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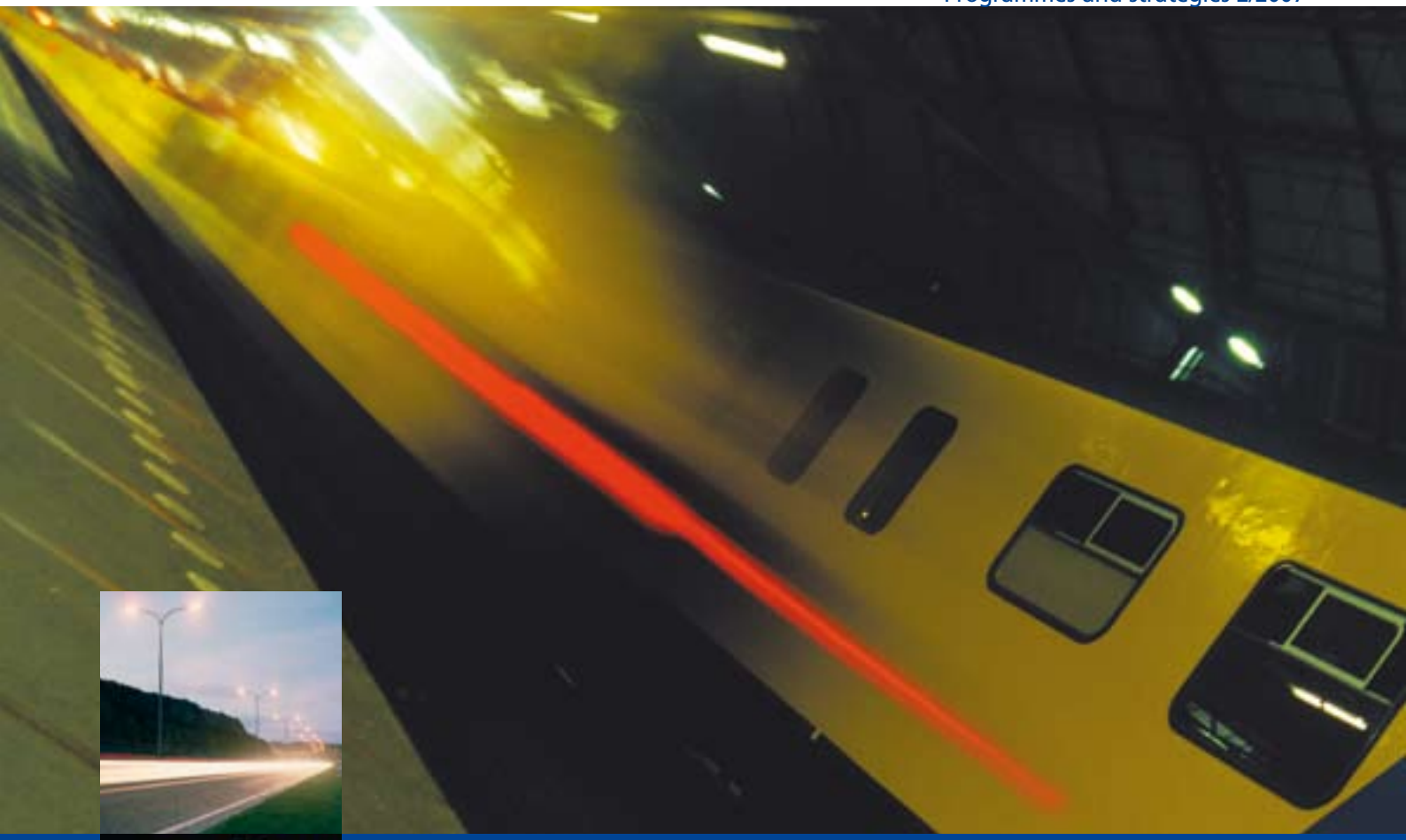

Transport 2030

Major challenges, new directions

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Major challenges, new directions

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Foreword

Integrated management and development of the transport system requires strategic frameworks that will guide operations over the long term. *Transport 2030* is a proposal for new Finnish transport policy framework.

As the operating environment changes, development of the transport system faces many global and national challenges. The most central of these relate to Finland's competitiveness, smooth everyday travel and the control of climate change. They are all literally indispensable and require new choices in transport policy.

The framework will direct transport policy over the coming years. Many of these choices will have to be made soon while others will become relevant over a period of some years. What is essential is that the framework is effective and development is sustained. The pace and priorities of development will be influenced by the development of both resources and the operating environment. Limited public sector resources mean that operations have to be efficient and effectiveness improved; we have to be able to prioritise and find innovative solutions and operating approaches. It is critical that the transport system works as well as possible every day, both now and in the future.

Transport 2030 – Major challenges, new directions is the civil service view of the choices facing a future transport policy. The choices have been prepared within the Ministry of Transport and Communications in cooperation between management and experts in the Ministry's administrative sector. While the work was in progress in the spring of 2006, a wide-ranging consultation was carried out in the regions. The Ministry of Transport and Communications would like this document to stimulate a broad-based discussion about the direction and framework of transport policy. The natural result of such a discussion would be a report on government transport policy, which will be given to Parliament to consider.

The framework will be used in operational planning and budgeting by the Ministry of Transport and Communications' administrative sector, in directing the transport and infrastructure agencies, and in cooperation and interaction with other organisations.

Working with other partners, the framework will be used to draw up an action plan that will set out the critical measures required over the next few years. The action plan will specify the measures that will be taken to develop the transport system in the desired direction.

Helsinki 20 March 2007

Harri Pursiainen
Permanent Secretary

To the reader

Transport policy is facing major challenges. Controlling climate change is the most significant of these. Greenhouse gases produced by the transport sector increase year after year and they now account for about a fifth of all of Finland's greenhouse gas emissions. Targets must be set to quickly and systematically reduce greenhouse gas emissions from transport.

Other critical future challenges are preserving the competitiveness of Finland's logistics sector in global markets and providing people with opportunities to efficient and convenient daily travel, both in the growing urban regions and in increasingly depopulated rural areas. The objective of this framework is to manage the change in direction of transport policy so that competitiveness of the logistics sector and the ease of people's daily travel are preserved while reducing greenhouse gas emissions. It is possible to reconcile these challenges, but this will require new kinds of sustainable choices in transport policy, innovation in operations and cooperation between the various actors.

The White Paper approved by the European Commission *European transport policy for 2010: time to decide* defined a new direction in transport policy. The mid-term review of the White Paper approved by the Commission in 2006 stated that mobility throughout the Union must be seen as a question for the whole continent. Rapid globalisation has made an efficient and reliable transport system a key factor in the competitiveness of the regions. At the same time, the price of oil, greenhouse gas emissions and climate change pose unprecedented challenges, but also a stimulus to work towards a transport system that is sustainable, energy efficient and environmentally responsible.

A transport system consists of different modes of transport for people's daily journeys and the world of business. People, vehicles, transport networks and terminals, the management involved as well as the services provided influence the effectiveness of the system. The choices made today will create the foundation for the transport system of the future. Many changes in the structure of society, for example, happen slowly, but they are all the more significant because of that. A clear view of the development objectives for the transport system is a prerequisite for a sustainable transport policy and for decision-making that will determine the options available. On the other hand, changes in the operating environment and choices available mean that transport policy has to be flexible and dynamic and that the direction and emphases have to be reviewed from time to time, for example in the transport policy report submitted to Parliament each parliamentary session.

Transport 2030 – Major challenges, new directions gives a view of the objectives and challenges facing transport policy. It presents the most important aspects of the framework covering the next few years, which will help the transport sector respond to its challenges in a sustainable and measured fashion, and will ensure that Finland and Finns have a functioning transport system for the coming decades. The central principles in Transport 2030 are customer orientation, management of an integrated transport system, sensible and efficient use of resources as well as flexibility, dynamism and a proactive approach in the face of changes to the operating environment.

Customer-orientation is a way of thinking. It means developing an understanding of customers' actions as well as the variety of their needs relating to travel and transport through continuous

dialogue. Dialogue with customer groups is also used to assess the measures required to respond to their needs as well as the constraints on implementing them. The objective is to provide as much real assistance as possible to customers – Finnish people and the Finnish business community. However, it is not possible to offer everything. Customer orientation means prioritising needs and selecting means that will be of benefit to customers. However, the actions taken must, above all, meet the demands of traffic safety and the environment and be feasible using the resources available.

An innovative transport policy will stimulate the choice of a broad range of approaches to ensuring the functioning of travel and transport. We must be able to exploit the opportunities created by the development of vehicle and information technology alongside traditional mechanisms. New approaches to development will generate the efficiency and effectiveness needed.

Development of the transport system requires holistic thinking and action, and effective cooperation between parties in order to harmonise different interests, objectives and approaches. Community structures and the transport system are locked in an unfavourable trend. Dispersed community structures result in limited opportunities to develop services and public transport, and this leads to lifestyles that are dependent on the car. On the other hand, increasingly good levels of service for car traffic on the edges of growth centres result in further residential dispersion.

Many of the mechanisms that could make the transport system efficient are outside the scope of the Ministry of Transport and Communications, the most important being land use and the location of activities. This requires cooperation from the Ministry and all the areas under its administration in providing opportunities to discuss the priorities of the transport system and those of society as a whole. The implementation of the transport policy framework will require concrete joint action. This will be agreed later when drawing up the action plan.

The European Union's common transport policy and regulations will guide Finland’s framework and its implementation. Dialogue is therefore needed to ensure compatibility between the EU and national frameworks.

Changes in the operating environment necessitate a review of transport policy. The challenge is to reconcile interests pulling in different directions. The final choice will be made by each of us individually. Only changes in accustomed ways of thinking and acting when making choices, in our common planning practices and decision-making will make Finland competitive and provide a sustainable transport system that supports our wellbeing.

