urban sprawl and sparse built-up areas is the shrinking undeveloped landscape areas around the towns. Although several towns and village might

function together and form a greater functional urban region, it is of high value for local identity and the historic cultural landscape to keep open areas between the agglomerations and define clear limits of the built-up areas. Large commercial and industrial areas outside the towns and cities erase the clear division town / open landscape. Rather few, but problematically located buildings might have huge consequences in this sense.

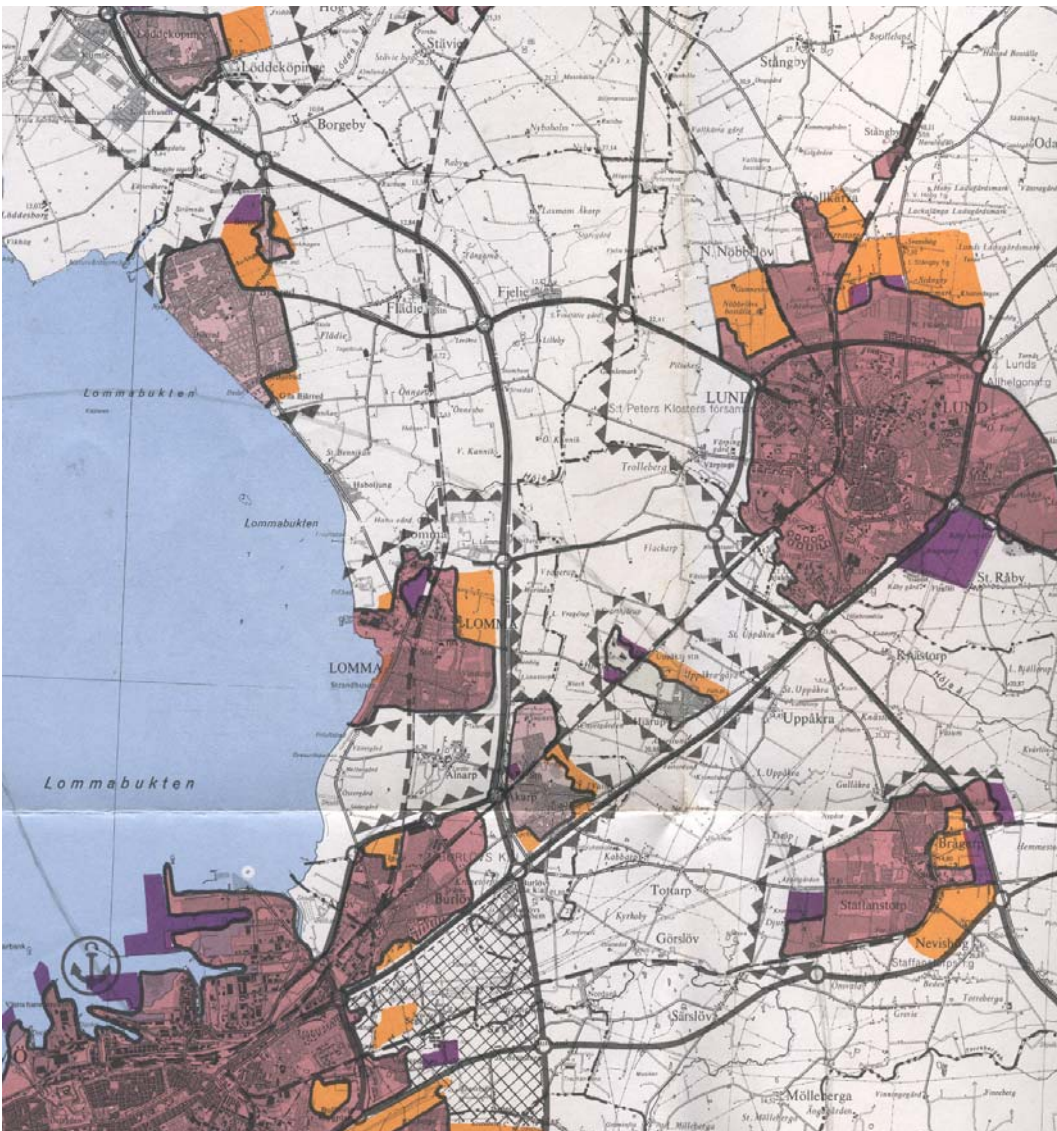


Fig. 3. Planned limits for urban growth between Malmö and Lund. Source: SSK Regionplan för sydvästra Skåne 1979. (Region plan for south west Scania 1979).

In England and the Netherlands special conditions have promoted clear limits between city and open landscape, preserving rural districts very close to densely built-up city areas. However, in Randstad Holland several such areas have been filled with greenhouses, destroying the open landscape views. Belgium has many examples of built-up strings, damaging the open landscape. In Poland such problems also exist.



Fig. 4. St. Albans, England. In spite of the proximity to London, a pastoral open landscape in direct connection with the town centre and the cathedral. Source: Google Earth

The Swiss urban planning researchers Peter Baccini and Franz Oswald launched in 1998 the urban growth model “Netzstadt”, which was a linear development pattern along communication lines. [1] A problem was, however, that these lines formed a network with many crossing points, which might lead to a continuous grid development with shrinking undeveloped areas between the built-up grids. Built-up areas would form continuity and open areas would be reduced to non built-up areas surrounded by built-up areas. The opposite is agglomerations as “dots” of different sizes, surrounded by the preserved, continuous open landscape. Such development promotes better identity of and identification with every agglomeration, although they might also be connected with each other in an efficient transportation network and be part of a larger scale identity.



Fig. 5. Densely built-up rural area, Flanders, Belgium. Villages and towns are gradually growing together. Source: Google Earth.



Fig. 6. Rural area in Randstad Holland. Greenhouses replace the open landscape. Source: Google Earth

4. CULTURAL HERITAGE IN THE FUTURE SOCIETY

The cities are crossroads of different economical and functional systems at different levels. International commercial and scientific structures meet the local systems and identities. The cultural heritage and the historic traces meet the global and future structures and development. Rationalistic and short-sighted development often leads to destruction of historical structures and values, but in recent decades there is a growing understanding for combining cultural heritage with international and far-sighted perspectives, e. g. in old university areas. Although cultural heritage and historical traces mostly have local connections, they add a valuable dimension experience dimension for visitors and users of the modern, contemporary venues. They provide attraction for visiting, living, working and locating facilities in the city. Also the relations city/landscape are important in this connection, as well as a minimum of unattractive neglected and leftover areas.



