

HLJ
Review
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29 March 2011

Helsinki Region Transport System Plan HLJ 2011

Abstract



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The Helsinki Region Transport System Plan (HLJ 2011) is a strategic, long-term plan that aligns regional transport policy, determines common goals for the development of the transport system, provides a development scheme for implementing the goals and assesses the impacts of the plan. A key aim is to reach binding decisions and to produce a Letter of Intent on the development measures related to the Helsinki region transport system to be implemented during the next few years, and to ensure that the measures are implemented and funded jointly by the parties involved. The transport system plan is compiled approximately every four years.

HLJ 2011 Draft Transport System Plan was completed in autumn 2010 and circulated for comments. The plan was finalized in early 2011 on the basis of the comments received. The Executive Board of HSL decided on 29 March 2011 to approve the Transport System Plan, to take note of its impact assessment (environmental report) and to approve the transport system vision and development program and the sets of measures included in them (Transport System Decision). On 19 April 2011, the Board of the KUUMA municipalities approved the Transport System Decision made by the Executive Board of HSL.

After the Transport System Decision, the aim is to produce a Letter of Intent on the implementation of HLJ 2011.

Starting points for HLJ 2011

The transport system must provide residents with seamless and diverse range of mobility options, and provide business and industry with well-functioning transport options both at present and in the future. The transport system must promote the region's development, competitiveness and wellbeing in line with the development goals. Helsinki region is the hub of national and international transport connections in Finland, and also these connections need to be sufficiently smooth and free of disruptions.

HLJ 2011 covers 14 Helsinki region municipalities (Fig. 1). The issues affecting the development needs of the Helsinki region transport system include growth of the region, land use development, and expansion of the commuting area. Both the Helsinki Region Land Use, Housing and Transport (MAL) work and HLJ 2011 plan provide for significant population growth in the Helsinki region to around 1.8 million by 2050. According to the National Land Use Guidelines (VAT), the transport system needs to be developed so that it mitigates climate change and contributes to a coherent urban structure as well as adequate housing production.

The preparation and implementation of HLJ 2011 are an integral part of regional cooperation of the 14 Helsinki region municipalities on land use, housing and transport. The Helsinki Region Cooperation Assembly decided on 5 June 2007 that in future the Helsinki Region Transport System Plan is prepared as a joint project of the municipalities of the entire Helsinki region.

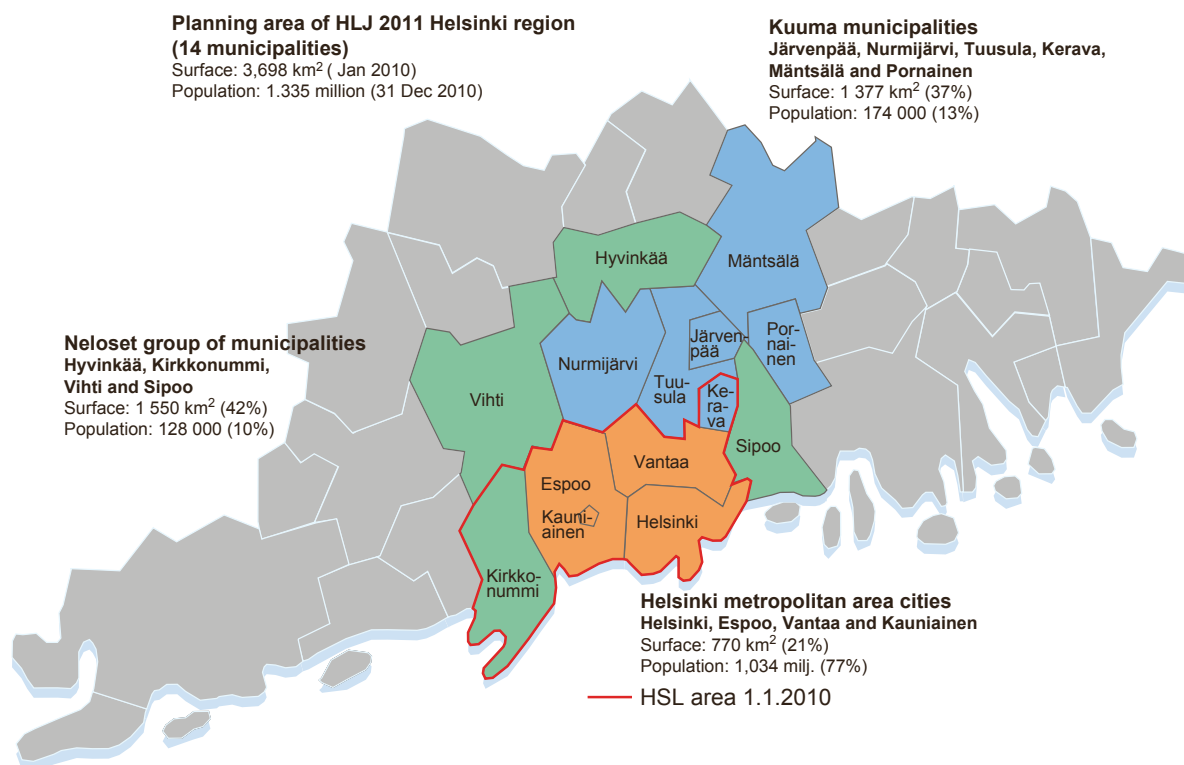


Fig. 1. Planning area and key figures of HLJ 2011.

Mobility and transport

The residents of the Helsinki region make about 3.9 million journeys on a regular weekday. Out of these journeys, 43% are made by car, 22% by public transport, and 32% on foot or by bicycle. There is significant variation in people's travel habits between different areas of the region (Figures 2 and 3). Opportunities for using public transport are remarkably better in the metropolitan area than elsewhere in the Helsinki region particularly due to more efficient land use and high service level of rail transport.