Transport policy framework in brief

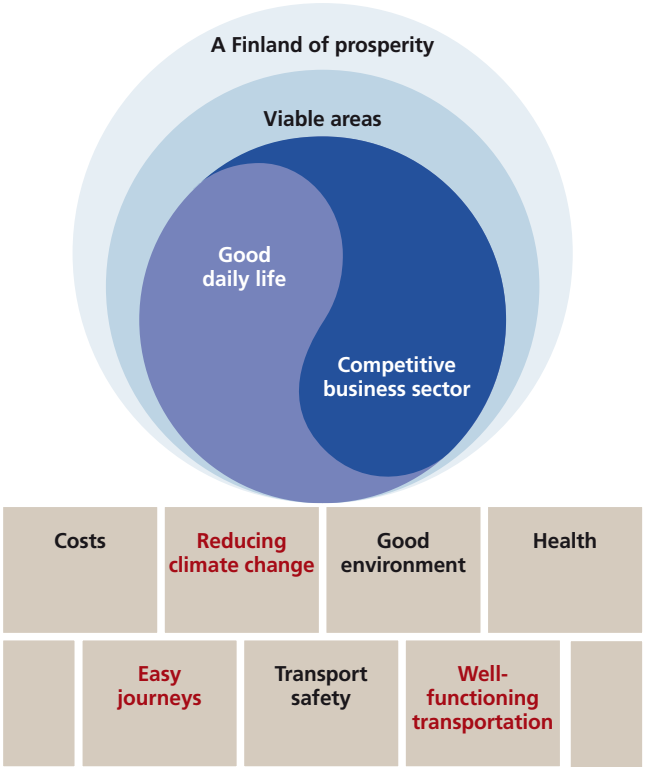
Challenges

Trends in transport policy will be guided by the challenge of climate change. The amount of greenhouse gas emissions from the transport sector must be reduced. But at the same time, care must be taken to ensure the competitiveness of the logistics sector and ease of daily travel. A balanced transport policy must find ways of reconciling these objectives. The key is to change our ways of thinking and acting and become more customer-oriented and innovative.

Central principles

Transport policy is based on customers' needs and wishes. Customer-orientation means transport policy choices that aim to ensure smooth travel in both professional and everyday life. The level of service needed by customers, citizens and the business community will be provided using a variety of diversified and innovative mechanisms. Customer-orientation also means ensuring that future generations will be able to travel and transport goods as required.

The transport system must be planned and developed holistically. Daily and business travel often involves chains of different modes of travel and transport and their overall functioning has to be ensured. Reviews of individual sectors and operations will be replaced by overall development and optimisation of the transport system. As the transport system is developed the activities of the various agencies will be used to their best advantage.



Transport policy choices form part of the foundation for Finland's well-being.

Resources will be used efficiently. The sensible and efficient use of limited resources means using a broad selection of mechanisms. The objective of the new development strategy will be to make effective use of the capital invested in transport infrastructure, faster resolution of travel and transport problems, and innovations to improve service levels. Efficient use of resources also means prioritising; resources have to be used in the most productive way overall. Increasingly close cooperation and networking will be used to exploit skill-based resources.

A flexible approach will be taken to solutions and operations. Although the development of the transport system aims at long-term sustainability, there must be flexibility in identifying the right development approach, skill in predicting and responding to changes in the operating environment, and the courage and initiative to influence developments. The future will change people's approach to working and doing business, and will bring new and efficient mechanisms to improve the quality and operation of the transport system. We must be able to take advantage of the opportunities of new technology when improving the transport system. There is a risk that the long-term solutions adopted in the light of today's mechanisms and ways of thinking will not be the best way of responding to the needs of the future.

New transport policy framework

The transport policy framework is a comprehensive approach that will enable the amount of greenhouse gas emissions to be reduced and simultaneously ensure the ease of daily travel and the competitiveness of logistics for business. The aspects of the framework dealing with operating methods aim to improve the productivity of the transport sector and emphasise the importance of networks and cooperation in administering increasingly broader questions of transport policy. Implementing the framework will require a long-term approach and a commitment to development work from those in authority.

To reduce greenhouse gas emissions from transport, it is important to stop the dispersion of community structures and the growth in travel by private car. Transport policy in isolation will not achieve this. The support of land use planning in particular and tax policy and other economic steering mechanisms is needed. A common will to stop the trend towards the dispersion of community structures is also required as well as effective cooperation in order to reach these goals.

Logistics in the business world is facing increasing demands and tougher objectives. In transportation long distance transport of goods and people is concentrating on specific routes and transport corridors. In the long term, the objective is that the nationally important and most travelled routes, i.e. the trunk network, will be of a consistent high quality in order to provide good operational availability and safety. A national programme to improve the service level of the trunk network is being drawn up. From the point of view of the operation and safety of maritime transport, it is important to maintain the competitiveness of Finland's merchant fleet.

Transport safety has to be improved, particularly regarding road traffic. To improve transport safety it is important to create a safety conscious, responsible traffic culture. Road maintenance will aim at reducing head-on collisions on main roads and pedestrian and bicycle accidents in built-up areas.

The coverage, service level and attractiveness of public transport in large and medium-sized urban areas will be improved. In rural areas and small towns, a reasonable level of public transport will be provided for inhabitants with a more cost-effective operational model.

There will be more concentration on the maintenance and improvement of transport infrastructure. The extent and quality of the public infrastructure will be reviewed because part of the network serves areas of very low demand. Allocation of sufficient funding will halt the weakening of the service level of roads, rail tracks and waterways. At the same time, the financing of small investments aimed at improving service levels will also be increased.

In order to improve the development of the transport system and the sustainability of decision-making, it is proposed that each electoral period the Government submit a report on the long-term framework for transport policy to Parliament. The report will provide a good basis for the long-term development of Finland's transport system. It will present the condition of the transport system, how development is envisaged, the challenges, and will describe the long-term framework, emphases and priorities for transport policy. The report will also provide an opportunity to develop the whole transport system by objectives in cooperation with the various agencies as well as to link transport policy to other areas, including commercial, regional and environmental policies.

The transport policy framework and the development measures involved concern people in many areas and many administrative sectors. On the basis of the framework, the Ministry of Transport and Communications will commission an action plan in cooperation with the various interested parties. The action plan will result in concrete cooperation and measures to develop the transport system in line with the objectives set in the framework.

Development of the transport system will require a long-term development programme that will be reviewed during each electoral period. Many kinds of long-term measures will be needed to develop the transport system, and it will be necessary to ensure there are sufficient resources to implement them. The traditional development programme, which focussed almost exclusively on investments in transport infrastructure, will no longer be sufficient. In addition to projects to improve infrastructure, the development programme must also include other areas that are central to the transport system.

What are the objectives?

Transport vision 2030

The objective of transport policy is well-being for Finland. Essential journeys and business-related transport operations are carried out both nationally and internationally every day, providing people with a good quality of life, making business competitive and injecting life into the regions. Travel and transport are safe and the transport system is ecologically, socially and economically sustainable.

Easy journeys are part of a good day-to-day life for people

Easy and safe daily travel is part of a good life and part of the well-being of all of us. Travel is increasing, our habitat is expanding, services and contact with people cover a wider area than previously. The world is getting smaller, and international links are ever more important. The rhythm and nature of life and travel change according to people's stage of life. Accessibility is important, people have to get to school, work, go to their hobbies and activities, go shopping and meet friends every day.

The transport system offers everyone a reasonable service and is easy to use. Everyday travel for work and, increasingly, for leisure should function well, smoothly, without delays and safely. At the same time, the objective is to have a travel culture where short journeys are made more and more by foot or bicycle. In urban areas daily travel is easy using public transport. It is very important for the whole journey chain to be successful. A critical problem in the travel chain could be a slippery path in the yard, a footpath that has not been ploughed clear of snow, steps into buses or trains that are too high or a difficult or frightening travel environment.

A well-functioning logistics sector is a central part of business competitiveness

We need efficient and reasonably priced logistics in order to be competitive and to maintain employment. Well-functioning logistics is part of a company's production process and an important factor in being competitive in global markets. The transport system and the predictability of its service level are part of logistics. The main interested parties are commercial and industrial companies that need transport, companies that offer transport and logistics services, ports and port operators, the authorities responsible for border formalities, and the agencies responsible for transport infrastructure. Land, sea and air transport make Finland part of the global transport system and global markets. A variety of procurement and delivery chains make up the whole system. There are functional and developed markets for logistics services. The operating environment for international transport is internationally competitive.

The challenges of the future will be met through cooperation, skill and innovation, and efficient use will be made of the opportunities provided by the information society. A changing operating environment will encourage the adoption of new mechanisms alongside those used today.

The transport system supports the regions' individual strengths

Viable regions make Finland successful. Good accessibility helps business to function and contributes to the quality of life. The large urban areas, particularly the capital and its metropolitan area, act as the motors for the success of Finland's national economy. The municipalities and central government ensure that transport systems in the major urban areas function as the cities expand.

Connections to regional centres and the capital function well. There are also good connections from the regions to airports, ports and border crossing points. The regions' internal transport systems meet the needs of business and accessibility to daily services: journeys are easy and transport operations are flexible.

Safety is an important quality factor for travel and transport

The transport system is so safe, irrespective of the place or mode of transport, that people do not get killed or badly injured during journeys. Transport is considered to be so safe that people make their journeys to and from work without fear. People know what traffic risks are and how they can be managed.

The safety of transport is a factor in business competitiveness. Transport is safe throughout the chain and does not pose dangers to other travellers. Confidence that the goods being transported will reach their destination is part of transport safety.

A quality environment also for future generations

An ecologically sustainable transport system means that environmental damage and risks can be recognised and measures taken to prevent and correct them. The transport sector has to bear its responsibility for reducing greenhouse gas emissions and reducing damage to people's health, living and natural environments.