Fig. 7. The Science Village in Lund, between the European Spallation Source (ESS) and MAX IV. Remains of the old village with a wind mill are included in the modern international research society. Source: Map from Lund municipality.

5. HOLISTIC PLANNING OF TRANSPORTATION SYSTEMS

The transportation system has always had a crucial importance for city development and form. Before the development of cars, the cities had a limited spread and a rather com-

6. HIGH-SPEED RAIL – A TOOL FOR SUSTAINABLE DEVELOPMENT

High-speed trains can replace most domestic and even many inter-European flights, provided they have a high comfort and standard and allow speed up to 350, perhaps 400 km/h. Beside less energy use and much less pollution, high-speed trains make a number of stops between the end stations possible, which flights do not. If these stops provide easy change to interregional, regional and local connections the systems at different levels will work together in a symbiotic way and provide each other with passengers. In Sweden there is a discussion of construction of a high-speed train system versus upgrading and improvement of the existing rail system. But instead of being put as alternatives, they could be combined in a step-by-step development, both supporting each other. Studies have shown that high-speed rail built on bridges mean considerable reduced total costs and shorter construction time than traditional construction on the ground, and also better efficiency, higher speed and much better environmental quality. In fact, high-speed rail on bridges for 350 km/h speed cost much less than new conventional rail for 200 – 250 km/h.¹ Since such an efficient rail system including high-speed rail can take over many passengers from flight, planned extensions of airports can be suspended and thus large sums of money, can be transferred to rail development. High-speed rail on bridge have also a potential to be changed to Maglev lines. Rail will also take over from car traffic and existing railways will have increased capacity for freight traffic. Moreover, analyses show that reduced air and road transport saves environment and accident costs large enough to pay the construction of the high-speed rail in about 10 years.²



Fig. 9. High speed rail on bridge. More effective, less impacting the environment and less expensive than railways on the ground. Source: Picture by Wei Wanzhong in Dagens Nyheter, 10th September 2016.

¹ The presentation "Environmental friendly and cost effective high speed line design" by Per Corshammar, at the UIC World Congress on High Speed Rail in Tokyo 2015 shows that the average investment cost of 1 km double track traditional railway 250 km/h is 102 million SEK / km and for 1 km double track high-speed rail 500 km/h on bridge, 91 million SEK / km. Construction time for high-speed rail on bridge Stockholm – Malmö is 4 years and pay-back time 28. For the conventional line is this figures 12 years and 73 years respectively.

² The paper "Väginvesteringar eller höghastighetståg" by Per Corshammar 2016 shows that if the high-speed rail Stockholm – Göteborg/Malmö is well constructed, it can reduce road and air transport to a degree that the total costs, 225 billion SEK, correspond to 7 years of reduced environment and accident costs and 8 years of ticket income. The environmental charge of the bridge lines, including pillars, correspond to one year reduction of CO₂ emission from cars and flights.

In the Öresund region these problems can be clearly illustrated, but also attempts to find more comprehensive and sustainable planning guidelines and aims. Today high speed rail connections are planned through the region, but the potential of how to connect it with regional and local transportation is not sufficiently studied, and not either the optimal technical solutions. There is a need for a better overall intermodal public transportation system, connected with high quality urban development. The field between high-speed rail, integrated in an effective European system and local urban development must be seen within a complete far-sighted sustainable vision, with clear principles. This must also include principles as human scale, local identity and attractiveness of every town and city in the region, saving and using cultural heritage and historical traces, saving the un-built landscape between the agglomerations and avoiding urban sprawl.

