CITY OF HELSINKI

ENVIRONMENTAL REPORT 2002 | SUMMARY

CONTENTS

Mayor's Overview

The purpose of Helsinki's Environmental Report is to monitor implementation of the city's environmental policy, to evaluate progress in environmental protection in the city, and to promote environmental management in the city's administration. Environmental reports are being established as part of the public-sector monitoring process in a number of countries. The City of Helsinki wants to be at the leading edge in both handling and reporting on environmental issues.

The environmental report complements well the image portrayed by the City of Helsinki to its citizens and liaison groups. It has found its place in the city's reporting process alongside the annual report, financial statement and the personnel report. This year, to emphasise this collection as a whole, the reports have been given a consistent visual appearance. The reports are supplemented by annual and environmental reports by different city departments and businesses.

From the perspective of environmental protection, the highpoint of 2002 was the Sustainable Development Summit organised by the United Nations in Johannesburg in August/ September, in which I participated. The Conference of Cities and Towns that was held in conjunction with the Summit was also attended by a large number of administrators and experts from around the world.

Many important commitments were made in Johannesburg and implementing these is also the objective of local administration. Several good strategies were outlined in the field of sustainable consumption, an integral part of sustainable development, and these can be put into effect by all city departments. Every consumer decision has environmental consequences and affects our ecological footprint, which in Helsinki, as in other locations, is still far too great on a global scale. For example, by continuing to rationalise procurement, traffic and the use of energy and by making these functions more efficient, the city can achieve both environmental and very-necessary financial gains.

Sustainable development work in the City of Helsinki culminated in June 2002 when the City Council unanimously adopted the Sustainable Development Action Programme, making Helsinki the first capital city in Europe to have completed a comprehensive programme of sustainable development. This effort was acknowledged in the European Sustainable Cities Award competition in which Helsinki was a finalist this year.

Preparation for the Action Programme was carried out in extensive co-operation with all city departments and a large number of citizen groups and non-governmental organisations. This guarantees that implementation of the programme is based on a good foundation. It is, however, important to monitor completion of the objectives so that efforts can be directed where progress has been weakest.

This Environmental Report introduces several key aspects of environmental protection in 2002. One of these was the Vuosaari Harbour decision, which enables a change in the use of land in the Western Harbour, Sörnäinen Harbour and Central Pasila, allowing the construction of new residential areas close to public transportation and midtown services.

The court case concerning the tendering of Helsinki city bus services attracted considerable international attention and ended in the best possible way for the environment. According to the ruling made by The Court of Justice of the European Community in September, all the environmental criteria set by Helsinki in the tendering of Bus Route 62 were legal. The decision showed that environmental issues also have a key role in EU guidelines and in the interpretation of those guidelines. Helsinki's position as a forerunner in this field means that opportunities of this type for achieving an improved environment must be implemented to the fullest possible extent.

The City of Helsinki's departments and businesses have a fairly-independent role in executing environmental management. In the future, the objective is to integrate environmental-management systems more effectively into normal financial and operational planning in accordance with City Council requirements. The responsibility for environmental issues lies with all departments, as well as with the city's political leaders. Joint environmental operations in the city will be outlined in the near future in the next City of Helsinki environmental programme.

Eva-Riitta Siitonen, Lord Mayor

Environmental Management in the City of Helsinki

Environmental management in Helsinki is carried out via directive instruments which concern the whole city and each department's own environmental-management systems. ISO 14001 Environmental Management Certificates have been awarded to HKL bus traffic (1998), The Port of Helsinki (2000) and the Helsinki Energy plants in Salmisaari (2000), Vuosaari (2002) and Hanasaari (2003). Helsinki Energy's head office and two of the company's other offices, and the HKL head office were awarded the right to use the Green Office environmental-management system certificate in 2002.

