Environmental Report

2024

Helsinki

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City of Helsinki
Environmental Report
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Address by the Deputy Mayor

Eight years as Deputy Mayor for Urban Environment have clarified two things in my mind: urbanisation is not a choice, but we can choose how sustainable urbanisation is.

I can also say the following with my head held high: Helsinki takes responsibility for the environment on all fronts.

The environmental work in Helsinki grew more ambitious when the City Board approved the new environmental protection objectives for the city in spring 2024. The objectives show the way towards an ecologically sustainable future and set clear, measurable long-term goals that are essential for the consistent execution of environmental protection.

Nature conservation took strides forward! In 2024, the City Board proposed the founding of five new nature reserves to the Centre for Economic Development, Transport and the Environment (ELY Centre). With the new Nature Reserve Programme in Helsinki, new nature reserves will be established in Helsinki at an increasing rate when compared to previous years. Our current aim is to protect more than 10 per cent of both our land and water areas.

The direct greenhouse gas emissions by Helsinki decreased by 16 per cent. The significant decrease in emissions is due to the dramatic reduction in the use of coal, in particular. This spring, we closed the last remaining coal plant in Helsinki, setting the carbon-free future of Helsinki afoot. We are executing many measures to adjust to climate change, and this work combines both climate and nature objectives by adding comfortable green surface areas to the city. Forestry principles were updated to strengthen forest diversity.

Helsinki offers improved opportunities to use streamlined, low-carbon public transport. Tram services between Pasila and Kalasatama started in August and expanded the tram network to entirely new areas in Helsinki. The number of passengers on the line has increased steadily. Helsinki Region Transport (HSL) commissioned approximately 120 new electric buses, and nearly 42 per cent of kilometres driven on public transport buses were driven by electric buses.

After the closure of the Salmisaari power plant, transport became the largest source of carbon dioxide emissions in Helsinki. By 2030, the share of transport is expected to exceed 60 per cent. In order to achieve emission reductions, we need a wide selection of effective measures and, as decision-makers, we need to be able to commit to their implementation. Keeping the concentrations of street dust, i.e. inhalable particles, under the limit values will be challenging. The revised EU Directive on air quality entered into force in December 2024. It will significantly tighten the binding EU limit values for air pollutant concentrations in 2030. We need new measures and we need to employ existing measures more efficiently: reducing the use of studded tyres plays an important role in these efforts.

Helsinki is executing environmental work at a level that is appropriate for a city that is aware of its environmental responsibility. For my part, I would like to extend a heartfelt thank you to those involved in Helsinki's ambitious environmental work and reporting on it.

Anni Sinnemäki
Deputy Mayor for Urban Environment

Helsinki in a Nutshell

Helsinki is the centre of a rapidly growing large metropolitan city area. Helsinki, together with the municipalities of the Helsinki Metropolitan Area (Espoo, Vantaa, and Kauniainen) and ten neighbouring municipalities, forms an area with a population of over 1.6 million residents, which is referred to as the Helsinki region. As of 31 December 2024, Helsinki had a population of 684,018.

As of the end of 2024 the population density was 3,187.7 residents per land area square kilometre. The city of Helsinki's surface area is 715.47 km², of which 214.58 km² (30.0 %) is land, 0.84 km² is inland waters, and 500.05 km² sea waters.

From an environmental impact's perspective, the City of Helsinki is one of the most significant actors at a national scale. For instance, Helsinki serves as the largest public procurer in the country, with an annual procurement volume of around four billion euros. Helsinki accounts for a little less than five percent of Finland's overall greenhouse gas emissions. The Viikinmäki wastewater treatment plant processes wastewater from approximately 900,000 people. Additionally, as Finland's largest employer, the City's activities carry significant environmental implications.

The Helsinki City Group comprises the following entities:

- The City of Helsinki as a parent entity (4 divisions, City Executive Office, Audit Department and 5 municipal enterprises).
- Subsidiary entities, i.e. organisations which are owned directly by the City (86 subsidiary organisations and 13 foundations).
- Associated entities, i.e. companies, foundations and joint municipal authorities in which the City has a 20–50 per cent ownership stake (3 holding companies, 35 associated companies and 3 joint municipal authorities).

At the end of 2024, the City employed 38,595 people.

Helsinki

Population: 684,018

Population density: 3,187.7 / km²

Surface area: 715.47 km²

Environmental management and partnerships

The aim of environmental management is to ensure that environmental protection objectives are taken into account in all of the Helsinki City Group's operations and decision-making. Helsinki guides and evaluates the city's development through the UN's Sustainable Development Goals. According to the City Strategy (2021–2025), if Helsinki can invest in reliable forms of sustainable growth, its future prospects are exceptionally promising. Sustainable growth is in balance with the prevailing ecological limitations, creating benefits that are socially, financially and culturally sustainable. The City of Helsinki's Environmental Protection Targets 2040, adopted in spring 2024, complement the City Strategy with regard to environmental protection.

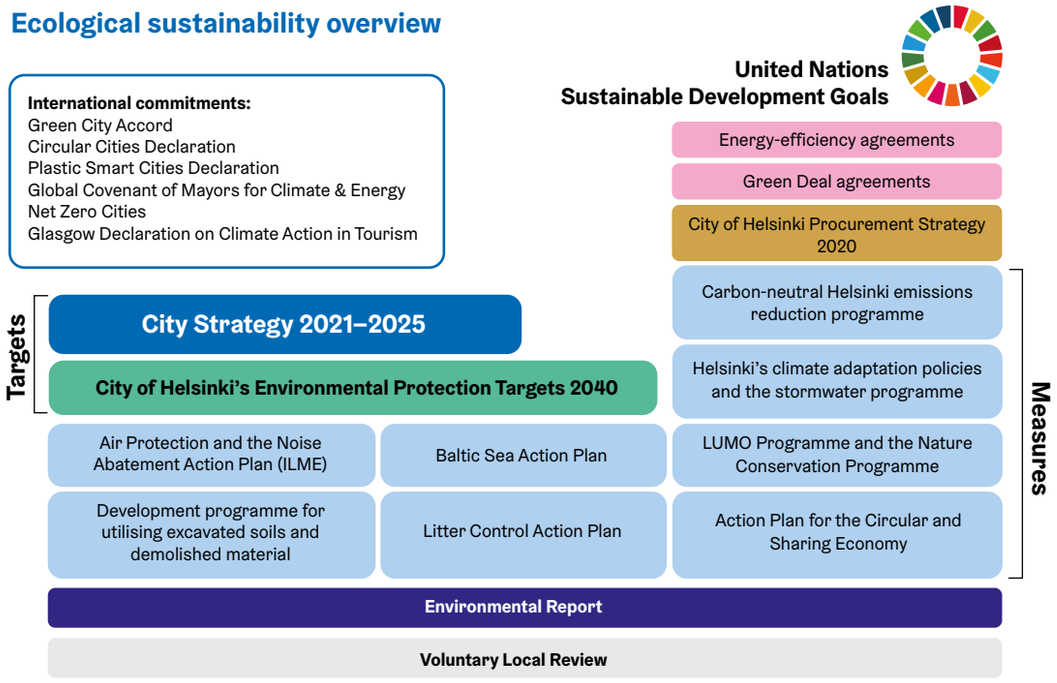
Helsinki got new environmental protection targets

In March 2024, the Helsinki City Board adopted a new, ambitious set of environmental protection targets that pave the way for an ecologically sustainable future. The City of Helsinki's Environmental Protection Targets 2040 is a document that guides the City's environmental protection activities, specifying the environmental protection targets of the City Strategy and setting targets for areas of environmental protection not covered by the strategy. The environmental protection targets for 2040 are part of the City's overall sustainable development goals. The document brings together the goals for ecological sustainability and also sets long-term targets that are fundamental for carrying out environmental protection consistently.

The City monitors progress on the environmental protection targets annually as part of the Environmental Report presented to the City Council. This Environmental Report also presents the indicators of the environmental protection targets and their trends (see chapter Environmental indicators).

During 2024, the environmental protection targets were implemented by attending the management meetings of all of the City's divisions and enterprises. These discussions reviewed the challenges and strengths of implementing the targets from the perspective of each organisation. Overall, the set of targets was seen as being necessary for the development of a growing city and its services. In November, the City also organised a seminar for its staff, presenting the promotion of the environmental protection targets at a concrete level from the perspective of the management and experts of the divisions and enterprises.

Ecological sustainability overview



Promoting environmental management and sustainable development in divisions and enterprises

One of the environmental management targets set in the City's overall environmental protection targets is for the divisions, as well as municipal enterprises and subsidiaries with significant environmental impacts, to have a verified environmental management system and/or a sustainability programme that broadly takes into account the UN Sustainable Development Goals. The City also aims to have its other enterprises and subsidiaries integrate environmental management into their operations, following the principles of less formal environmental management systems, and/or develop a sustainability programme by 2025.

The Social Services, Health Care and Rescue Services Division launched a new sustainable development programme (2024–2026), which brings together all sustainability themes for the first time. The programme consists of 26 targets, 22 of which were advanced in 2024. Of these, 13 were implemented in full. The targets involved a total of 43 concrete actions, of which 31 were completed. The targets for ecological sustainability included reducing and measuring greenhouse gas emissions, managing chemicals and reducing energy and resource consumption by means such as a better use of space capacity. The division has a certified EcoCompass environmental management system.

The Education Division has sustainability certificates and programmes for schools and educational institutions. The activities of Helsinki Vocational College are guided by the Sustainable Future Programme, and the institution was awarded the OKKA certificate for sustainable development as a result of an audit in the autumn. The Swedish-language adult education centre, Arbis, has drawn up its own environmental programme, the Arbis miljöprogram. A total of 33 providers of early childhood education, basic education and general upper secondary education are involved in the Eco-Schools sustainable development programme and have the Eco-Schools certificate.

The Culture and Leisure Division promotes environmental management through environmental programmes drawn up for each service area. Library Services, Sports Services, Youth Services and City Museum have certified EcoCompass environmental management systems. The re-audit of the Youth Services' EcoCompass particularly praised the implementation of environmental education activities with young people as part of the core activities of the organisation. Sports Services prepared for the coming re-audit by developing its chemical and waste management, in particular. The City Museum's EcoCompass work included training in responsible procurement, increasing environmental communication, learning about ecological exhibition construction and integrating environmentally responsible activities into the City's cultural environment programme. In 2024, the establishment of the EcoCompass system and the development of environmental programmes was also launched in other functions of the Culture unit in addition to the City Museum. The aim is to strengthen environmental work through art, culture and art-based environmental education.

The Urban Environment Division prepared its sustainability and responsibility objectives, which were adopted in early 2025. In addition to the sustainability principles, the division's sustainability work defined the areas of development to achieve the principles. In particular, these include setting sustainability targets for projects and integrating related sustainability assessments into the planning and implementation process, as well as including a sustainability assessment in decision-making documents. The division will continue to conduct sustainability assessments of its core processes. Four of the six sustainability principles deal with ecological sustainability and relate to carbon negativity, nature positivity, sustainable mobility and resource wisdom. As a result of the reform, the division abandoned the separate EcoCompass environmental management system.

The City Executive Office has a certified EcoCompass environmental management system. In 2024, the City Executive Office reduced the environmental impact of products during their lifecycle by improving the recycling of ICT equipment and participating in the City-wide work to develop the recycling of furniture. The staff participated in workshops to improve their environmental awareness. Furthermore, the City Executive Office supported tourism businesses in developing sustainable tourism and in pursuing the Sustainable Travel Finland label.

Helsinki City Construction Services, Stara, also has a certified EcoCompass environmental management system. Many of the targets of the environmental programme have been integrated into the continuous operations of the enterprise. In 2024, the focus was on improving chemical safety and developing waste reporting and responsible procurement. Compliance with the environmental programme has been found to be challenging in some areas due to the general nature of the targets set. The 2025 programme update will increase the effectiveness of the environmental programme and further develop environmental management.

Palvelukeskus Helsinki completed its three-year sustainability programme and adopted a new sustainability programme in December 2024. The enterprise implemented all of the measures of the completed sustainability programme, establishing many of the targets, such as the systematic monitoring of procurement sustainability criteria during the contract period, as permanent policies. The 2024 targets for halving the amount of food waste, developing recipes and improving recycling rates were also met. Palvelukeskus Helsinki also has a certified EcoCompass environmental management system.

The environmental and sustainability management tools of divisions and enterprises

Division/enterprise	Environmental management system / sustainable development programme
Social Services, Health Care and Rescue Services Division	• Certified EcoCompass environmental management system (division-level) • Sustainable development programme (division-level)
Culture and Leisure Division	• Certified EcoCompass environmental management system (Library Services, Sports Services, Youth Services, City Museum)
Urban Environment Division	• No certified system or responsibility programme (division's sustainability work guides environmental work systematically)
Education Division	• Eco-Schools programme and certificate (33 early childhood education, basic education and general upper secondary education units), OKKA Foundation's sustainable development certificate for educational institutions (Helsinki Vocational College, awarded in early 2025)
City Executive Office	• Certified EcoCompass environmental management system
Helsinki City Construction Services, Stara	• Certified EcoCompass environmental management system
Palvelukeskus Helsinki	• Certified EcoCompass environmental management system • Responsibility programme / sustainable development programme
Financial Management Services	• No certified system or responsibility programme
Occupational Health Helsinki	• No certified system or responsibility programme

Eco-support activity encourages everyday environmental action

Eco-support activity helps implement everyday environmental actions in the different units of the City. In 2024, the City of Helsinki had around 1,200 eco-supporters. Each division and enterprise has eco-supporters. In 2024, the City organised six training courses for new eco-supporters. A record number of 152 people participated in these courses, more than twice as many as in 2023. In addition to basic training, the eco-supporters received advanced training, network meetings and visits to various sites in the environmental sector. The City also organised training in cooperation with the municipalities of the Helsinki Metropolitan Area and Central Uusimaa, Helsinki Region Environmental Services Authority HSY and Turku University of Applied Sciences. The City of Helsinki also coordinated the national eco-support network consisting of 34 organisations around Finland.

The City carried out the eco-support activities in close cooperation with ChemBee – Chemical Ambassadors for Europe, a project led by Turku University of Applied Sciences. Joint training and a communication campaign were carried out to raise awareness of harmful chemicals among eco-supporters and other employees. The City presented the eco-support activity model to Greek and French project partners during their study visit to Helsinki.

Helsinki tops Global Destination Sustainability Index

Helsinki achieved its strategic goal of being the most sustainable tourist destination in the world by ranking first in the international Global Destination Sustainability (GDS) Index. The index assesses the sustainability of tourist destinations based on over 70 indicators in four categories: City Environmental Performance, City Social Performance, Supplier Performance and Destination Management Performance. The comparison includes more than one hundred cities all around the globe, all investing in sustainability.

International surveys show that more and more tourists are looking for more sustainable services and destinations. The tourism industry has invested heavily in sustainable tourism, which is reflected in the exceptionally high number of tourism businesses in Helsinki that have obtained environmental certification. The City's ambitious efforts to develop sustainable tourism led to great results in March 2025, when Helsinki was awarded the Green Destinations GSTC certification, which applies the most stringent tourism destination criteria in the world. Helsinki is the first city with more than 500,000 residents to be certified as such.

Fourth Voluntary Local Review assesses the past strategy period

Helsinki published its fourth Voluntary Local Review on the UN Sustainable Development Goals in January 2025. The review assessed the successes and areas for development over the past strategy period. The four-year period saw significant changes. The Russian invasion of Ukraine forced a rapid renewal of energy production, which initially had a negative impact on emissions. The closure of the Hanasaari coal power plant in 2023 put emissions back on a downward trajectory. The targets for increasing the number of nature reserves over the strategy period were met. Over the four years, Helsinki has grown at a record rate, increasing the pressure to reconcile housing production, climate and nature conservation targets.

Eyes on the future

Helsinki will review its environmental protection targets at the beginning of the new council period of office after the completion of the City Strategy. This update will also take into account the changes in legislation.

A survey of the City's staff in January 2025 showed that knowledge of Helsinki's environmental protection targets is currently rather poor: only a third of respondents were moderately or well aware of the targets. From the staff's point of view, the areas that have made the greatest progress are the circular economy, responsible procurement and environmental awareness. The City will use the results of the survey in the implementation of the environmental protection targets and in the development of its environmental work. The survey was a part of a larger joint survey conducted in Helsinki, Espoo, Vantaa, Kauniainen, Oulu, Tampere and Turku to investigate the environmental awareness and attitudes of the cities' employees.

Helsinki will continue to develop its environmental statistics, which will be completed in autumn 2025. The updated environmental statistics will provide open and up-to-date information on the state of Helsinki's environment for decision-makers, journalists, researchers, residents or anyone else interested in environmental topics.

The Urban Environment Division will continue to assess the impact of the requirements of the Corporate Sustainability Reporting Directive and the EU taxonomy for sustainable activities. Eight of the City's subsidiaries are covered by the sustainability reporting requirement. The European Commission has launched a project to reduce the regulatory burden on companies regarding areas such as the Corporate Sustainability Reporting Directive and the EU taxonomy. These potential changes will also affect the operations of the Helsinki City Group.

Policies and websites:

- **City of Helsinki's Environmental Protection Targets 2040**
- **Helsinki Environmental Statistics**
- **From Agenda to Action – Implementation of the UN Sustainable Development Goals in Helsinki 2025**

Securing biodiversity

Helsinki is characterised by the fact that nature is always close by and easily accessible. In line with its strategy, the City has succeeded in preserving local nature and ensuring that it is accessible to all, wherever they live. Helsinki has also started to pay more and more attention to the quality of local nature. The City Strategy (2021–2025) states that no construction will take place in the most treasured nature areas, biodiversity will be promoted in a systematic manner, forests will be allowed to age naturally, and the city's forest and meadow networks will be strengthened. The city's growth puts considerable pressure on achieving these goals, and the challenges of balancing densification and natural values are everyday issues that affect all city residents.

Nature management principles updated

Of its nature management policies, Helsinki updated the principles of forest management in 2024. In 2025, the City will continue this work by updating its nature management policies pertaining to meadows and open areas, as well as the work instructions pertaining to their nature management.

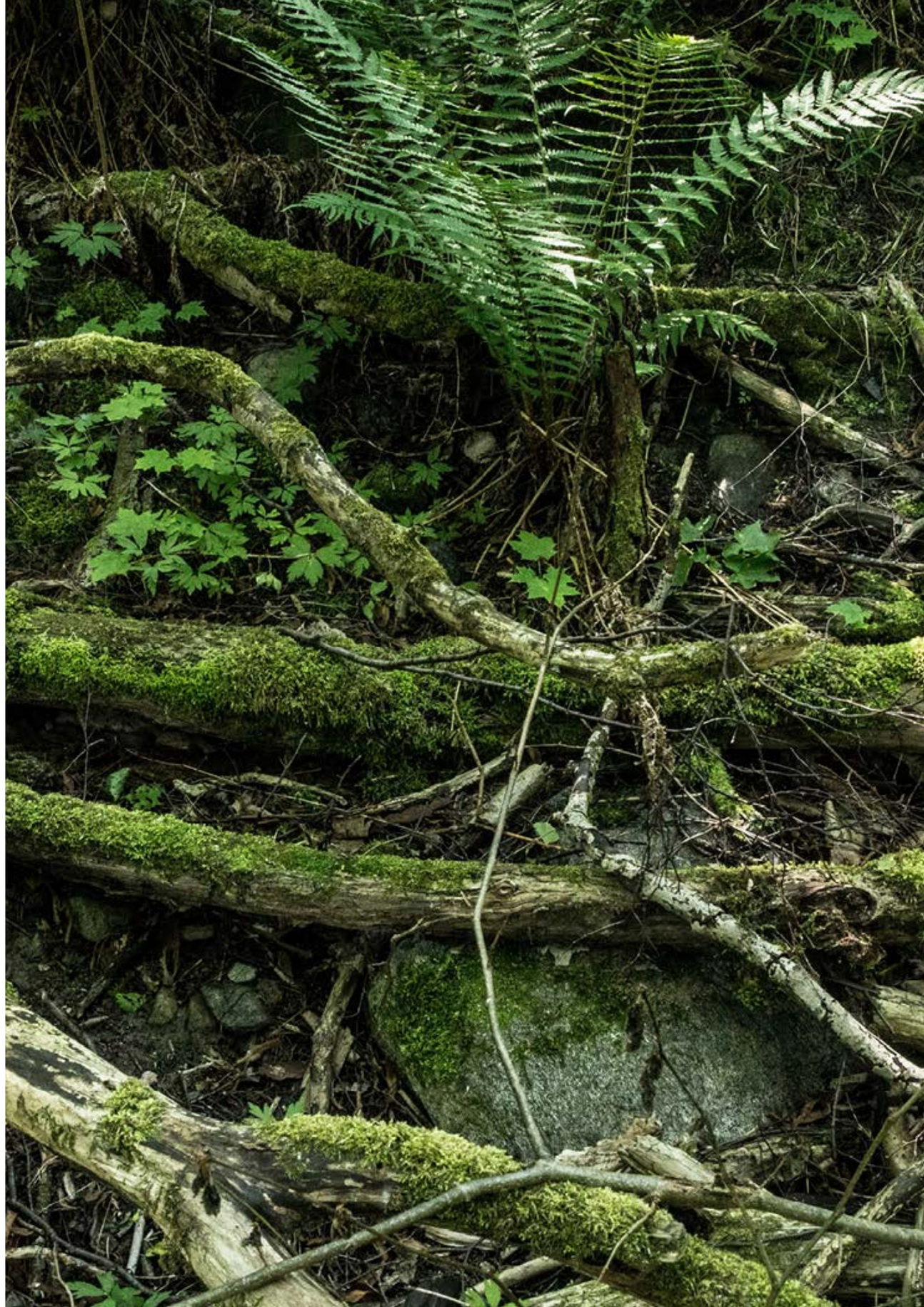
The amount of decaying wood in Helsinki's urban forests is already considerable. In 2024, Helsinki deliberately left more than 15 kilometres of trees to decay in its urban forests. The importance of decaying wood for biodiversity is well recognised. In urban forests, much more decaying wood can be left in the wild than is typical of traditional forest management. Helsinki's forest management that promotes natural values has already produced results, as many forest species, including those with very particular habitat requirements, such as the Siberian flying squirrel, the Eurasian goshawk and many polypore species, are now found in abundance in Helsinki's forests. A more natural forest landscape with decaying and mature trees does not mean compromising on recreational needs or safety, although it can sometimes be perceived as being aesthetically challenging.