Land-use and transport approaches support each other: journeys are increasingly made by on foot, and by bicycle and public transport. More thought goes into the use of private cars. Transport is efficient. Information systems and transport services support ease of travel and transport.

Social sustainability means equality

Everyone has the opportunity to make their daily journeys on their own terms, easily and without hindrance. The transport system does not only work for the masses and the strong. Social sustainability means that the benefits and problems of the transport system are distributed as evenly as possible between all groups of the population. It is not possible to provide the same level of service to everyone everywhere, but everyone should have access to a reasonable level of service. The problems are not spread evenly either, but no single group should suffer an unreasonable level of problems.

Barrier-free access is an important part of the social sustainability of the transport system. This concerns traffic routes, opportunities to use transport services, access to information and the safety and reliability of travelling. Functional systems and accessibility make travel easier for everybody.

The objective is an affordable system and long-term development

The high quality transport system functions well every day; now and in the future. When maintaining and developing the transport system we will be able to anticipate and respond to changes in the operating environment. Operating practices and methods will make a sustainable transport policy and affordable transport system possible. Operating practices and methods are also flexible, so development of the transport system can be re-evaluated in the light of any changes in the operating environment.

The resources of the various actors are pooled so that investments generate as much real value as possible for people's daily lives, the business community and Finland as a whole. This means taking new approaches when appropriate. Development of the transport system will lead to wider use of cheaper, fast-acting mechanisms that are well adapted to change.

A networked transport sector will operate efficiently and innovatively

Networking, cooperation and partnerships will be needed not only within the administration of the transport sector, but also in local government, transport sector operators , national associations and other sectors of society. National and international networking and cooperation will bring about innovation. By developing durable ways of working together, all parties will benefit.

Administrative structures will be designed to use fewer skilled people, but still be effective. Skills and knowledge will be available for joint use. Cooperation will be based on a shared view of the transport system as a whole and its development needs. Planning practices and decision-making models will encourage more efficient and cost-effective innovations to ensure the functioning of the transport system.

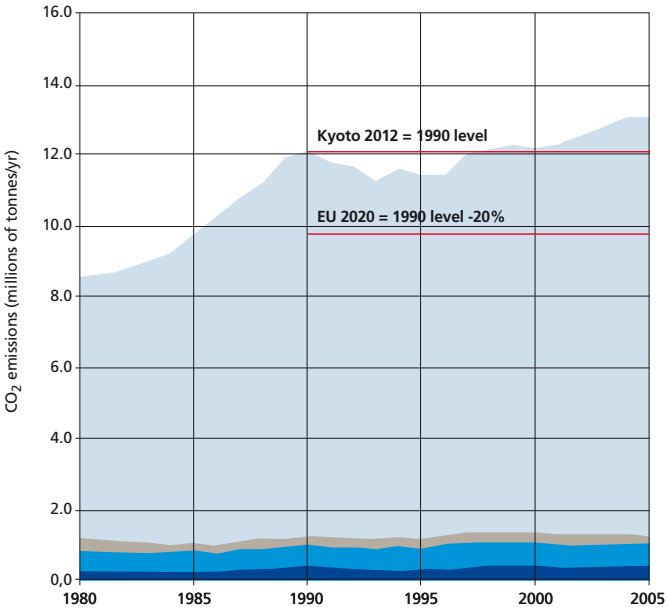
Central challenges to developing the transport system

The operating environment contains significant global, international, national or local views on the development of the transport system and thus the effectiveness of the transport system or its impact may be developing in undesired directions. On the other hand, developing technology is making new mechanisms available and we must be ale to exploit them effectively.

Climate change

Global warming is a threat to the whole world's ecosystem. The economic effects of climate change have been estimated to be massive. In order to prevent the threat from becoming reality, the amount of greenhouse gas emissions must start to decrease. This also applies to the transport sector, which currently produces one fifth of greenhouse gas emissions.

The central challenge
is to begin reducing the amount of greenhouse gas emissions.



Carbon dioxide (CO_2) emissions by mode of transport

- Road traffic
- Railway traffic
- Water traffic
- Air traffic

● The Kyoto protocol set binding reductions and limits to greenhouse gas emissions for industry. Finland's obligation is to keep its greenhouse gas emissions in 2012 at the level of 1990. The transport sector will be unable to meet even this target; on the contrary, emissions will increase.

In order to reduce greenhouse gas emissions associated with transport, there will have to be a change in the direction of transport policy. Reducing demand for transport, improving energy efficiencies and developing and adopting new, low emission fuels will require a variety of actions from the responsible players. Economic steering methods can be used to influence overall demand for transport, modal split and energy efficiency.

Developments are underway to reduce greenhouse gases. Efforts are being made to replace biofuels for road transport with more cost effective second generation biofuels. The critical factor affecting levels of emissions on railways is electricity production, an area in which emissions trading is helping to reduce the levels. At the moment there are no replacement fuels available for air traffic. Air transport has to reduce fuel consumption in order to reduce emissions. Developing marine engines to make them more fuel efficient will help in water traffic as will switching to fuels that are less polluting.

Part of the reduction in transport emissions will be achieved through good planning. If land use and transport planning are long-term and mutually consistent we can reach a sound holistic community structure. Appropriate transport system planning affects operations, alignment of travel and transport and the choice of transport mode. In urban areas particularly, the nature of the transport system and its development framework have a major influence on travel choices. Land-use planning can have a significant impact on both the modal split and the need for transport. Reductions in emissions from transport are achieved when action is taken to reduce the need for transport and to promote the use of public transport, cycling and walking. A particular challenge is to change people's attitudes so that emissions reductions are achieved voluntarily through people's day to day choices. Improving the service level of public transport can make such choices easier.

Taxation affects choices regarding travelling and where to live. Employment policies that allow the commuting costs to be offset against tax, and company car tax that is not linked to use of the vehicle encourage long journeys to work and the use of cars for other journeys too.

Competitiveness of business

Globalisation opens up new growing markets to everyone, but it also makes competition tougher. The internationalisation of decision making and interaction between people continues. The current rates of growth in China and India in particular will maintain for a long time to come. Economic growth in Russia has been important for Finland, and Russia has become one of Finland's largest trading partners.

The main challenge
is to maintain the conditions for a global network: connections between centres, international connections and good transport systems in urban areas. Ensuring that the logistics process works is also a challenge.

● The basis of Finland's economy is sound and the conditions for economic growth are good. The structure of commercial life has diversified rapidly over the past years. The service sector's national product has risen to two thirds of the share of the total; the share of processing has reduced to a third with agriculture and forestry accounting for a few percentage points. High-technology industry accounts for almost 50 per cent of all industry, and the traditional metal industries and forest products account for about one fifth. Manufacture of highly processed products is estimated to continue growing faster than base industries. The high-technology industries account for almost half of all industrial value added, but only for a few per cent of transport use. As a result of the changes in industry structure and the increase in value added, haulage is not growing at the same rate as overall economic growth.

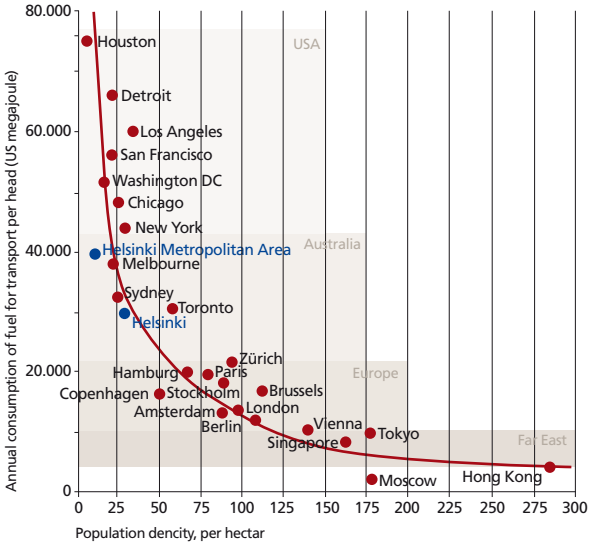
Logistics costs for Finland's businesses are greater than in other European countries. The reasons are the structure of production, long transport journeys within the country and Finland's location on the edge of most export markets. The journey to European markets for Finnish goods is some 2–3 days longer than those from competitor countries. As the structure of production changes, the demands placed on transport change too. Binding commitments to precise delivery times are in particular required by new industrial sectors that have spurred the economic growth.

Globalisation, Russian economic growth and increasing competition in the Baltic area means that Finland needs long-term planning to strengthen its position in logistics. Finland's logistics sector is built on skills, efficiency, well-functioning transport markets and improving transport links. Transport and transport networks allow companies to network with a global operating environment and lifestyles to become more international. Logistics processes, connections between centres and well-functioning international connections are critical to competitiveness.
A good logistics sector also requires a skilled workforce. Well-functioning transport systems in the major urban areas as well as lively and pleasant centres are becoming more important factors in business competitiveness.

Growing, congested urban areas

Almost half of all Finns now live in ten major urban areas. However, the degree of urbanisation in Finland is low compared to most other European countries. The migration continues, and urbanisation is the future of a networked, competitive Finland. The growth in urban areas is concentrated in the suburbs and the surrounding communities, increasingly distant from services and jobs. Urban structures in the centres of growth are fragmenting. Journeys to work are getting longer and car-dependent lifestyles are becoming common.

The central challenges are reducing dependency on the car and arresting urban fragmentation.



Fragmented urban areas increase transport-related emissions

Sources: Towards an Urban Renaissance, Urban Task Force and YTV

● The conditions in a fragmented city do not support the use of public or non-motorised transport. To an ever greater extent, they have been replaced by the private car. The service level and pricing of public transport have not attracted new customers at the same rate as travel has grown. The problem is often the failure of the travel chain.