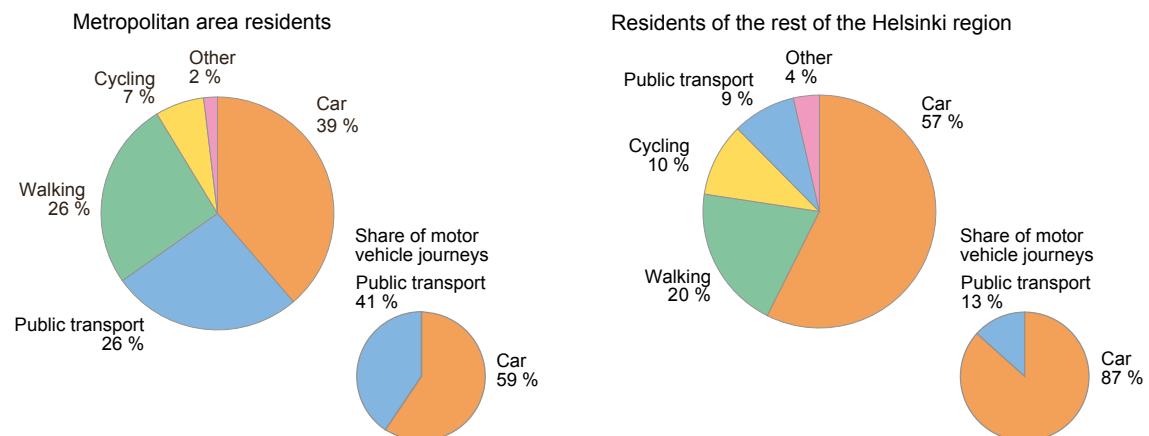


Fig. 2. Modal split of the residents of the metropolitan area and the rest of the Helsinki region by number of journeys. The journeys include journeys both within and outside the areas. Source: Extensive Traffic Survey (LITU 2008).

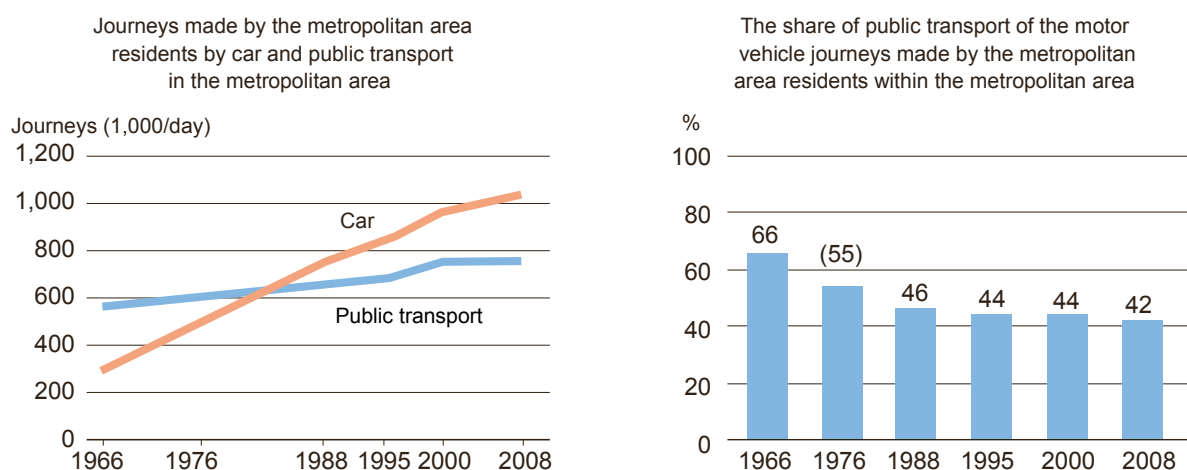


Fig. 3. Journeys made by the residents of the Helsinki metropolitan area (Helsinki, Espoo, Vantaa, Kauniainen) by car and by public transport within the metropolitan area, development from the 1960's to the present day, and the share of public transport of all motor vehicle journeys. Source: Extensive Traffic Survey (LITU 2008).