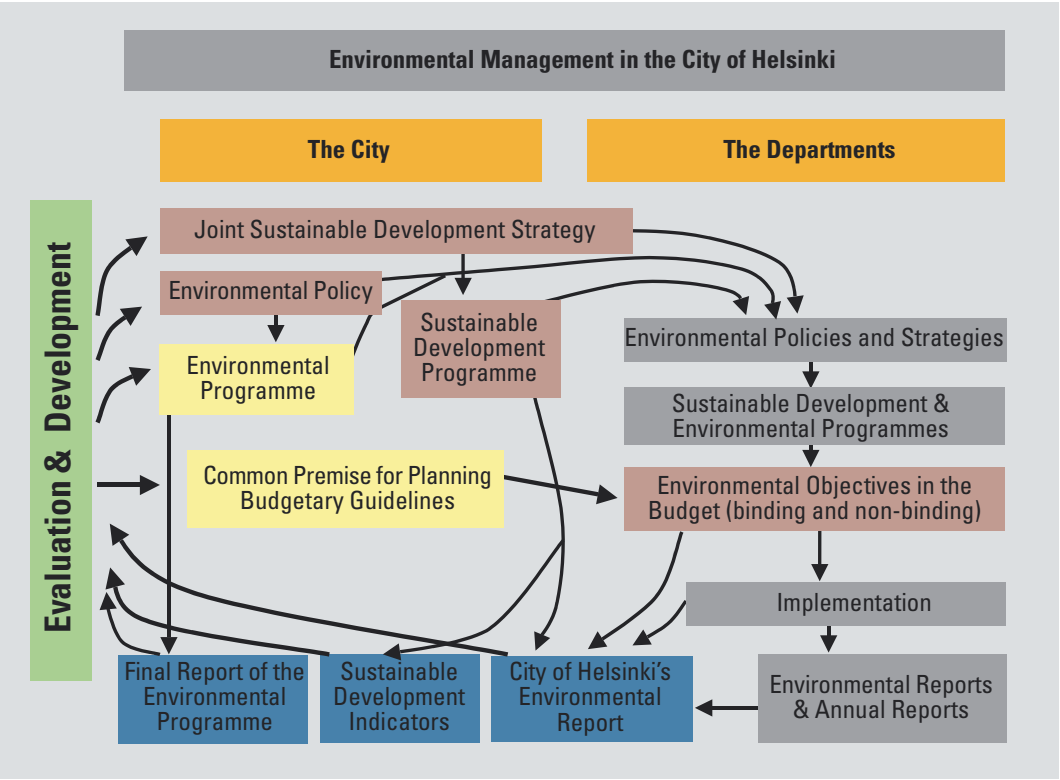
A landmark in environmental protection in Helsinki was achieved in June 2002 when the City Council approved the city's Sustainable Development Action Programme. Helsinki was the first European capital to complete a comprehensive Sustainable Development Action Programme.

Several citizen groups and non governmental organisations as well as the contact network between different departments participated in development of the programme. During the preparation phase, four extensive citizen forums were held at Finlandia Hall in which experts and representatives from different organisations held preliminary sessions and citizens were able participate in the exchange of ideas.

The programme contains seven primary objectives and 21 other decision points that describe the operational areas promoting sustainable development. In addition to environmental affairs and ecological sustainability, the programme sets objectives for the social and economic aspects of sustainable development.

In accordance with the city's environmental policy, environmental management must be part of managing the whole city administration. This is a considerable challenge as the City of Helsinki's organisation consist of 36 departments and institutions and approximately 40,000 employees.

A key way of making environmental management part of administration is to include it in annual operational and financial planning. In Helsinki, this has been implemented in many different ways. General guidelines for environmental management and reporting are included in the budget guidelines, which require all departments to set their own environmental objectives and monitor the completion of these objectives.



The City of Helsinki's Key Environmental Operations and Impacts

The main environmental impacts resulting from the city's own operations are emissions into the air and water.

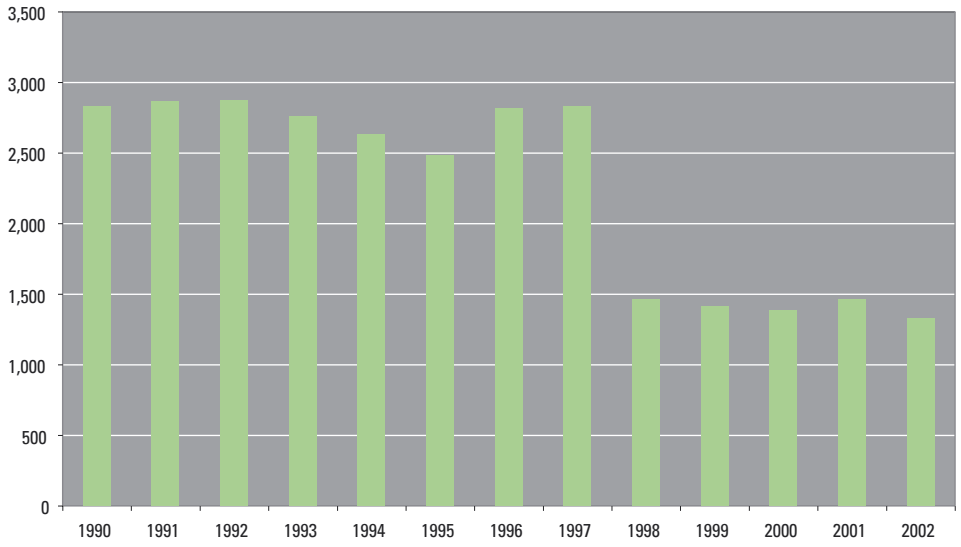
Helsinki Water's wastewater treatment plant in Viikinmäki achieved a purification efficiency of 94% for phosphorus and 68% for nitrogen in 2002. The total nitrogen load was 130 tons less than in the previous year, but the binding operational objective was not met. Nitrogen purification will be more effective once biological polishing filtration comes on stream in 2003.