The fragmentation of urban areas has a significant impact on how quickly the use of private cars increases, with better roads accelerating the fragmentation. The growth of urban areas has resulted in spiralling costs as dependency on the private car grows, urban areas expand and fragment, the use of public transport and walking and cycling falls, and the townscape and quality of living in cities become poorer. Neither benefits nor problems are distributed evenly. The improvement of routes for private cars benefits those living in the suburbs, while the problems associated with the growth in the use of cars are felt throughout the urban area.

In addition to accelerating the greenhouse effect, the increase in traffic results in major problems and costs for society. These include the need to build more routes, longer journey times and congestion costs to people and transport, accidents, reduced air quality, health problems and a reduction in the quality of the urban environment.

There are problems associated with transport planning for urban areas. The different parties have different interests and objectives, and there are often contradictions between the objectives of the plan and its contents. The plans often emphasise the construction of transport infrastructure. But pedestrians and cyclists are not ranked as highly as other forms or transport. There are gaps in the forecasting and evaluation methods for the transport system. Implementation of the plans is incomplete when the supporting measures agreed in the statement of intent cannot be financed.

The challenge is to arrest the fragmentation of urban structures and develop public transport approaches that are attractive and which can reduce the number of private cars on the roads. Today's approaches to planning, organising and financing public transport do not support a competitive and attractive alternative to the use of private cars as well as they could. New technology could be used to manage demand for transport so as to reduce congestion and improve the flow of travel and transport in urban areas. The application of new operating models would create opportunities to find more effective solutions to problems.

Improvements to the transport systems in the growing urban areas would also reduce greenhouse gas emissions and other environmental damage as well as promoting business competitiveness.

A changing, quieter countryside

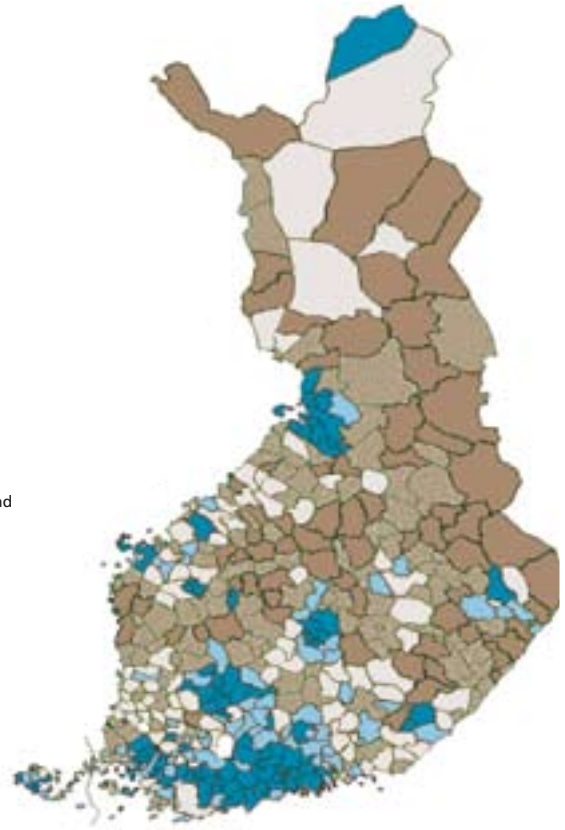
The population and jobs are concentrated in different sized centres and are decreasing in more rural areas. Migration is focussed more and more on the regional capital. Areas are clearly either viable or depressed. It is estimated that Finland could have only about ten economically viable areas. The populations of the stronger regions grow as a result of inward migration and a birth rate that exceeds the death rate. The population increase is found predominantly in the communities surrounding the centres of growth.

The central challenges
are to provide transport to rural areas, the smaller centres and the archipelago as well as to maintain little used roads and tracks in a way that is economically sustainable.

● The population levels of rural areas are reducing and the inhabitants are getting older. It is difficult to provide regular scheduled transport services. Journeys to work, school or for shopping are more and more difficult without a car. In rural areas, most daily journeys will continue to involve the use of a car. That means that households without cars in rural areas will pose particular challenges. The same problems will also affect small urban areas.

Today's operating models make it difficult to maintain a reasonable, and reasonably priced, level of public transport service that will enable daily travel in rural areas that are suffering from population decline. The operating model has to be improved. Effective approaches might include increasing public sector financing for public transport, and reviewing the organisation and planning principles behind public transport. In any case, more public financing will be needed as legislation increases the costs of travel.

There are a lot routes that are little travelled, and as traffic decreases this number will grow. But these routes serve areas that are permanently populated and have holiday homes, and they may be important for rural services, tourism, agriculture and forestry. Even in sparsely populated areas we must be able to ensure reasonable and reasonably priced travel and transport services. In the archipelago the specific problem is how to organise boat traffic to reach the islands: the number of people using them is decreasing except on the main tourist routes. Use of some of the railway network is also very slight. Maintenance of the least used tracks is no longer economically feasible.



Predicted population change between 2003–2030 by sub-region
Source: Central Statistical Office of Finland

Quality of the local environment

Hundreds of people die in Finland every year as a result of particulate emissions. Transport accounts for about one third of particulate emissions. Tightening the limits on vehicle exhaust gas emissions has been an effective way of reducing them. The effect of the new EURO-norms will not be fully felt in Finland until the beginning of the 2020s. Breaches of NOx limits in urban areas will increase as the limits are tightened.

The main challenges
are to reduce the health problems resulting from vehicle particulate emissions and vehicle noise pollution, preserve cities as pleasant places to be in, and reduce the environmental threats to groundwater and the Baltic Sea.

● Emissions from cars have a disproportionate impact on air quality and health. Emissions are at their highest in the centres of built-up areas where most people live. Particulates from sanding roads and the wearing of road surfaces are also at their highest in built-up areas.

Noise is a serious problem in urban areas. About 800,000 Finns live in noisy areas. Usually the same people suffer from noise pollution and emissions. In accordance with the objectives of a government resolution, the number of people at risk from traffic noise is to be reduced by about 20 per cent by the year 2020. The growth of traffic in the problem areas is making the situation worse. The townscape and pleasant aspect of urban centres are under threat from the noise and congestion caused by increasing volumes of traffic as well as the space needed for more traffic routes.

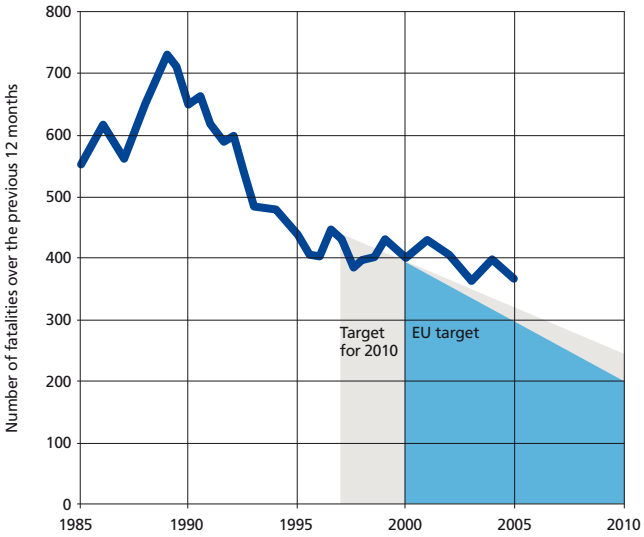
The challenge is to prevent the pollution of watercourses and soil. The release of substances dangerous to the environment and human health, such as salt and biological control agents, into the soil and waterways can be minimised through ground water protection, switching to less dangerous substances and minimising the risks associated with the transport, use and storage of dangerous substances.

The main objective is for the Baltic Sea to be clean. Maritime transport affects both the water quality in the Baltic Sea and the organisms in it. Emissions of sulphur and NOx from maritime transport are quite high compared to other modes of transport, even though maritime transport generates a low environmental load overall. From the transport sector's perspective, the greatest threats to the Baltic Sea are the increasing transport of dangerous substances, particularly oil, and eutrophication, climate change and the introduction of foreign species.

Traffic safety

The long term objective for all modes of transport is to avoid fatal accidents. We are already close to this objective with air traffic and merchant shipping. The greatest challenge is to improve road safety.

The main challenges
are to improve road safety, particularly to reduce the number of head-on collisions on main roads and pedestrian and bicycle accidents in built-up areas as well as to change people's attitudes and behaviour and increase safety awareness.



Monitoring traffic safety objectives. The number of people killed in road accidents from 1985–2005, the government's target for 2010 and the EU target.
Source: Statistics Finland

● According to a government resolution, the objective is to improve road safety so that the number of fatal road traffic deaths by 2025 is no more than 100. Transport safety has only improved a little over the past ten years. At the present rate of progress, we will lag far behind the targets set by the government and remain below the levels of other Nordic countries. Another problem is the large number of people who are seriously injured. A particular challenge is to reduce the number of head-on collisions on main roads and pedestrian and bicycle accidents in built-up areas.

Trains are involved in traffic accidents at level crossings. Since the high number of level crossings makes it impossible to remove them all, the challenge is to change people's behaviour.

Growing transport to Russia is increasing safety risks for both road and maritime transport. The high growth in maritime transport to Gulf of Finland ports means more safety risks in the Baltic Sea. The growth in pleasure boating will result in more dangerous situations with merchant vessels.

Security issues have become more important and will continue to become even more important particularly for international travel and transport. A particular challenge in maintaining the security level at ports and airports is to keep these bottlenecks functioning smoothly.

Pedestrians and users of public transport sometimes feel insecure. The threat is that increased feelings of insecurity will limit people's movements and reduce the attractiveness of light and public transport.

The renewal of the vehicle fleet and improvement in the road network will have a positive effect on traffic safety, as will increased surveillance. Reducing speeds will decrease the number of accidents and makes them less serious. New technology can be an efficient way of providing information about driving conditions and other dangers and can also help drivers control their vehicles. The threat is that the benefits of new technology will be outweighed by greater risk-taking in traffic. The problem can be seen on a wider scale too: people's attitudes, motivation and behaviour are often in contradiction to the objective of improving safety.