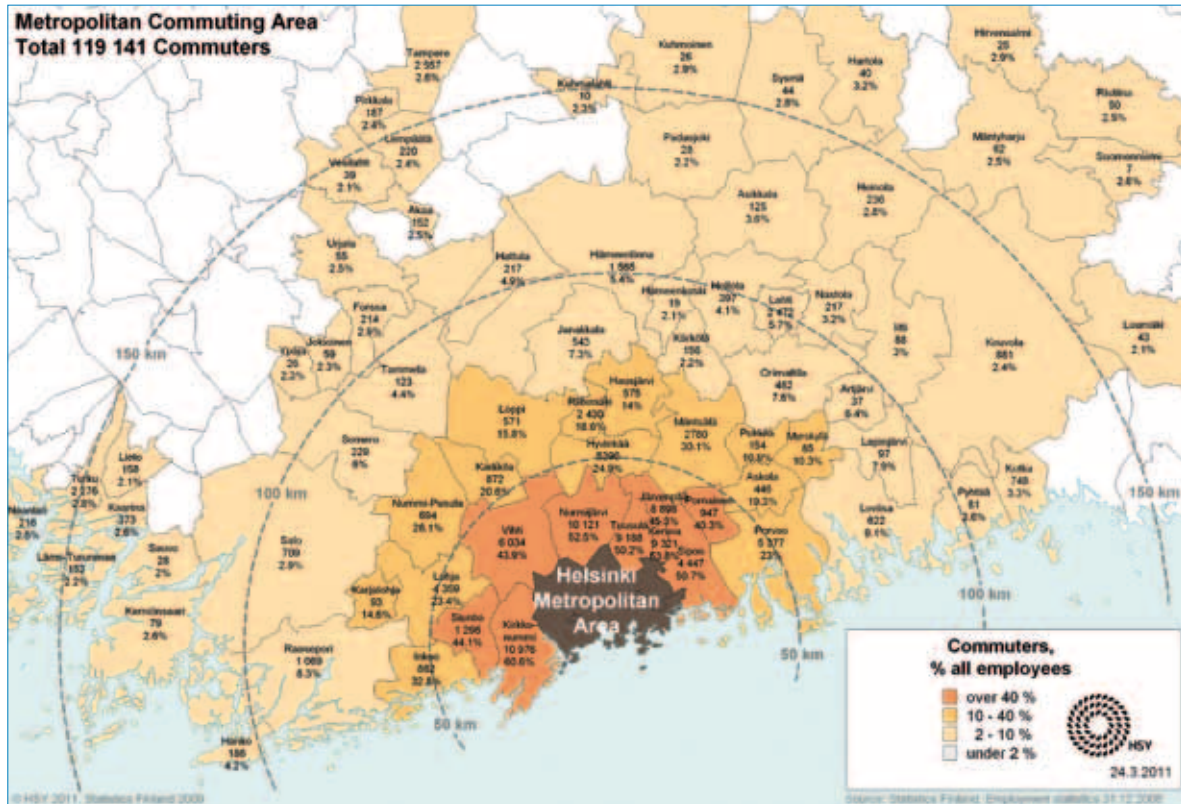


Fig. 4. Share of people commuting to the metropolitan area among the working population of the municipality 2008. Source: Statistics Finland, employment statistics; map HSY.

Commuting to the metropolitan area has increased considerably during the past decades. The increased commuting is due to the expansion of the commuting area of the Helsinki metropolitan area and increased population. The commuting area of the Helsinki metropolitan area extends to as far as over one hundred kilometers from the region's center (Figure 4). Commuting over longer and longer distances has increased due to changes in the economic structure, labor and housing markets, improved transport connections and increased motorization.

The number of journeys in the Helsinki region is forecasted to increase by nearly 30 percent by 2035. It is estimated that without significant changes in the operating environment, car journeys will increase faster than public transport journeys. Journeys made on foot or by bicycle are forecasted to increase more slowly, among other things due to the expansion of the region's urban structure.

Underpinning the challenges and threats to the development of the transport system identified in the preparation of HLJ 2011 is often urban sprawl. Among other things, urban sprawl increases the traveling distances and makes it more difficult to provide competitive public transport services. Also the conditions for walking and cycling deteriorate as distances grow longer. Increased car use increases transport emissions and noise and reduces safety. Cars driving at high speeds put pedestrians and cyclists at risk.

Interaction in the preparation of HLJ 2011

HLJ 2011 plan was prepared as a joint venture between the region's municipalities. The plan was prepared on the basis of the Helsinki Region Transport System Plan Framework Program approved by the Executive Board of the Helsinki Metropolitan Area Council (YTV) on 13 June 2008. The work was coordinated by HSL's HLJ Committee, which included representatives from HSL's member municipalities, KUUMA municipalities, Neloset group of municipalities, State transport authorities and other partners in cooperation.

Interaction took place mainly with authorities but also different civic organizations and residents were provided with the possibility of participating in interactive meetings and giving feedback. The aim of the interaction was to offer possibilities for participating in the drawing up of the plan and the impact assessment, to develop cooperation between different actors, and to gather and highlight different views on the transport system plan.

The HLJ 2011 vision and key goals approved by the HLJ Committee on 3 June 2009 served as starting points for the preparation of the plan and the impact assessment. The vision of HLJ 2011 is that high-quality, eco-efficient means of mobility and transport promote development and wellbeing in the region. The key goals have been formed on the basis of surveys and studies conducted on the state of the transport system and the region's development, as well as societal goals.

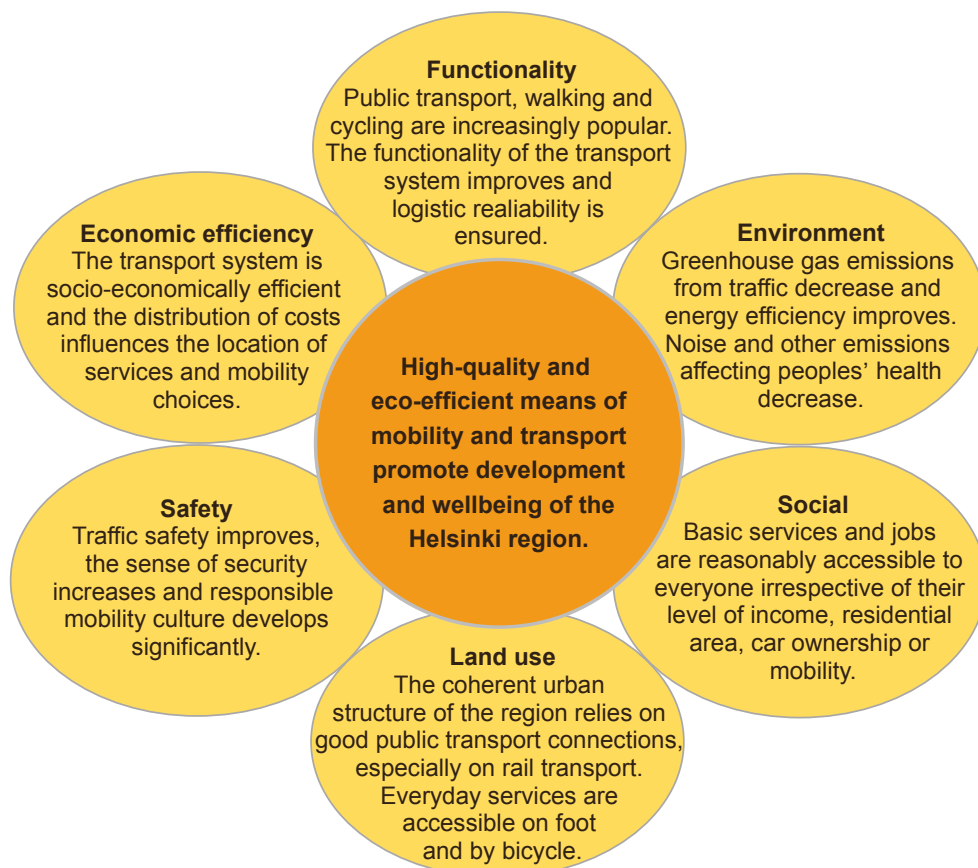


Fig. 5. HLJ 2011 vision.