Nature conservation boosted by new nature reserve programme

In 2024, the City Board proposed the founding of five new nature reserves to the Centre for Economic Development, Transport and the Environment (ELY Centre). The ELY Centre decided to found all of the proposed sites. The ELY Centre made founding decisions on the areas of Patterimäki (3.9 ha), Varjakanpuisto alder forest (4.6 ha), Fastholma (17 ha), Ramsinniemi nature reserve extension (2.84 ha) and Pakilanmetsä (28 ha).

The City prepared a new nature conservation programme in 2024. The Nature Reserve Programme 2025–2038 will result in the creation of significantly more new nature reserves in Helsinki than before. The aim is to have more than 10 per cent of land and water areas designated as nature reserves by 2038. In addition to this, other natural areas should cover 30 per cent of the land area. This is a challenging goal, as more than 60 per cent of Helsinki's land area is already built environment.

At the end of 2024, Helsinki had 80 nature reserves with a total area of 1,480.46 hectares. The proportion of nature reserves in Helsinki's land area increased by 0.2 percentage points from 2023, from 4.4 per cent to 4.6 per cent. Helsinki also made



Surface areas of the current nature reserves, other protected sites and areas proposed to be founded in 2024

	Area (ha)	Share of land area (%)	Share of water area (%)
Land area			
Nature reserves	987,7	4,6	
Other protected sites*	80,4	0,4	
2024 applications	65	0,3	
Total	1133,1	5,3	
Water area			
Nature reserves	492,8		1
Other protected sites*	201,8		0,4
2024 applications	0		0
Total	694,6		1,4

** protected nature types, species protection areas and Natura areas not protected by the Nature Conservation Act*

plans to develop nature sites owned by Helsinki that are located in other municipalities. The aim is to promote the preservation of the natural values of the sites and, as a general rule, protect the land areas owned by Helsinki.

Working together to promote nature conservation

At the Urban Nature Forum held in Tampere in September, the leaders of Finland's ten largest cities signed a historic declaration to halt biodiversity loss and strengthen biodiversity. The city leaders made a joint commitment to strengthen biodiversity through concrete and measurable actions and to set an example for other cities.

Helsinki also joined the Luontoviisaat kunnat (Nature-wise Municipalities) network in October, which aims to mitigate biodiversity loss, promote biodiversity and reduce activities that undermine nature, as well as develop the nature operations of municipalities in a comprehensive manner. Joining the network will strengthen Helsinki's image in accordance with the City Strategy as a city that conserves nature ambitiously and cherishes its biodiversity. The network may enable Helsinki to find new solutions for preventing biodiversity loss and share its own good practices with the other members of the network, thus standing out as a pioneer in the local implementation of global nature responsibility.

In November, the City organised a LUMO biodiversity seminar on the history and status of Helsinki's aquatic nature, its rehabilitation and restoration activities and biodiversity in the city's waters. Helsinki's aquatic nature should be valued more highly, as the city has unusually high-quality and diverse aquatic nature for such a large city, which also offers excellent opportunities for hiking and recreation.

New technology used in nature inventories

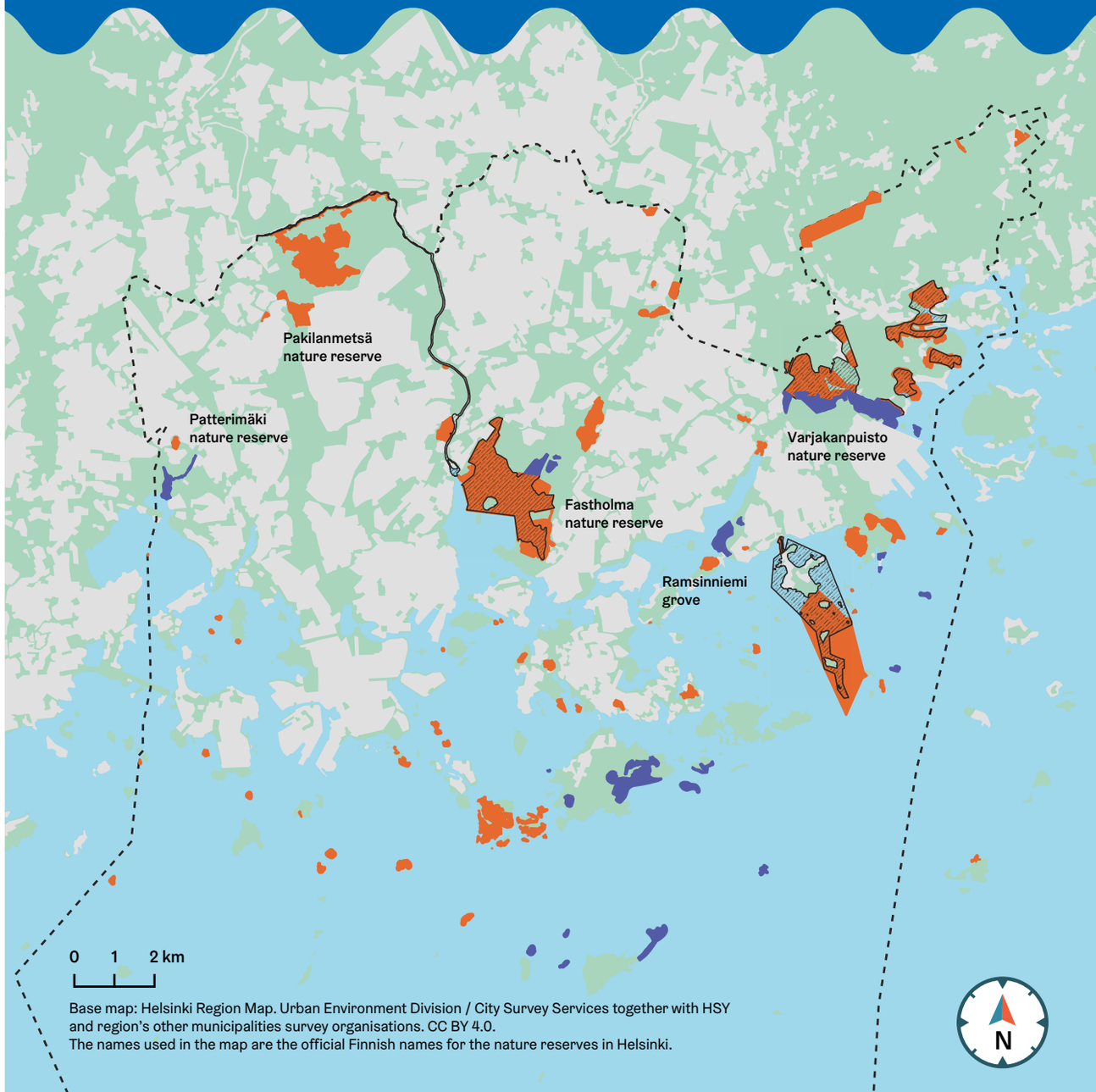
Helsinki is part of several cooperation networks that monitor the state and development of urban nature. According to a comparison carried out by the European Commission's Green City Accord, Helsinki has less protected nature (4.6%) than the average European city (n=42) (18.7%), but our protection is more stringent. There are also significant differences in calculation

Nature reserves in Helsinki

Helsinki

Map 31 December 2024

Nature reserves
Nature reserves included in the Helsinki Nature Conservation Programme for 2015–2024
Natura areas
Green space
Residential and industrial areas
Helsinki city border



Base map: Helsinki Region Map. Urban Environment Division / City Survey Services together with HSY and region's other municipalities survey organisations. CC BY 4.0.
The names used in the map are the official Finnish names for the nature reserves in Helsinki.

methods between cities, making a comparison between cities challenging.

The needs of the Green City Accord have led to closer monitoring of bird species in Helsinki. Modern technology also makes it possible to monitor the bird population through citizen science. The Muuttolintujen kevät (Migration Birds Spring) app allows citizens to record bird songs on their mobile phones and send the files for analysis. There are already several routes in Helsinki where people can make recordings, such as those in Seurasaari, Viikki and Uutela. Last year, citizens made thousands of recordings in Helsinki, which have been used to determine the arrival times of migratory birds and estimate their numbers.

Another technological advancement in nature mapping is the identification of genes from organisms in nature, for example by using water samples. In Helsinki, the occurrence and numbers of mussels in the city's waters was studied by determining their DNA from cells in the water. The new genetic method makes it much easier to detect and track rare species than before. For example, the world's largest population of the endangered thick shelled river mussel, 2–3 million individuals, live in the geographical centre of Helsinki, at the bottom of the River Vantaa. Thick shelled river mussel live to be decades old, so they have already witnessed many Kaljakellunta events.

Multispecies aspect as part of city planning

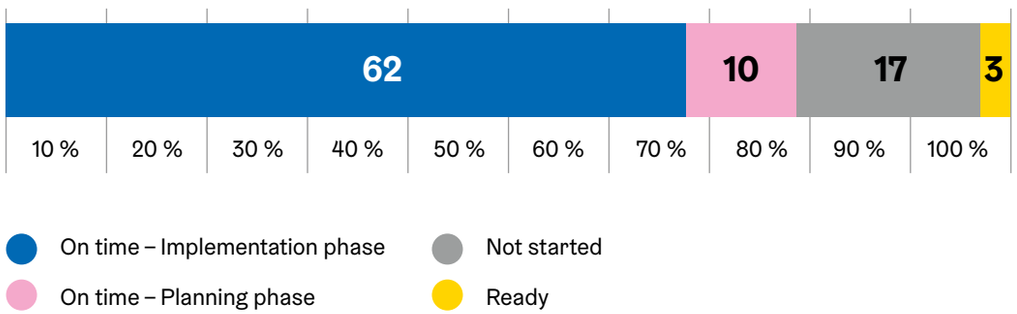
Helsinki is also home to many non-human species. In its 2023 study 'Multispecies City – Justice Perspectives for the Planetary Planning of a Carbon-negative City', the City of Helsinki examined the status of non-human species in Helsinki.

In general, we use the term 'non-human' to refer to organisms other than humans living in the city. The perspective can be used to look at individuals, populations, species or other groups. The starting point is the idea that when designing a city for humans, other species should also be taken into account – preferably on an equal footing. Multispecies planning usually involves a strong principle of justice, which challenges prevailing practices. It is challenging to take non-human species into account as active agents. The key is to consider and take into account the perspectives of different species, understand interdependencies and assess the impact of actions or projects on non-human species as well. According to the report, planning practices that are broadly and equitably inclusive of non-human species do not yet exist, but the report highlights three key planning considerations. Planning that takes into account the multispecies aspect

- contributes to finding solutions that are in line with both the multispecies approach and human-driven needs;
- challenges past worldviews and methods to better consider impacts on other species and ecosystems; and
- reveals structures that maintain unsustainable solutions.

The current City Strategy (2021–2025) has a strong emphasis on sustainability and environmental ethics, although it hardly uses these exact words. The City gives high priority to urban nature and its species in the city plan, the new Nature Reserve Programme, the LUMO Programme and the City of Helsinki's Environmental Protection Targets, among others. From an ecological and conservation perspective, it makes sense not to consider wild species in isolation from their habitat, but to consider and seek solutions at the level of ecosystems, populations or habitat networks.

Status of the actions included in City of Helsinki Biodiversity Action Plan 2021– 2028 on 7 May 2025



Eyes on the future

The Urban Environment Division will continue to work in closer cooperation in order to coordinate urban growth and the preservation of local nature in as early a planning stage as possible, e.g. in the planning of land use and public areas, as well as the maintenance and nature management of areas. The City has piloted biodiversity offsetting and is building a model around it that is suitable for Helsinki, allowing for compensation of natural values in future projects.
Helsinki will undergo an assessment of the state of its nature in 2025. The City will invest in restoring and improving the quality of small water bodies, and a new stream caretaker will start work in 2025.
Helsinki's LUMO Programme will be subject to a mid-term review in 2025. The LUMO Programme has progressed according to schedule. The mid-term review will aim to further improve the efficiency and impact of the programme.

Programmes and policies:

- **City of Helsinki Biodiversity Action Plan (LUMO) 2021–2028**
- **LUMO-vahti** (in Finnish)
- **City of Helsinki Nature Conservation Programme 2015–2024** (in Finnish)
- **City of Helsinki´s Environmental Protection Targets 2040**
- **City of Helsinki Nature Reserve Programme 2025–2038** (in Finnish)

Water protection

The water protection work of Helsinki focuses particularly on preventing eutrophication, preserving biodiversity and managing stormwater. The City commits to water protection and securing the diversity of marine nature through several programmes and strategies. According to the City Strategy (2021–2025), Helsinki cherishes the Baltic Sea and its shores and is decreasing its emissions into the sea. Maritime Helsinki is being developed with respect for nature values. The objectives of the City Strategy are supplemented by the long-term and mid-term targets set for water protection in the City's new Environmental Protection Targets. The City's new Nature Reserve Programme, completed in 2024, identifies several valuable marine nature sites, the protection of which has been proposed to be strengthened.

Protecting marine nature supports biodiversity

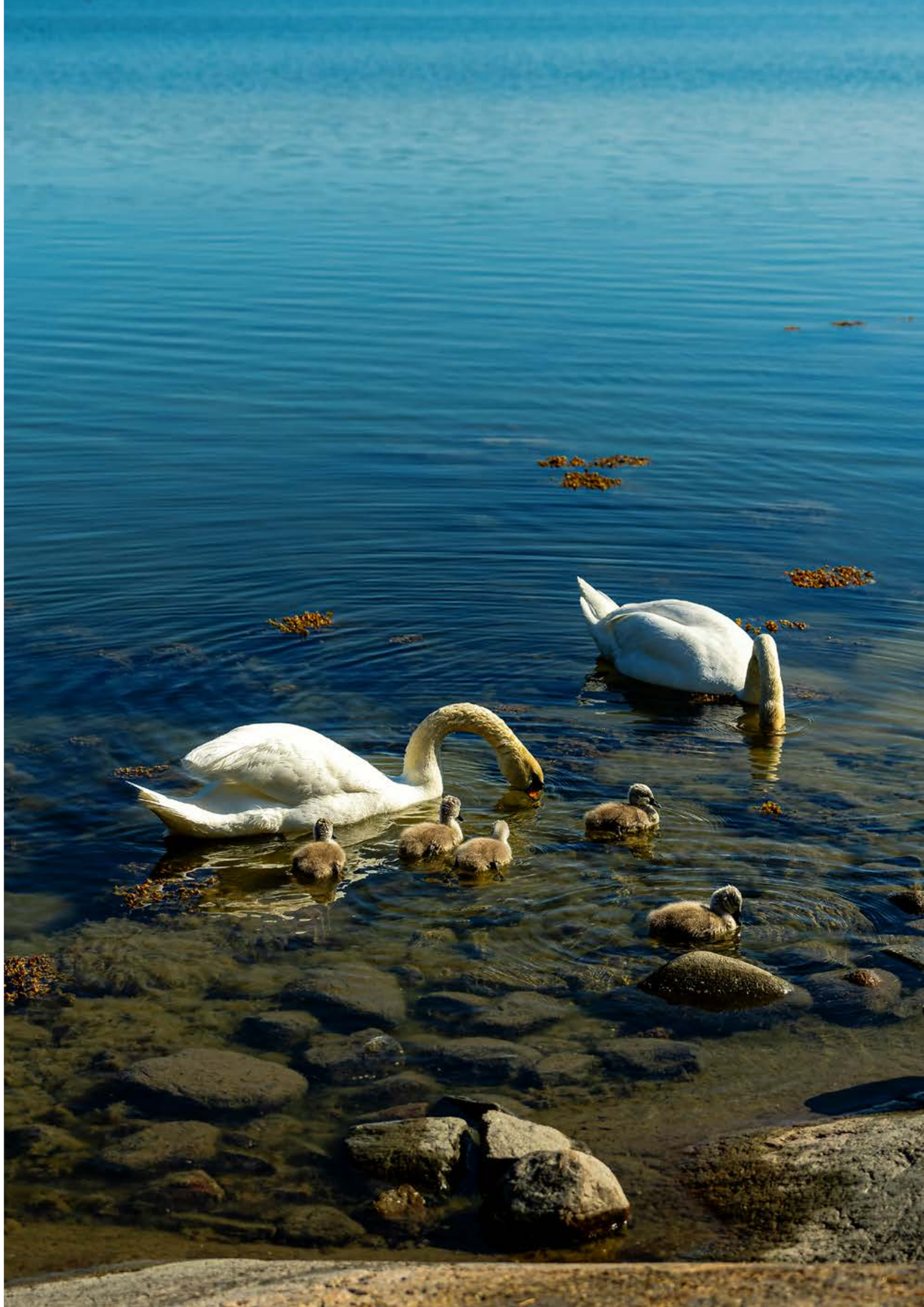
In 2024, the City prepared a new Nature Reserve Programme, which will increase the total surface area of the City's marine conservation areas tenfold. The aim of the programme is to secure Helsinki's most valuable and sensitive marine nature areas and promote the preservation of biodiversity.

Marine nature was restored by planting eelgrass in the Hevosenkenkälahti bay area in Lauttasaari and in front of Hattusaari. The seafloor was also improved in Hevosenkenkälahti by increasing the amount of sea stone material to improve the living conditions of the eelgrass meadows. The preliminary results are promising and support the recovery of the marine ecosystem.

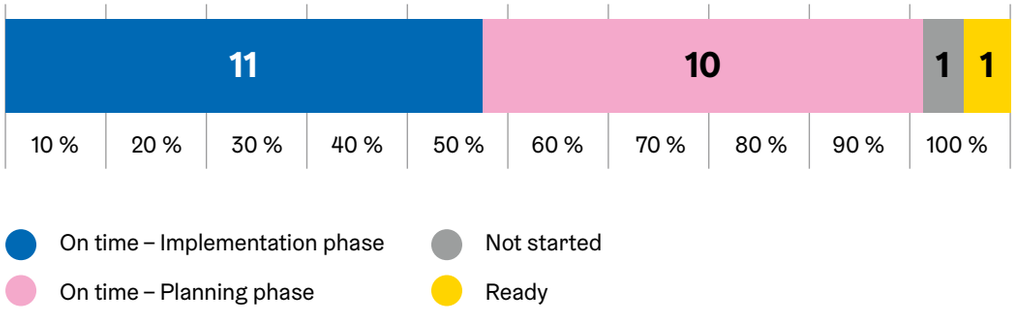
A new shared Baltic Sea Action Plan of Helsinki and Turku was published

Helsinki is committed to reducing the load on the Baltic Sea and cherishing the sea and its shores. Together with the City of Turku, Helsinki aims to serve as a pioneer with a shared Baltic Sea Action Plan. The action plan assigns Helsinki 23 measures to contribute to the health of the sea in a variety of ways. The objectives of the action plan include reducing eutrophication, increasing biodiversity, reducing littering, promoting sustainable use of the sea, reducing harmful substances, and increasing cooperation and participation.

The Helsinki City Board approved the action plan in January 2024. The implementation of the programme is off to a good start: 22 measures have been initiated, one of which was completed in 2024. In the measure completed, the maintenance objective included in the lease agreements for fields leased out by the City was specified to take water protection into account better than before. The maintenance obligation was specified in terms of aspects such as the buffer zone requirement, the mowing obligation and cultivation principles. These specifications are to be added to all lease agreements renewed from October 2024 onwards. Additionally, the Baltic Sea Action Plan involved measures such as promoting the maintenance of septic pump-out stations provided to boaters by the City and the creation of local stormwater plans, as well as increasing awareness during events such as sailing events and Baltic Sea Day.



Status of the measures of the Baltic Sea Action Plan as of 31 December 2024



The state of the coastal waters has been monitored since the 1960s

The water quality of the marine areas of Helsinki has been monitored throughout the year at several observation stations since 1966. The coastal waters are only in a passable ecological condition, and their chemical state does not meet the criteria for a good condition, either. The water quality is affected by factors such as the load from catchment areas, sea deposits and filling, the discharging of treated wastewater into the sea, waterway transport and the water quality of the Vantaa River.

In the 2024 winter season, the inner archipelago was largely covered by ice, and run-off from the shore undermined the water quality of inner bays. The ice melted over the spring, and peak spring bloom took place in April–May. The hot and dry summer raised surface water temperatures more than usual, and algae blooms increased chlorophyll concentrations in different areas. In the autumn, the water quality was normal for the most part, but heavy rainfall increased the cloudiness of the water temporarily, and deviations in nutrient concentrations were observed in some areas.

Swimmers enjoyed good-quality water in Helsinki

The beaches of Helsinki are open to all and serve as popular exercise and recreation spots. Helsinki has a total of 26 public beaches, 12 of which are large public beaches. The new Palettilampi beach was opened in Kuninkaantammi, built at a former wastewater treatment plant basin with water flowing into the artificial pond from Lake Päijänne.

In the 2024 swimming season, the beach waters of Helsinki had a good level of hygienic quality for the most part. A total of 167 water samples were collected by the authorities at the beaches. 96 per cent of the samples taken at seashore beaches were of good quality. At the beaches along the Vantaa River, the quality of the swimming water was occasionally affected negatively by rain.