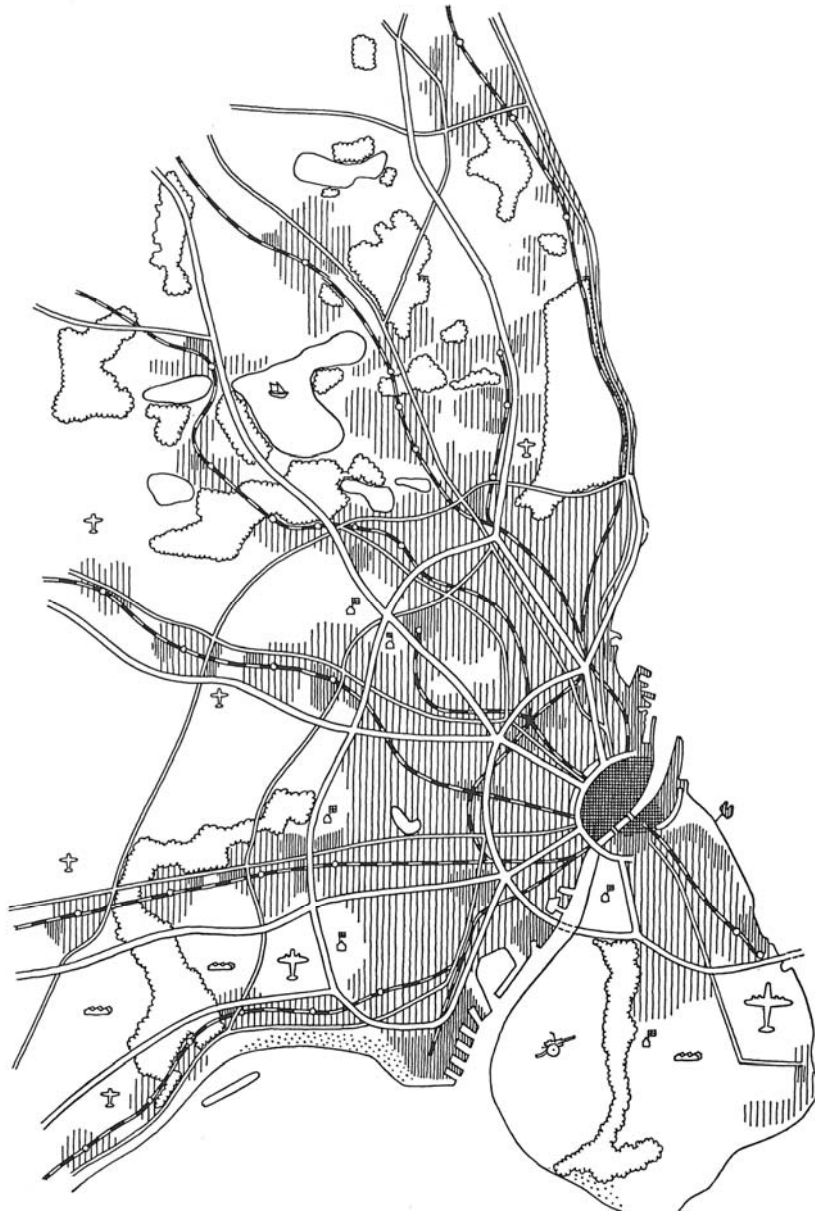


Fig. 10. The "Finger Plan" for Greater Copenhagen. Source: Arne Gaardmand: Dansk byplanlægning 1938-92 (1993). The development was planned like "fingers" along the radial railways.

7. BEGINNING REGIONAL PLANNING IN THE ÖRESUND REGION

The rail tunnel through the old town of Copenhagen (the “boulevard line”) from 1917 gave possibility of an efficient, star-shaped suburban rail system. Electrified commuter trains came in the 1930s and in 1947, a group of urban planning architects launched the “Finger plan” for development of Copenhagen.³ The urban growth was located along the rail lines as pearls around the stations. The “green wedges” between the “fingers” were secured by a new law, defining urban and rural zones. Urban growth was limited to the urban zones and prohibited in the rural or landscape zones, such as the “green wedges”. This was a very strong ruling instrument. Although the urban zones have later increased at the cost of rural zones, the planning legislation still protect rural zones from urban development.

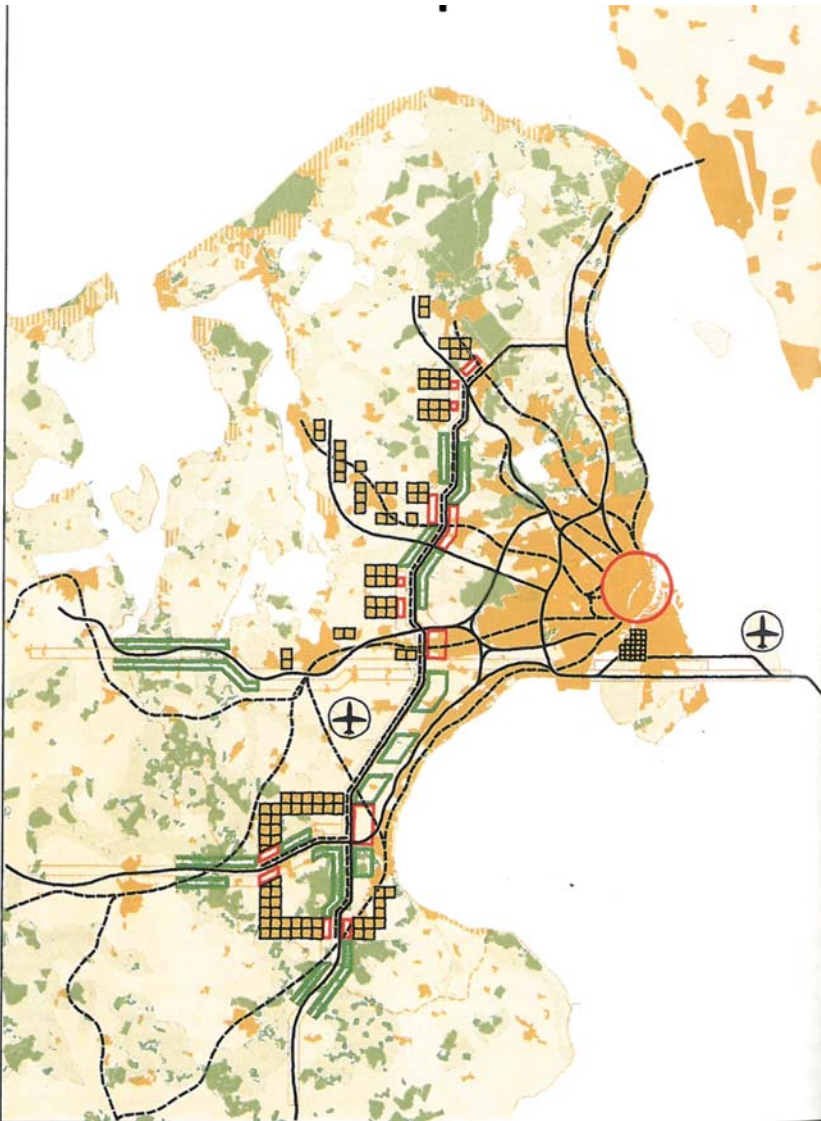


Fig. 11. The region plan 1973 for the Copenhagen area. The north-south transportation corridor can clearly be seen. Source: Arne Gaardmand: Dansk byplanlægning 1938-92 (1993).

³ The main authors of the Finger Plan were the architects Steen Eiler Rasmussen and Peter Bredsdorff. Since the responsible authorities worked slowly, the Finger Plan was made on more or less private initiative.

In the densely populated south-western part of Scania, at the Swedish side of Öresund, there was in the 1970s and 1980s a common regional planning in cooperation with the different municipalities. A part of this planning was to protect the open landscape between the agglomerations by defining limits of urban growth. This plan was only a guideline, not a legislative document. Today there is no common plan for saving the landscape between the agglomerations. Although there is a regional cooperation, nothing prevents every municipality to maximise its own plans for urban growth. There is again a growing risk that agglomerations will grow together.