Sector	Key goal
Economic efficiency	1. The socio-economic efficiency of transport improves 2. The economic efficiency of public transport improves
Functionality	3. The competitiveness of public transport relative to the car improves 4. Conditions for walking and cycling improve 5. Congestion does not impede the movement of goods transport
Environment	6. Greenhouse gas emissions from traffic decrease on target 7. Exposure to traffic emissions and noise, as well as health hazards from traffic decrease
Social	8. Accessibility of everyday services and jobs for those without a car improves 9. The cost of mobility does not restrict basic mobility
Land use	10. Land use solutions support walking and cycling 11. New land use is located within public transport city
Safety	12. Serious personal injury accidents decrease

Fig. 6. Key goals of HLJ 2011

Sub-studies dealing with different aspects of the development of the transport system played a central role in the preparation of HLJ 2011. The studies established development policies and proposals for measures for the purposes of the plan. The sub-studies of HLJ 2011 are:

- Transport system level means for combating climate change, Tool kit
- Helsinki region congestion charge study and its follow-up study (Ministry of Transport and Communications)
- HLJ 2011 Scenarios for the future
- Starting point analysis and Assessment plan of the impact assessment of HLJ 2011
- Possibilities of vehicle and fuel technology in reducing emissions from car traffic
- Land use and rail network study (MARA)
- Work shop on parking policy in the Helsinki region 19 April 2010
- Mobility and traffic management
- Public transport strategy
- Freight traffic in the Helsinki region
- Walking and cycling in the Helsinki region
- Vehicular traffic network study
- Scenario evaluations, reported as part of HLJ 2011 Impact Assessment
- HLJ 2011 Impact assessment

HLJ 2011 reviews and reports are available online at www.hsl.fi/hlj (in Finnish).

The land use and rail network study (MARA), which was conducted using wide regional cooperation, played a major role in determining the contents of HLJ 2011. MARA proposed policies and produced material for the purposes of the development program of HLJ 2011 and the target-oriented development path of the rail network. The work involved cooperation between the HLJ process and the Helsinki Region Land use, Housing and Transport (MAL) process, as well as interaction with the work on structure models carried out by Uusimaa Regional Council and Eastern Uusimaa Regional Council.

Results of the Extensive Traffic Survey conducted in 2007-2008 and HSL's new traffic forecast models were utilized in the preparation of HLJ 2011 as well as in the impact assessment and different sub-studies. The models were used for analyzing the interaction between the transport system and land use as well as for evaluating the developments in road traffic flow and congestion, public transport service level, transport emissions and number of accidents.

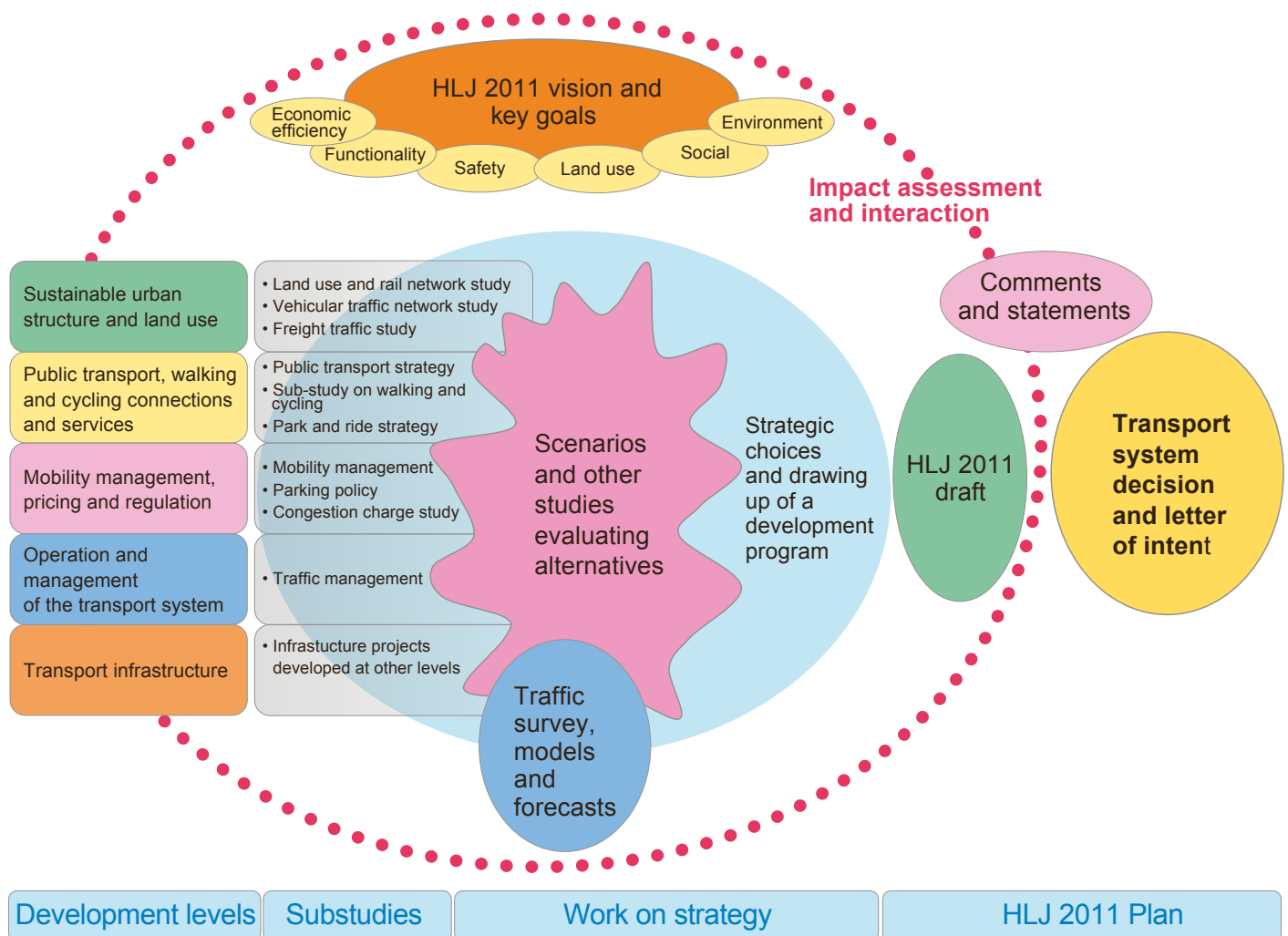


Fig. 7. HLJ 2011 preparation process.