New, intelligent technology

Intelligent transport links transport and the related information to improve safety, traffic flows, efficiency and environmental friendliness. Intelligent transport systems are based on information and communication technologies. They support monitoring, management and guidance, and also provide information to drivers and other travellers. Intelligent transport systems will be part of all modes of transport in the future.

The central challenge
is to provide quality, understandable, easy to use and reasonably priced services that will improve the service level of the different kinds of travel and transport.

● Developments in the information society will provide models for removing transport and logistics problems and creating new and effective approaches to improving the transport system and transport services. Wireless data transfer networks, improved positioning technology and the spread of remote identification will enable new transport services and applications.

The main success factors are effective use of the opportunities provided by technology and promoting innovation. Finland's remote transport services markets will arouse international interest through bold and well timed decisions concerning the application of information and communications technology.

The adoption of new, intelligent technology is being slowed by the lack of maturity of transport operating models and uncertainty regarding the objectives of public sector agencies. In most cases a sustainable service offering requires active cooperation between the public and private sectors.

Technological development supports the shift in emphasis in transport policy from construction of transport infrastructure to the operation of transport networks, mobile telematics and transport pricing. New technology has already provided and will continue to provide additional opportunities to adopt active safety features, services based on electronic identification of vehicles, improvement in passenger information on public transport, and more efficient logistics processes.

Improvements in vehicle technology will help prevent road traffic accidents. There are already technical solutions in place, or very close to being ready, to control vehicles and prevent collisions, but installing them in the vehicle fleet is a slow process. There are several alternative technologies being developed to reduce energy consumption and emissions from motors. One alternative, hybrid motors, are already on the market.

Technical skills have increased rapidly over the last few years and they will continue to develop rapidly in the future. A continuing feature of developments in information technology is the capacity to surprise.

Transport sector efficiency

Since 2000, central and local government have spent about 2.5 billion euros annually on maintenance and improvements to roads, railway tracks and waterways, as well as on transport procurement and subsidies. Air traffic infrastructure and services are provided through the market without state financing.

The main challenges
are taking action on an appropriate scale, exploiting a wide range of mechanisms to ensure the day-to-day functioning of the transport system and improving the sustainability of transport policy.

● Development of the transport system has been heavily weighted towards major infrastructure investments at the national level. It has not been possible to invest enough in local projects that also have a major influence on people's daily lives and business. In addition, there has been too little emphasis on proper maintenance of infrastructure. The infrastructure agencies estimate that if financing of basic infrastructure maintenance remains at its current level, there will be a gradual degradation of railway tracks, waterways and little used roads. There are also major challenges associated with maintaining the level of service and safety on all transport routes.

In fact, there are major challenges in improving productivity and efficiency across the transport sector. Development of the transport system must not be planned under the assumption that significant additional funding will be made available. More attention has to be paid to the transport system as a whole. Instead of optimising parts, the transport system has to be considered as a whole. Productivity and effectiveness could be improved by focussing resources in a more customer-oriented manner, taking an open-minded approach to using a broad range of mechanisms and supporting innovations to develop more efficient and customer-oriented operations.

The transport sector requires more effective administration and well-functioning markets for infrastructure and transport services. The skill base needed in the transport industry is growing and becoming more diverse. Improving the operating environment means continuous innovation and renewal. It is important to ensure that there are sufficient skills and development.

Decision-making for transport system financing is part of the annual budget and thus very short-term in nature. Planning and the associated land use decision-making for work such as infrastructure projects takes several years. That is why development of the transport system has to be long term. In addition, decision-making focuses on major infrastructure investments at the expense of improvements and maintenance of the transport system. The uncertainty regarding government financial decision-making and the timing of decisions means cooperation in developing transport systems in urban areas lacks credibility. The effectiveness of the transport sector would be improved through a more long-term approach to transport policy, development of the system and financial decision-making.

Unpredictable trends in development

Values and attitudes

The central challenge is to understand the significance of differing lifestyle choices to selection of transport.

● In the future, people will look for individual lifestyles to suit their personal needs and this will increasingly determine their mobility. Work, study and leisure time may not necessarily be so tightly bound to time, place and phase of life as they have been. Sociability will take new forms and expand from something local into a global virtual society. Differences between people's views on life will increase. Transport needs will fragment and become unpredictable. There will be changes in modes of travel, numbers of journeys, length of journeys, and destinations.

Choices of where to live and travel are affected by how people value urban or rural lifestyles and how they value work and leisure. In future, environmental awareness will be more evident in people's actions, although material values will continue to influence consumption. However, it is very difficult to evaluate the influence of factors that affect people's attitudes and values in the future. It is also very difficult to evaluate how changes in people's opinions and attitudes will eventually affect their behaviour.

Development of the neighbouring areas

The main challenge is to be prepared for the changes in goods transport resulting from Russia's rapid economic growth.

● Development in Finland's neighbouring areas, particularly the St Petersburg and the Barents regions in Russia, as well as the Baltic and East European states, will be rapid. The increased traffic near Finland's eastern border is largely due to Russia's economic growth and the resulting transport of goods. Over the next few years, the volume of traffic will continue to increase, particularly on main roads, and will also switch more and more to rail. It is estimated that the EU's exports to Russia will triple by 2030. Imports from Russia will also triple. Finland's imports and exports to Russia will grow at the same pace, and Finland's exports to Russia could grow at ten per cent per year.

The growth in Russia's imports and exports is seen in increased maritime transport in the Gulf of Finland, increased maritime transport to and from Finland's ports, and the increase in goods transport on the rail and road connections to the ports. Growing transport of oil increases environmental risks. Russia will make more use of its ice-free ports of Kaliningrad and Murmansk once the logistics environment in these areas has improved. The development of the northeast passage might also affect international transport routes over the longer term.

The growth in export traffic can be seen as increased road traffic in southern Finland, particularly on the east-west arteries. Most of the growth in imports has been carried on the railways, but road traffic of imported goods has also increased. The split of transit traffic will remain the same as earlier with westbound transit traffic on the railways and eastbound on the roads. The traffic via various inland terminals can be routed with eastbound transit traffic to the railways.

The attractiveness of Finland as a transit route will decrease once the Berlin-Warsaw-Moscow transport corridor improves. The extension of Via Baltica and Rail Baltica to St Petersburg will create a new route for goods and passengers, which will also affect Finland's transit traffic.

Energy prices

The central challenge is to be prepared for rapid fluctuations in oil prices.

● The energy crises of the last few decades have been associated with rapid rises in oil prices. These rapid changes caused problems as operating models had to be adapted suddenly to changes in resources. When the real price of energy increases slowly, companies and people have time to adapt gradually. Even a four or five-fold rise in oil prices over 30 years would not necessarily lead to an unbearable situation if there was time to prepare.

A five-fold rise in the price of fuel would double the cost of motoring in Finland. Maintaining current travel habits would reduce the household budget by about ten percentage points. In the short term, journeys by private car could be reduced by over a third and air travel could be cut by as much as half. Journeys by public transport would increase by about ten per cent and journeys using light transport by a quarter. The overall reduction in travel could be in the order of a quarter. After a period of adjustment, the replacement of the fleet with more fuel-efficient vehicles, and the use of alternative fuels would let people increase their use of cars again, but energy consumption would remain lower.

The fastest way to adjust would be to change travel habits and reduce traffic. In order to prepare for fluctuations in fuel prices, it would be wise to maintain public transport services in the centres of growth and smaller urban areas.. The maintenance of effective rail traffic is the most energy efficient alternative in densely populated areas and for travel between major centres. In the long term, integrating communities and increasing population densities could be an adaptation to expensive travel.

For business it is the relative changes that will be decisive: which industry sectors use relatively more energy and transport in production, and which states and communities have secured their well-being more effectively than others through energy-efficient operations and transport. Although there is a lot of heavy industry in Finland that needs to transport both raw materials and intermediate products, energy efficiency is good compared to its competitors. On the other hand, transport to the major markets requires air or maritime transport, and it is not easy to compensate for the extra cost. The major structural challenge may be faced by industry sectors that have not traditionally been seen as old-fashioned or as high energy consumers: components with high value-added and various intermediate products or sub-assemblies are moved between production plants in a continuous stream which relies on road transport. The continuous rise in transport prices may lead to a preference for local production.

Transport policy framework

The challenge of climate change will have an increasingly important effect on transport policy. Greenhouse gas emissions from the transport sector must be reduced.
But at the same time, care must be taken to ensure the competitiveness of the logistics sector and ease of daily travel. A balanced transport policy must find ways of reconciling these objectives.

Transport systems and land use cannot be changed quickly. Changing transport policy requires long-term action and new choices. The approaches taken now in transport policy and land use planning will define transport choices for a long time to come. Getting results takes time, but concerted action by the various players can change the direction of development.

The transport sector will develop to become more customer-oriented, profitable and innovative. An operating approach that is customer-oriented and focussed on the sensible and effective use of resources will underline harmonisation between the needs of its various customers and society's objectives. It also makes prioritising unavoidable; public sector resources cannot satisfy everyone's needs and expectations. Information, skill and cooperation will be used to find the best combination of action and operating approaches. New operating approaches will compensate for a lack of resources; getting more from what is available.

The objective in developing transport systems and corridors is to secure a more cost-effective, long-term level of service for passengers and transport by combining different approaches. Along with increasing infrastructure and transport services, effective mechanisms to manage demand will also be adopted: harmonising land use and transport, management of demand for transport and influencing people's attitudes and behaviour. Securing service levels through small steps in development increases flexibility and provides some leeway in the event of changes in the operating environment. It also enables the effective use of new, intelligent technologies. The four-step principle aims at resolving transport problems quickly, cost-effectively and with more attention paid to the customer than traditional development, which mainly focussed on large infrastructure investments.