The Copenhagen “Finger plan” with a radial transportation structure proved to be very foresighted, but it put a large press upon the central districts. Therefore a system of concentric ring roads has been constructed. They promoted, however car traffic, and as a first step, express buses along the rings were introduced. Now there are plans for a light rail along the most important ring. The regional plan from 1973 also made reservation for a north south “transportation corridor” just outside the Finger plan area. Its north end was planned to continue to Sweden, via a bridge or tunnel Elsinore – Helsingborg. At its crossing with the main railway from Copenhagen to Jutland, a new “secondary” main station was built; Høje Tåstrup. The corridor has not yet come into use, but it provides important future possibilities. A new regional railway is planned there, and a freight line and a high-speed line to Sweden have also been discussed. Also in Scania, a new freight line, not disturbing existing agglomerations, is also discussed.

The Öresund rail and motor bridge from Copenhagen airport to Malmö has revolutionized public transportation in the region. Every 20 minute a train connects Elsinore and Copenhagen with Malmö and Lund on the Swedish side and further to many destinations in south Sweden. This line is connected with a well-developed system of local and regional trains on both sides of Öresund. Also an underground metro line between Copenhagen and Malmö is discussed. However, the present refugee situation in Europe, when the EU countries selfish throw the refugees between each other, like Black Peter, instead of finding a common solidary solution, has lead to reintroduction of pass control between Denmark and Sweden, after 60 years of uncontrolled travelling. The number of working places in the Copenhagen area, available from Lund by public transport within an hour is reduced with 300 000, and from Malmö by 100 000. This results in doubled commuting time and less commuters and interchange between the Swedish and Danish parts of the region.



Fig. 12. The Öresund bridge. Source: Kristianstadsbladet 4th December 2015, photo by Erland Vinberg/TT.

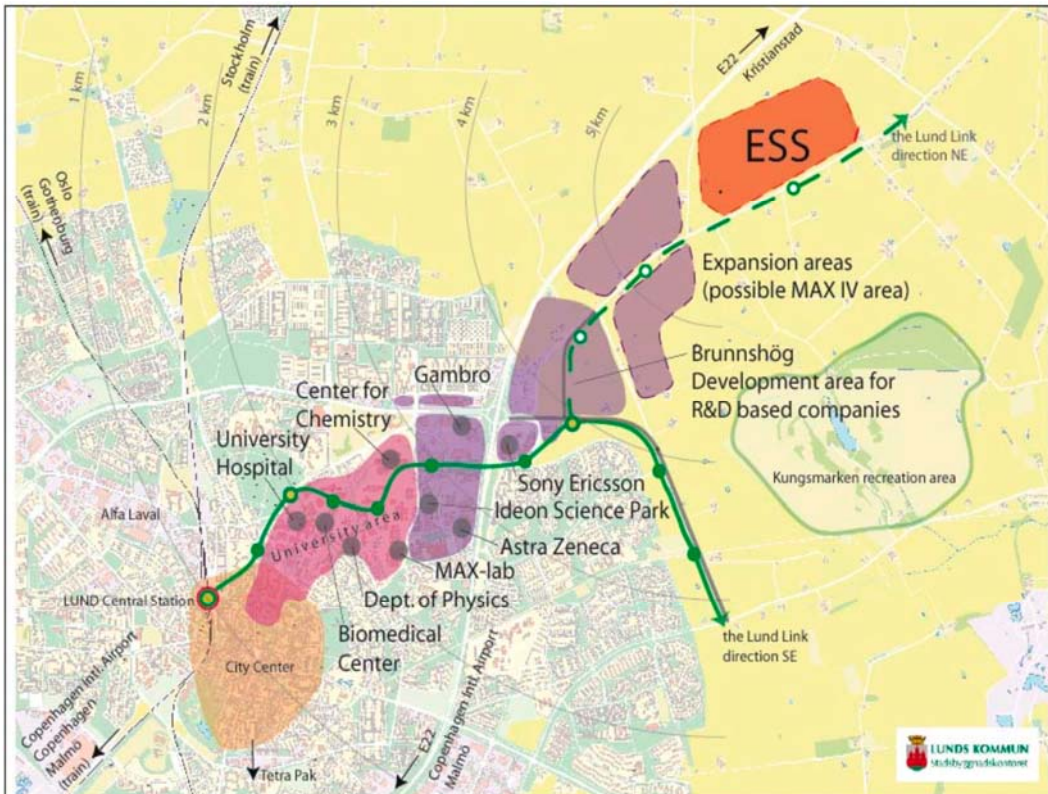


Fig. 13. The "Scientific wedge" from Lund city centre to ESS. The green line is the planned tramway. Source: Map from Lund municipality, 2007

8. EXTENSION OF THE RAILWAY SYSTEM AS STRUCTURE FOR URBAN GROWTH

The railway system is being extended by new lines, reopening closed station at existing lines and by reconstruction of some closed lines. Very important is the planned high-speed line Stockholm – Jönköping – Gothenburg/Malmö, which in Scania will have stops in Hässleholm, Lund and Malmö and, in a first step, continue on the existing Öresund bridge. Hässleholm is an important junction and exchange station. Unfortunately the line is so far planned on the ground, through narrow two-track sections in central Lund and the City Tunnel in Malmö, shared with slower trains. The ground solution is more expensive, gives lower speed and larger environmental impact than a bridge solution. In Lund and Malmö, a bridge line with external stations would be advantageous. In Malmö, this station would have connections with most regional and local trains as well as Malmö city centre, and in Lund, a new tramline would connect the external station, Brunnskög, with the central station. Along this tramline, new, dense urban development will take place, including university departments, research facilities and dwellings. Close to Brunnskög station, two research institutions at highest international level are under construction: The "Max IV Laboratory" and the "European Spallation Source" (ESS).



Fig. 14. Possible location of high-speed rail on bridge through Brunnskögdalen in Lund. Source: Map from the municipality of Lund, with addition by the author. Note the composition urban fringe – adjacent open landscape.