HLJ 2011 development program

The structure and phasing of the development program

The HLJ 2011 plan offers an overall view of the transport policy in the Helsinki region in the coming decades. The development program comprises of five development levels (Fig. 8) and measures involved in them. All the measures set out in the different levels are needed in order to solve problems and achieve the key goals of HLJ 2011.

1. **Sustainable land use and urban structure**
2. **Public transport pedestrian and bicycle traffic connections and services**
3. **Mobility management, pricing and regulation**
4. **Operation, management, maintenance and monitoring**
5. **Transport infrastructure**

Fig. 8. HLJ 2011 strategy framework, which forms the backbone of the development program.

The first level, Sustainable urban structure and land use, forms the baseline for mobility demand and conditions for the use of different modes of transport. The next levels, Public transport, walking and cycling connections and services, and Mobility management, pricing and regulation, include policy definitions and measures aimed at influencing the mode choice and attractiveness of use of different modes of transport. The operation and maintenance of the transport system includes measures aimed at ensuring the predictability and unimpeded flow of traffic and transportation. Transport infrastructure collates infrastructure projects that serve the policies and measures set out at the previous levels.



The main idea of the development program is to influence transport demand and mode choice, as well as to make the use of the present transport system more efficient. The goal-oriented implementation path of the rail network and land use defined in the Land use and rail network study (MARA) is applied in the phasing of the development program (Fig. 9). It is worth developing and utilizing the existing transport system before opening entirely new rail corridors or roads in order to support the integration of the urban structure and infill development. Improving the competitiveness of public transport and other sustainable modes of transport and making travel chains more seamless play a key role. In the first phase of the development of the rail network, the focus is on the region's core area and on improving the reliability of rail services. Transport system planning also includes preparations for long-term development needs arising from the regions' growth and land use development.

1st period: Retention phase 2011–2020

Competitiveness of public transport and other sustainable modes of travel is improved and seamless travel chains developed by using various development tools. The existing infrastructure of the entire transport system is utilized efficiently. Projects promoting land use development and compact urban structure are prioritized.

2nd period: Fill-in phase 2021–2035

Rail service capacity is increased, bus service quality corridors, rail service network in the core area and road transport infrastructure are developed to promote an integrated urban structure and to improve the competitiveness of sustainable mobility and transport connections in the entire region. A comprehensive set of measures is used to influence mobility demand and mode choice.

3rd period: Expansion phase 2036–2050+

The rail network is expanded by opening selected short rail corridors and developing new areas around stations. Road network is developed by prioritizing projects that support the flow of public transport and freight traffic, as well as land use development.

Fig. 9. Phasing and main areas of emphasis of the HLJ 2011 development program.

1. Sustainable urban structure and land use

Development policies

Mobility demand is reduced and energy efficiency of transport improved with the help of land use solutions. Urban structure is developed and consolidated to make it even denser and more coherent.

Competitiveness of public transport and other sustainable modes of transport is promoted by land use solutions and sizing of construction activity.

Possibilities of using sustainable modes of transport are taken into account in the location of services and business establishments.

Agreements and other forms of cooperation are used to promote interaction in and coordination of land use and transport planning and decision-making.

Key sets of measures

- Infill development of the existing urban structure: new housing and jobs are located in existing centers with access to public transport, especially rail transport services. The region's rail network and trunk route network for bus services are developed to support the integration of the urban structure. Location of business establishments and services near public transport hubs is encouraged. Infill development of areas around stations is promoted.
- Transport corridors are developed as functional entities based on the integration of land use and transport in order to support a coherent urban structure.
- Parking policy is more tightly integrated with land use planning and common regional principles for parking policy are established.
- A letter of intent on the implementation and timing of development measures related to the transport system, land use and other regional issues is signed between the region's municipalities and the government.
- The impacts of land use solutions on the transport system are assessed and the development of land use and the transport system are monitored. For this purpose, public transport city studies and other mobility zone studies are developed through regional cooperation.

2. Public transport, walking and cycling connections and services

Development policies

The economic efficiency and competitiveness of public transport relative to the car is improved by developing the route network structure and service supply.

An extensive trunk route network of rail and bus services forms the basis of the public transport system, which is supplemented by seamless and safe feeder connections for buses, car, walking and cycling. This ensures the functionality of travel chains.

A commitment is made on long-term financing of public transport in order to ensure the provision of an attractive level of service.

In rail service development, measures that improve the capacity of the rail network and the reliability and punctuality of rail services are prioritized. In terms of road and street network, priority is given to improving and speeding up the trunk route connections of bus services and to enhancing feeder connections.

Park and Ride is promoted to reduce congestion and ease the strain on the road and street network.

Mobility alternatives are increased and adverse environmental impacts of transport are reduced by promoting walking and cycling.

Key sets of measures

- Route network structure is developed and public transport service supply is ensured.
- Investments are made on the public transport trunk route network, hubs and priorities.
- The reliability and punctuality of public transport are improved.
- Train control and dispatch systems are developed to improve the reliability of train services.
- Park and Ride is promoted. Cooperation and distribution of responsibilities are agreed for the implementation of the Park and Ride arrangements.
- Conditions for walking and cycling are improved.
- Interaction between and integration of sustainable mobility and land use planning are improved at all levels of planning and implementation.