This section presents the elements of the framework that are the most influential for long-term development of the transport system. Above all, the framework outlines the changes in transport policy that are needed for sustainable development of the transport system in the best manner possible to meet people's day-to-day and business needs. Some of the actions required need to be taken fairly soon, while others will not be needed until much later.

Reducing greenhouse gases from transport

The main factors in reducing greenhouse gas emissions from transport are stopping the fragmentation of urban structures and the growth in use of private cars, improving the energy efficiency of transport and new, low-emissions fuels. Emissions could also be reduced by improving the competitiveness of rail and water transport and by increasing their share of the transport market.

Reducing greenhouse gas emissions will be slow. There are many effective mechanisms available although their effect may only be seen in a few years. That is why it is necessary to set off in a new direction systematically and immediately. If reductions in greenhouse gas emissions from transport are targeted in a controlled manner and in different ways, there is every possibility that it will succeed without endangering the competitiveness of Finland's logistics sector or the functioning of day-to-day travel.

However, an approach that considers using transport policy in isolation to reduce greenhouse gas emissions from transport will not work. The support of land use planning in particular, and tax policy and other economic steering methods are needed. Environmentally friendly modes of travel; walking, cycling and public transport should be promoted. This also needs the support of land use planning.

Urban structures in the centres of growth to be more compact

The objective is a compact urban structure with little traffic and where journeys can be made using public transport, cycling or walking. However, the different interest groups involved in land use and transport planning often pull in different directions. Decisions taken by government, municipalities, business and individuals emphasise their own, mainly economic, interests. Travel and transport are just one factor in location decisions taken by companies and individuals.

Planning of regional transport systems has to develop so that transport and land use planning are better integrated. Land-use planning has to give more consideration to the effects on traffic and the split between different modes of travel. Activities should be located so as to minimise journeys and promote the use of public transport, cycling and walking.

There should be closer cooperation between the Ministry of Transport and Communications and the Ministry of the Environment with regard to land use and transport planning. The role of the Ministry of Transport and Communications and the infrastructure agencies is to promote transport considerations in planning by other government bodies and agencies. It is important that the municipalities and central government develop a common understanding of the importance of improving the transport system in response to changes in urban structures, a common will to stop the process of fragmentation of urban structures, and a way to work together to achieve these targets. The main tools are the provincial and overall plans, as well as urban and transport system plans for renewal of municipal and service structures. In the large urban areas it is important to develop a network where local centres offering day-to-day services are connected by strong public transport links.

Taxation of company cars and offsetting the commuting cost against tax should be reviewed so that their negative effect on community structures and travel behaviour is reduced.

Attractive alternatives to the use of private car

The objective is to increase the share of public transport in urban areas. In order to make travel easier and day-to-day journeys possible without a car, transport services in places where people work will be reviewed and planned holistically in the light of local objectives. Land-use planning will be linked to the development objectives for public transport.

There will be more government aid for public transport planning in the most important urban areas, and subsidies will be carefully targeted to public transport services as long as the municipalities also increase their contribution. The development of public transport will be supported over the long term through development programmes specific to particular urban areas. The public transport development programme will be linked to the regional transport system

plan. The objectives set for the regions' public transport and land use will help achieve national objectives. The regions will select the best mechanisms to achieve their objectives with consideration to their individual strengths and particular needs.

In urban areas, most journeys are so short that they could easily be made on foot or by bicycle. Footpaths are needed that are attractive, safe and suitable for everyone, as well as cycle paths and services for cyclists. A comprehensive network of good quality paths for pedestrians and cyclists will be established in urban areas, and they will be signposted and have information points as well as access to stops for public transport. Pedestrians and cyclists will be considered as important as other modes of transport in urban areas' transport planning.

Demand management through pricing

The aim will be to price all transport modes on the basis of use. The need is most urgent in road traffic. There is a clear link between price and demand in air, water and railway traffic: pricing influences customer choices.

Road pricing will be implemented using intelligent technology and satellite positioning. The new pricing system will be introduced in 2015 at the earliest. The basis for charging will be the time a vehicle is used, the place, time of the day and the characteristics of the vehicle. It will replace part of today's taxation on vehicle use without increasing the average cost of using a vehicle. However, the price during rush hour in urban areas could be higher than now. On the other hand, pricing in rural areas would take the long distances and lack of alternative modes of transport into account.

This new approach to pricing could influence the choice of transport and the amount of private car use, increase utilisation of the current network and cut rush hour peaks by influencing the timing of journeys. Pricing could also encourage a switch to vehicles with low emissions. The objective is to use pricing to manage transport demand and thus reduce the damage done by traffic. In major urban areas in particular, road pricing will be effective in managing demand, thus reducing congestion and greenhouse gas emissions.

Road traffic pricing in urban areas will be part of a review of traffic pricing throughout the country. When improving transport systems in urban areas, demand management will always be one of the mechanisms available.

More energy efficient travel and transport

The competitive position of energy-efficient passenger rail travel will improve for local travel in urban areas and long distance travel between centres. The train is at its best for medium distance travel of about 100–400 kilometres. Improving the competitive position of rail traffic requires improvements in connections, information and train services as well as development of the network of travel terminals and door-to-door services.

The competitiveness of rail and water traffic will be improved to increase their share of transport. This requires efficient, intermodal terminals and new approaches to loading and load areas as well as investment in transport management and administration systems. Emissions trading scheme as proposed by the EU will be introduced in air traffic. Businesses will be encouraged to save energy and use energy more efficiently in transport as part of their quality and environmental management systems.

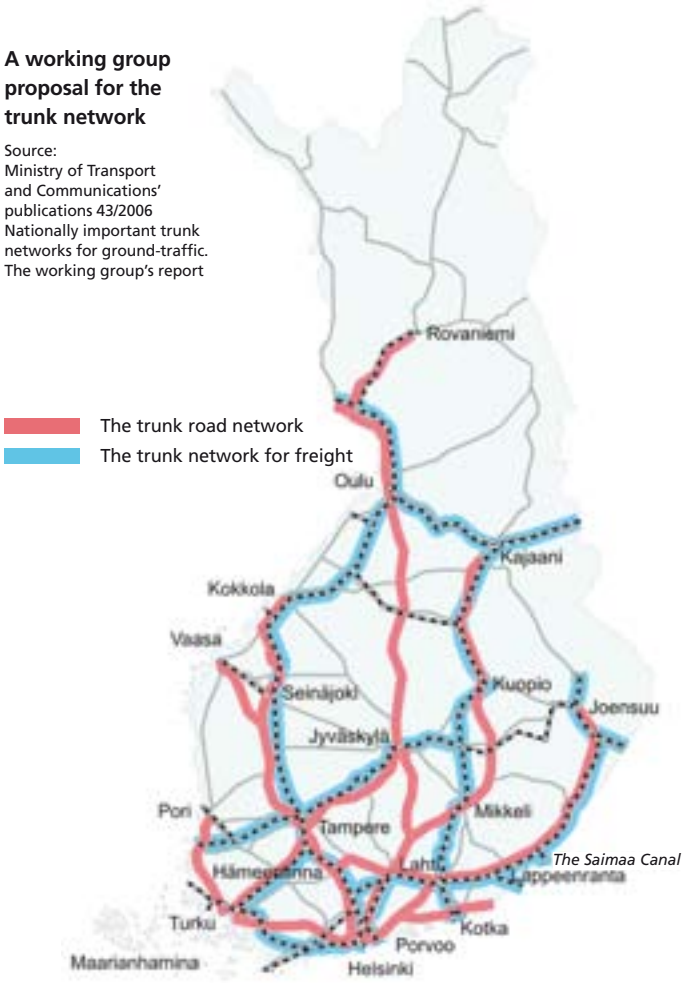
Increases in the price of fuel for road traffic will play its part in the switch to alternative fuels. The use of biofuels in transport will be replaced as soon as possible by cost-effective, second generation biofuels made from forestry and waste raw materials.

Maintaining competitiveness in logistics

In order to maintain competitiveness, Finland's businesses need reliable and cost-competitive logistics services and international connections, well-functioning trunk road network, terminals, ports and the infrastructure to access them. Good logistics services require functioning markets, skills, use of technology and a competitive operating environment in international transport services.

A working group proposal for the trunk network

Source:
Ministry of Transport and Communications' publications 43/2006
Nationally important trunk networks for ground-traffic. The working group's report



The trunk network development programme

Logistics is facing increasing demands and tougher objectives. The development trend in transport is for long distance transport of goods and people to be concentrated on specific routes and transport corridors. In the long term, the objective is that the nationally important and most travelled routes will be of a consistent high quality in order to provide good operational availability and safety.

A working group has drawn up a report on the trunk network of nationally important roads and rail tracks. The working group's recommendation is that the most important main roads, about 3,000 kilometres, and the most important railway connections for passenger and freight transport, about 2,800 kilometres, should be part of the trunk network. In accordance with national targets for the regions, definition of the trunk networks for road traffic will provide initial guidance on land use. The definition identifies significant national interests that must be considered in land use planning.

A decision will be taken as soon as possible on the scale of the trunk network. To maintain the competitiveness of logistics and for the long-term development of the transport system, it is important that a trunk network for water and air transport routes is defined in the same way as for land transport. The costs of developing the trunk network have been estimated at several billion euros. A national programme will be drawn up to improve their service level, and this will ensure that networks operate well at the lowest possible overall cost. Development of the transport infrastructure will utilise a variety of financing models and approaches.

High-quality logistics services

To maintain competitiveness in logistics, Finland will have to invest in logistics competence and related research and development. Information and communications technology and the opportunities provided by other technologies will be widely used. It will be ensured that there are effective markets for transport and handling services, and that there are information systems available to plan and manage supply and demand of transport services. The operating environment for international transport services has to be competitive: infrastructure, regulations, transport fees and taxes must not increase transport costs relative to competitor countries. The environmental effects of transport services must be managed.