A high-speed railway is also discussed Oslo – Copenhagen, perhaps with one branch via Lund and one via Helsingborg-Elsinore. The idea is that it should continue to Hamburg and be included in a pan-European high-speed network. A study showed a line on bridge Oslo - Copenhagen would only cost 2/3 of a line at the ground.⁴ With such a network, Lund could be reached in 2 – 2,5 hours from Stockholm as well Oslo and Hamburg. There are also discussions of a line from Oslo to Stockholm and even from Stockholm via the Åland islands to Helsinki. This system of public transportation, from high-speed rail and interregional trains to regional and local trains, metro and tramlines gives a framework for sustainable urban development and a considerable decrease of the share of car and flight transport. With such a system, almost all public transports within Zealand and Scania would take less than one hour and between Malmö and Copenhagen city centre 20 min. But also Gothenburg and Jönköping would be one hour from Copenhagen. Attractive urban development has already begun on old harbour and brownfield areas in Copenhagen, Malmö and other cities, but the rail system makes areas in most Zealand and Scania attractive for development. This also brings to the fore the question about preventing agglomerations from growing together and save the landscape between them. This needs a stronger legislation, especially on the Swedish side, but also an enforced regional planning.

⁴ A study made by Rambøll in 2013 estimated the total costs of a bridge line Oslo – Copenhagen to 87 billion SEK, compared to 140 billion for a line on the ground, and a construction time of 4 years instead of 8 years. This study was presented at the website of Öresundskomiteen 09.04.2013 and in Helsingborgs Dagblad, the same day.

HIGH-SPEED RAILWAYS AND CONNECTING CONVENTIONAL LINES IN A HIGH-CLASS FUTURE RAILWAY SYSTEM

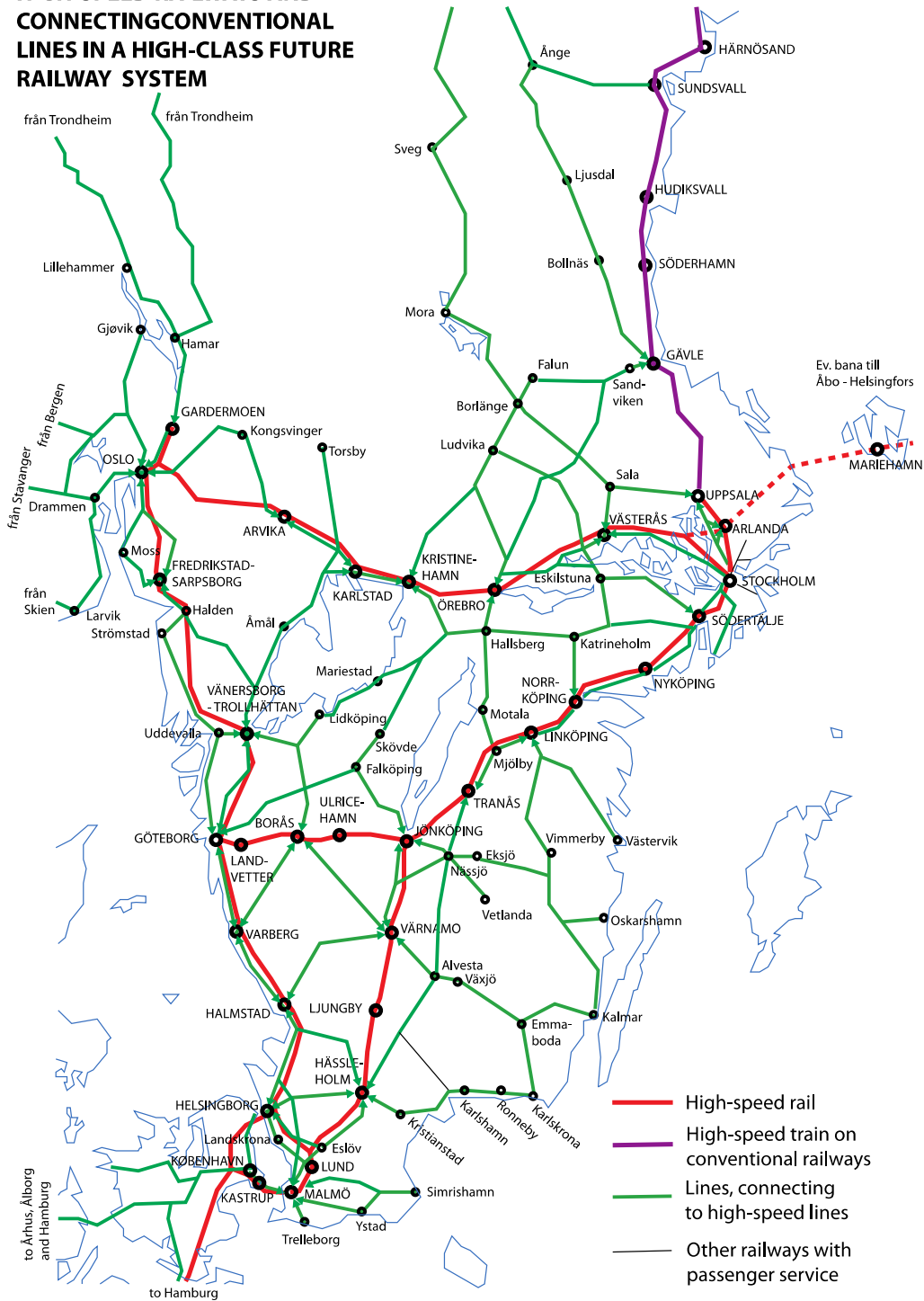


Fig. 15. Possible future railway system in the southern part of Sweden. Map by the author