After the end of the swimming season, the beaches were classified based on the previous four years. Ten beaches were classified as excellent or good. Two were classified as satisfactory. Not one beach was classified as poor. At the Marjaniemi beach, the City collaborated with the University of Helsinki on a project examining potential factors causing swimming waters to become polluted to support risk assessments regarding health hazards related to swimming waters.

The amount and occurrence of blue-green algae at beaches were at a low level in the 2024 swimming season. Filaments of the potentially toxic species Dolichospermum sp. and Nodularia spumigena were found in the swimming waters. The City issued recommendations to avoid swimming whenever blue-green algae was observed. In early May, harmless golden algae of the genus Uroglena occurred in Palettilampi, causing an unusual smell. The plentiful occurrence was probably caused by attempts to strike a balance between different factors in the new artificial pond.

Public winter swimming spots were taken under regular monitoring in 2024. For the most part, the winter swimming spots have had good water quality, but the quality can fluctuate, particularly in the urban area. New winter swimming spots are being planned in the inner city of Helsinki.

The ecological and chemical state of the blue network of Helsinki was established in greater detail

The Urban Nature themed map of the Helsinki City Plan illustrates the City's ecological networks, forest network, meadow network and blue network. The blue network survey launched in 2021 involved specifying information related to the ecology and status of water bodies and converting it into a more readily usable form. The information on the blue network survey on the degree of naturalness of small waters, shores and the sea area makes it easier to take natural values into account when planning land use, monitoring waters and otherwise developing the areas. In 2024, the work was continued by drawing up plans for Helsinki for surveying and monitoring the ecological and chemical state of small water bodies.

Land surveys carried out in 2024 revealed new streamlets and creek branches, which were then added to the Geographical Information System. Additionally, a more detailed streamlet survey was carried out in the Laajasalo and Kruunuvuorenranta area, resulting in the identification of streamlets in a natural and natural-like state in the area. Land surveys and inventories will be continued in the summer of 2025.

The water quality of small water bodies has remained stable

The water quality of the creeks and ponds of Helsinki has been monitored since 1982. Samples are taken twice a year and analysed for the most common parameters indicating the quality of the water. The water quality of the creeks varies, but it has generally improved from the 1980s. The water quality of ponds has remained stable, with only a minor variation between ponds.

In 2024, the monitoring of water quality was intensified through constant measuring of the water of Mätäjoki. The City aims to continue this monitoring in alternate months at Helsinki's key trout creeks in 2025 as well. In 2024, the City used eDNA to establish whether the thick shelled river mussel (Unio Crassus) occurs in Longinoja. The species was not found, but based on the trial, the method appeared to be promising for seeking other organisms in flowing waters.

Supervision of water protection

The City's instructions for the treatment of worksite water (in Finnish) were completed in March in cooperation with the environmental protection authorities of the other cities of the Helsinki Metropolitan Area and the Helsinki Region Environmental Services Authority (HSY). Construction sites are one of the most significant sources of harmful substance loads on stormwaters in cities. The work to apply the worksite water instructions began partially during the preparation of the instructions. The work to establish the instructions will require efforts from the environmental supervision authorities for several years to come.

In connection with the creation of the new worksite water instructions, the cities

of the Helsinki Metropolitan Area utilised available materials to prepare a separate map level for the open map service of each city. This map level is entitled 'Sensitive aquatic environments'. The purpose of the map level is to help planners and contractors identify sites that require special care in their worksite water management. The 'Sensitive aquatic environments' map level covers aspects such as the known habitats of the extremely endangered sea trout. The builder must survey and ascertain the location of their upcoming construction and work site in relation to sensitive water sites.

In 2024, the City received hazard reports particularly with regard to damage to water bodies caused by worksites and geothermal heat well drilling operations, as well as some snow management operations. Damage to creeks caused by geothermal heat well drilling operations has continued to occur in recent years due to the increasing popularity of geothermal heat wells. It is important that wastewater containing solids (sludge) generated from drilling is treated appropriately in order to avoid adverse impacts on water bodies. Operators have been instructed and supervised actively to spread awareness and minimise damage. Graffiti removal methods were also discussed with parties such as certain major removal commissioners. Going forward, the aim is to develop instructions for removing graffiti by using methods that are as environmentally friendly as possible.

The work on the Helsinki water management development plan (2025–2034) began as a collaboration between the City and the Helsinki Region Environmental Services Authority (HSY). The plan is set to be completed in 2025. The development plan is being created in parallel with water management development plans for the HSY area and the Cities of Espoo, Kauniainen and Vantaa. The aim is for the plan to emphasise charting water management needs brought about by changes in the societal structure, as well as the water management needs of areas located outside networks.

The congestion of applications brought about by HSY's sewer renovation projects in stormwater drain exemptions pursuant to the Act on Water Services in the previous years was successfully cleared with the help of temporary additional workers, and the number of new applications was stabilised at the normal level.

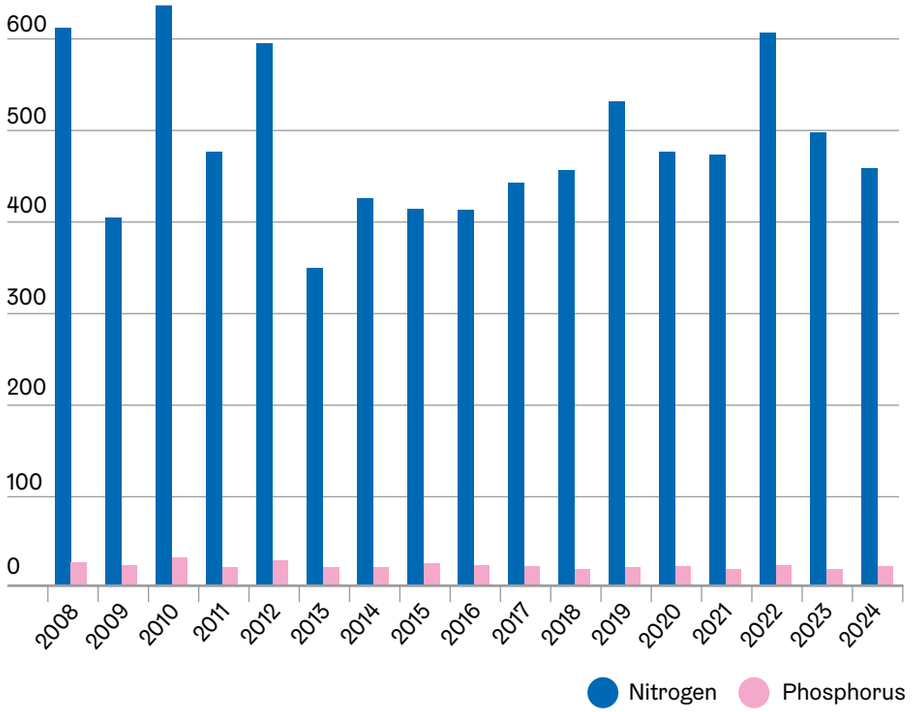
Wastewater was treated efficiently

The amount of water pumped into the water supply network in 2024 was 94 million cubic metres in the HSY water supply area, with 51 million cubic metres pumped into the Helsinki network.

The Viikinmäki Wastewater Treatment Plant in Helsinki is the largest water treatment plant in all of Finland and the Nordic region. The plant treated a total of 114 million cubic metres of wastewater, 77 million cubic metres of which came from Helsinki. Both the total amount of wastewater and the amount of wastewater from Helsinki were greater than in the previous year. The Viikinmäki Wastewater Treatment Plant met all the environmental permit regulations. Combined sewer network overflows amounted to 0.06 per cent of the overall amount of sewage in Helsinki.

The 2024 treatment efficiency for phosphorus in Viikinmäki was 97 per cent. For biological oxygen demand, the removal efficiency was 97 per cent, and for nitrogen, 92 per cent. The treated wastewater is conducted through a 16-kilometre-long tunnel to the open sea. The phosphorus load from the Viikinmäki sewage treatment plant on the sea areas in front of Helsinki was 20.9 tonnes (+10 per cent from the 2023 level), and the nitrogen load was 456 tonnes (-9 per cent from the 2023 level).

Nitrogen and phosphorus load channeled to the sea from the Viikinmäki treatment plant, tons per year



Eyes on the future

The new worksite water instructions for the Helsinki Metropolitan Area will be applied and established in 2025, and the City will monitor how the instructions improve the level of water treatment at major construction sites. Cooperation with Building Control Services will be increased in the supervision of worksite waters.
In 2025, the chemical state of the marine area of Helsinki will be surveyed in greater detail as part of the collective programme for monitoring of the marine area of the Helsinki Metropolitan Area. Additionally, the restoration of marine nature will be continued by planting more eelgrass in front of Hattusaari and by charting new potential restoration sites.

Programmes and policies:

Joint Baltic Sea Action Plan of the Cities of Helsinki and Turku 2024–2028

City of Helsinki's Environmental Protection Targets 2040

Mitigating climate change

Helsinki has ambitious emission reduction targets and aims to reach net zero (emissions and carbon removal in balance) by 2040. During the strategy period, emission reduction work made consistent progress, but further additional emission reduction measures are still needed.

Total greenhouse gas emissions decreased significantly

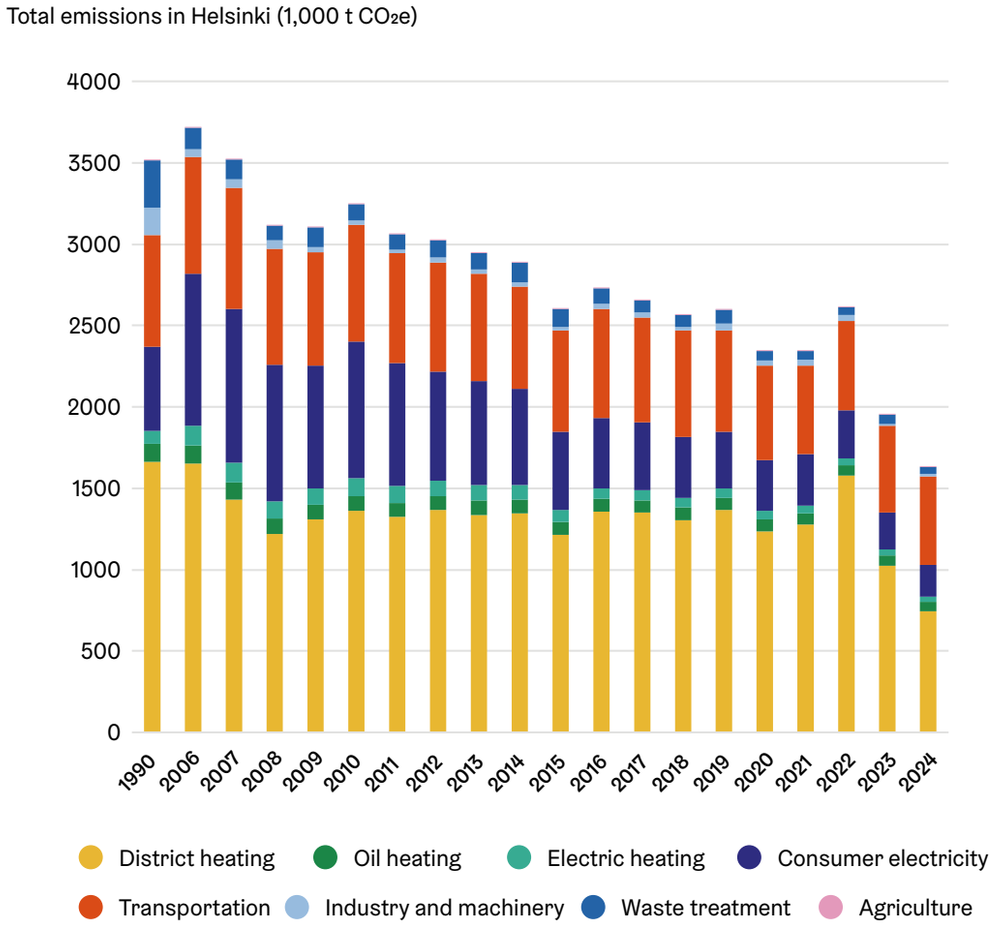
According to global data from the EU's Copernicus Climate Change Service, the year 2024 was the warmest year on record since 1850. The previous record was set in 2023. Human activity has already warmed the planet by 1.3°C. In Helsinki, 2024 was the second warmest year after 2020.

In 2024, greenhouse gas emissions from Helsinki's residents, services and industry amounted to 1,632 t CO_2e, decreasing by 16 per cent from the previous year. As in the previous year, the most significant reason for the decrease in emissions was the cessation of coal burning in the Hanasaari power plant. The year 2024 was the first year in which coal was not used there at all. This and other emission-reducing district heating solutions, such as heat pumps and biofuels, reduced district heating emissions by 27 per cent compared to the previous year.

Emissions from electricity consumption decreased by 14 per cent, which is explained by a reduction in the national electricity emission factor. Electricity consumption increased by five per cent from the previous year. This growth is explained by the electrification of transport. Emissions from transport increased by three per cent from the previous year. This is mainly due to a decrease in the bio share of transport fuels when compared to the previous year. Compared to 1990, the total emissions of Helsinki were 54 per cent lower. Emissions per capita were 2.4 t CO_2eq, which is 18 per cent lower than in the previous year and 67 per cent lower than in 1990.

Helen Ltd's share of energy produced with renewable energy was 38 per cent in 2024. All in all, 63 per cent of the energy produced was carbon-neutral.

Total greenhouse gas emissions in Helsinki



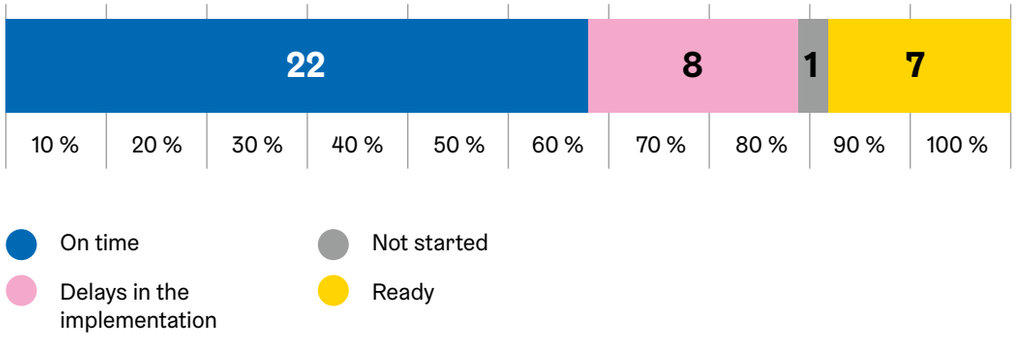
Carbon Neutral Helsinki Action Plan progressing well

The implementation of the Carbon Neutral Helsinki programme progressed well during the strategy period, with emissions falling by 30 per cent between 2021 and 2024. The Ambitious Climate Responsibility programme group, chaired by the Mayor, set out the guidelines for climate work during the strategy period and ensured a level of ambition in both mitigation and adaptation work.

For more information on the progress of the measures in the Carbon Neutral Helsinki Action Plan, see the 'Energy,' 'Construction' and 'Transport' chapters of this report.

Please see ilmasto.hel.fi/en/ for the results of the measures and emission reductions of the Carbon Neutral Helsinki Action Plan.

Status of the measures of the Carbon Neutral Helsinki Action Plan as of 30 April 2025



Climate change mitigation in the City's divisions and enterprises

Divisions and public enterprises have different roles in reducing emissions. The Urban Environment Division bears the main responsibility for the implementation of the measures of the Carbon Neutral Helsinki Action Plan. The sector also plays a key role in improving the energy efficiency of the City's real estate stock and private housing companies. The division manages a large part of the real estate owned and occupied by the City. The Energy Renaissance team supports private housing companies with energy renovations and surveys. The sector also has a significant impact on emissions from construction through, for example, the carbon footprint management of residential apartment buildings in detailed planning and land transfer, E-number targets, measures to reduce emissions from infrastructure construction and the Green Deal agreement for zero-emission construction sites. More information about the aforementioned is provided in the 'Construction' and 'Procurements' chapters of this report. The division is also responsible for city and transport planning, which have a significant impact on emissions trends, particularly in transport, which is set to become the largest source of emissions in 2025.

The Education Division's most important climate change mitigation measure is the development of a sustainable development study path. On this study path, learners of all ages get to delve into and study climate change and sustainable development. The study path is made tangible by aspects such as the Kettu model and a 'Carbon-neutral Helsinki' study course, which combine climate and environmental education and creative learning. Additionally, the City's adult education centres provide a wide range of courses that encourage residents to participate in emission reduction. The climate and environmental impacts of the division's own operations are reduced through Eco-Schools and OKKA certificate work. Helsinki Vocational College (Stadin AO) also applied for OKKA certification in 2024. Staff sustainability skills are ensured through the mandatory Professional's Handprint™ online course, and progress is monitored through a sustainability roadmap. Helsinki Vocational College arranges for specialized vocational certificates in environmental and sustainability education by SYKLI Environmental College and offers a study module on sustainable development in all fields of education. More information about the aforementioned is provided in the 'Environmental awareness and education' chapter of this report.

The Education Division carries out close cooperation with Palvelukeskus Helsinki and other food service providers in order to reduce the climate impacts of food.

Pupils are activated to take part in reviewing and developing vegetarian recipes in tasting panels. The carbon footprint of food is reduced by developing plant-based recipes and menus. Waste reduction is implemented through measures in the Food Waste Ecosystem project and through Palvelukeskus Helsinki's own waste reduction work. Stadin Safka collects leftover food from school lunches for distribution. Palvelukeskus Helsinki also commissioned a study on the impact of school menus on nature. As part of the study, the carbon footprint of meals was also examined.

The Culture and Leisure Division will reduce emissions through energy efficiency measures. Geothermal projects were also launched in 2024. In the Social Services, Health Care and Rescue Services Division, a key aspect of climate change mitigation work is improving the energy efficiency of premises and electrifying the vehicle stock. In 2024, the division's electric vehicle fleet grew significantly, already accounting for almost a quarter of the total. Most of the cars are used by home care and fire inspectors.

Helsinki City Construction Services Stara reduces emissions by improving the energy efficiency of its buildings, increasing the use of renewable diesel and the amount of electric equipment in small machines and vehicles, and by purchasing electric vehicles for its divisions. Stara has also piloted the use of electric heavy vehicles on construction sites.

In 2024, three projects were completed and one was under construction in the Re-Thinking Urban Housing Programme coordinated by the City Executive Office. One of the projects is an energy-efficient solid brick apartment building with natural ventilation. The Urban Wooden Block project is the largest timber apartment building project in Finland so far. The 0CO₂ project currently under construction will create an operating model to achieve a fully carbon-neutral block in terms of energy use.

Mitigating climate change in the City’s subsidiaries

The city's subsidiaries are implementing a wide range of climate change mitigation measures: installing solar panels, increasing the share of renewable energy purchases, implementing energy efficiency investments and energy saving measures, integrating a climate perspective into procurement, increasing the use of electric vehicles and services, and reducing the number of flights. The construction will follow the City's guidelines on, for example, E-number targets and thermal insulation of building components. Many subsidiaries have a certified environmental management system or a responsibility programme in place. Helen Ltd, together with Helsinki City Housing Company Ltd (Heka), is developing an intelligent heat control service that enables demand response for district heat. Demand response is also being piloted in the Systemic Heat Shift project in City service buildings, especially schools. More information on this can be found in the ‘Energy’ chapter of this report.

Metropolitan Area Transport Ltd sets emission reduction targets for all construction projects in accordance with the carbon management model for investments, and emission calculations are carried out in the projects to plan and implement emission reduction measures related to, for example, the use of low-emission concrete, circular economy materials and energy solutions. More information on this can be found in the ‘Construction’ chapter of this report.

In 2024, Port of Helsinki Ltd defined the milestones of its own carbon neutrality plan, and the company is now involved in the Green Corridor cooperation for decarbonising maritime transport with the cities of Helsinki and Tallinn, the Port of Tallinn and shipping companies operating between Helsinki and Tallinn and the Ministry of Climate of Estonia. A new shore-side electricity connection was introduced in Vuosaari Harbour.

Helen's clean transition progressing

The priorities of Helen Ltd's strategy are clean transition, flexibility and profitability. The company's goal is carbon neutral energy production by 2030. It also aims to phase out incineration in its energy production by 2040.

Helen Ltd invested a record 565 million euros in carbon-neutral energy in 2024, and the share of carbon-neutral energy in the company's production rose to 63 per cent. Direct greenhouse gas emissions decreased by 24 per cent. The significant reduction in emissions is due, in particular, to a substantial reduction in the use of coal. During the year, Helen Ltd converted a coal-fired boiler in Salmisaari to a pellet-fired boiler and introduced new electricity-based heat sources, such as three electric boilers in Hanasaari.

During 2024, the Pjelax, Karahka and Kalistanneva wind farms and the Lohja solar power plant were completed. The amount of electricity produced from wind power almost tripled. Nuclear power accounted for 45 per cent of the company's electricity production and renewables for 38 per cent. The remainder was produced from coal and natural gas.

Helen Ltd made an investment decision on the construction of a green hydrogen pilot plant in Vuosaari. The waste heat generated as a by-product of the production process is utilised in the district heating network in Helsinki. The company also launched a nuclear energy programme, which aims to use nuclear energy in the production of heat in Helsinki.

Eyes on the future

The City of Helsinki's ambitious emission reduction targets require additional emission reduction measures. In 2025, transport will become the biggest source of emissions in Helsinki, so measures must be targeted specifically at this area. The price of emission reductions should be examined in relation to the pricing of decarbonisation. The carbon negativity objective requires looking at both natural and technological sinks but also responding to a constantly evolving and changing policy and regulatory environment.