The availability of high quality and reasonably priced transport services and functioning transport markets will be ensured. The roles and tasks of government and transport operators will be clarified, and operating models will be developed so that transport as a business operates efficiently. Deregulation and good functioning of rail freight markets will make rail transport competitive in the long term.

Finland's position today as a gateway to Asia is a clear competitive advantage. Because of that, Finland has good air freight connections to Asia as well as better daily connections to Central Europe than many of its competitors. Russian transit traffic will increase maritime connections between Finland and other countries. We want to preserve these competitive advantages.

Maritime transport across the Baltic will retain its dominant position in the foreign trade transport system. Winter conditions and an extensive archipelago place considerable demands on maritime transport in terms of cost, safety and the environment. It is important that Finland maintains its professional skills in maritime transport. The best guarantee of this is through measures at the national and EU levels to maintain the conditions needed for a competitive shipping sector.

To ensure transport security, the use of automatic identification systems will spread from trailers and individual shipments to vehicles. Electronic customs procedures will also increase transport security. In the future, information about individual shipments and transport will be transmitted electronically from the supplier to the buyer and also to the authorities. In maritime traffic, cargo information will be entered electronically into an information system, and the relevant information will be automatically transmitted to the people who need it.

Connections to Europe, Asia and America

Smooth daily travel

Good daily life needs accessibility to transport services, functioning travel chains and predictable travel times. The way to attain these depends on circumstances. Measures aimed at reducing greenhouse gas emissions, strengthening the position of public transport and walking and cycling also support smooth daily travelling. Transport safety and a good transport environment contribute to the quality of daily life.

The transport system has to be suitable for as many people as possible irrespective of age or capacities. Accessibility is always considered when making decisions that affect people's travel. This requires re-evaluation of habitual ways of working, and commitment to customer orientation. It is important to provide access to high-quality, reasonably priced passenger services and ensure that transport markets function. The objective is to develop operating models for government, municipalities and transport service providers with the aim of providing efficient transport services every day as part of a well-functioning transport system.

Goal-directed and long-term transport safety work

The most pressing needs for transport safety concern road traffic, where particularly head-on collisions on main roads, accidents involving pedestrians and cyclists in built-up areas and people's attitudes need to be addressed.

The single most important safety factor in any vehicle is the driver. People's behaviour and choices greatly determine the rate of improvement in road safety.

The objective is a safety-conscious, responsible traffic culture in which there is respect for the lives of others and for observing the rules. This requires changes in the attitudes, motivation and behaviour in individuals, companies and decision makers. Training and the provision of information will have to be changed in order to achieve these objectives. Transport companies will be encouraged to include safety as part of their quality system.

Head-on collisions on main roads will be reduced by installing median barriers. The most important ways of reducing accidents involving pedestrians and cyclists in towns are traffic calming schemes for residential and central areas and the building of paths for pedestrians and cyclists. The travel environment will be made clearer to promote safety.

Driving speeds will be controlled using intelligent speed adaptation, speed limits and speed checks. Security systems such as driving stability systems, accident prevention systems and emergency messaging systems will be widely installed in vehicles. Real-time information systems will be used. Alcohol-related accidents will be reduced by encouraging the use of alcohol ignition locks. Improving the safety of heavy vehicles will require new measures relating to vehicle safety features, driving skills and transport operations and services.

Many new, effective mechanisms of vehicle and information technology are being developed, but it will be some time before they are widely used. In order for the new safety technology to be effective, the renewal of the vehicle fleet will be accelerated by such means as the taxation system.

Making public transport attractive in urban areas

The objective in urban areas is to develop public transport options that can compete with the use of private cars. The objective with public transport is to create travel chains that are functional, of good quality and accessible. The coverage, service level and attractiveness of public transport in growing, large and medium-sized urban areas will be clearly improved by reviewing transport planning, organisation and funding. New technology will be used to improve information services for passengers, and to make journeys easier and public transport more attractive.

Government investment in public transport infrastructure will be increased, including tracks, bus-lanes and other aids to, interchange stops and information systems. A condition for increasing government support for planning and public transport services is that the municipalities also increase their investments.

New approaches to rural public transport

A reasonable level of public transport will be provided for people in rural areas and small towns. This means that reductions in the number of scheduled routes will be compensated by organising demand responsive public transport. The municipalities and the Social Insurance Institution of Finland will be encouraged to use scheduled services as well as demand responsive services and the associated booking systems when ordering transport and reimbursing transport costs.

Improving public transport and making the services more effective means decision making on service levels and better coordination in transport planning. Planning of services will be integrated over a wider area than a municipality, so travel and transport needs across regions and local government areas can be considered as well as possible.

Government subsidy for public transport to the regions will be used to maintain a basic level of service. Subsidies will ensure that citizens throughout the country have basic public transport services. Funding will be considered both as a whole, separate from the municipalities, as well as in conjunction with the funding for the municipalities and the Social Insurance Institution of Finland for transport services and reimbursement of travel expenses.

Most travel in sparsely populated rural areas depend on private cars. Help from neighbours and car sharing could be of particular help to older people in rural areas when there are insufficient public transport services to meet their day-to-day needs. Improvement in information services could support the wider use of car sharing. Developing public and commercial operating models could improve accessibility to services and facilitate the daily life of people without cars in rural areas.

Sustainable practices in maintaining private roads

Private roads have a significant role in rural transport systems as access routes for permanent inhabitants and holiday makers. As populations fall, more and more little-used roads are left to the few remaining inhabitants to maintain as private roads. The current system of government subsidy is not fair in all respects. The subsidy system needs to be renewed so that maintenance payments for owners of long roads through sparsely populated areas do not become excessively high, and private roads can be maintained at reasonable cost.

Maintaining private roads requires sufficient resources and maintenance skills. It is becoming more and more difficult without assistance as fewer and fewer people live in rural areas and the population is aging. Thus maintenance of private roads is increasingly provided by companies as a paid service. There is a need to encourage the development of skills and markets to ensure appropriate long-term maintenance of private roads. There is also a need to develop a joint approach between government, municipalities and private road owners to procurement of cheaper and better quality road maintenance services.

High-quality local environments

Measures aimed at reducing greenhouse gas emissions also support the reduction of local environmental damage. Cooperation between transport and land use planning, action to reduce the growth in traffic and investing in research and development will prevent an increase in environmental damage. Damage caused by exhaust gases and particulate emissions from traffic will fall steadily, but very slowly, as a result of improved vehicle technology. The most effective ways of reducing damage caused by particulate emissions are to reduce the growth in urban traffic, and to invest heavily in research and development aimed at reducing all emissions. Removing the existing noise pollution will require structural noise abatement measures.

Protective measures will be taken in ground water areas where there is transport infrastructure.

Reducing the largest risks threatening marine environments means participation in international work to promote maritime safety and environmental protection, and using information technology to prevent accidents.

Together, better, more efficient

The transport sector's operating culture will be changed through evaluating problems and measures together with customers, and by open-mindedly searching for solutions, also from the field of information technology. The objective is to move from optimising parts to optimising the whole system and having it work well on a daily basis.

The new operating culture, with its focus on the efficiency of the whole transport sector, will mean broad-based cooperation and networking between transport sector experts, customers and other stakeholders. Ways of working together will be developed to benefit all parties.

Efficiency in maintenance and development of transport infrastructure

In order to maintain roads, rail tracks and waterways sensibly, and to halt the weakening of their service level and condition, they will be allocated sufficient funding. Financing for small investments will be increased so that essential investments can be made quickly and flexibly.

Effective use of resources will require prioritising. We will try to find solutions to the travel and transport problems of people and businesses so the transport system as a whole can serve its users as well as possible. This means there will be a deeper understanding of different customer groups' operations and a serious evaluation of problems in the travel and transport chain. Resources will be focussed to bring as much added value as possible to people's daily lives and to business, and simultaneously support the objectives of society in general.

When improving the service level of transport corridors, aside major long-term investments broad-based development strategies using the four-step approach will be used. The objective is to secure travel and transport service levels, as well as safety and environmental quality, cost-effectively by combining different mechanisms. Development measures will often be shorter-term than at this time, but there will be more of them. The objective of the new development strategy will be to make effective use of the capital invested in transport infrastructure, and to improve service levels. Securing service levels through small steps increases flexibility and provides some leeway in the event of changes in the operating environment.

Healthy and functional markets for service providers are essential for innovative and economic approaches to improving the productivity of the sector. The infrastructure administration is a major player in the markets for both civil engineering and expert services. This is why it is important that procurement methods promote the development of functioning markets. In order to make civil engineering markets more transparent, Finnish Road Enterprise is to be privatised.

The extent and quality of the public road network will be reviewed because part of the network serves areas of very low demand. The least used half of the road network carries only five per cent of road traffic. Generally speaking, little-used roads in rural areas are now of so little importance to traffic that there is no reason to maintain them as regular roads. A survey will be carried out to determine the boundaries between rural roads and private roads, and they will be defined accordingly.

The rail network also has some very little used tracks, mainly serving the forest industry for transport of raw material and products. Such low demand and high maintenance costs mean that there is no reason to carry out basic repairs or maintain the track. These transport needs can be satisfied more cost-effectively using road transport. Tracks that are consistently little used will be abandoned as unnecessary.

The same principles will apply when evaluating the government's investment in the maintenance of little-used waterways and icebreakers.

New technology will be used creatively

Finland offers an innovative environment for the application of information and communication technologies to travel and transport. Other necessary elements include relevant legislation, funding of information products, the will for cooperation and joint ventures between the public and private sectors, acceptable operating models and open debate within society. It is important to recognise the needs of users and ensure that there are companies, operators and service providers in the country who are able to produce reliable systems, interfaces that are easy to use and reliable services for citizens.