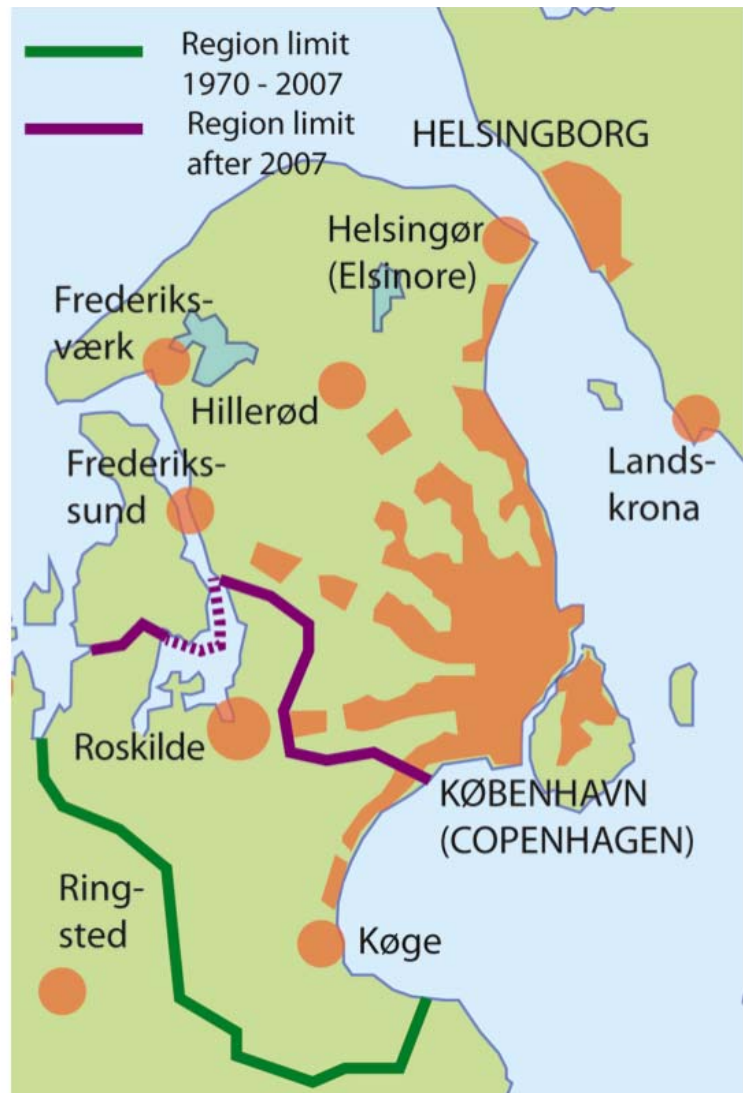


Fig. 16. The formal Copenhagen region in 1970 and 2007. Note that the southern suburbs towards Køge are now outside the metropolitan region, which is non-functional. Map by the author

9. PRESENT ISSUES OF OVERALL PLANNING OF THE ÖRESUND REGION

The Öresund Committee (Öresundskomiteen), founded in 1993, including both Zealand and Scania made analyses, partly financed by EU, of regional development as well as visions and proposals for coherent regional planning. In 2016 it was replaced by the Greater Copenhagen and Skåne Committee, which has strangely enough only an English name, no Swedish or Danish name. It is mostly a branding organisation. For overall regional planning this change is a considerable loss. In Scania, the regional authority is responsible of health care and public transportation and makes also analyses and guidelines for spatial planning. However, the municipalities have full autonomy to make their own plans, provided some national interests are satisfied. At the Danish side, regional planning is stronger. Zealand had earlier three main planning zones: The Metropolitan Region (*Hovedstadsområdet*), including Roskilde, Køge and Elsinore, and the two counties West Zealand and Storstrøm (south Zealand and the southern islands). The Metropolitan Region Council was responsible of public transportation in the area. The municipality plans had to follow the regional plans. In 2007 the 14 Danish counties were replaced by 5 larger regions. A new type of regional plan was introduced, but not mandatory for the municipalities to follow. The legal distinction between urban and ru-

ral/landscape zones is preserved. The West Zealand and Storstrøm countries were joined to the region, but paradoxically enough, the southern suburb zone of Copenhagen (Køgebugt Area) was moved from the Metropolitan Region to the new Zealand Region, together with Roskilde and Køge. Local public transportation (trains and buses) in both regions is taken over by the company Movia, owned by the regions and municipalities in the area. Several railways are, however under the responsibility of the national rail company (DSB), but there is a ticket cooperation. Altogether this means, that regional planning has been weakened at the Danish side and keep shortages at the Swedish side, and that the overall Swedish – Danish cooperation on spatial planning is also weakened. There is a strong need for a common vision and common planning guidelines in the Öresund region, but there is no clear responsibility and power to implement this. Still, professionals and politicians should continue this work like the Finger Plan 1947.

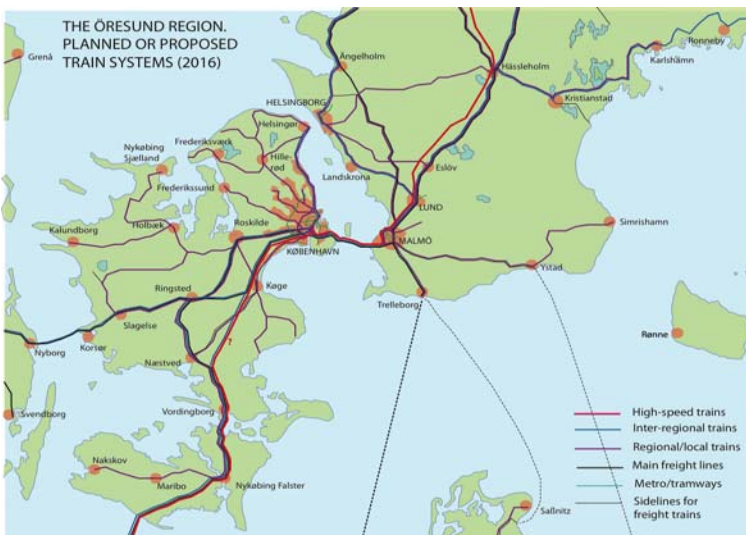


Fig. 17 Present plans for rail development in the Öresund region. Map by the author

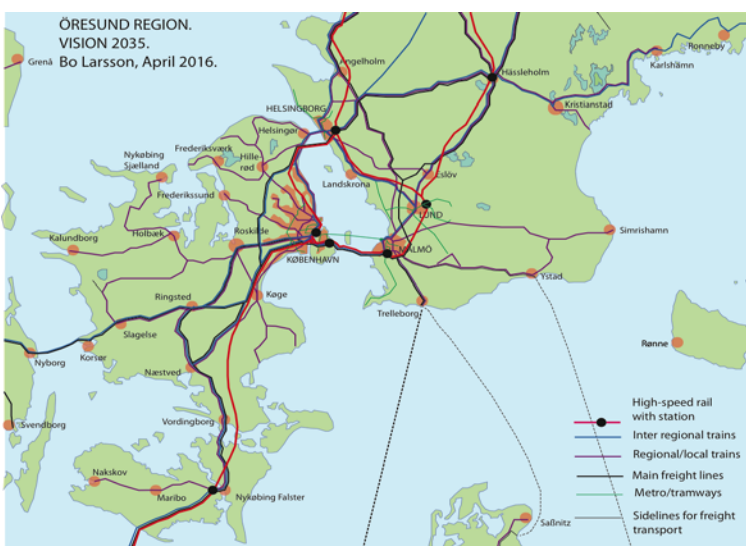


Fig. 18 .Possible structure of an extended rail system. This shows the connection between the international, regional and local systems. Map by the author.