Programmes and policies:

- Carbon Neutral Helsinki Action Plan
- City of Helsinki’s Environmental Protection Targets 2040

Adapting to climate change

Helsinki promotes its adaptation to climate change from a risk perspective. The policies of the City Strategy (2021–2025) guide the adaptation work. The goal is to prepare Helsinki phenomena and their indirect effects. Of the climate risks identified in Helsinki, the most urgent is the increase in the frequency and intensity of heatwaves and torrential rains. The City's flood group is working on preparing for and adapting to rising sea levels.

Preparing for torrential rains and heatwaves

The planning for torrential rain preparedness in the inner city started with a survey of the relevant legislation and the identification of future torrential rain events relevant for Helsinki. In 2024, the City completed a hydrological model, which includes both surface run-off and the sewer system. The model can be used to estimate the potential flooding events resulting from different rainfall events, as well as their magnitude and duration. The results add to the knowledge base for setting the level of preparedness for heavy rainfall in Helsinki. The City's flood group has determined the tasks involved in preparing for seawater floods and identified operators responsible for these tasks. The work will continue in 2025 with an update of the flood strategy.

A pervasive priority in the preparation for intensifying heatwaves are vulnerable groups, such as home care and nursing home clients and children. For schools and daycare centres, particular attention is being paid to water management and the shade and shelter provided by courtyards. The work on heatwave preparedness has started by strengthening the knowledge base. In spring 2025, the Finnish Meteorological Institute will complete its modelling of the city's heat islands and the intensity of heatwaves in the current and future climates.

Strengthening the green structure

In 2024, the City allocated resources to strengthening the effectiveness of the green efficiency of green factor tools. The partially EU-funded 'VALUE – Valuation and strengthening of urban green spaces in landscape planning in cities' project, launched in 2023, focused on strengthening the green structure in detailed planning by means of further developing the regional green factor tool and putting it to use. The regional green factor is a continuation of the City's plot-specific green factor work, extending the green factor from plots to broader public areas. Work on updating the plot-specific green factor tool to focus more on climate change adaptation and biodiversity continued. The City also strengthened its green structure in a number of planning projects. The tree canopy cover percentage was calculated for the entire area of Helsinki and separately for different sub-areas, and this work will continue by determining the scope for the targeted increase in canopy cover.

Eyes on the future

The City will continue to improve the effectiveness of climate change adaptation work and develop its monitoring and assessment methods. The adaptation work will be prioritised on a risk basis. The City will improve its preparedness for torrential rains by repairing identified flood risk areas in the inner city and better integrating adaptation objectives into the planning documents for new areas. The City began preparing for more frequent heatwaves in 2024 as a City-level collaboration. As part of this work, the City will also carry out a vulnerability assessment of the impacts of climate change to determine the equity of its adaptation measures. The City's work on developing the regional and plot-specific green factor and increasing tree canopy cover to strengthen climate change adaptation and biodiversity will continue.

Programmes:

- Helsinki's climate change adaptation policies 2019–2025
- City of Helsinki's Environmental Protection Targets 2040

Energy

The production and use of energy continue to play a very significant role in the achievement of the City of Helsinki's emission reduction target. 43 per cent of CO_2 emissions in the urban area of Helsinki are generated from district heat consumption and 30 per cent from the electricity consumption of properties. The CO_2 emissions of the Helsinki Group account for 18 per cent of the emissions of the entire urban area. Of this proportion, 92 per cent is caused by the energy consumption of buildings.

Helsinki's energy conservation work is based on the Carbon Neutral Helsinki Action Plan. Helsinki has been involved in the energy efficiency agreements made between municipalities and the Finnish government. These agreements are used to implement the measures required by the national energy and climate strategy at the municipal level.

Reduction in carbon dioxide emissions from energy use

Helsinki Group accounted for 11 per cent of the consumption of electricity, 18 per cent of the consumption of district heat and roughly three per cent of the consumption of district cooling in the entire Helsinki urban area.

The energy consumption and CO_2 emissions of the Helsinki Group in 2023 and 2024 are presented in the table. The total energy consumption of the Helsinki Group decreased by one per cent from 2023, compared to a 13 per cent reduction in CO_2 emissions. A more significant decrease in CO_2 emissions, compared to the total energy consumption, is explained by the fact that Helen's emission factor for district heating was 15 per cent lower than in 2023 due to a decrease in the use of fossil fuels.

Although the emission factor of Helen's basic electricity product used in the calculation increased by 18 per cent from last year's calculation, electricity consumption emissions did not increase in the same proportion since half of the electricity supply of the Helsinki Group is renewable electricity or certified nuclear power, the CO_2 emissions of which are calculated as zero. In 2023, the corresponding share was 40 per cent. The increase in the emission factor of Helen's basic product is explained by the fact that an increasing share of the emission-free production is sold as separate products, which means that fossil fuels account for an increasing share of the remaining basic product.

The electricity consumption of Helsinki Group real estate properties decreased by one per cent, and the consumption of district heating decreased by two per cent from 2023. The energy consumption of the properties varies annually due to changes in the property stock, changes in the occupancy rate and equipment level of the buildings, and changing weather conditions. Real estate property district cooling consumption increased by 40 per cent since 2023. This is explained by both new sites of use and the increased need for cooling.

Electricity consumption in public areas increased by 16 per cent, whereas the consumption of district heating was reduced by 32 per cent from 2023. The increase in electricity consumption is due to new sites and an increase in the need to heat stairs and outdoor surfaces. Annual weather conditions affect heat consumption. The

Energy consumption and CO_2 emissions of the Helsinki Group in 2023 and 2024

PROPERTY owned by the city*	GWh, 2023	GWh, 2024	GWh, change in % 2023–2024	CO_2 kilotonnes, 2023	CO_2 kilotonnes, 2024	CO_2, change in % 2023–2024
Electricity	195	193	-1 %	92.1	107	16 %
District cooling	2.65	3.48	31 %	0.00	0.00	
District heating	372	374	0 %	60.3	51.2	-15 %
Total	**570**	**571**	**0 %**	**152**	**158**	**4 %**
Properties, others and subsidiary communities						
Electricity	190	187	-2 %	44.6	14.9	-67 %
District cooling	2.46	3.67	49 %	0.00	0.00	
District heating	737	720	-2 %	119	99	-17 %
Total	**930**	**910**	**-2 %**	**163**	**114**	**-30 %**
Outdoor lighting, traffic lights						
Outdoor lighting, electricity	34.6	31.5	-9 %	16.31	17.47	7 %
Traffic lights, electricity	1.21	1.21	0 %	0.57	0.67	18 %
Total	**35.8**	**32.7**	**-9 %**	**16.88**	**18.14**	**7 %**
Public areas						
Electricity	2.50	2.91	16 %	1.18	1.61	37 %
District heating	3.85	2.62	-32 %	0.62	0.36	-42 %
Total	**6.35**	**5.53**	**-13 %**	**1.80**	**1.97**	**-9 %**
Traffic						
Metro service, electricity (nuclear electricity)	53.1	49.1	-8 %	0.00	0.00	
Tram service, electricity (nuclear electricity)	30.6	38.6	26 %	0.00	0.00	
Ferry traffic, fuel energy	6.48	7.65	18 %	1.20	1.50	25 %
Total	**90.3**	**95.3**	**6 %**	**1.20**	**1.50**	**25 %**
Vehicles and machinery						
Fuels	21.3	21.3	0 %	3.43	2.91	-15 %
Electricity**	0.16	0.26		0.073	0.14	
Total	**21.5**	**21.6**	**1 %**	**3.50**	**3.05**	**-13 %**
Total	**1,654**	**1,636**	**-1 %**	**339**	**297**	**-13 %**

*Service buildings directly owned by the City, where consumption is monitored by the hour (in the Nuuka system with about 750 properties).

**Reporting coverage improved for 2024

The CO_2 emissions for 2024 have been calculated by using the product-specific emission factors of Helen Ltd, which are the following:

- 137 g/kWh for district heating
- 555 g/kWh for electricity (data for 2023; the factor for 2024 is not available)
- 0 g/kWh for cooling

The CO_2 emissions for 2023 have been calculated by using the product-specific emission factors of Helen Ltd, which are the following:

- 162 g/kWh for district heating
- 471 g/kWh for electricity (data for 2021; the factor for 2022 is not available)
- 0 g/kWh for cooling.

electricity consumption of outdoor lighting was reduced by 9 per cent by replacing existing lighting with LED lighting.

The electricity consumption of metro traffic decreased by eight per cent since 2023 due to suspended services on Rautatientori. As for the electricity consumption of tram services, it increased by 26 per cent since 2023, due to the start of the operation of new lines. On the other hand, the energy efficiency of transport operations improved; the light rail, in particular, is energy efficient due to the different driving profile of the line, where the distances between stops are considerably longer and there are fewer pedestrian crossings than on the main track. This means that there are fewer electricity-intensive accelerations.

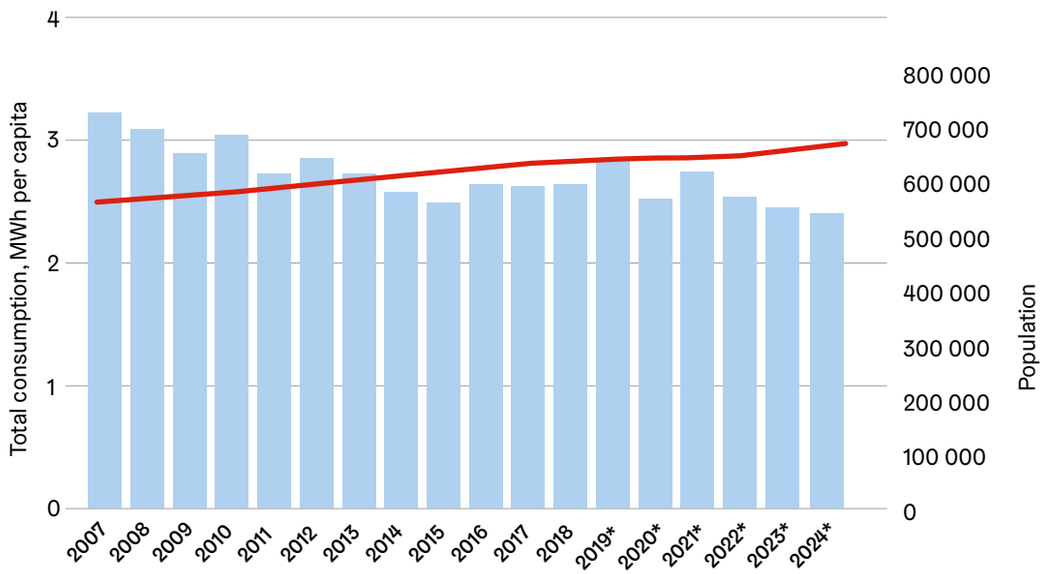
Fuel consumption in ferry transport remained at the 2023 level, but CO_2 emissions from fuel consumption decreased by 15 per cent after ferries started using lower-emission fuels.

District heating amounted to 67 per cent of the Helsinki Group's total energy consumption (1,096 GWh), electricity amounted to 31 per cent (504 GWh), district cooling amounted to 0.4 per cent (7.15 GWh) and fuels amounted to 1.8 per cent (29.0 GWh).

Per capita energy consumption continues to decrease

The image shows the trends in the per capita energy consumption of the City's own operations for the last 19 years. Thanks to long-term work on energy efficiency, per capita energy consumption decreased by 29 per cent during the period in question. Since 2019, energy consumption data has become more comprehensive, which is why the reduction achieved in per capita energy consumption during the period examined is greater in reality than presented here.

The development of the per capita energy consumption in the City of Helsinki's own operations and the population of the city in 2007–2024



*Reporting principle changed due to improved comprehensiveness of energy consumption data

Total consumption, MWh per capita Population

Energy-efficient construction exceeds national requirement

The standards and requirements regarding energy efficiency remained unchanged in 2024, i.e. the City's own new and renovation construction projects had to be planned and implemented with a level of energy efficiency higher than the national requirement. The energy class of a building is based on its calculated energy efficiency reference value, i.e. its E value (kWh/m²/a).

In service buildings, the average E value of new permanent buildings commissioned in 2024 was 73 kWhE/m²/a and the average E value of new building projects calculated in the building permit application process was 63 kWhE/m²/a, the requirement being 100 kWhE/m²/a. In housing production, the average E value of new buildings commissioned in 2024 was 72 kWhE/m²/a (class A) and the average of the E values calculated in the building permit application process was 71 kWhE/m²/a (class A), the requirement being 90 kWhE/m²/a.

Of all service buildings commissioned in 2024 (permanent buildings only), 76 per cent had a heat pump as the primary heating form based on the surface area. In projects for which a building permit was applied for in 2024, the corresponding number was 96 per cent. All Helsinki Housing Production Department's projects for which a building permit was applied for in 2024 had a geothermal heat pump as the primary heating form. Of completed projects, 43 per cent featured geothermal heating.

As before, buildings were required to be equipped with a solar power system. All of Helsinki Housing Production Department's new and renovation construction sites that were commissioned or for which a building permit was applied for in 2024 featured a solar power system. Nearly all of the Facility Service's projects also included a solar power system. More information about the environmental impact of construction is provided in the 'Construction' chapter of this report.

The energy efficiency of Helsingin kaupungin asunnot Oy's (Heka) building stock will be improved, especially as a result of extensive renovations and new development. In 2024, ten renovations and three new buildings were completed for Heka, the energy-efficiency of which exceeded the national requirements. As part of these projects, a solar power plant was installed at 11 sites and a geothermal heating system was installed at seven sites. In addition to this, eight renovation sites introduced a mechanical outgoing air ventilation system with heat recovery, which significantly reduces energy losses.

Investments in energy efficiency and renewable energy production

In addition to new and renovation construction projects, the City is installing solar power stations as separate investments on existing properties. The total power rating of the solar power systems installed in service buildings has already exceeded 2 MWp. In addition to this, the Helsinki Group's subsidiaries have been investing in solar power in recent years.

The Helsinki LED project, in which the City is transitioning to the use of LED lighting in public outdoor lighting, is progressing. In 2024, a total of 8,980 new LED lights were installed. In total, there are 97,366 street and park lighting units in Helsinki, of which 45,275 use LED lights. The share of LED lights in outdoor lighting is currently approximately 46.5 per cent. The transition to LED lighting has progressed rapidly in City buildings, as well. These changes yielded at least 350 MWh in calculated energy savings through investments made in 2024.

A few sites with large energy consumption, such as the Central Library Oodi and the offices of the Urban Environment Division, have been equipped with E-power hybrid filters. They improve the quality of electricity, which reduces losses and extends the life cycle of the devices connected to the power grid. The measured savings in electrical energy have been approximately four per cent.

Measures for improving energy efficiency

In autumn 2024, the acquisition of an energy and condition management system for the service buildings of the Facility Service was subjected to competitive tendering. The service includes active monitoring of the energy consumption, the indoor conditions and the functionality of the building services systems of buildings and reacting to any deviations observed. Based on these observations, the service provider then makes remedial adjustments as agreed through an automation system and provides the property management department and the property manager with instructions for carrying out remedial procedures. The service provider also supervises that the necessary procedures are carried out. The service facilitates remedying various disruptions and finding procedure and investment suggestions for improving energy efficiency and the performance of building services. In the best-case scenario, the service will pay for itself within less than a year.

Helsingin kaupungin asunnot Oy (Heka) implemented several measures to make building heating control more precise and energy-efficient in 2024. The renewal and addition of housing unit-specific temperature sensors was continued in order to adjust the heating more precisely according to the actual conditions. Sensors will also be used in the Optimal Heating service developed jointly with Helen, combining intelligent control of space heating with heating based on demand response. The service is estimated to reduce the need for space heating energy by an average of five per cent. The Optimal Heating service has already been introduced in 170 district heating sites.

Heka enhanced energy and water consumption monitoring by employing the EnerKey Ines AI tool, which helps to identify energy saving potential and supports consumption monitoring. Next, metrics will be used to specify the monitoring of the production and consumption of heat pumps in order to better assess the functioning of the systems. Please visit the Heka website for more information about Heka's responsibility operations.

Energy efficiency is promoted in projects as well

The three-year Energy as a Service in Urban District Areas project that started in late 2023 aims to create a company-oriented energy service model to support the planning and implementation of regional zero energy and low-carbon energy solutions on the city block level. The project partners include Helsinki, Vantaa, Espoo and Metropolia University of Applied Sciences. The project is funded by the European Regional Development Fund. The project is part of the joint innovation programme of the cities of Helsinki, Espoo and Vantaa (HEVi).

In the two-year Systemic Heat Shift (SHS) project, which started in September 2024, Helen and the City of Helsinki implement demand response for heating of service buildings through AI technology. The objective is to address district heating peak times, which can increase heat production emissions and costs. The demand response scheme is not expected to affect the comfort of the indoor facilities. The SHS project is funded by the EU's Net Zero Cities project, in which a hundred European cities striving towards carbon neutrality take part.

Heka is involved in the innovation programme of the HELENA project, which involves piloting low-carbon construction and housing solutions, such as a smart electricity storage, room-specific heating control and dynamic radiator valves. The HELENA project ran from 2020 to the end of 2024. The project was focused on identifying cost-effective improvement measures to energy efficiency through multi-objective optimisations in large renovation projects, in particular. The project developed the multi-objective optimisation method with the companies involved in the project and produced a large-scale database on the

profitability of energy solutions that can be used in the planning of future energy renovations. A total of 86 million euros was invested in the energy efficiency of building sites included in the HELENA project, and, thanks to the executed measures, their annual calculated energy consumption, with the environmental impacts of the forms of energy used taken into consideration, will be reduced by 17.6 GWh.

In 2024, the project employed a market dialogue to examine the acquisition of energy solutions through a service model in which Heka's equity capital would not be tied to investments, but the supplier would be responsible for the optimal functioning of the systems and the realisation of savings. Based on reviews, the service model proved to be a viable option in terms of economic profitability. In order to promote service model procurements, the project also prepared a procurement plan and contract document templates. Next, the service model will be piloted with concrete energy solution acquisitions.

Considerable improvements to energy efficiency through Helen's investments in the green transition

Electricity supplier Helen's goal is to improve energy efficiency by 5.4 per cent from the 2015 level by 2025. This savings target under the energy efficiency agreement has already been exceeded.

In 2024, the most significant measure to improve the energy efficiency of production was the investment in the electric boilers of the Hanasaari heating plant, which saved up to 700 GWh of primary energy. The increased connection power of district cooling increased the utilisation of waste heat. On the side of energy distribution, the district heating network was renovated and management of the network was improved by utilising AI. Helen also allocated resources to digital services that support residents in energy conservation. The number of annual 'Oma Helen' service users exceeded 500,000. More information about Helen Ltd's sustainability actions is provided in Helen's annual review.

KETS and VAETS objectives look achievable

Helsinki is committed to an energy conservation target of 61 GWh in the Energy Efficiency Agreement for Municipalities (KETS), while subsidiary companies of the City that own rental apartments are committed to an energy conservation target of 55.7 GWh in the energy efficiency agreement for rental apartments (VAETS) during the contract period 2017–2025. The contractual obligations are implemented with energy conservation measures, the energy conservation effects of which are reported to the sustainable development company Motiva annually.

By the end of 2025, the total energy savings achieved by the known energy efficiency actions (KETS + VAETS) of the City will have amounted to approximately 98.6 GWh, which is 84 per cent of the total conservation target for the entire agreement period. Some of the energy conservation measures proposed in the energy audits and implemented during the agreement period are still in progress, so they could not be taken into account in this report.

Eyes on the future

The Helsinki Group is preparing to sign new energy efficiency agreements. The plan is to sign the agreements in 2025 and have the contract period cover the years 2026–2035.
In recent years, the three service buildings of the Facility Service have piloted an AI-based application to produce the right indoor climate conditions for all kinds of uses by optimising ventilation, heating and cooling functions simultaneously, reducing unnecessary energy consumption. Next, experiences gained from pilots will be analysed and preparations will be made for wider utilisation of AI in the real estate stock.

Construction

In 2024, Helsinki drew plans for a significantly larger area than in the previous year, a total of 950,211 square metres of floor area, more than half of which was for residential construction. There has been a clear change in where planning takes place: in line with the 2016 city plan, future construction will be increasingly concentrated in the suburban light rail zone, rather than in the central zone. From an environmental perspective, reconciling construction activities with both nature conservation and a smaller carbon footprint is a major challenge that the City is determined to address.

City planning

In accordance with the 2016 city plan, the measures carried out in city planning in Helsinki continue to aim at consolidating and complementing the urban structure by relying on public transport. In 2024, the City continued supplementing the 2016 city plan through work on four local master plans (Östersundom, Viikinranta-Lahdenväylä, the Länsiväylä area and Vartiosaari). Of these, the Viikinranta-Lahdenväylä local master plan, which focuses on residential development, and the Vartiosaari local master plan, which safeguards the area's natural values, were approved by the Urban Environment Committee.

In the Östersundom local master plan work, solutions based on impact assessments were made in order to control climate emissions from construction and preserve natural values and the ecological network to the maximum extent possible. The City has conducted city planning and planning for the protection of natural values in the same integrated process.

Detailed planning uses a limit value for the lifecycle carbon footprint of blocks of flats with the aim of steering building construction towards a lower carbon footprint. Furthermore, as part of the impact assessment of detailed planning, a more extensive calculation of lifecycle climate emissions is carried out by using the Planect method. The average lifecycle climate emissions of the plans are 21 kg $CO_2e/a/m^2$ of floor space. Emissions are increasingly concentrated in the construction phase, as the sources of emissions from the use phase (energy production, transport) are reduced. The City has various planning regulations in place to adapt to climate change, in addition to which a project to develop a regional green factor is underway.

Progress in reducing emissions from construction

Examples of significant low-carbon measures in the City's housing production and construction of business premises include good energy efficiency and heat pumps, which have been a requirement for a long time now. In 2024, the City set up a monitoring system for carbon footprint calculations, which will allow a better analysis and comparison of emissions from building construction projects at different stages of their lifecycle.