Carbon-dioxide emissions by Helsinki Energy in 2002 were 3.4% higher than in 2001 as a result of increased energy production. Specific carbon-dioxide emissions have settled at just under 300g CO_2/kWh, in 1990 this figure was 400g CO_2/kWh. Helsinki Energy's share of the total carbon-dioxide emissions in Finland in 2002 was approximately 6%. This figure has remained much the same over the past few years.

In 2002, contaminated soil was cleaned up on ten residential sites, 13 industrial or office sites and 20 service- and distribution-station sites. Due to a complaint made against the environmental permit for clean-up of the former Myllypuro landfill area, landmass transfer efforts at this location still could not be initiated. In the clean-up operations handled by the city, 156,800 m³ of contaminated soil was transferred for treatment or moved to final placement areas. A further 42,400 m³ of soil was transferred from areas cleaned up by private landowners or operating companies. The total quantity of contaminated soil in the city area is estimated to be 2.5 million m³.

Noise-abatement programmes for main roads and railway traffic in the metropolitan area were supplemented by a noise-abatement survey of the Helsinki street network that was completed early in 2003 and concentrated on the 39 most-problematic areas. For 21 of these, a noise barrier has been suggested as the noise-prevention method, in the other 18 areas property-directed measures such as improving the soundproofing of windows have been proposed.

Nitrogen Load from the Viikinmäki Treatment Plant (tons/annum)



The budgetary target value for 2002 was 1200 tons/annum

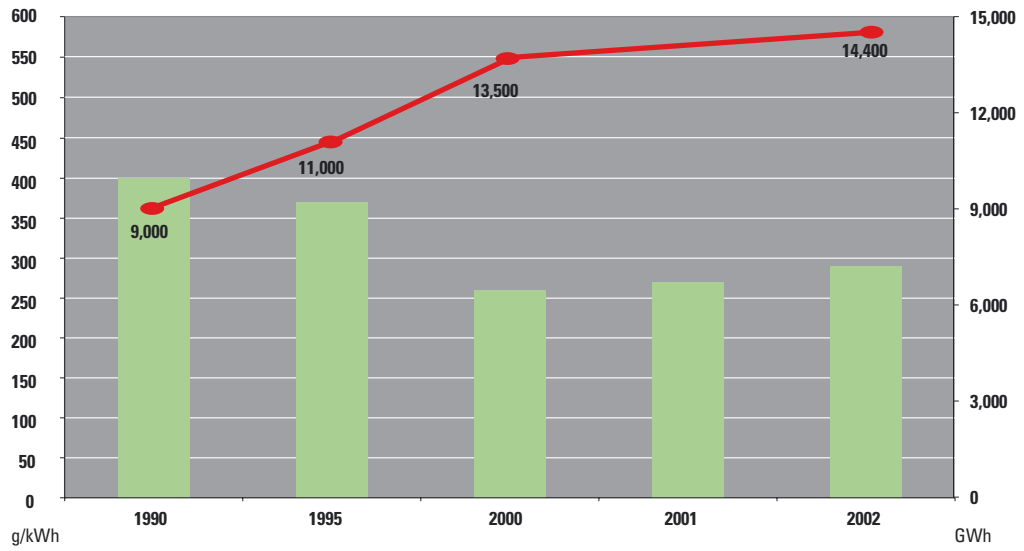
The City of Helsinki Supplies Department administers a competitive tendering process for the procurement of larger quantities of materials and services. In 2002, 37 new environmentally-labelled products were selected for supply agreements, seven more than in the previous year. The court case concerning environmental criteria which applied to tenders for the city bus service was the subject of a much-publicised ruling by the EC court in September 2002. In this ruling, the court found all the environmental criteria used by the city to be in accordance with directives on public procurement.