Both the public sector and commercial companies will be responsible for developing systems and services. A clear division in the roles of the public and private sectors in gathering and processing information to provide services is an essential condition for significant product development. The task of the public sector is, above all, to create a base for the application of new technology and to ensure opportunities for commercial operations.

Services directed to all citizens must meet the needs of their users, be comprehensible, easy to use and moderately priced as well as provide equal access to special groups.

The opportunities provided by new technology will be used alongside other measures in all transport system developments. New technology can be used to increase the efficiency of transport administration, logistics processes and information services as well as to improve transport safety. Many of the new ITS mechanisms should be utilised quickly, whereas others will not be used effectively for years, maybe decades, to come. However, we must be able to prepare for the adoption of new mechanisms at the appropriate time when planning short-term development work.

Information technology is already widely used in the management and control of water, rail and air traffic to ensure safety and effective operations. Administration of information related to shipping and logistics is becoming more efficient, particularly in the Baltic Sea region. Control systems for maritime transport will be integrated into a single international system.

For road traffic, the emphasis is on basic services related to traffic flows, disturbances, weather and road surface conditions, and up-to-the-minute monitoring systems. The new technology enables management of traffic demand using information and pricing.

Real-time information, route planning and other value-added services will be provided in public transport. The services will help individual passengers feel in control of their journey and make it pass pleasantly. Real-time systems can support the operational management of transport hardware so that travel is efficient, cheap and certain.

Technological development makes it possible to equip vehicles with more and more safety systems, and these help drivers control their vehicles. They can include applications and services that affect transport safety, such as the eCall emergency messaging system.

Transport system planning will be developed

The service levels that customers need can be achieved using a broad and innovative range of measures. In particular, travel problems in cities can be eased in a sustainable manner by influencing transport needs and the choice of transport mode. All modes of transport will have the same weighting when considered in transport system planning.

The first priority is to affect the creation of transport needs through land use planning. Use of today's transport services and network can be made more effective through transport management, technology and maintenance, and by developing new operating models.

Resources will be used as efficiently as possible to achieve objectives. A new development approach that supports innovation, i.e. the four-step approach, will be used to find effective solutions to the problems in the transport system. A variety of small development steps, which are relatively short-term but consistent, can be used to maintain and improve the service level and quality of the whole transport system more cost effectively than today, particularly in urban areas. Alongside increases in infrastructure and transport services, efficient use of demand management and new intelligent technology will be added. Large, one-off investments are the best option when gradual development is not possible.

Financing the development of transport systems in large urban areas will comprise a variety of financing initiatives focussed by area instead of project-directed funding. This will apply particularly in the Helsinki area, but possibly in the Tampere, Turku and Oulu areas too. Government investment will depend on how well the transport system plans contribute to the objectives of national transport policies.

Investment in transport sector research and skills

Research into the transport sector will be strengthened nationally through universities, research institutes and other central players. The Ministry of Transport and Communications will coordinate and fund strategic research and development in the transport sector. The infrastructure agencies will work with the Ministry as well as being responsible for the development of their own areas. Research and development will be coordinated between other ministries, the private sector, and training and research institutes allowing multidisciplinary, cross-administrative programmes.

A common transport data handling system for the administrative sections will be developed to evaluate the transport system itself, and trends and developments in travel and transport.

Investments in skills and research and development will be made through international co-operation and multi-

disciplinary networking so that transport sector skills are kept at a high, internationally competitive level. Training curricula will be continuously developed so they can respond to changes in the operating environment and the challenges of working life. Further training will be developed through cooperation between universities, polytechnics and working life. This will provide the base for a new generation of research, development and skills.

Development and innovation in the sector will promote new approaches to cooperation, planning and procurement. Reward systems for innovation will also be developed.

Administrative structures to be renewed

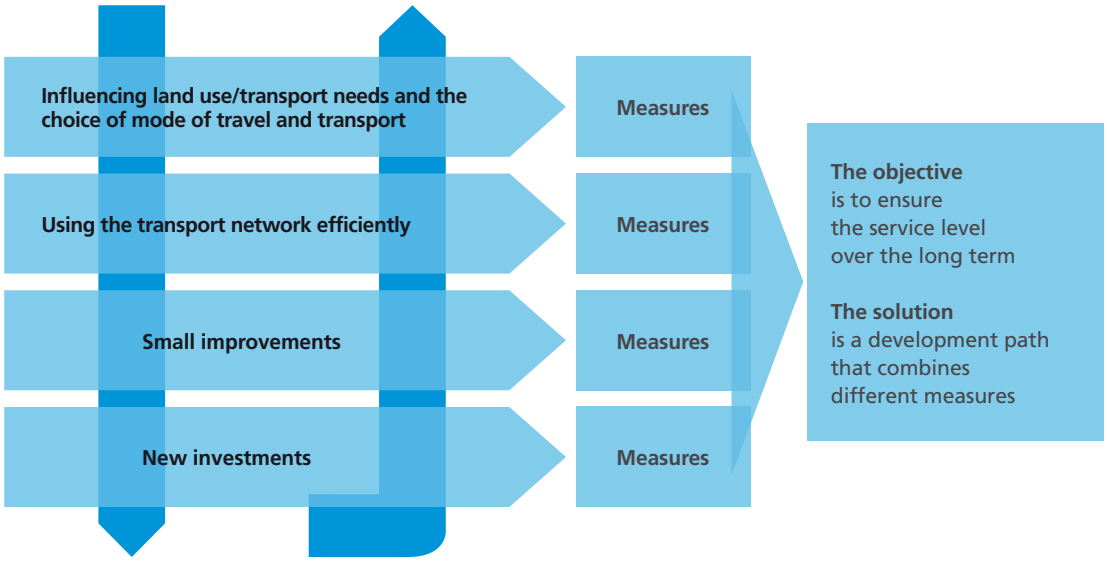
Administrative structures will be continuously developed so that the administration can respond effectively to the challenges of a changing operating environment. By 2030 there will be major changes in administrative operations and structures. The attempt to develop the transport system as a well-managed whole, the need for interactive planning in land use and transport, the efficiency targets for the administration and many other operational development needs will, in time, be visible in the renewal of administrative structures.

The first phase is to improve the efficiency and service capability of the administration by revamping the infrastructure and transport administration, developing a joint, overall view of the transport system, and common measures to improve efficiency and effectiveness. The use of the administration's joint resources will become more efficient, cooperation between the transport agencies will be improved and a common, transport system knowledge base created.

A preliminary examination of the requirements for combining the infrastructure agencies i.e. the Finnish Road Administration, the Finnish Rail Administration and the Finnish Maritime Administration, has been carried out. In addition, the Finnish Maritime Administration has put forward a proposal to turn its production activities into unincorporated state enterprise. The first phase is to improve the efficiency and effectiveness of the administration's operations. Areas for examination in later years include the organisation of the transport departments and safety authorities in provinces to make public transport and road safety work more efficient.

Customer-oriented planning will be emphasised in organising public transport. The starting point will be regional needs and views of the roles and objectives of public transport. This refers to strengthening operational and decision-making authority for public transport in the regions, which means having appropriate administrative resources. The operating model will be selected so that the administration remains light.

Barriers to competition will be removed and markets opened to the supply of transport services in rail transport and public transport in the most important urban areas.



The transport system's new development strategy will use resources more efficiently

Further measures to support the framework

Transport policy report

The challenges facing the transport system require new transport policy choices from many quarters as well as broad-based and functional cooperation between the various sectors of society and operators. Sustainable development of the whole transport system requires decisions to be sustainable and consistent with the framework.

In order to improve sustainability, it is proposed that the long-term framework of the transport policy be considered during each parliamentary period in a report on transport policy from the Government to Parliament. The report will evaluate the broad spectrum of Finland's transport policy as a whole. It will describe the condition of the transport system, how development is envisaged and its challenges, and the long-term framework for transport policy, emphases and priorities. The report will provide a good basis for the long-term development of Finland's transport system and offer the opportunity to develop the whole transport system by objectives in cooperation with the various agencies, and to link transport policy to other policy areas, such as commercial, regional and environmental. The report will also provide the framework for implementation of transport policy in different sectors.

Action plan

The transport policy framework includes many development proposals that attempt to ensure a functioning transport system that will support the well-being of Finland and its regions. The work is challenging with conflicting pressures from different objectives and players.

The development work concerns people in many areas of responsibility and many administrative sectors. On the basis of the framework, the Ministry of Transport and Communications will draw up an action plan in cooperation with those agencies that will play a significant role in its implementation. The action plan will define the central measures required over the next few years, the timing and the responsibilities of the various organisations and agencies. The action plan will result in cooperation and measures that aim to develop the transport system in line with the objectives in the framework.

Part of the action plan will be a policy programme for the transport industry. Its objective is to ensure that high-quality goods and passenger transport and travel services are generally accessible, moderately priced and provided effectively through functioning transport markets. The objective is also to clarify the roles and tasks of government and municipalities as well as the operating companies, and to develop operating models so that the transport industry is efficient and benefits from day-to-day travel and business transport.

Transport system development programme

Development of the transport system will require a long-term development programme to be reviewed in each parliamentary period.

The traditional development programme, which focussed almost exclusively on investments in transport infrastructure, is not sufficiently wide-ranging. The transport system will be developed over the long-term using many different development measures to answer current and future challenges and create the conditions for future approaches. The development programme will present the funding and other resource requirements.

The transport system's development programme consists of different, wide-ranging measures.

Transport infrastructure development	• Trunk network development • Other transport infrastructure developments • Themed projects / infrastructure developments
Development of transport systems in urban areas	• Development measures required by the statement of intent
Transport services development	• Development of public transport services • Development of traffic guidance and information services • Themed projects / Transport services development
Development of future approaches	• Development of data networks for transport • Development of transport management systems.
Improvements in skills and knowledge	• Research and development • Improvements in transport sector skills

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