The City must further reduce material-specific emissions. Using low-carbon concrete is one of the most essential ways to reduce material-specific emissions. In business premise projects, the City's policy is to use low-carbon concrete (minimum GWP.85) whenever technically and economically feasible. In housing production projects, the cost impact of low-carbon concrete will be investigated.

The City has included the requirement for low-carbon concrete (GWP.85) in the planning of special structures in infrastructure projects. Infrastructure contracts require that the ready-mixed concrete used in the project must be low-carbon concrete of at least class GWP.85 according to the BY low-carbon classification. However, GWP.85 concrete cannot be used in all applications. In some projects, it has transpired during construction that concrete that meets all of the requirements is not available or cannot be produced. The low-carbon requirements for concrete may have to be waived during construction due to challenging concrete casting conditions, such as those caused by seasonal variations. In 2024, the City used low-carbon concrete in an estimated 90 per cent of infrastructure projects that used concrete. Low-carbon concrete is around 10–20 per cent more expensive than conventional concrete.

The steering of the environmental objectives of construction projects is evolving

Rakennustieto Oy's environmental classification (three-star level) will continue to be used in overall responsibility contracts in both housing production and business premise construction. In housing production projects in the Postipuisto area, four-star level certifications were achieved in Heka sites Lavakatu 10 and Postiljooninkatu 2, Haso's Veturi and As Oy Helsingin Kollikallio. The City's projects scored innovation points in areas such as the intelligent use of building automation in building services control and the blowing dry of hollow-core slabs. The first Nordic Swan Ecolabel daycare centre built by the City, Daycare Soittaja, opened in 2024. In other projects, planning is steered through the City's lifecycle management model (housing production) and objectives for ecologically sustainable construction (business premises). The yard planning instructions in the housing production planning instructions were updated to better support biodiversity. The environmental document for business premise construction sites was updated and a new reporting template was created. In 2025, the City will develop the monitoring and control of the environmental impact of construction sites.

The documentation for infrastructure construction specified the presentation of environmental issues and updated the document templates from the perspective of construction site water management and steering towards low-carbon solutions, among other things. In the tendering process for a framework agreement on planning and expert services for streets and public areas, the consultant was required to appoint a mass liaison and a low-carbon planning specialist, and a checklist was drawn up to support these tasks. The themes were updated in the service description for street and park planning and in the planning programme document template.

The sustainability of urban transport construction projects was guided by the BREEAM environmental rating. The Kalasatama–Pasila project received the second highest rating of Excellent in the BREEAM Infrastructure rating scheme. In Finland, the BREEAM Infrastructure environmental rating has only been awarded once before. The project's emissions were reduced by nine per cent, compared to the plan. The BREEAM rating has also been used in the construction of the Ruskeasuo depot, which is also seeking to achieve the Excellent level. Metropolitan Area Transport Ltd set emission reduction targets for all of its construction projects in 2024 and carries out lifecycle or emission calculations on them.

The Helsinki Metropolitan Area worksite water instructions were introduced in spring 2024. They guide worksite operations, minimising adverse impacts on water bodies through measures such as the use of sedimentation containers for worksite water. Detailed instructions have been drawn up to help construction sites manage worksite water, including instructions for drawing up a worksite water management plan and a template for the in-house control of worksite water. Worksites use a range of filtration solutions to purify their water, and the condition of worksite water is effectively monitored. You can read more about worksite water management in the 'Water protection' chapter of this report.

Biodiversity as part of construction

The building regulations require a 'Luonnonarvot tontilla' (Natural values on the plot) report for certain projects. The Facilities service's policy is that the report will be prepared for all of its projects, whether new, extension or modernisation. An internal guideline was drawn up for the Facilities service's projects to take into account the nesting of birds and other animals in construction.

The City of Helsinki is currently updating its plot-specific green factor tool. The aim of the update is for the tool to better address biodiversity enhancement and climate change adaptation.

In processes relating to public areas, the transfer of nature data has been reviewed and ensured so that it can be utilised more effectively by maintenance and land use monitoring.

Case Töölönlahti summer park

The Töölönlahti summer park, which opened to the public in summer 2024, was planned with an experimental approach. The City created various functional areas and structures in the park and will use the experience gained from these in the further design of the park. The construction work progressed one area at a time, and at no point did the park area need to be completely closed off to pedestrians and cyclists.
Stara used its own Tali leaf compost as a base for a productised growing medium in the summer park. The compost helped to improve the water retention capacity of the soil. The compost also served as a nutrient bank for the growing medium, and no additional nutrients were needed. The plants in the summer park were grown locally in the City Garden at the other end of Töölönlahti. Some of the seeds were sown directly into the soil. With a wide range of plants that attract pollinators and produce a large number of seeds, the summer park provided an important oasis not only for the city's human residents but also for insects and birds.

Eyes on the future

The Building Act's national carbon footprint limits for new buildings will come into force in 2026. The limit values will also affect non-residential projects in Helsinki and, in the longer term, the level of the limit values in Helsinki for all new construction projects. The emphasis on the nature footprint of construction has increased in the national discussion on regulation, and the topic requires more research and data production also from the City of Helsinki.
Helsinki is involved in development projects to reduce the amount of plastics and harmful substances that end up in the environment through construction. The City has already refined its guidelines for the use of filter fabric in street and park planning.
The Urban Environment Division has a resource need for a worksite water coordinator. There is a need to further develop the processes and procedures for worksite water management in planning and construction.

Traffic

Helsinki invests in promoting sustainable and smart transport solutions in accordance with the City Strategy (2021–2025). Helsinki wants to increase the share of public transport, walking and cycling among modes of transport and the electrification of the transport system. When realised, the strategy will reduce carbon dioxide emissions from transport and air pollution and noise that are harmful to health.

Improved conditions for cycling and pedestrian traffic

The aim of the Bicycle Action Plan 2020–2025 is to increase the proportion of journeys taken by bicycle to at least 20 per cent by 2030. The proportion of journeys taken by bicycle was 11 per cent in 2024, similarly to the previous year.

The cycling network of Helsinki was expanded on routes such as Itäbaana and Pasilanbaana. As part of the Itäbaana route, the Kaisaniemi Park cycling route arrangements were completed and the Merihaka bridge with its bicycle lane was opened. The bicycle street on Pasilanbaana in Tilkanvierto and Ratsastie was completed. A section of Pasilanbaana was also completed next to tram line 13 on Asemapäällikönkatu and Vallilanlaakso.

Of the roughly 140-kilometre target network in the city centre, approximately 73 kilometres were completed or under construction in 2024. Similarly, of the roughly 148-kilometre target for the Baana cycling network, roughly 34 kilometres were completed or under construction.

At the beginning of May, the new Kaisantunneli cycling and pedestrian connection under the Helsinki Central Railway Station railway yard was opened. The 'Pyörätalli' bicycle garage, improving services for cyclists, was also opened in connection with the tunnel in July, providing extra parking space for approximately 900 bikes.

The year-round traffic pilot on the Esplanades, which started in 2023, ended in autumn 2024. The pilot reserved more space for pedestrians and cyclists and added greenery to the area. Most people visiting the area felt that the pilot had had a positive impact on the pleasantness of the area. Summer streets were carried out in summer 2024 in the Koulupuistikko square and Erottajankatu. Summer streets involve implementing temporary improvements to the area's walking environment and comfort for the summer season.

The City Board approved the City Centre Transport Network Plan in late 2024. The plan is important for the promotion of walking, e.g. thanks to measures aimed at calming down the Kaivokatu public transport street and the local network.

Tram line 13 began operating

Tram services between Pasila and Kalasatama started in August and expanded the tram network to entirely new areas in Helsinki. Line 13 runs from Nihti in Sompasaari to Maistraatintori square in Länsi-Pasila. The number of passengers on the line has increased steadily. The Vallilanlaakso section of line 13 is a green track on top of which it is prohibited to drive by car. The green track binds dust and reduces the noise generated by tram traffic.

The new Hakaniemi bridge was opened for transport in the spring as part of the Crown Bridges project. This will improve, in particular, links between Kruununhaka and Sörnäisten rantatie and Hakaniemi for pedestrians and cyclists, as other streets around them are completed.

Nearly 42 per cent of bus journeys were driven by electric buses

Helsinki Region Transport (HSL) aims to cut local emissions and carbon dioxide emissions from public transport by more than 90 per cent (2010–2025). As far as the bus fleet is concerned, the objective is that 90 per cent of HSL buses are zero emission electric or fuel cell buses by 2030. By 2035, the objective is to achieve zero emission public transport.

Over the course of 2024, HSL commissioned roughly 120 new electric buses, increasing their total number to 547. The electric buses accounted for nearly 42 per cent of the total kilometres driven by the bus fleet in 2024.

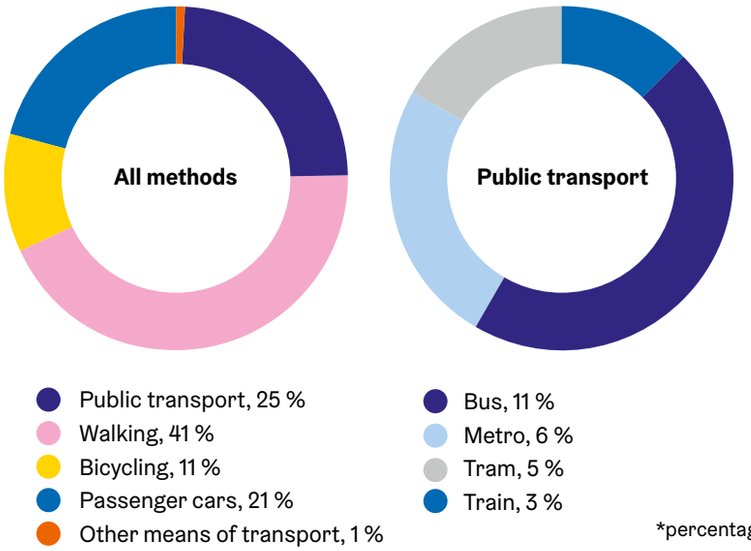
The number of passengers using public transport increased in 2024 from the previous year but is yet to return to the level preceding the COVID-19 pandemic. In 2023, the number of passengers increased by two per cent on the metro, six per cent on trams, nine per cent on local trains and 12 per cent on buses from 2023 in the HSL area. However, HSL's passenger numbers in 2024 were roughly nine per cent lower than in 2019. The city bikes were used for approximately 2.2 million journeys in Helsinki in 2024, similarly to the previous year. The average distance of the journeys was 2.7 kilometres, and the average travel time was 16 minutes.

Increasing remote work is one reason for the reduction in the use of public transport. Due to the decrease in passenger numbers and the increase in operating expenses, ticket prices have increased in the Helsinki region during the strategy period 2021–2025.

However, the residents of Helsinki are satisfied with the functioning of public transport. In 2024, the Helsinki region again ranked fourth in the international BEST – Benchmarking in European Service of Public Transport survey, which surveys the satisfaction of public transport users. Helsinki was only beaten by Turku, Geneva and Tampere. 75 per cent of customers in the HSL area were satisfied with public transport in 2024. The share increased by three percentage points from 2023.

Distribution of modes of transport

Helsinki residents' primary mode of transport within the city, per cent of journeys in a day *



*percentages rounded to integers

The MAL agreement for 2024–2035 on land use, housing and transport between the municipalities of the Helsinki region and the state was approved in September. Essential entries in the agreement, as concerns Helsinki, include the development of the Lahdenväylä route, which would facilitate the construction of the Viikki-Malmi tram line in the near future and the renovations of metro and train stations in Helsinki.

Transport electrification progresses

The number of electric cars continued to increase in 2024. At the end of the year, 20,399 fully electric cars and 24,838 rechargeable hybrids were in traffic use in Helsinki, coming to a total of more than 45,000 rechargeable passenger cars. 24 per cent of the passenger cars registered to the City of Helsinki were fully electric at the end of 2024.

The number of charging points in public areas in Helsinki was approximately 245 by the end of the year. As a result of a tendering process prepared in 2024, the number of charging points placed in public areas will increase in the coming years by 240 new charging points. In addition, the city has a large number of charging stations maintained by commercial operators and private charging stations. Statutory charging points at non-residential City properties were executed by the end of 2024.

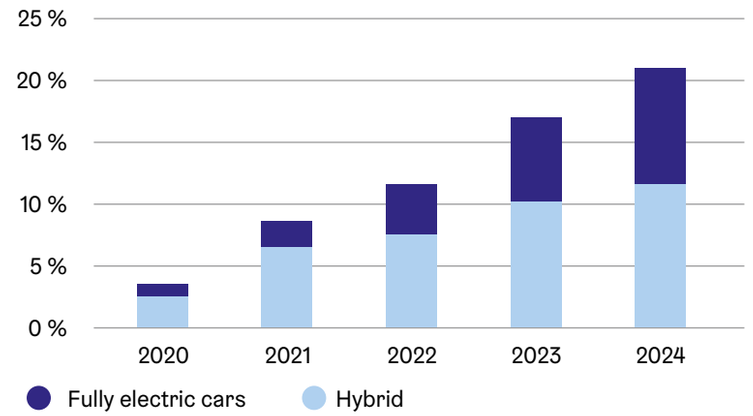
As part of the Carbon-neutral Helsinki Action Plan, the City has commissioned a comprehensive study to identify the most effective measures to achieve the transport emission reduction targets by 2030. The preparatory work carried out in 2024 executed an impact assessment of the measures and interaction with local residents and businesses.

In summer 2024, a climate panel consisting of residents considered ways in which Helsinki could achieve its climate target in terms of traffic. The panel prepared a statement, which was presented to the Urban Environment Committee in October. The statement stressed the needs of various groups of people, the development of public transport and cycling, the improvement of winter maintenance and the improvement of conditions for the different modes of transport.

Smart transport solutions developed to support a sustainable transport system

The Helsinki Intelligent Transport System Development Programme is used to offer comprehensive data on transport and develop advanced traffic management systems that support sustainable modes of transport. In 2024, the transport statistics database was completed, enabling versatile tools to support traffic statistics and plan-

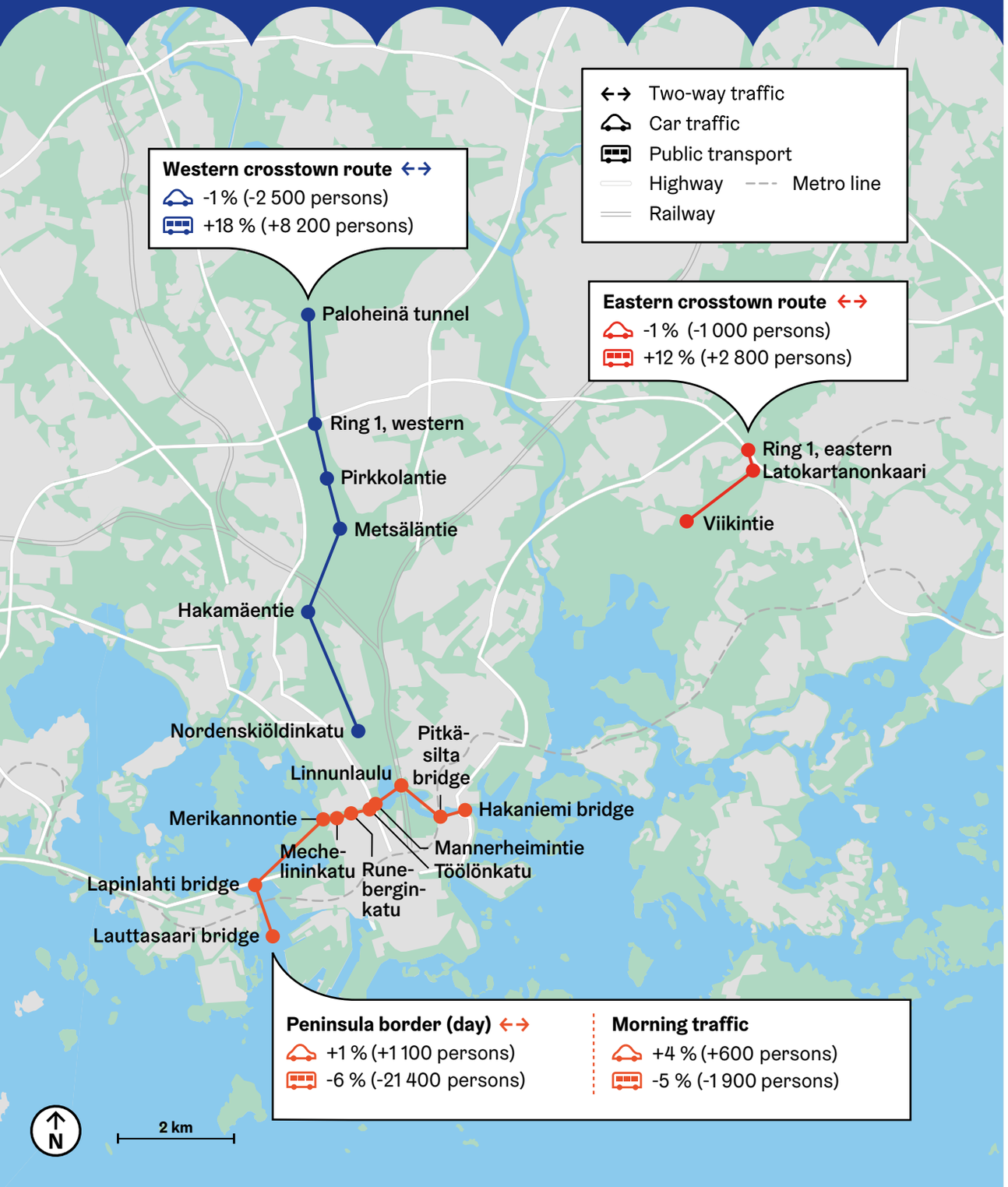
Proportion of chargeable cars among all passenger cars in traffic use in Helsinki



Passenger numbers

Helsinki

Changes in the number of passengers using cars and public transport on Helsinki's calculation lines on an autumn weekday in 2024 compared to the previous year.



ning. The database also makes statistical data openly available to external operators.

Forum Virium Helsinki promotes low-emission mobility and urban logistics in different projects. In the summer of 2024, a local pick-up point pilot to reduce urban logistics emissions was launched in Ruoholahti. From the local pick-up point, items would be distributed on cargo bikes, electrical vans and robot distribution devices. This allowed for the replacement of transport normally carried out by car in the western city centre.

The number of cars in traffic use continued to decrease

In 2024, there were 218,900 passenger cars in traffic use in Helsinki. There were 320 passenger cars per 1,000 residents in traffic use, marking a 1.6 per cent decrease from the previous year. Since 2021, the population of Helsinki has increased more than the number of passenger cars in traffic use, due to which the density of passenger cars in traffic use has also been declining.

Potential reasons for the declining density of passenger cars include the letting up of the COVID-19 pandemic, as well as the strong increase in fuel prices and inflation since 2022. Compared to five years ago, the density of passenger cars in traffic use was 2.45 per cent lower.

On an average June weekday, the border of the Helsinki peninsula was crossed by 26,700 cyclists, which is 8.6 per cent less than in 2023. The motor vehicle traffic volume (cars, vans, trucks, buses and trams) remained the same or decreased slightly across all calculation lines, with the exception of the peninsula border.

Since the pandemic, the share of remote work has settled at a higher level, and mobility needs and habits have changed as a result. In 2024, the mobility of the residents of Helsinki was particularly affected by major street construction sites in the city centre and disruptions to metro services. The introduction of the new light rail line 15 was reflected in the increase in the number of public transport passengers in transverse traffic.

Eyes on the future

In 2025, transport will become Helsinki's largest source of carbon dioxide emissions. By 2030, the share of transport in emissions is expected to exceed 60 per cent, as emissions from heating, in particular, are expected to be reduced dramatically. In order to achieve the emission reduction targets, we need a wide selection of measures that affect both the change in transport power sources and the reduction of mileage.

The City is preparing for an increasing amount of alternative fuel sources by means such as developing its distribution infrastructure. In the next few years, the increase in the number of charging points for electric cars will be accelerated. The first green hydrogen filling station in Helsinki, built by Helen, will be completed in Vuosaari in 2026.

Tramway projects improve the accessibility and growth potential of different urban areas. Walking is an essential part of daily mobility in a city with a tram network. The walking environment will be improved by measures such as implementing the Kallio summer streets pilot in 2025–2026. Determined efforts to promote bicycle traffic will be executed and a new Bicycle Action Plan for 2026–2030 is being prepared. Smart transport solutions will be developed and new means of transport will be increasingly visible in the streets. Drones, for example, will become more commonplace and aviation will be electrified, which has generated the need to control the air space on the whole.

Air protection

The air quality in Helsinki is fairly good at an international level. However, street dust, emissions from small-scale wood burning and exhaust fumes from traffic continue to have adverse effects on people's health and the pleasantness of the environment. The WHO's health-based guidelines published in 2021 are exceeded broadly. The focus in air protection has shifted from exhaust emissions to combating street dust and emissions from small-scale wood burning in particular.

Limit values are becoming significantly stricter

Binding limit values for air quality in the EU are set out in the Ambient Air Quality Directive. The revised EU Directive entered into force in December 2024. It will significantly tighten the binding EU limit values for air pollutant concentrations in 2030, which will pose challenges for Helsinki.