The assessment and monitoring of waste amounts has been Although the monitoring system is not yet comprehensive, waste resulting from the activities of the Health Department are now included in the assessment. Increasing waste-management costs are evidence of the change in waste quantities: according to the departments, costs have increased by approximately 11% compared to 2001, while according to an YTV estimate, the increase in price level in the same period was some 5%.

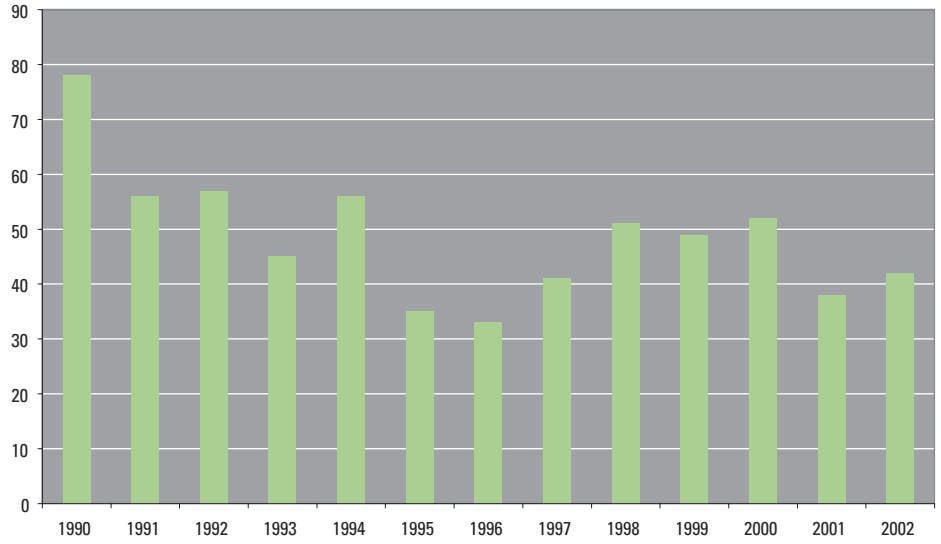
In 2002, the proportion of travellers using public transport was equal to that in the previous year both during the rush-hour and over the whole day. The number of passengers travelling by rail increased by 0.8% compared to 2001. HKL's bus service acquired 32 new natural-gas-fuelled busses in 2002, these low-emission vehicles help in improving air quality especially in the downtown area.

On 9th October 2002, Helsinki City Council made the decision to construct Vuosaari Harbour. The primary positive environmental effects of this project are related to the removal of heavy traffic from the city centre, reducing the amount of heavy traffic, and increasing the share of rail traffic in the

Helsinki Energy's CO2 Specific Emissions (g/kWh) and the Overall Energy Supplied (GWh)



Phosphorus Load from Viikinmäki Treatment Plant (tons/annum)



The budgetary target value for 2002 was 45 tons/annum

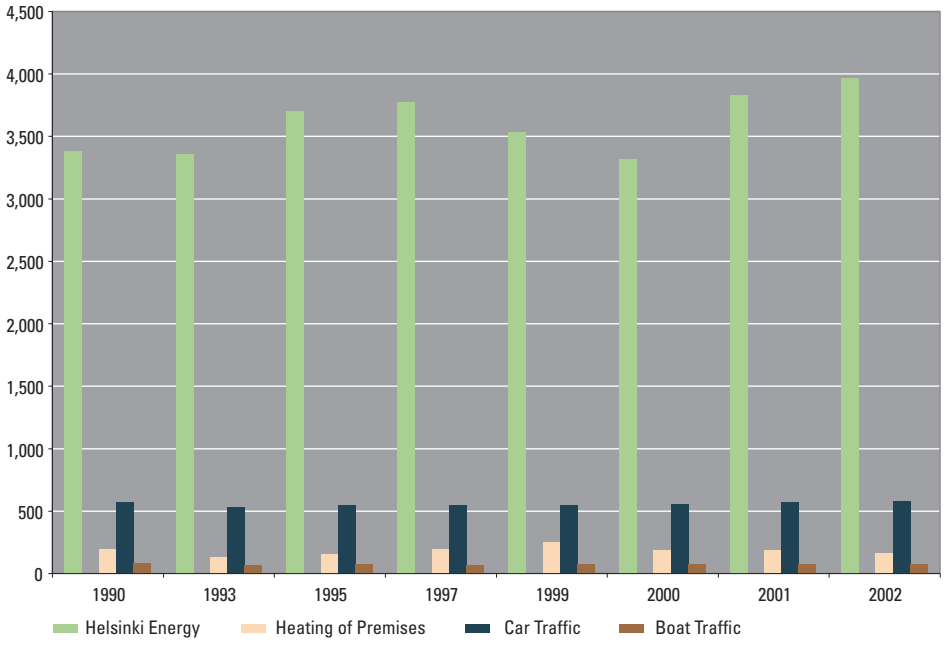
harbour-transportation system. Environmental nuisances for Vuosaari and its surrounding areas stem from the land areas affected by construction, noise, and disturbances to the birds and their living environment in Porvarinlahti bay.