Another issue is the link to Germany. The line Copenhagen – Hamburg is being upgraded and improved with the new Fehmarn tunnel. However, there is not yet any final decision on high-speed train 350 km/h, so important for Scandinavia. From German side, the Scandinavia link is of secondary importance.



Fig. 19. Ørestad, Copenhagen, a node in the public transport system. There are many working places and dwellings, and ambitious architecture, but the potential for an attractive, living and human city environment are not fulfilled. Source: By og Havn 2015. Aerial photo by Ole Malling.



Fig. 20. Sluseholmen, an industrial harbour area transformed to a canal city. Photo by the author.

NEW URBAN ENVIRONMENT IN THE ÖRESUND REGION

Undoubtedly, there has been many success stories concerning urban planning and development in the Öresund region during the last 15-20 years. Copenhagen Airport has developed to be a main node for rail transportation in the whole region. New train and metro stations have been centres of mixed urban development, e. g. Ørestad, Høje Tåstrup and Hyllie (Malmö). However, the urban design quality is varying. In Ørestad, much effort is put on specular solitary architecture, but the urban environment as such does not invite to strolling and meeting. Old harbour areas are being developed in Copenhagen, Malmö, Helsingborg, Landskrona, Elsinore, Køge, Holbæk, Trelleborg, Ystad, Lomma and other places, also at different quality levels. Especially successful are the North Harbour in Helsingborg, The “Bo 01”-area in Malmö, Sluseholmen in Copenhagen and Lomma Harbour. Among development in old industrial areas should be mentioned the Carlsberg brewery area in Copenhagen. Around local stations, villages and dormitory areas with detached houses are being developed to attractive small towns with traditional urban qualities, such as small streets and square: Staffanstorp, Hjärup, Lomma. In Lund the tramline to Brunnsög will be a structure-giving axis for urban development. The idea is to create a network of tramlines – light rails – connecting smaller agglomerations with potential for growth. In Lund there is an opposition against tramlines, regarded as old-fashioned, not suiting for Lund, too expensive and lacking flexibility. However, the critics disregard modern trams (maybe without overheads) and total cost–benefit discussions and do not understand that structure-giving transport should not be flexible, if urban sprawl is to be avoided.



Fig. 21. Part of the “Bo 01”-area in Malmö, seen from “Turning Torso”. A dense, mixed urban area with traditional streets and squares. Photo by the author

Fig. 22. Lomma Harbour. A former industrial area, transformed to a traditional “small-town” and garden city. Source: Municipality of Lomma



Fig. 23. Proposal for urban development at a sparsely built-up area in central Lomma. Source: Plan- och Byggnadskonst i Lund AB, 2016. The market place in the background can also be seen in the south east corner of the map at fig. 22.



Fig. 24. Staffanstorp. A former sparsely used area has been developed into a traditional town centre. Photo from the municipality of Staffanstorp.





Fig. 25. Hjärup between Lund and Malmö. A new urban district in north German historic style, constructed near a local train station. Photo by the author.

10. COMMENTS ON SZCZECIN

Many lessons could be learned in the Öresund region – both positive and negative – and this could also inspire the Szczecin region. After the collapse of communism there has been negative attitudes towards public urban planning and openness for laissez-faire development. Today there is a large understanding that conscious planning and environmental policy are necessary for obtaining a sustainable development. West Pomerania and the adjacent German area have excellent conditions for a common regional planning and urban development based on a rail and tram network. The landscape conditions with sea, river, lakes, forests and hills is attractive as well as the proximity to Berlin. Szczecin has a beautiful position along the Odra river. Old harbour areas have a potential to be very attractive and well located urban districts. The on-going restoring the Old Town of Szczecin is a very important first step. I wish the Szczecin area a prosperous future!