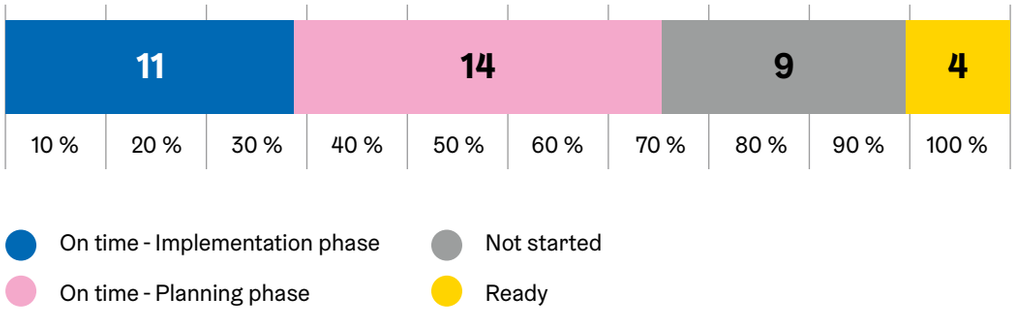
Helsinki has been working towards better air quality for a long time now. Helsinki's new environmental protection targets, adopted in March 2024, set long-term and medium-term targets for air quality. Helsinki adopted its new Air Quality and Noise Abatement Plan 2024–2029 (ILME) in May 2024. It includes almost 40 measures to improve air quality and the soundscape. Some of the measures already started in 2024 and most will start in 2025 or 2026. The future air pollutant limit values, which were still Commission proposals at the time the plan was drawn up, were set as short-term targets in the plan. If the new limit values are exceeded between 2026 and 2029, the ILME plan will need to be revised and extended to reflect the roadmap under the new Directive. It must show the means by which the limit values will be met within the time limit.

Street dust poses a challenge

As it stands, the future EU daily limit value for particulate matter, or street dust, would be exceeded in Helsinki in busy traffic areas. In 2024, the highest number of times the limit value was exceeded in Helsinki was measured on Teollisuuskatu. Dusty days occur particularly in spring. Dustiness is significantly affected by the weather and snow conditions in spring and street maintenance measures. In 2024, high levels of particulate matter in the air were also measured in late autumn after the start of the winter tyre season.

The joint research project KATOA2 on the formation and control of street dust ended at the end of 2024 and planning for a new project started. Research has shown that studded tyres cause a considerable proportion of street dust, as much as half, by grinding on the pavement. Accordingly, the City has set an objective to increase the proportion of friction tyres among winter tyres to 70 per cent by the 2030–2031 winter season. The benefits of friction tyres were again widely promoted in the autumn across different communication channels. The trial to ban studded tyres for through traffic was running for the third year on Lönnrotinkatu. The purpose

Status of the measures of the Air Quality and Noise Abatement Plan as of 21 May 2025



of this trial is to monitor the impacts of the ban on aspects such as air quality and the proportions of studded tyres at large. The proportion of friction tyres in Helsinki has slowly increased in recent years, now averaging around 43 per cent. However, further efforts are needed to reach the target.

Exhaust emissions decreasing

Traffic emissions from exhaust fumes, including nitrogen dioxide and particulate matter, have decreased clearly due to advancements in vehicle technology and the electrification of vehicles. This trend is expected to continue. Replacing the buses of Helsinki Region Transport (HSL) with lower-emission ones has played a key role in the improvement of air quality, particularly in busy street canyons.

The current annual EU limit value for nitrogen dioxide has not been exceeded in Helsinki for years. Concentrations are also below the future, stricter limit value, but it is possible that this limit value will be exceeded in the busiest street canyons where ventilation is poor. The health-based annual guideline level set by the World Health Organization (WHO) is exceeded at almost all measurement sites.

Wood burning reduces air quality in detached house areas

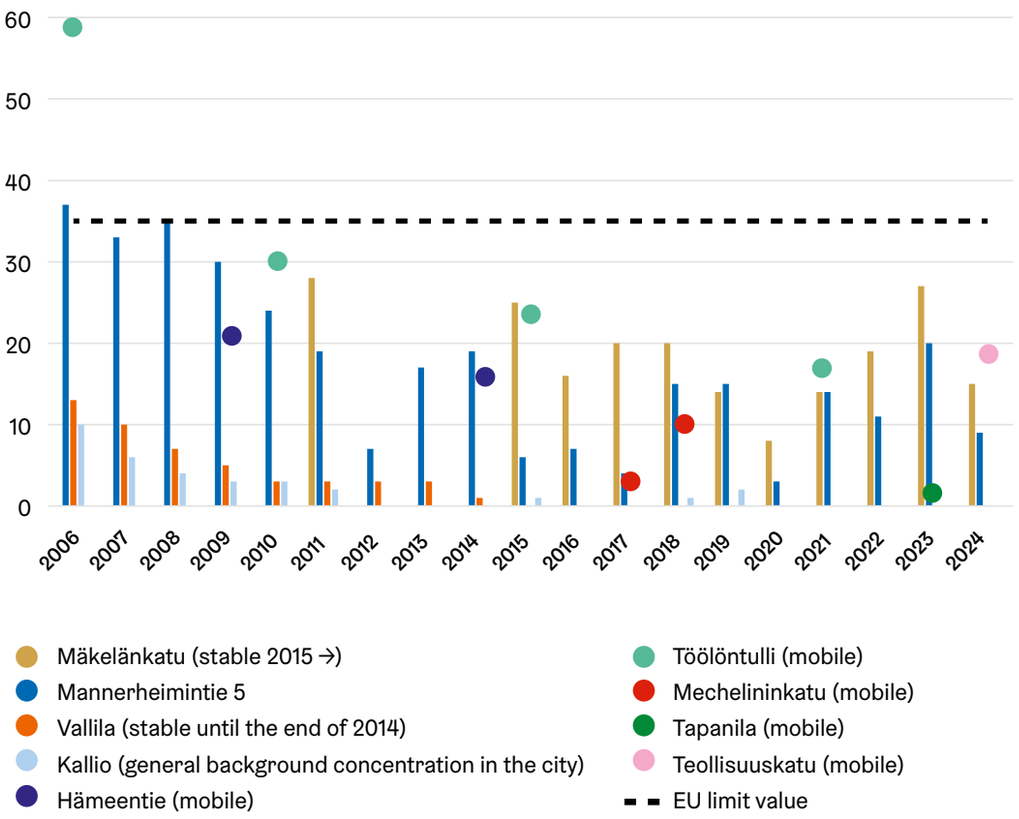
Wood burning in fireplaces occasionally causes high concentrations of particulate matter and associated black carbon and benzo[a]pyrene in detached house areas. On calm, frosty nights, the concentrations can climb significantly higher than in busy traffic areas at peak times.

According to HSY's measurements, in some detached house areas in the Helsinki Metropolitan Area concentrations of the carcinogenic benzo[a]pyrene are close to the current EU target value, which will become a binding limit value in 2030.

The way wood is burned has a significant impact on the emissions generated. Helsinki has campaigned for cleaner burning methods by communicating via social media and the City's info screens, and the City will further develop the communications.

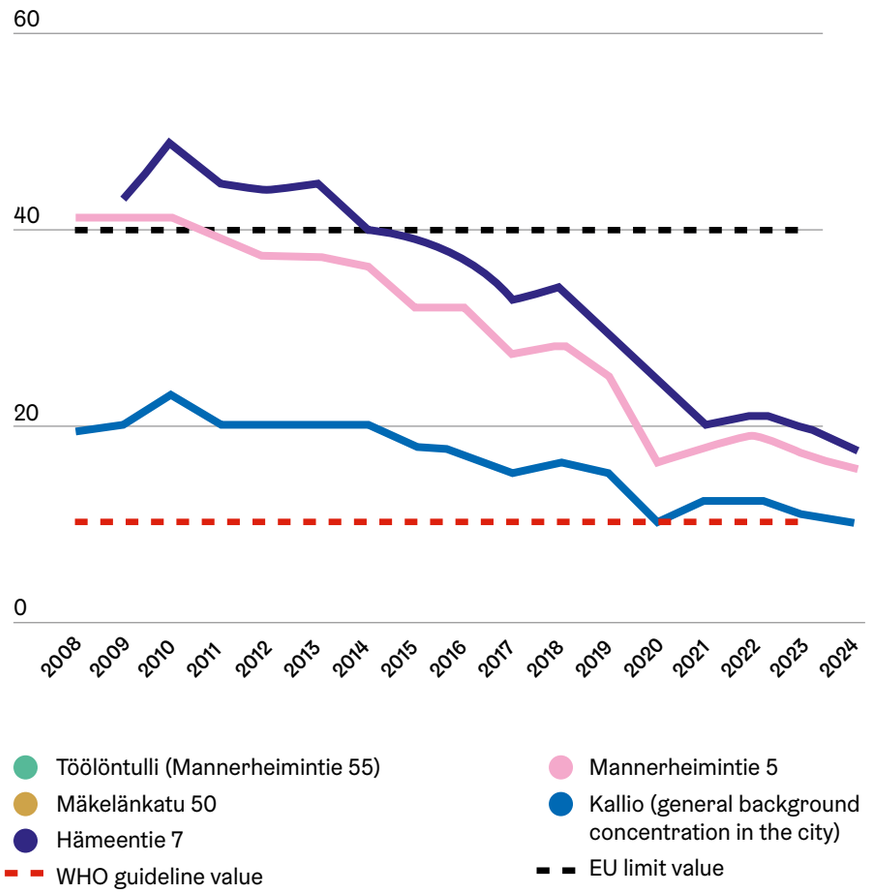
Particulate matter (PM_{10}) concentrations in ambient air

The number of days when the limit value level (50 µg/m³) for particulate matter (PM_{10}) was exceeded in the air quality measurement stations in Helsinki. The limit value is exceeded if the number of days with PM_{10} levels above 50 µg/m³ is more than 35/year.



Nitrogen dioxide (NO_2) concentrations in ambient air

Annual average nitrogen dioxide (NO_2) concentrations measured by HSY's monitoring stations and passive samplers, µg/m³



Eyes on the future

The EU's binding limit values for air pollution will become significantly stricter in 2030. For Helsinki, keeping the concentrations of street dust, i.e. inhalable particles, under the limit values will be particularly challenging. New measures and improvements to existing ones will be needed in the future. Reducing the use of studded tyres plays an important role. Reducing the amount of traffic-generated nitrogen dioxide and fireplace-generated particulate matter and benzo[a]pyrene also requires efforts.

The densification of the urban structure will decrease traffic mileage, but it may lead to challenges in terms of air quality as the mixing and dilution of air pollution will also decrease. In a dense urban structure, people also live and spend time near emission sources.

Programmes and policies:

- Helsinki's Air Quality and Noise Abatement Plan (ILME) 2024–2029
- City of Helsinki's Environmental Protection Targets 2040

Noise abatement

Noise impairs the quality of the environment in Helsinki on a large scale. The most significant source of noise is road traffic. Roughly 39 per cent of Helsinki residents live in areas in which the average daytime noise level of road traffic exceeds the limit value of 55 dB. Six per cent of Helsinki residents are exposed to tram noise, one per cent to railway noise and slightly over one per cent to metro noise. Over the last decade, the number of residents exposed to road traffic noise has slightly increased due to new construction.

Prevention of noise pollution is key

Many decisions on noise pollution and noise abatement are made at a national or EU level. However, Helsinki has established a wide range of its own tools to improve the City's sound environment over the years. The most important thing is to prevent noise pollution. A healthy and pleasant living environment and sufficient noise abatement are ensured in Helsinki in land use and traffic planning.

Helsinki adopted its new Air Quality and Noise Abatement Plan 2024–2029 (ILME) in May 2024. It includes almost 40 measures to improve air quality and the soundscape. Some of the measures already started in 2024 and most will start in 2025 or 2026. Many of the noise abatement measures are well-established, and the ILME plan is committed to continuing them. By combining noise abatement and air protection objectives and measures, the aim is to achieve greater effectiveness and shared benefits. Furthermore, Helsinki's new environmental protection targets, adopted in March 2024, set long-term and medium-term targets for noise abatement.

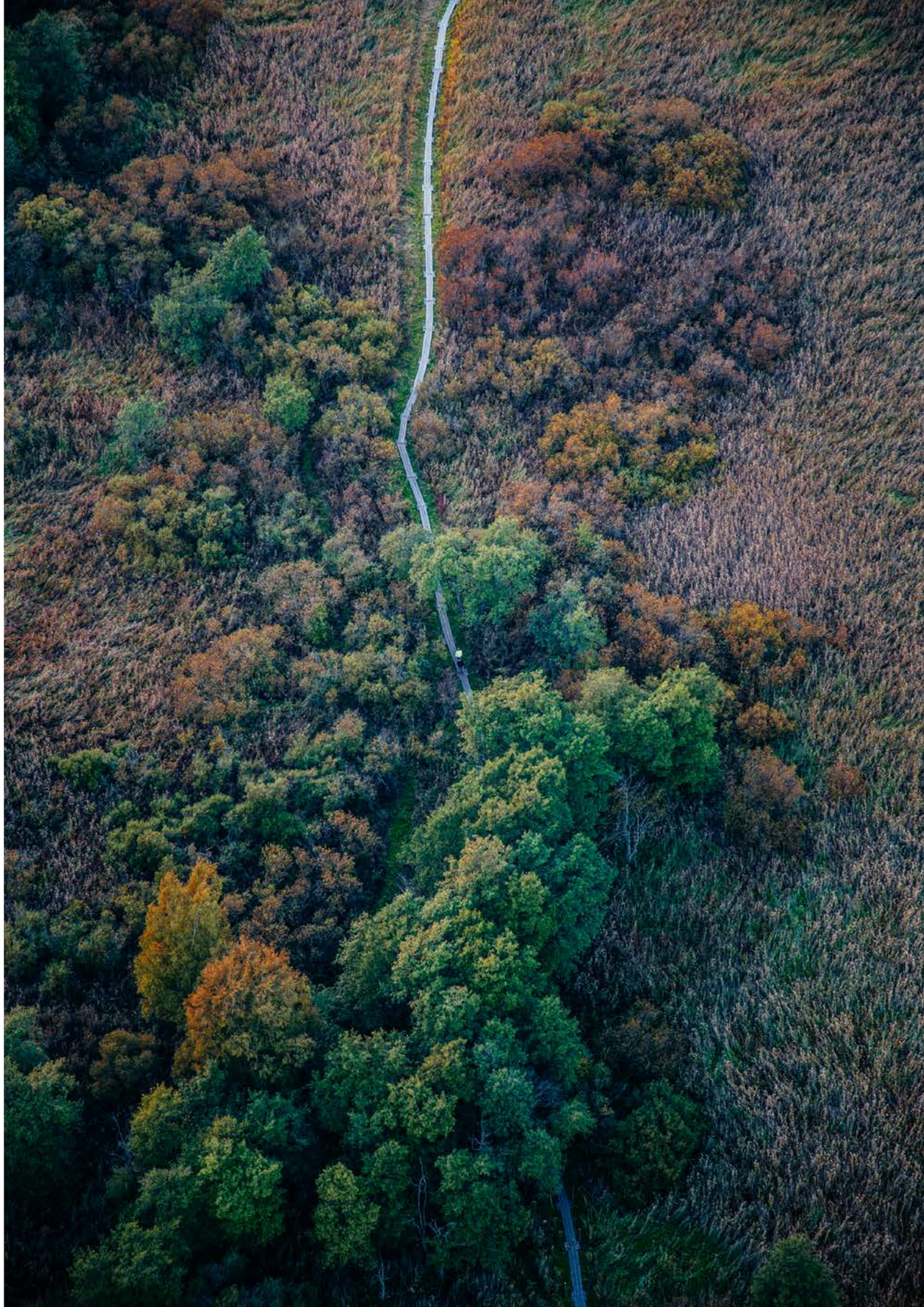
Efforts were made to reduce noise emissions from road traffic, e.g. by promoting the use of friction tyres through an extensive communication campaign. The proportion of friction tyres in winter tyres has started to rise and now averages around 43 per cent. The City's target is to increase the proportion of friction tyres to 70 per cent by the 2030–2031 winter season, so reaching the target will require further efforts. The large-scale electrification of traffic will slightly reduce noise in areas with low driving speeds. HSL bus services have continued to electrify, but the electrification of other heavy transport is slow. The number of electric cars in Helsinki has increased.

Noise from tram traffic was reduced through measures such as installing new deep groove rail switches and honing and lubricating tracks. Tram line 13 from Kalasatama to Pasila started operating. The line runs largely on a green track, which also slightly dampens the noise.

Authorities are working together to tackle noise pollution

In addition to traffic, environmental noise is generated by industrial plants, restaurant terraces and building services equipment, for example. Many construction works and open-air concerts, on the other hand, cause temporary, particularly disturbing noise. They can generate noise levels of up to 85–100 dB in residential areas.

The Environmental Protection Act provides for environmental permit, registration and notification obligations, the purpose of which is to prevent harmful noise generated from industrial plants and temporary



functions. In 2024, the environmental protection authority made 136 decisions on notifications concerning temporary activities causing particularly disruptive noise or vibration. Furthermore, the environmental protection regulations of the City of Helsinki set a notification and negotiation obligation for all temporary operations causing harmful noise, as well as restrictions on nighttime noise.

In 2024, the City of Helsinki Environmental Services received nearly 300 contacts from residents about environmental noise pollution. About half of these were about music noise and the rest were mainly noise from construction and maintenance work. The prevention of noise pollution was also supervised by health protection and building control authorities.

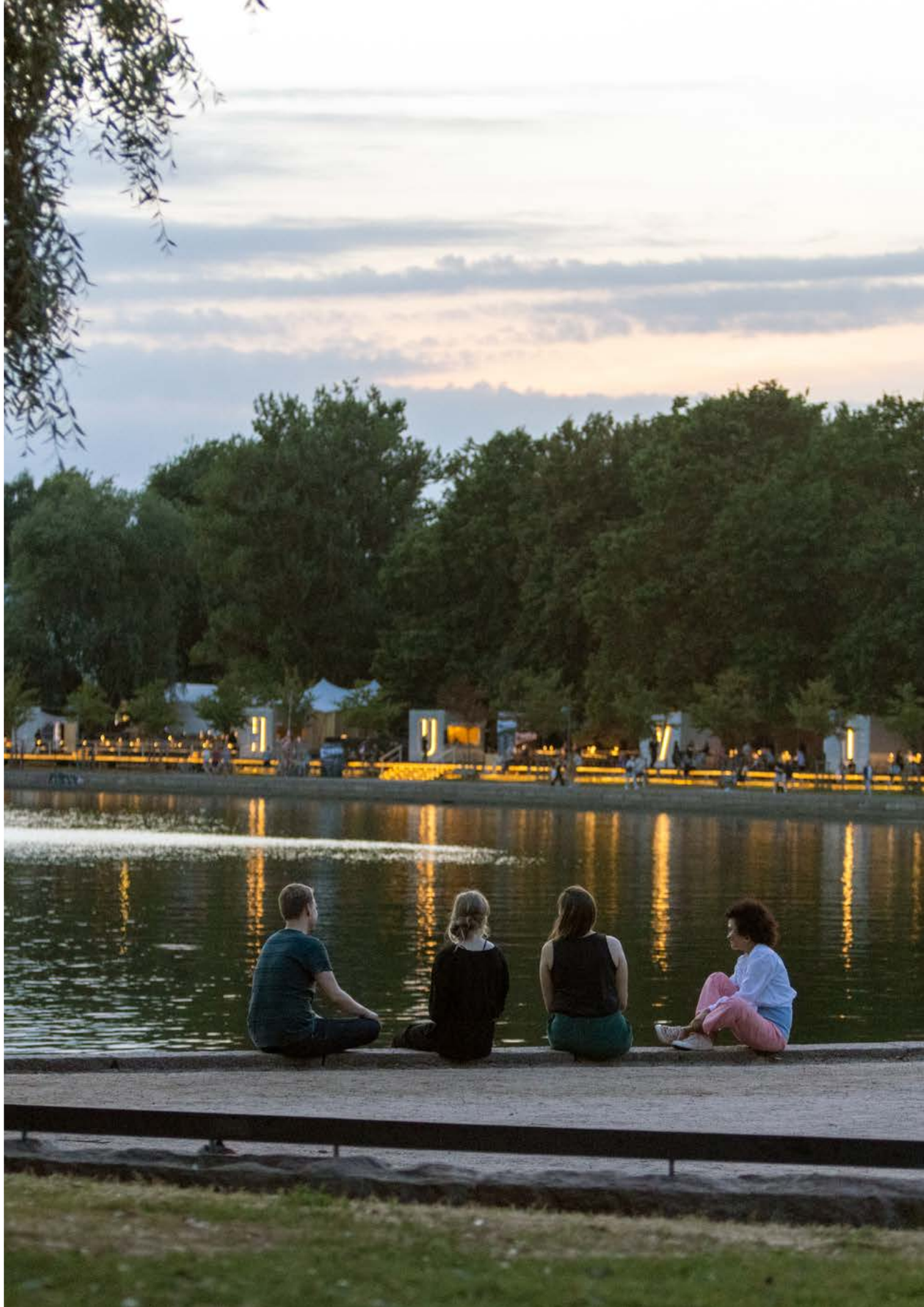
Eyes on the future

The city plan directs housing development along busy roads, rail lines and public transport hubs. This will further highlight the importance of adequate noise abatement and the quality of the sound environment. Areas and places with a peaceful and invigorating soundscape are important to residents.

Programmes and policies:

Helsinki's Air Quality and Noise Abatement Plan (ILME) 2024–2029

City of Helsinki's Environmental Protection Targets 2040



Procurements

In accordance with its Procurement Strategy, the City is committed to promoting responsibility and acting as a pioneer in the environmental responsibility of procurements. Based on the reports of the City's units, environmental criteria have been set in slightly over two thirds of all procurements exceeding the threshold value in recent years. For the first time, this report also describes the City's measures to reduce the consumption of meat and dairy products within the City Group.