The Housing Production Department placed specific focus on managing lifecycle issues in its projects during 2002. The main subjects of attention were the setting of lifecycle objectives for project planning, the goals-led steering of construction, and improving transfer-stage procedures. During the year, good experience was gained from the use of solar heating in the Eco-Viikki district.

In April 2002, the City Council approved general guidelines for risk management in Helsinki City. This document introduces both the main principles and key objectives of risk management and its organisation and tasking in the city. The City of Helsinki improved its readiness for preventing oil damage by acquiring a new E-class oil-recovery vessel and stationing this at the Suomenlinna fire-station dock.

Environmental education in Helsinki is provided by several of the city's departments and by the Korkeasaari Zoo. Other key facilities for providing environmental information are the Harakka Nature Centre and Gardenia. During 2002, these two establishments hosted 243 nature-school days and welcomed more than 37,000 visitors.

Carbon Dioxide Emissions by Source (1,000 tons)

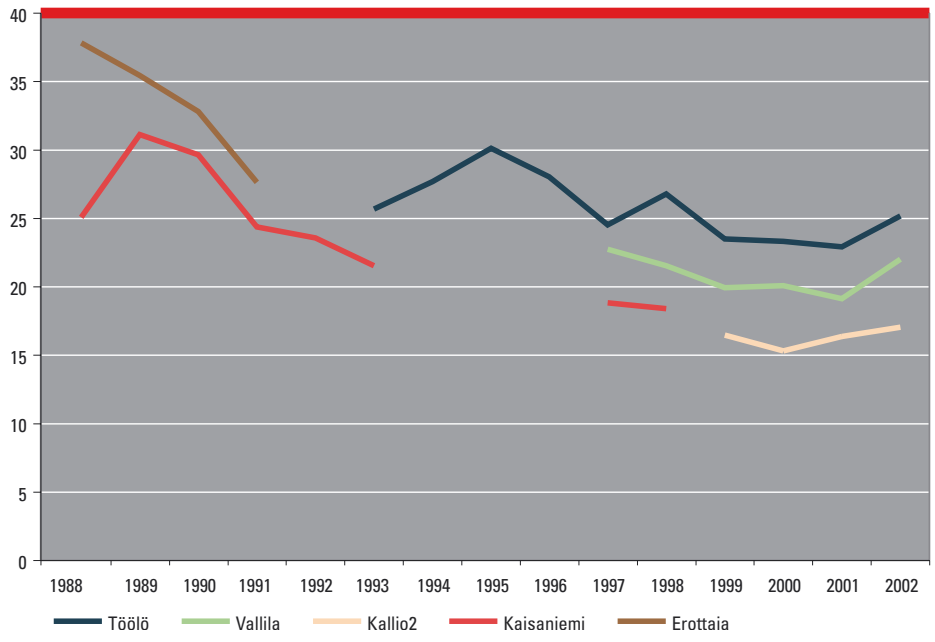


Indicators of the State and Loading of the Environment

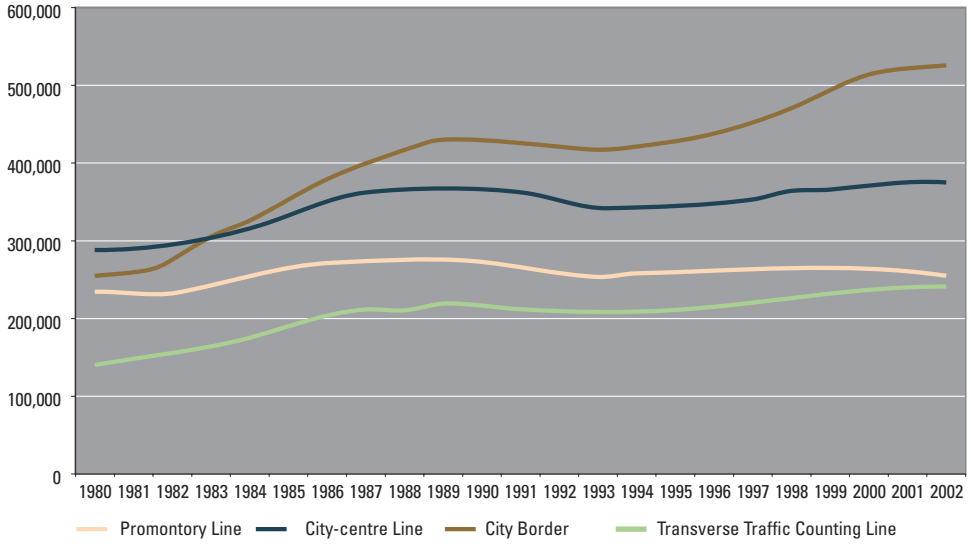