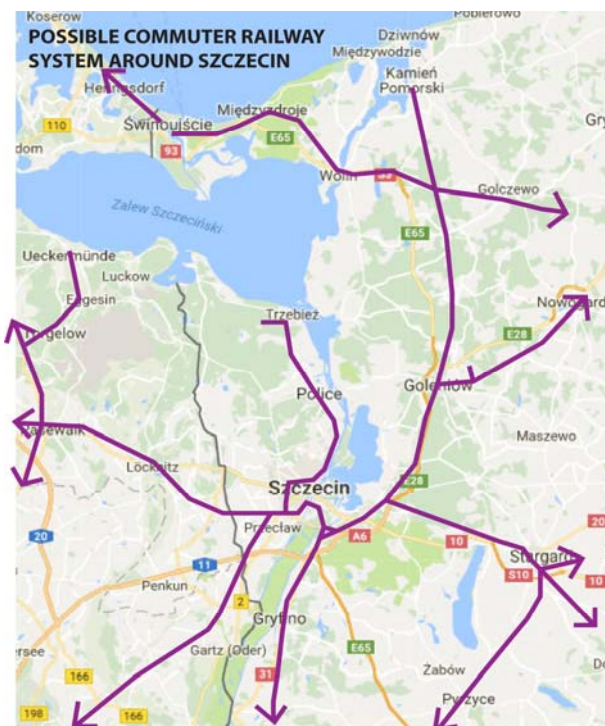
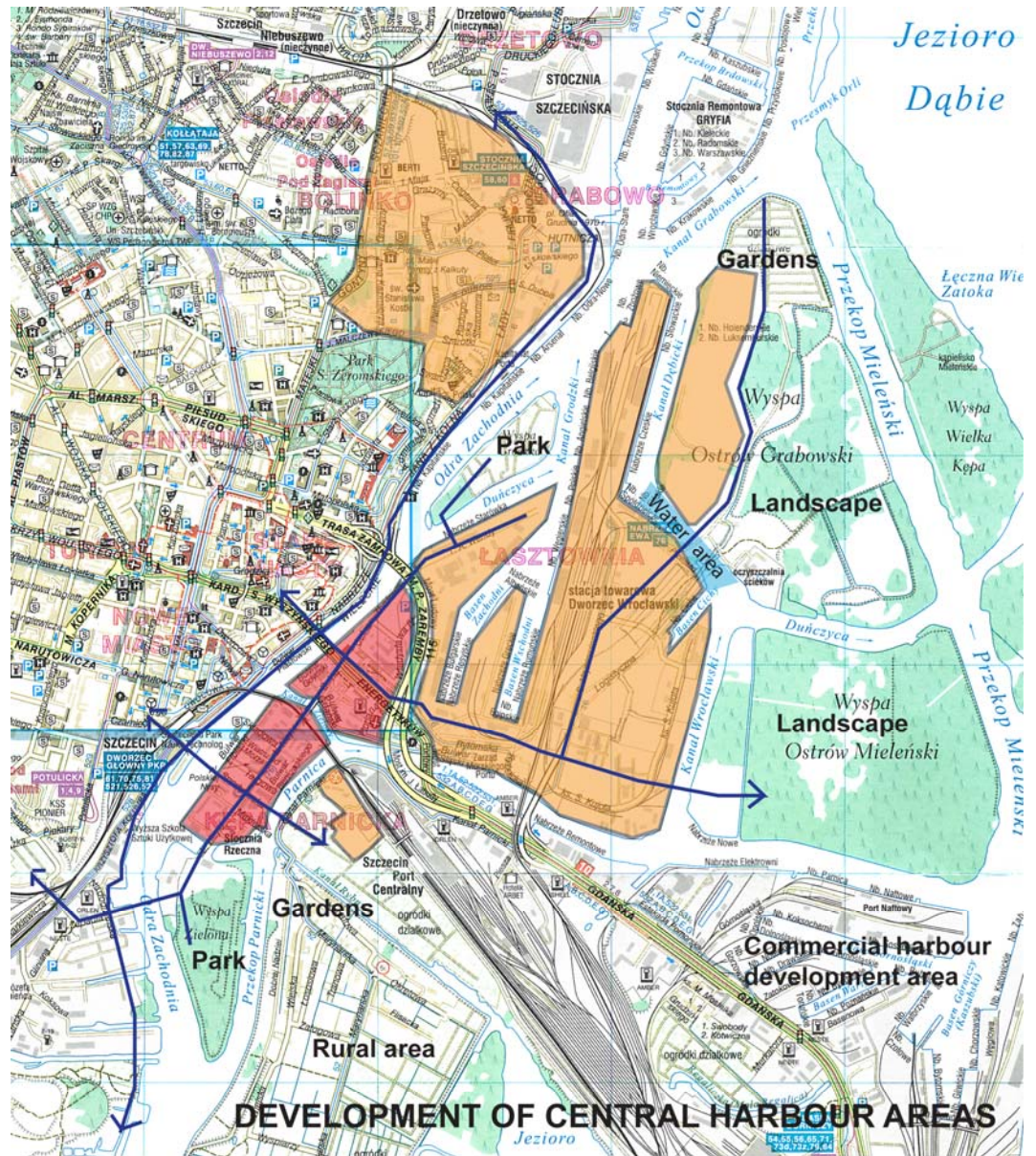


Fig. 26. The railway system between Szczecin and Świnoujście, with possibilities for a commuter train system. Google Map with additions by the author.



- Important axes for biking and walking
- Mixed half-dense urban development
- Dense, city centre urban development

Bo Larsson, May 2012

Fig. 27. Proposal by the author for development of the central harbour area of Szczecin. The proposal is drawn on an official map of Szczecin

BIBLIOGRAPHY

- [1] Baccini, P. and Oswald, F. (Hsg.): *Netzstadt. Transdisziplinäre Methoden zum Umbau urbaner Systeme*. Zürich, Hochschulverlag AG an der ETH Zürich, 1998.
- [2] Corshammar, P: *Environmental friendly and cost effective high speed line design*. Presentation at UIC World Congress on High Speed Rail, Tokyo, 2015.
- [3] Corshammar, P: *Väginvesteringar eller höghastighetståg*. Work paper, Lund, 2016.
- [4] Gaardmand, Arne: *Dansk byplanlægning 1938-1992*. København, Arkitektens forlaff 1993.
- [5] Larsson, B & Thomassen, O: *Urban planning in Denmark*. In Hall, P. (ed.): *planning and Urban Growth in the Nordic Countries*. London, E & FN Spon, in the series Cherry, G. E. & Sutcliffe, A.: *Studies in History, Planning and the Environment*, 1991.
- [6] Corshammar, P: *The Scandinavian 8 Million City. Corridor of Innovation and Cooperation (COINCO). Slutrapport*. Malmö, Rambøll, 2012.
- [7] Helsingborgs Dagblad: *Förslag om höghastighetståg over Hallandsåsen*. 9th April 2013.

AUTHOR'S NOTE

Bo Larsson is architect, Techn. Dr and Docent (assistant professor). He works parallel as researcher in urban planning as well as practicing in the field. His main research projects concern urban planning history, overall planning and urban design history of the Nordic capital cities and of Lund, improvement of urban qualities of suburbs and questions concerning cultural heritage and historic traces in current and future urban planning. Three projects have concerned cultural heritage, memories and planning policies in east-central European cities, where most of the population disappeared during and after World War II, the national borders changed and where new inhabitants took over the buildings and environments of the vanished population. Bo Larsson is also engaged in questions concerning urban development based on sustainable transportation systems, e. g. rail and tram. Bo Larsson is affiliated to Centre of European Research at Lund University, and has earlier worked at the departments of architecture / urban planning at the Royal Academy of Fine Arts in Copenhagen and at Lund University. As practitioner he works at *Planoch Byggnadskonst i Lund AB*. He was co-starter of this bureau in the 1990s, in connection with planning of the new town Alsike between Stockholm and Uppsala.

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