In 2024, the City's major divisions and enterprises used environmental criteria in an average of 69.8 per cent of their procurements exceeding the threshold value when examined as individual procurements. Examined in euros, the average of the environmental criteria of the divisions and enterprises was 67.4 per cent of the total value of the procurements. The proportions are roughly at the previous year's level. Environmental criteria were used the most comprehensively by Palvelukeskus Helsinki and Helsinki City Construction Services Stara. 100 per cent of Palvelukeskus Helsinki's procurements and nearly 100 per cent of Stara's procurements included environmental criteria when examined in euros. The proportion was 93 per cent at the City Executive Office and 86 per cent in the Social Services, Health Care and Rescue Services Division.

The most commonly used criteria were those related to reducing the environmental impacts of vehicles and machinery and those concerning the environmental management system. Criteria related to recyclability, material efficiency and circular economy, as well as the reduction of harmful substances and the criteria for environmental certificates, were also highlighted in the responses. The responses show the impact of the Green Deals for emission-free worksites and reducing harmful substances.

During the year, the City Executive Office prepared category guidance to support procurement management. The guidance focuses on dividing products and services with similar properties into groups, i.e. categories, and managing these categories efficiently in processes such as tendering and agreement management. The standard meeting agenda prepared for the established category teams includes responsibility, the purpose of which is to ensure that the position of responsibility criteria in tendering processes conforms to the Procurement Strategy.

Towards the end of the year, the Procurement and Tendering unit of the City Executive Office established a post tasked with coordinating the City's responsible procurements. The Urban Environment Division will continue to be responsible for developing the environmental responsibility of procurements, but the new resource of the City Executive Office will significantly improve the management of responsible procurements at the level of the City.

During the year, the City provided training courses on responsible procurements for the Culture and Leisure Division, the Education Division, Palvelukeskus Helsinki and the City Museum. An information event focusing on the implementation of responsibility criteria for the agreement management system was also held.

According to an environmental attitude survey conducted with staff in early 2025, responsible procurements are, together with circular economy, the best-progressed area among the City's Environmental Protection Targets 2040.

After two years of growth, the number of flights taken by City staff and the amount of climate emissions thereof decreased slightly. Air travel among staff has not returned to the level preceding the COVID-19 pandemic. The City's travel instructions state that the carbon neutrality and low-emission perspectives need to be taken into account in all business trips.

Progress has been made in the objectives for emission-free worksites, but challenges will continue

For the most part, Helsinki has made progress as scheduled in terms of the Green Deal for emission-free worksites. In projects commissioned by the Urban Environment Division, the objectives of the Green Deal concerning machinery were met with regard to projects started in 2024 in all agreements as follows:

- infrastructure contracts: 72
- contracts of the Facility Service: 21
- housing production contracts: 25
- local public area maintenance contracts: 3.

These contracts include ones carried out by both private service providers and Helsinki City Construction Services Stara. Housing construction worksites do not have internal lorry transport operations, so no requirements determined in the Green Deal were set for them in this regard.

In the infrastructure contracts of the Urban Environment Division, the main fuel used in machinery and heavy transport equipment is renewable HVO diesel, and since 2021, the machinery has used renewable HVO fuel oil. With regard to electric machinery, contractors have had challenges due to lacking equipment. Even though the proportion of low-emission machinery has increased significantly, the focus has remained on increasing the use of renewable HVO diesel instead of switching to electricity. On the worksites of Helsinki City Construction Services Stara, the HVO fuelling percentage in 2024 was 48.8 per cent. The worksites only used electricity produced with wind power. In Stara's subcontracts, the Green Deal requirements were set for 93 per cent (289/310) of the agreements.

The effectiveness of the Green Deal for emission-free worksites and the conditions for realising the Green Deal in relation to the requirements set for 2026 and 2031 were assessed in a separate survey. The Green Deal requirements are very ambitious and, according to current views on the matter, objectives such as those set for energy source changes cannot be achieved by 2026. Achieving the objectives requires emission-free heavy machinery, which is still in short supply in Finland. Furthermore, local experiences with solving the practical challenges of worksites have, so far, been scarce.

Based on the survey, operators in the sector are willing and motivated to develop their operations to reduce their emissions. Due to significant investment costs, the hope is to apply persistence and consistency regarding the requirements. Accordingly, the work and trailblazing carried out by pioneers such as the City of Helsinki is very valuable and of the utmost importance to make the change possible and the objectives set for 2031 achievable.

Projects boosting the environmental responsibility of procurements

The six-year Canemure project ended in October 2024, having significantly promoted the environmental responsibility of procurements. The key outputs of the project were:

- low-emission procurement pilots concerning food service procurements, housing construction, infrastructure construction and work clothing procurements
- a survey on utilising the carbon footprint in public procurements
- an online course on low-carbon public procurements.

In addition to these outputs, the project took part in responsible procurement development work, both at the City level and by taking part in consulting the City's divisions and enterprises to promote responsible procurements.

In 2024, the NonHazCity 3 project involved surveying the occurrence of harmful substances in construction materials and stormwater, creating drafts of instructions for taking harmful substances better into account in the instructions issued by the housing production unit and Heka Oy to planners and contractors, and conducting a market survey regarding the instruction drafts.

In the autumn, the ChemClimCircle2 project consortium led by the national procurement authority of Lithuania received a positive funding decision from the Interreg Baltic Sea Region funding programme. Helsinki's role in the three-year project is to pilot and test the inclusion of chemicals, the climate and the circular economy perspective in procurements to be selected later, and to share solutions by means such as training courses and market dialogue.

Progress made in the reduction of meat and dairy product consumption

In accordance with the City's Environmental Protection Targets, the City Group aims to halve the consumption of meat and dairy products from the level of 2019 by 2025.

The food service agreements of the Social Services, Health Care and Rescue Services Division have moderately promoted increasing the proportion of plant-based foods, as in many services, food is part of the care provided and the maintenance of functional capacity. Changes made to resident and patient meals provided by Palvelukeskus Helsinki have focused mainly on reducing the amount of red meat used and replacing it with chicken and fish. Vegetarian food served for lunch has been introduced gradually. In 2024, vegetarian food was served once every two weeks for lunch and two or three times per week for dinner. The clients' consumption of dairy products has not been restricted, as products such as milk-based beverages served with the meal are a key way to secure sufficient protein intake for clients. At meals other than those served to residents and patients, vegetarian food is served more often, e.g. every day or several times a week.

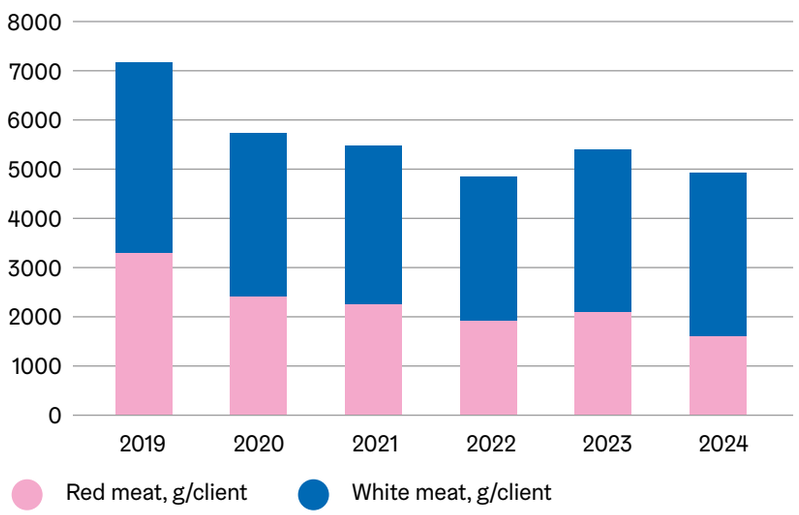
In the Social Services, Health Care and Rescue Services Division, the amount of meat products used in resident and patient meals provided by Palvelukeskus Helsinki in 2019 was 52.9 g/meal/client. Lunch and dinner were taken into account in the consumption of meat. In 2024, the amount of meat consumed was 39.8 g/meal/client. The amount of dairy products used in resident and patient meals provided by Palvelukeskus Helsinki in 2019 was 160.5 g/meal/client. In 2024, the amount of dairy products consumed was 168 g/meal/client. All meals of the day were taken into account in the consumption of dairy products.

The food service descriptions of the daycare centres and schools of the Education Division determine the principles for menu planning and taking the objectives of the City of Helsinki into account. The service descriptions determine aspects such as the number of vegetarian dishes on the menu. The food services favour climate and environmentally friendly raw ingredients and aim to replace and supplement products with significant climate impacts. An important factor in increasing vegetarian food is that it must be tasty to children and young people. The service provider must involve pupils in the development of recipes by means of tasting panels in accordance with the Division's objectives. The service providers have pupils taste their new recipes in tasting panels as a sample roughly once a year per service provider.

With regard to dairy product consumption at daycare centres and schools, information has only been obtained regarding Palvelukeskus Helsinki's food services. The figure was 88.3 g/meal/client in 2019 and 87.0 g/meal/client in 2024. All meals of the day were taken into account in the calculation of dairy products. Similarly, the amount of meat purchased for daycare centre and school meals in 2019 is only known with regard to Palvelukeskus Helsinki's food services, in which the figure was 25.0 g/meal/client. The amount of meat purchased for daycare centre and school meals in 2024 is known with regard to all service providers, the figure being roughly 23.5 g/meal/client. The reduction of meat consumption has focused primarily on dishes containing red meat, which have been replaced with dishes containing vegetables, fish and white meat. Every week, the menu features days with only vegetarian and/or fish dishes and no meat. A vegetarian dish is also available every day as an option.

When examining annual meat consumption at schools and daycare centres, it can be observed that the use of meat in Palvelukeskus Helsinki's food services has decreased by roughly 30 per cent from the reference year of 2019.

Use of meat at schools and daycare centres



Eyes on the future

The City's procurement management information system project began at the start of 2025. The project provides an opportunity to strengthen the dissemination of responsible procurements in the management of procurements. The monitoring of responsibility criteria, which has so far relied primarily on the agreement management system, can also be made more comprehensive and effective. The role of externally funded projects in the development of environmental responsibility has been significant, and their role particularly in the creation of new solutions will continue to be important.

Programmes and policies:

City of Helsinki Procurement Strategy 2020

City of Helsinki's Environmental Protection Targets 2040

Circular economy

The focus areas of the City of Helsinki's Action Plan for the Circular and Sharing Economy are construction, procurements, and environmental awareness and sustainable consumption. For each focus area, the action plan sets circular economy goals up to 2035. To achieve the goals, the action plan includes 23 actions, the progress of which will be monitored through the public Kiertotalousvahti (Circular Economy Watch, in Finnish) service. In addition to this, Helsinki's environmental protection targets set long-term and medium-term targets for the circular economy.

Sustainable daily choices introduced to residents

The Urban Environment Division's Environmental Services launched the 'Sustainable daily choices' project in the spring, which aims to raise awareness of ecologically sustainable daily choices among Helsinki residents and especially immigrants. The project includes developing multilingual communication materials and organising information and discussion events and participatory workshops in cooperation with different operators and organisations in the city.

A model was developed for Helsinki's libraries to calculate the CO_2 savings from borrowing a book in relation to the emissions of a new book. In 2024, the book loans made by Helsinki residents saved around 5,327 tonnes of CO_2e emissions, equivalent to the annual car emissions of around 2,961 Finnish people. The results of the calculation are indicative only, but they show the key role of borrowing and sharing in reducing emissions from consumption.

At the end of the year, a week-long campaign was held to promote the circular economy services on the Helsinki Metropolitan Area Service Map. An advertisement on the topic was displayed on metro, tram and trunk line bus screens, escalator screens at metro stations, information screen at the City's service locations and on social media. An extensive article on the subject was also published on the City's website.

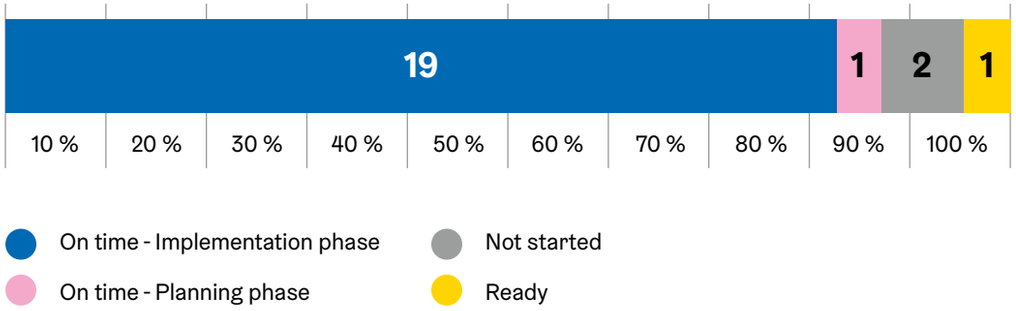
Helsinki residents were able to find reuse services well. The Helsinki stores of the Helsinki Metropolitan Area Reuse Centre sold 1.5 million items and distributed 1.3 million items free of charge. The amount of natural resource savings from the reused goods was 20.5 million kg and the amount of avoided CO_2 emissions was 8.6 million kg.

Working together to find solutions to a variety of challenges

In the Food Waste Ecosystem project, a total of four trials were launched with food services in Helsinki, three of which involved the donation of food waste generated at serving lines and one of which involved the separate collection of coffee grounds and cooking fat. The trials were a great success and will continue as part of normal operations.

In 2024–2025, the City Museum is taking part in a peer development forum for museums, where the focus is on making temporary exhibitions more environmentally friendly. The work involves developing the reuse of conservation and packaging materials and seeking partners for the reuse and donation of surplus materials.

The status of the actions included in City of Helsinki's Action Plan for the Circular and Sharing Economy as of 9 May 2025



Progress made in waste recycling

The Social Services, Health Care and Rescue Services Division improved the range of plastic sorting bins in 2024 and informed and trained the division's eco-supporters on this. Over 118 tonnes of plastic packaging waste was collected in 2024, which is 20 per cent more than in 2023. Dental clinics carried out a pilot to find effective plastic sorting solutions for the dental treatment rooms. The results of the pilot will be fully implemented at the beginning of 2025 in both dental clinics and health centres.

The Education Division and Social Services, Health Care and Rescue Services Division started sorting and collecting textile waste. The Stara logistics centre transports the textiles to Rester Oy's recycling facility in Paimio.

Promoting the reuse of materials in urban construction

A study completed in 2024 examined the implementation of the circular economy and lifecycle sustainability in the City of Helsinki's infrastructure construction. Based on the challenges identified, the City determined the measures to be taken to improve circularity, which will be implemented by updating construction guidelines, among other things.

The City reused 297,728 tonnes of recoverable soil materials in construction projects, representing 32 per cent of all recoverable soil materials. The reuse of these materials saved 0.2 million litres of fuel and 755 tonnes of CO_2 emissions, equivalent to the annual emissions of 420 Finnish motorists. Furthermore, the reduction in transport trips to the sites and the avoidance of buying new materials resulted in savings of EUR 2.1 million. The reuse of soil materials is currently limited by the scarcity of reuse sites and interim storage areas (the trend, compared to the previous year, is illustrated in the 'Environmental indicators' chapter of this report). Moreover, construction schedules or legislation and its interpretations do not always allow for the recovery of soil materials. The use of excavated soil and aggregates is guided by the guide Principles for the utilisation of excavated soil, aggregates and recycled materials in earth construction (in Finnish).

In 2024, the City delivered around 276,700 tonnes of contaminated soil that could not be used in its projects for treatment or disposal elsewhere, which is around 150 per cent more than in the previous year. The costs generated by the restoration of contaminated areas and landfill sites decreased slightly from the previous year, coming to roughly EUR 11.2 million.

The contaminated soil transported for treatment or final disposal from the City's restoration sites, as well as the costs incurred by the City from the restoration of contaminated soil and landfills in 2021–2024

	2021	2022	2023	2024
Soil, tonnes	100 100	216 320	110 000	276 700
Costs, €	15 785 000	15 037 000	11 500 000	11 206 000

The recycling of paving stones used in street construction saved EUR 1.7 million and 1,200 tonnes of CO_2 emissions, equivalent to the annual emissions of 667 Finnish motorists.

The City promoted the recycling of biomaterials by composting biomass from green areas in storage areas. The products were used to produce recycled substrates, among other things, resulting in cost savings of EUR 0.3 million. This saved 1,000 tonnes of carbon emissions, or the equivalent of the annual emissions of 556 Finnish motorists. The City investigated the use of common reed materials as mulch, as safe surfacing materials for playgrounds and zip lines, in combating invasive species and for filtering stormwater. Trials were carried out in places such as Haltiala, Mustapuro, Meilahti Arboretum and Porthaninpuistikko. The Helsinki Biochar Project explored the production of biochar from common reeds and other materials, such as crushed branches, through pyrolysis. The aim of the biochar project was to promote the use of biochar and the opportunities to create carbon sinks and climate-resilient vegetation areas with biochar. The City recognises the challenges of carbon sequestration in dense urban areas and sees the use of biochar as one possible solution to this.

The City of Helsinki's part of the PlastLIFE project, coordinated by the Finnish Environment Institute, included carrying out a national study on promoting the circular economy of end-of-life artificial turf. The results of the study support the development of the City's procurement procedures and the assessment of the environmental impact of sports facility construction. The project also produced a report on the recovery of plastic waste from infrastructure construction, with a particular focus on old plastic structures and the development of plastics recycling on construction sites.

Reuse of building components boosted

The Facilities service continued the circular economy pilots launched earlier and launched some new ones. The project to replace the building of Kannelmäki Comprehensive School piloted the planning of the reuse of building components, including the dismantling and storage of intact calcium silicate bricks and suspended ceiling panels, and the preparation of suitability studies. In the tendering process for the lifecycle project to replace the multipurpose building in Suutarila, the City awarded quality points for the reuse of building components from the old building in the new one. As a result, the project aims to repurpose the metal canopies for use in playgrounds and study spaces in the yard, for example.

In demolition projects, the City identifies reusable materials, building components, machinery, and equipment, which the reuse centre of Stara Logistics then directs for sale and reuse.

A joint project between the City of Helsinki Circular Economy Cluster, Culture and Leisure Division and Urban Environment Division is building a depot and storage facility from reused building components for sports services in Mustikkamaa. The project sourced reusable building components from places such as Espoo, Turku, Vantaa and Helsinki's Postitalo building.

The City tendered the new Melkinlaituri School and Daycare Centre project as a lifecycle project, awarding quality points for meeting the material efficiency requirements of Rakennustieto's environmental classification. The project implementer will also partly meet these requirements through the use of reusable building components.

The Facilities service and Housing Production tendered a new lifecycle planning framework agreement, one of the new elements of which is a specialist in the reuse of building products. The specialist's tasks include the preparation of reuse assessments of building components in demolition and modernisation projects.

Eyes on the future

In 2024, the City of Helsinki launched the preparation of a national Circular Economy Green Deal. This preparation will continue in 2025. The steering group for the promotion of furniture reuse appointed by the City Manager and its operational working group started operating in the spring of 2024. The groups are tasked with submitting a proposal for a City-wide furniture reuse and recycling model to the City Manager by 30 September 2025. The City will guide the circular economy in construction through the development of circular economy plans for construction projects, starting in 2025.

Programmes and policies:

- **The City of Helsinki's Action Plan for the Circular and Sharing Economy** (in Finnish)
- **Kiertotalousvahti** (in Finnish)
- **City of Helsinki's Environmental Protection Targets 2040**

Environmental awareness and education

The City of Helsinki's environmental and climate objectives also play a central role in early childhood education and schools, as well as in services for young people and adults. The aim of environmental education is to strengthen environmental awareness and develop sustainable values and practices. According to the City Strategy (2021–2025), Helsinki facilitates more environmentally friendly everyday choices for its residents.

Developing a positive relationship with the environment in education

The Education Division continued implementing a sustainable development learning path. Developing a positive relationship with the environment, recognising the impact of one's actions and appreciating biodiversity are included in the curriculum objectives for early childhood, basic and general upper secondary education.

In early childhood education and the first two grades of basic education, the emphasis was on using local nature as a learning environment. Environmental School Polku of Helsinki Metropolitan Area Reuse Centre produced the Fox tour of sustainable development for the City of Helsinki's sustainable future education programme, which focused on outdoor pedagogy and reached almost all of the City's primary schools and around 2,900 pupils. Many early childhood, basic and upper secondary education units organised activities to protect local nature, such as clean-ups, invasive species eradication, winter bird feeding and the creation of school meadows and gardens.

The cultural services of the Culture and Leisure Division strengthened the provision of weatherproof art-based environmental education, especially for school, student and daycare groups. The local forests of East Helsinki serve as a source of environmental sensitivity and a learning environment for diverse art activities throughout the year. An example of a new initiative was the concept of 'Hämärän hyssy' courses for pre-primary education groups, which take place in the forest during the dark winter months.

In vocational education and training, Helsinki Vocational College continued to systematically develop sustainability activities in its operating culture and pedagogy. Around 30 teachers completed SYKLI Environmental College's specialist vocational qualification in environmental education. Students were interested in the optional sustainable future studies, and the number of students completing these studies exceeded the target. The Helsinki adult education centres Työväenopisto and Arbis offered a wide range of courses and lectures on climate change mitigation for city residents.

Visits, lessons and materials to support environmental education

Helsinki Region Environmental Services Authority HSY provided daycare centres and educational institutions with free-of-charge lessons, materials and visits to support environmental education. The aim was to promote environmentally friendly everyday skills and increase awareness of the impact of one's actions on the environment. The education provided included indoor, outdoor and distance learning. The lessons were implemented by HSY's cooperation partner, Environmental School Polku of Helsinki Metropolitan Area Reuse Centre. A total of 6,325 children and young people in Helsinki attended the environmental education lessons provided by HSY. A total of 369 hours of advisory lessons were provided. The visits were attended by around 1,300 pupils and students from Helsinki. The visits included the Viikinmäki and Blominmäki wastewater treatment plants, the Ruskeasanta Sortti station and the Ämmässuo eco-industrial centre.