Carbon-dioxide emissions in the Helsinki area in 2002 were approximately 112,000 tons (2.4%) higher than in 2001. Almost all of this increase was the result of increased emissions from energy production. When compared with the so-called Kyoto Protocol comparison year of 1990, the increase was 13%. Emissions per capita increased by 0.2 tons (2.4 %) from the previous year, but there was a 0.1 ton per capita reduction compared to 1990.

In the autumn of 2002, the amount of vehicle traffic on Helsinki's main road network was approximately the same as in the previous year. There

Annual Averages for Inhaled Particles (PM_{10}) at Helsinki Measurement Stations µ/m3



Traffic Amounts by Counting Points (vehicles/year)



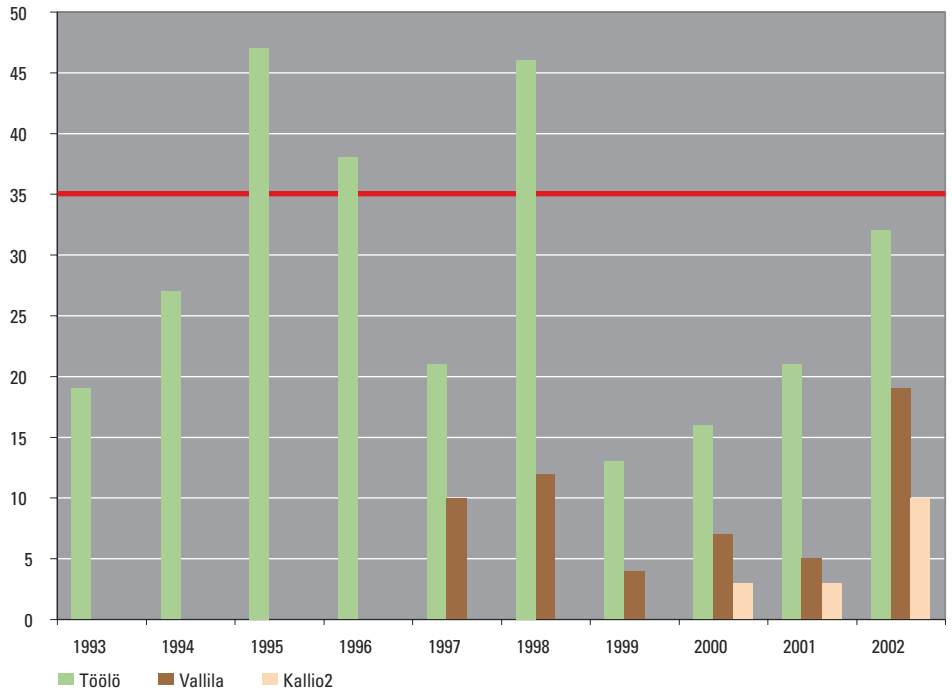
was a reduction in the amount of traffic on the city peninsula line and the city centre line, primarily as a consequence of traffic redirection caused by the Kamppi construction site. While traffic at the city border increased by one per cent, transverse traffic remained at the level it was in the previous year.

The main problem with air quality in Helsinki is the so-called inhaled particles (PM_{10}), the main source of which is street dust blown up into the air by traffic. The PM_{10} day-guideline limit is exceeded when there are more than 35 days a year with a daily concentration of more than 50µg/m³. This limit was almost exceeded at the Töölö measurement station in 2002 which experienced 32 days of measurements higher than the limit value.