3. Mobility management, pricing and regulation

Development policies

Sustainable travel behavior is actively promoted.

Efficient economic steering tools are adopted to contribute to a well-functioning transport system and to achieve environmental goals.

Competitiveness of public transport relative to the car is improved with the help of pricing.

Public transport tariff and information systems are developed.

Parking policy is used to support mode choice and curb motorization.

Park and Ride conditions are improved by developing information and payment systems.

Key sets of measures

- Varied and efficient economic steering tools are used in order to achieve the transport system development goals and to ensure the functioning of the transport system. Special attention is paid on transport demand management, congestion, reducing emissions and arranging of financing.
- Varied mobility management measures are implemented.
- A new, common public transport fare and ticketing system is created and expanded on the basis of decisions made by municipalities.
- A regional, public-transport oriented tariff policy is created by the municipalities and the government.
- Use of the transport system is controlled by parking space supply and pricing.
- A real-time information system and journey planner for Park and Ride are introduced and paying for Park and Ride is integrated into the ticketing system.

4. Operation and maintenance of the transport system

Development policies

The reliability of all modes of transport is ensured in the operation and maintenance of the transport system. Real-time information ensures seamless travel chains.

The modal share of public transport is increased and competitiveness improved by utilizing a range of intelligent transport tools in the operation and maintenance of public transport.

The safety of the main road and street network is improved and vulnerability to disruptions is reduced by means of intelligent transport.

Connections with high-level of maintenance form a continuous regional walking and cycling network independent of administrative boundaries.

Key sets of measures

- Traffic network control, incident management and information are developed.
- Public transport operation and information services are improved.
- HSL participates in the implementation of the national strategy for intelligent transport.
- Quality of maintenance and its punctuality are improved.



5. Transport infrastructure

Development policies

The use of the current infrastructure is made more efficient and the preconditions for a coherent urban structure are improved by small, cost-efficient measures.

Transport network development projects which support infill development of urban structure and land use development are prioritized.

Efforts are made to improve the infrastructure for public transport, walking and cycling.

Rail network is developed following a goal-oriented implementation path.

The operating conditions for bus and freight traffic are promoted by developing the road and street network.

Problems caused by increasing congestion are alleviated.

Operating conditions for distribution traffic are improved.

Sets of measures that are promoted simultaneously:

- Walking and cycling infrastructure
- Infrastructure for intelligent transport
- Park and Ride and feeder connections
- Ensuring the flow of bus and freight traffic on radial main roads
- Improving traffic safety on the main road network
- Noise abatement projects
- Freight traffic service areas
- Road projects that support land use development
- Development of transversal road and street connections
- Development of rail traffic

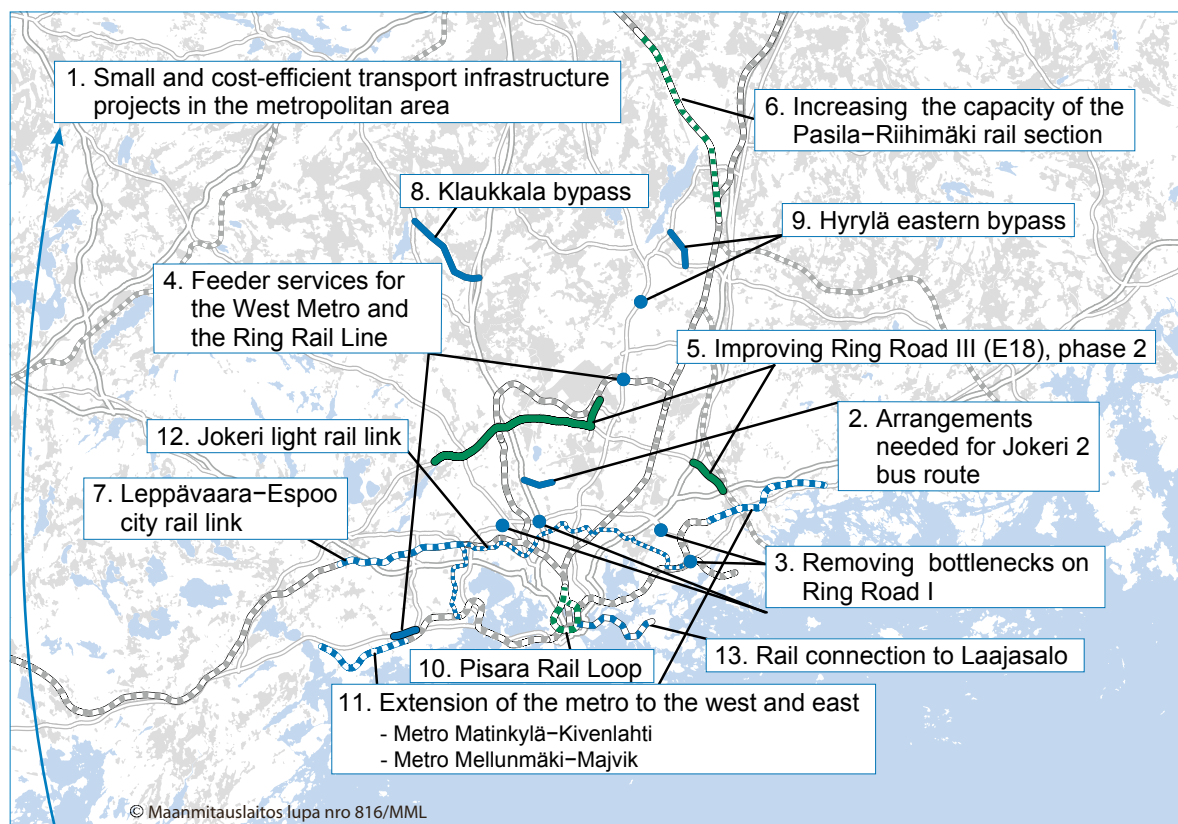
Infrastructural development projects to be launched in the first period before 2020 in order of priority

Projects that improve in particular the regional transport system	Projects that improve in particular the national transport system
1. Small cost-efficient transport infrastructure projects in the metropolitan area (KUHA) (a total of about €50m/year) • The development of the financial system is a prerequisite for the implementation of the projects • Programming and implementation of projects	
2. Arrangements required by Jokeri 2, bus route, €50m	
3. Removing bottlenecks on Ring Road I, €150m	
4. Feeder services for the West Metro and the Ring Rail Line • on Länsiväylä motorway and the road network, €40m • Ruskeasanta station, €40m	
	5. Improving Ring Road III (E18), phase 2, €250m
	6. Increasing the capacity on the rail section between Pasila and Riihimäki, phase 1, €160m
7. Leppävaara-Espoo city rail link, €190m	
8. Klaukkala bypass, €45m	
9. Hyrylä eastern bypass, €40	
	10. Pisara Rail Loop, €500m
11. Extension of the metro to the west and east • Metro Matinkylä-Kivenlahti, €400m • Metro Mellunmäki-Majvik, €700m	
12. Jokeri light rail link, €230m	
13. Rail connection to Laajasalo, €210m	
Delays in one project must not hinder the launching of the project next in line.	

Railway transport projects in the beginning of the first phase

- Pisara Rail Loop
- Extension of the metro to the west and east
 - Metro Matinkylä-Kivenlahti
 - Metro Mellunmäki-Majvik

The spearhead transport infrastructure development project is 'Small cost-efficient transport infrastructure projects in the metropolitan area', or KUHA. The array of projects includes low-cost, high impact measures and projects from the following sets of measures: walking and cycling infrastructure; intelligent transport infrastructure; Park & Ride and feeder connections; ensuring the flow of bus and freight transport on radial roads; improving traffic safety on the main road network; separate noise abatement projects; freight transport service areas; road projects supporting land use development; development of transversal road and street connections; and small rail transport development projects. The responsibility for the financing and implementation of the array of projects included in KUHA is divided between municipalities and the State. The implementation of the projects necessitates both development of the financial system and more detailed programming of the projects through regional cooperation.



1. Small and cost-efficient transport infrastructure projects in the metropolitan area
- Infrastructure for walking and cycling
 - Infrastructure for intelligent transport systems
 - Park and Ride connections
 - Ensuring the flow of public transport and freight traffic on radial roads
 - Improving traffic safety on the main road network
 - Noise abatement projects
 - Freight traffic service areas
 - Road projects that support land use development
 - Development of crosstown road and street connections
 - Small rail transport development projects

Fig. 10. Order of priority for infrastructure development projects during the first phase.

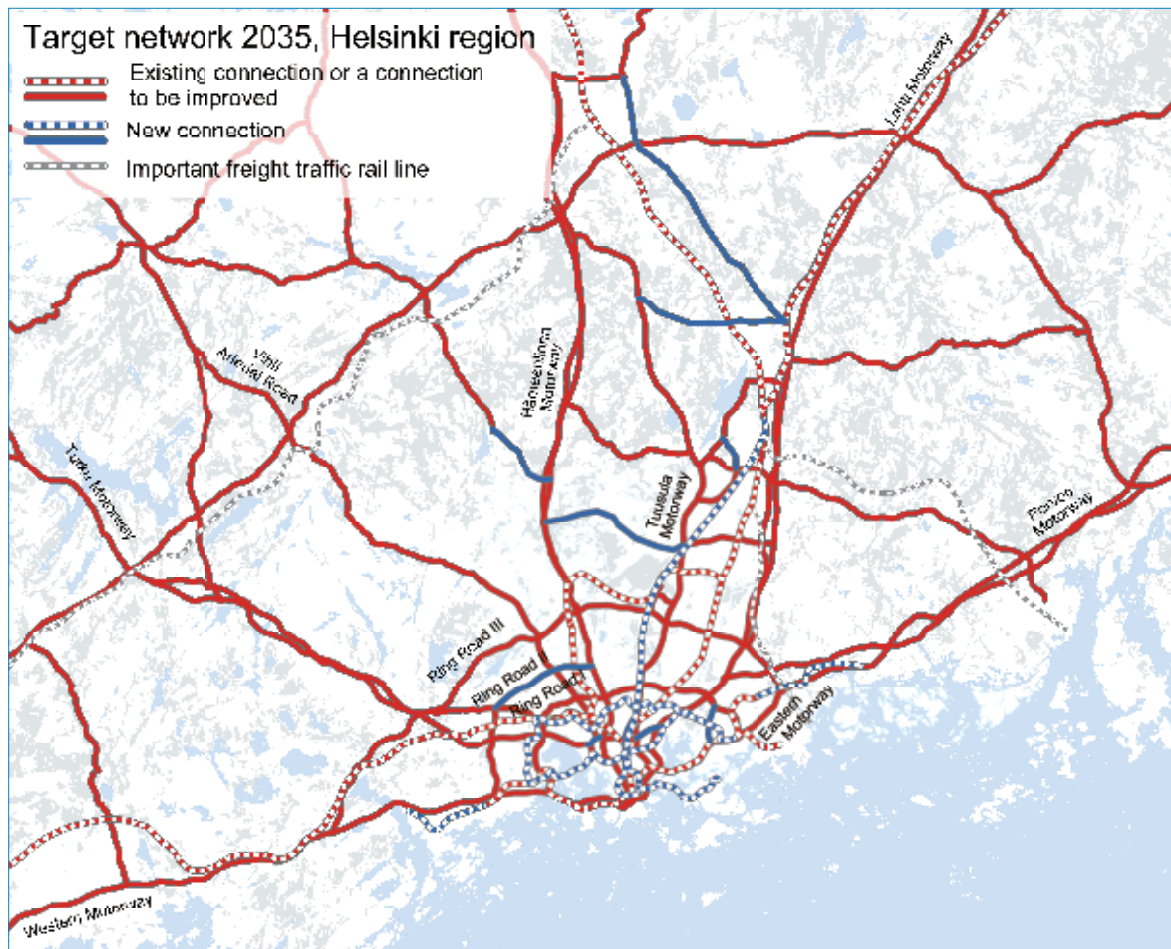


Fig. 11. Transport system target network 2035 in the Helsinki region.