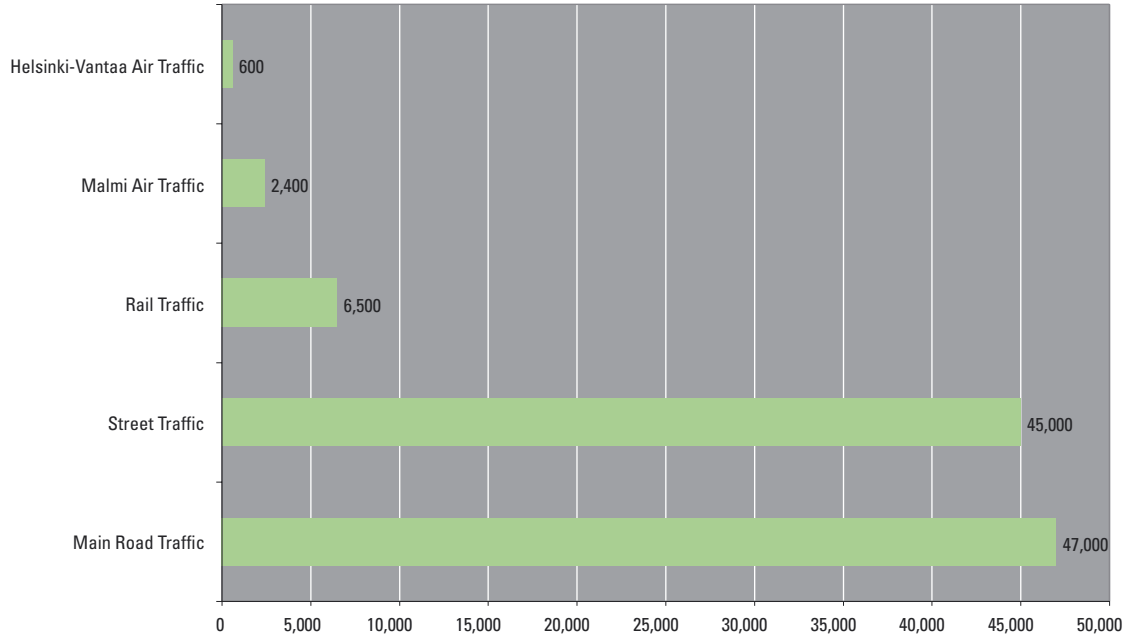
The condition of the sea region outside Helsinki is affected by the overall loading of the Gulf of Finland and changes in its water management as well as by emissions from Helsinki itself. Heavy nutrient loads and a warm and sunny summer resulted in heavy blooms of blue-green algae in the late summer of 2002. In late August and early September, a blue-green belt of algae covered almost the whole of Laajalahti and Seurasaari bays. Extensive quantities of blue-green algae were also observed in the outer archipelago.

The overall amount of waste received by the Ämmässuo landfill has fallen for the second year in

Days Exceeding the 24-hour Guideline Value for Inhaled Particles (PM_{10}) in Helsinki



Population in Different Traffic-noise Areas in Helsinki in 2002



a row, this time by some 35,000 tons. The decrease in the amount of waste received is primarily due to an increase in the collection of utilisable waste (bio-waste, metal, glass etc.), increasing producer's responsibility (i.e. recycling systems developed by companies) and the decrease in levels of construction (for example, there was 15% less construction in Helsinki in 2002 than in 2001). According to the latest surveys on noise-pollution areas in Helsinki completed in 2002, some 100,000 people reside in areas with a harmful noise level of more than 55dB(A), most of which is the result of noise generated by road and street traffic.

In 2002, both the mapping of endangered butterfly species in Helsinki and the mapping of lichen in the central city area were completed. According to the latter, the lichen-free zone that was already widespread in the 1930s has been reduced to a small number of lichen-free trees along the city's main streets.

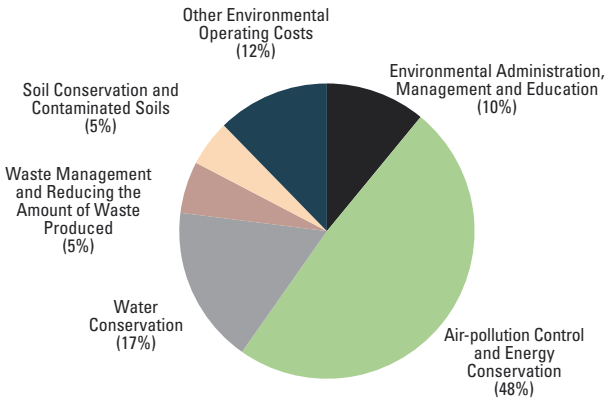
KEY FIGURES	Development	2002	2001
Carbon dioxide emissions per capita, city area	- - *	8,5 t	8,3 t
Phosphorus emissions into the sea, Helsinki Water	-	42 t	38 t
Nitrogen emissions into the sea, Helsinki Water	+	1 330 t	1 460 t
Amount of waste received at Ämmässuo land-fill	++	473 450 t	508 810 t
Number of vehicles/day at transverse-traffic counting points	+ -	240 000	240 400
Mass transportation's share of morning traffic at City border	++	71,70%	70,60%
Annual average of so-called inhaled particles (PM_{10}) in Töölö	-	25 µg/m^3	23 µg/m^3
Environmentally-labelled products in Supply Department's supply agreements	+	37	30
Contaminated soil treated in the city area	+	199 230 m^3	133 860 m^3
Groups attending nature school and fairytale adventures in Gardenia and Harakka	+	313	196
Number of guided nature walks and Nature House exhibition tours	+	197	184

++ positive development
+ some positive development
- some negative development
-- negative development

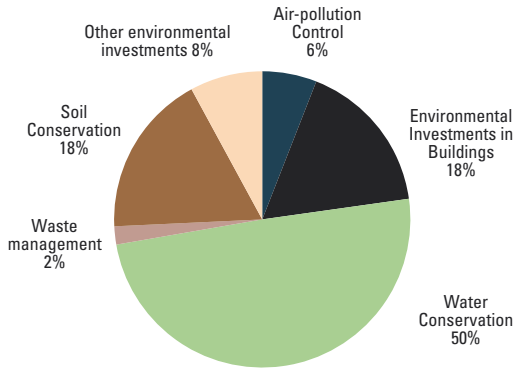
* Decrease of 1% compared to per capita CO_2 emissions in 1990

Environmental Economy Indicators

Environmental Operating Costs



Environmental Operating Investments



The City of Helsinki's environmental economy indicators are based on information provided by city departments. Not all of the source information for environmental costs is provided by financial accounting, it is in part based on estimates of the environmental aspects of buildings. On the other hand, the estimation of environmental costs is becoming increasingly accurate.

The City's aggregate Environmental Income for 2002 was €55.8 million, comprising 4.7% of the City's overall operational income (€1,196.2 million). The largest single source of income was wastewater charges (89% of all external environmental income).

There was an increase of €4.4 million in environmental income in 2002 compared to 2001. More than half of the growth (€3.1 million) was attributable to increased income from wastewater charges.

According to figures provided by city departments, the City of Helsinki's environmental operating costs in 2002 totalled €81.8 million, representing 2.6% of the city's total operational costs (€3116.4 million). The largest individual amount was the environmental tax paid by Helsinki Energy on fuel, which totalled €28.9 million.

Reported environmental operating costs were up by €7.4 million in 2002, approximately 10% higher than in 2001. There was an increase in almost all sectors of environmental protection, with the biggest increase in costs for air-pollution control and the sustainable development costs of buildings (i.e. inspections and renovation work concerning mildew, asbestos and indoor air quality as well as energy surveys). Part of the increase in costs was the result of more-extensive monitoring.

Environmental investments by the City of Helsinki in 2002 totalled €50.9 million, one tenth of all city investments (€502.7 million). In a similar way to previous years, the largest investments were made in wastewater purification and sewerage (51%), soil conservation, and environmental projects related to buildings. The single biggest individual environmental investments were the expansion of nitrogen purification at the Viikinmäki treatment plant (€11.3 million), investments in sewerage, and clean-up work on contaminated soil at Arabianranta (€4.4 million).

ENVIRONMENTAL ECONOMY INDICATORS, €1000	2002	2001
Environmental income	55 847	51 371
ENVIRONMENTAL OPERATING COSTS		
Environmental administration, management and education	8 959	7 795
Air-pollution control and energy conservation	39 946	35 149
Water conservation and wastewater management	14 103	13 752
Waste management	4 646	4 135
Soil conservation	4 132	3 800
Other environmental operating costs	10 062	9 776
Total	**81 848**	**74 411**
ENVIRONMENTAL INVESTMENTS		
Environmental management and development	0	10
Air-pollution control	2940	68
Environmental investments in buildings	8541	12 576
Water conservation	25 564	21 326
Waste management	985	1138
Soil conservation	9068	8281
Other environmental investments	3838	6219
Total	**50 936**	**49 619**

City of Helsinki

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