Impact assessment

The impacts of HLJ 2011 were assessed alongside the preparation of the plan. The assessment supported the preparation of the plan and the related interaction and decision-making. Impact assessments were made on the basis of the starting point analysis and assessment plan of HLJ 2011 impact assessment (YTV publications 22/2009). HLJ 2011 is a plan whose environmental impacts have to be assessed as stipulated in the Act on the Assessment of the Impacts of the Authorities' Plans and Programmes on the Environment or SEA Act 200/2005.

The assessment examined the key goals of HLJ 2011 and the criteria associated with them. In addition, the impacts on the region's economy, impacts on nature and landscape, and impacts on the cityscape were evaluated. The impact assessment was conducted utilizing the results from the evaluation of alternatives and scenarios related to HLJ 2011. The analysis years are 2020 and 2035, as well as 2050 in terms of a general vision. Also the current state (2008) of the system was analyzed. The impacts of the Draft Transport System Plan were studied by comparing the target oriented development as outlined in the Draft HLJ 2011 (26 October 2010) to a so called alternative of modest development (0+). Figure 12 shows a summary of the impacts of the Draft HLJ 2011.

The monitoring of the implementation and impacts of the transport system plan produces information for example about prevention and reduction of problems caused by traffic.

The HLJ 2011 Impact Assessment has been published in the form of a summary (HLJ Review 1/11: Impact Assessment, Abstract) and a report (HLJ 2011 Impact Assessment).

Summary of the impacts of HLJ 2011		
Sub-vision	Key goal	Realization of the goal
Economic efficiency	Key goal 1. The socio-economic efficiency of transport improves.	- Regional competitiveness and the competitiveness of business and industry improve. - Per capita socio-economic costs do not change substantially although investments are made in public transport.
	Key goal 2. The economic efficiency of public transport improves.	The economic efficiency of public transport does not improve.
Functionality	Key goal 3. The competitiveness of public transport relative to the car improves.	- Positive impact on the modal share of public transport especially in areas outside the metropolitan area. - The relative speed of public transport does not change. - The overall performance of public transport improves. - The most significant shortages in rail transport capacity are removed. - The service level of Park and Ride improves.
	Key goal 4. Conditions for walking and cycling improve.	- Supports the expansion of the pedestrian city. - Walking and cycling networks improve.
	Key goal 5. Congestion does not impede the movement of freight transport.	- Travel times in freight transport remain at the current level. - Traffic-related bottlenecks in freight transport are removed.
Environment	Key goal 6. Greenhouse gas emissions from traffic will decrease on target.	- The 2020 national target (-15% from 2005 levels) is not achieved. - The 2030 target for the metropolitan area (-20% from 1990 levels) is reached. - Achievement of the 2050 target set out in the Government Foresight Report (-80% from 1990 levels) is possible.
	Key goal 7. Exposure to traffic emissions and noise, as well as health hazards from traffic decrease.	- Exposure to emissions affecting health decreases. - Exposure to noise increases. - Number of quiet areas is not extensively threatened.
Social	Key goal 8. Accessibility of every day services and workplaces for those without a car improves.	- The pedestrian and public transport city expands. - Accessibility of services and workplaces for those without a car improves. - Development of motorization is differentiated within the region.
	Key goal 9. The cost of mobility does not restrict basic mobility.	The cost of transport relative to disposable income does not rise excessively.
Land use	Key goal 10. Land use solutions support the conditions for walking and cycling.	The pedestrian and public transport city expands as land use develops in line with the basic policy definition.
	Key goal 11. New land use is located within public transport city.	Calls for determined regional and city-specific policy definitions.
Safety	Key goal 12. Serious personal injury accidents decrease.	The scheme improves traffic safety slightly but not sufficiently.
Other environmental effects		Preservation of key natural areas and protected areas, landscape and cityscape factors and ecological connections have to be taken into account in the further planning.

Fig. 12. Summary of the impacts of the Draft HLJ 2011 (26 October 2010).



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HLJ Reviews:

- 1/11 HLJ 2011 HLJ 2011, Impact Assessment, Abstract*
- 2/11 HLJ 2011 Helsinki Region Transport System Plan HLJ 2011, Abstract*
- 1/10 HLJ 2011 Preparation status of the Helsinki Region Transport System Plan (HLJ 2011)*
- 2/10 HLJ 2011 Extensive Traffic Survey (LITU 2008) and use of traffic models in the preparation of HLJ 2011*
- 3/10 HLJ 2011 Public Transport Strategy*
- 4/10 HLJ 2011 Walking and cycling in the Helsinki region*
- 5/10 HLJ 2011 Mobility and traffic management in HLJ 2011*
- 6/10 HLJ 2011 Freight traffic in the Helsinki region*
- 7/10 HLJ 2011 Parking policy study*
- 8/10 HLJ 2011 Vehicular traffic network study*
- 9/10 HLJ 2011 Land use and rail network study MARA*
- 1/09 HLJ 2011 Helsinki Region Transport System Plan (HLJ 2011) Framework Program*
- 2/09 HLJ 2011 Current state of traffic*
- 3/09 HLJ 2011 Scenarios for the future*
- 4/09 HLJ 2011 Vision and strategy framework*
- 5/09 HLJ 2011 Interaction and impact assessment in the preparation of HLJ 2011*
- 6/09 HLJ 2011 Preparation status of HLJ 2011 in autumn 2009*

The Impact Assessment of HLJ 2011 and other HLJ publications are available (in Finnish) online at www.hsl.fi/hlj.

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