Traffic-related environmental education continued

The City of Helsinki's Environmental Services continued the environmental education work concerning traffic. A mobility management development project for lower secondary school pupils in Helsinki received a mobility management state subsidy. The project involved working with lower secondary school pupils to design a learning package focusing on the climate and environmental impacts of traffic, including a workshop and the educational Ilmansuojelijat mobile game for lower secondary schools. During the autumn term, 16 sustainable mobility workshops were held at 12 different schools. The workshops reached over 400 pupils and around 20 teachers. The project also reached residents of different ages through events. Helsinki also continued its 'Kulkuri, ambassador of sustainable mobility' environmental education activities for primary school pupils as part of the City's summer activities in playgrounds.

Environmental education on Harakka island and excursions to learn about nature

Harakka Nature Centre attracted visitors to learn about the archipelago nature from May to the end of September. The island received 10,071 visitors by ferry. The island hosted 86 island adventures for early childhood education groups. A total of 844 children and 197 adults took part in the island adventures. The island hosted 39 nature study days and 65 environment study days for school pupils. In total, 2,313 children and young people, along with their teachers, participated in the nature school days. A total of 20 children and young people attended the Baltic Sea camp and archipelago nature camp. The island hosted four environmental education courses for adults, which were attended by 56 people. On Helsinki Day, a nature and art event open to all was held on Harakka island, attracting more than 750 visitors. The autumn family fish day attracted 90 visitors.

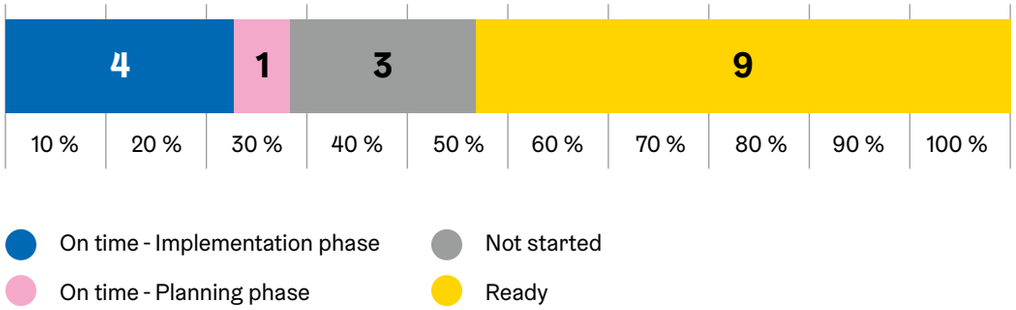
In early April, the City began organising free-of-charge guided nature hikes and park walks. A total of 27 nature hikes were held, attended by 1,048 people. A total of 220 people attended the four organised park walks. Additionally, seven island adventures for families were organised on Harakka island on summer Sundays, attracting a total of 392 participants. Nature awareness was also promoted by adding information signs to the Shaded Trail in the Haltialanmetsä nature reserve and the Rock Trail in the Hallainvuori nature reserve.

Residents involved in reducing litter

Helsinki residents participated actively in taking care of the tidiness of the environment. Residents, residents' associations and schools organised more than 200 volunteer events to clean up the environment, attracting over 25,000 participants. Hundreds of volunteers took part in litter control around Helsinki through the park pal activities.

As part of the Helsinki Litter Control Action Plan, the City implemented the 'Moving around without a trace' campaign. It included the creation of the Litter Trail, a checkpoint route about the impacts of litter on nature, which was used in libraries and at various events. The City produced

Status of the measures of the Litter Control Action Plan as of 16 May 2025



a cooking shelter guide on responsible behaviour at cooking shelters on the mainland and islands. In cooperation with the Finnish Environment Institute (SYKE) and libraries, a collaboration was organised on the library lending of small plastic debris research kits. The findings in Helsinki will help to estimate the amount of small plastic debris on Finnish beaches.

The Youth Council also started working with the Helsinki Litter Control Action Plan. In the autumn, a youth working group filmed social media videos for the Litter-free Helsinki campaign, tackling the problem of littering. With the campaign, the Youth Council is challenging all young people in Helsinki not to litter.

Environmental democracy and citizen science

The City of Helsinki started a citizen science partnership with the University of Jyväskylä. Helsinki's first point count routes using the Muuttolintujen kevät (Migration Birds Spring) app were established on the Uutela Forest Nature Trail and in Seurasaari, Viikki Arboretum and Haltiala. People could use the mobile app to make point-count recordings. During the monitoring period from 9 April to 10 August 2024, people made 2,316 recordings, for a total of 193 hours of material.

Helsinki libraries developed their role as a platform and facilitator of environmental activities through environmental events and environmental democracy work. In February, the ten-point Activist Diploma environmental challenge received a new version called the Junior Activist Diploma, aimed at children, young people, families and school classes. During the year, libraries hosted 158 Activist Diploma customer events, attended by around 4,000 people. Eco-shelves were set up in 33 libraries, stocked with fiction and non-fiction books on environmental topics. The libraries' eco-shelves contained a total of 3,833 volumes, which were borrowed 13,786 times, significantly more than in previous years. Environmental literacy was also promoted through book walks and book clubs.

In October, the City's Youth Services opened a new joint office for the Environmental Activities Youth Work Unit and the 4H Associations of the Capital Region in Itä-Pasila: Youth Activity Centre Silmu. The Silmu premises also became home to the young people's hiking equipment lending centre Wempaimisto and the animal-assisted small group activities of the Environmental Activities Youth Work Unit. Youth Services joined the VÄLKE group for the promotion of environmental education and awareness in Uusimaa. The aim of the group is to increase the networking and exchange of information between environmental education operators and the visibility of environmental education work in Uusimaa.

Energy advice for Helsinki residents

Residents' interest in energy efficiency was reflected in the energy-related training and events organised by HSY's Ilmastoinfo, which were attended by more than 400 Helsinki residents. During the year, Ilmastoinfo organised four housing company energy expert training courses, two of which were held in cooperation with the Helsinki Finnish Adult Education Centre Työväenopisto. The courses produced 54 new energy experts in Helsinki. A total of roughly 700 people participated in webinars held by Ilmastoinfo. The webinars focused on topics such as housing companies' heating solutions and the condition of the heating network. Ilmastoinfo also organised a dedicated electricity webinar for people living in detached houses. Furthermore, property managers and those studying to become property managers received training from the energy experts of Ilmastoinfo.

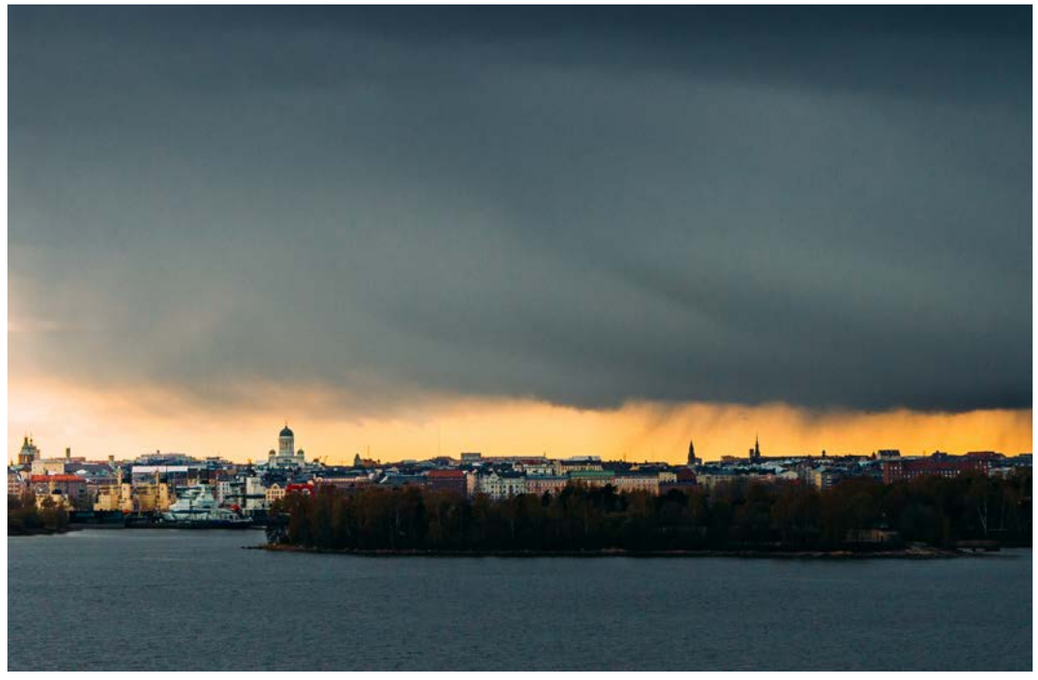
HSY's Ilmastoinfo responded to 70 energy advice requests by email or phone and also provided energy advice in person at regional resident events. The ilmastoinfo.hsy.fi (in Finnish) website published versions of the Climate Workout online course in English and Swedish.

Programmes and policies:

- **Litter Control Action Plan 2022–2025**
- **City of Helsinki's Environmental Protection Targets 2040**

Environmental risks

The Helsinki City Group's assessment of significant risks identified climate change as a significant risk area. Due to climate change, various extreme weather phenomena and exceptional situations will increase and cause a variety of risks. For example, stormwater floods caused by torrential rains, heatwaves, drought, storm damage and changes in winter conditions pose a significant threat to the people, buildings and infrastructure of Helsinki. There also continues to be a great risk of an oil spill in the Baltic Sea.



Helsinki City Group's major risks are assessed every council period of office

The Helsinki City Group's major risks are assessed every council period of office. In the previous assessment, carried out in 2022, failure to prevent and adapt to the climate crisis was identified as a major risk. The measures to manage the risk focus on adaptation to climate change and, in particular, risk-based preparedness for extreme weather events. In particular, the City is preparing for an increase in the frequency and intensity of torrential rains and heatwaves, and the intensification of the heat island effect. More information on preparing for weather and climate risks is provided in the 'Adapting to climate change' chapter of this report.

Environmental risks managed in the City's divisions and enterprises

Roughly half of the City's divisions and enterprises have determined their most significant climate risks and other environmental risks. The Social Services, Health Care and Rescue Services Division reduces the risks associated with extreme weather events by making preparedness and continuity plans for exceptional situations such as power cuts and heatwaves. For example, the division provided service homes with portable cooling units for the summer season. The division continued to introduce more fixed cooling solutions, both through construction projects and by retrofitting existing facilities, in accordance with its priority list. In its new sustainable development programme, the division has set targets and measures related to climate change adaptation.

The Urban Environment Division has identified its key risks as part of its overall climate change adaptation plan and has defined various processes to manage the risks. The Culture and Leisure Division is preparing for heatwaves by increasing the shaded areas of sports facilities, for example with trees. Improvements have also been made to the drainage and infiltration of stormwater in sports facilities. Efforts have been made to manage other environmental risks through training in equipment and chemical use.

Helsinki City Construction Services, Stara, has identified the risks related to fuels, chemicals and extreme weather events as the most significant climate and environmental risks. Among other things, Stara is actively assessing the suitability of new all-electric products for its equipment needs. Stara has paid attention to refuelling at construction sites, so that no fuel is spilt onto the ground. Stara is also working determinedly to improve chemical safety. In terms of extreme weather events, Stara has increased irrigation to prevent drought damage and prepared for storm damage clearance in forests. Floods are prepared for to prevent flood damage and additional clean-up is carried out to repair flood damage, where necessary.

The risk of oil spills has increased

As one of the busiest sea traffic areas in the world, the Baltic Sea is always in danger of oil spills. Since the Russian invasion of Ukraine, the risk of oil spills in the Gulf of Finland has increased significantly due to the Russian shadow fleet. This means that the City must be well prepared to respond to any environmental damage at sea as well. The Helsinki City Rescue Department fights oil and chemical spills both on land and at sea. The Rescue Department is also preparing for oil spill response in the event of a maritime disaster. The Rescue Department's oil spill prevention and response plan for 2021–2025 aims to introduce stability into oil spill preparation and uphold conditions where the Rescue Department remains prepared for all situations where oil spill prevention and response is necessary.

Oil spills in Helsinki in 2020–2024

Oil spills in Helsinki	2020	2021	2022	2023	2024
In marine or inland water areas or at harbours	50	68	47	49	54
In important groundwater areas	10	11	10	3	10
Elsewhere	302	286	259	225	257
Total	**362**	**365**	**316**	**277**	**321**

Environmental economy

Environmental economy includes the income, costs and investments primarily arising from environmental reasons. The information below is presented for the parent organisation, meaning the City's divisions, enterprises and departments.

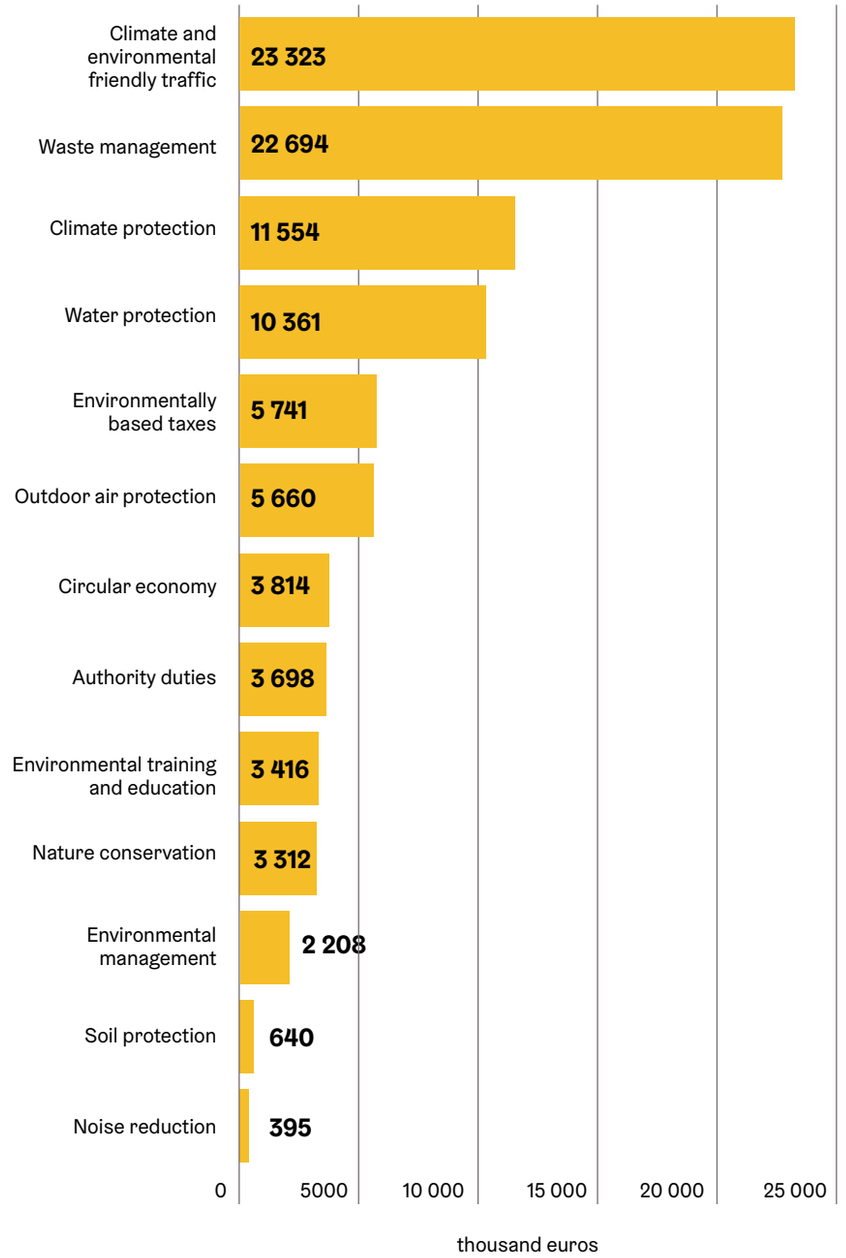
The environmental costs, including amortisations, added up to a total of EUR 96.8 million (-0.8% from 2023). The environmental costs made up 1.7 per cent of the City's total operating costs, equalling EUR 141 per capita. The largest expense items were the promotion of climate and environmentally friendly transport (24%) and the sanitation and waste management of city areas (23.4%).

The environmental investments added up to EUR 96.9 million, which was 12.9 per cent of the total capital expenditure of the City and EUR 142 per capita. In 2024, the City's environmental investments decreased by 10 per cent from the previous year. The greatest investments were related to climate and environmentally friendly transport (68.8%), climate protection (11.3%) and the restoration of contaminated soil (11.1%).

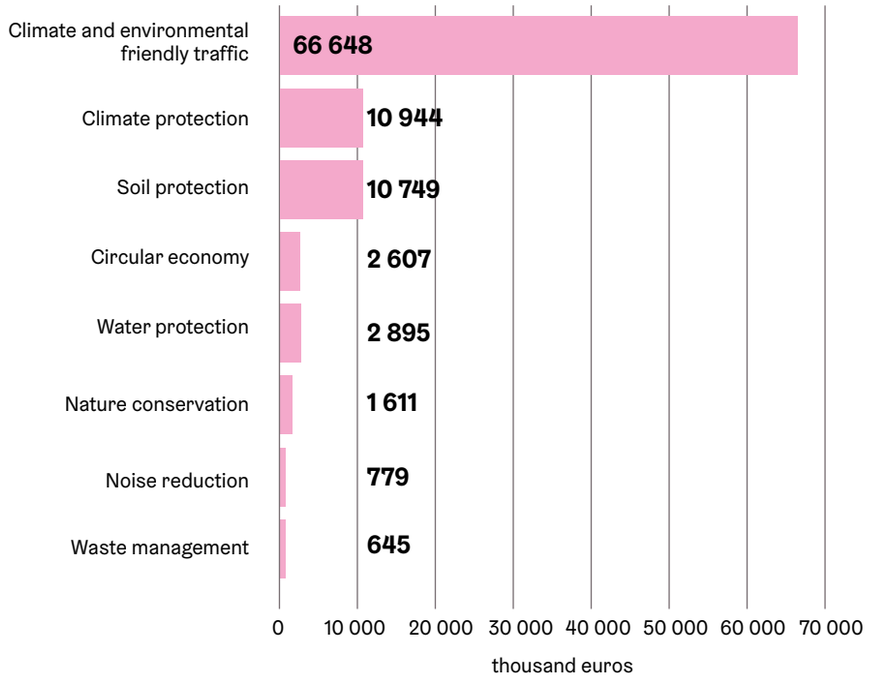
The City's environmental income added up to EUR 5.7 million (+64.6% from 2023). The increase in environmental income is mainly explained by the Single-use plastics (SUP) fees paid to municipalities, which are imposed on companies that place plastic packaging on the market. The SUP fees are linked to the Single-use Plastics Directive and are intended to compensate municipalities for the costs of cleaning up public areas. Environmental income accounted for 0.5 per cent of the total operating income of the City, amounting to EUR 8 per capita. The most significant income was generated from vehicle transfer fees in connection with street cleaning (32.9%) and waste management (22.7%).

The value of environmental liabilities in the financial statements on 31 December 2024 was EUR 22.4 million in total. The liabilities concerned preparing for the restoration of old landfills and decontaminating soil.

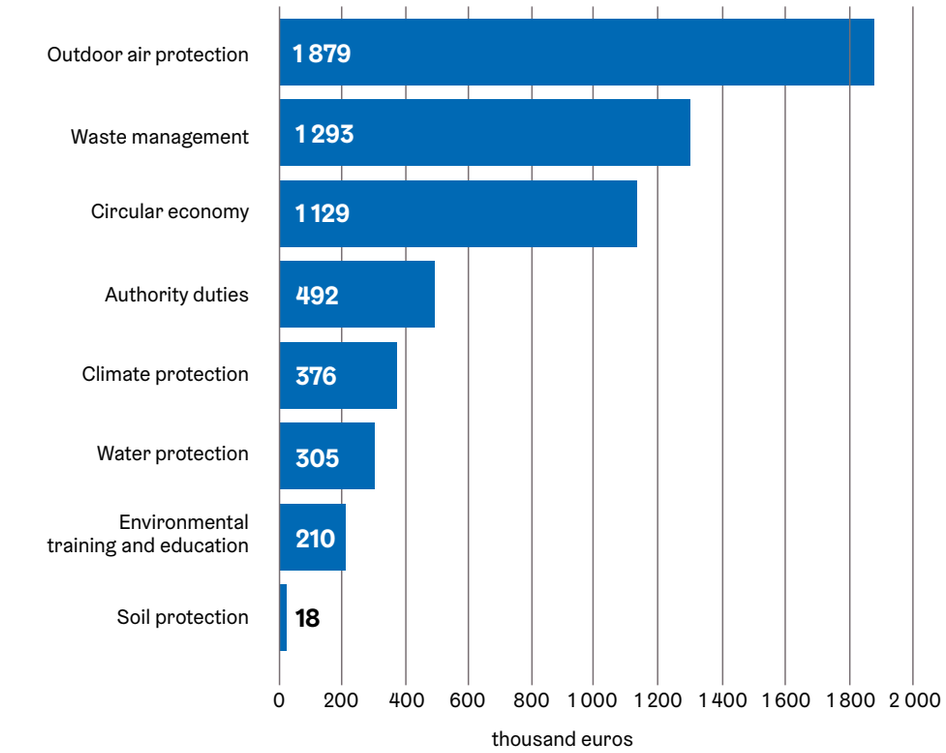
Environmental costs



Environmental investments



Environmental income



Environmental indicators

The tables below show the indicators for City of Helsinki's Environmental Protection Targets and their development when compared to the previous year.

A longer time series of environmental indicators can be found in the Helsinki environmental statistics service at hel.fi/ymparistotilasto.

Environmental management

Indicator	2023	2024	Definition
Proportion of divisions, enterprises and subsidiaries with environmental certification / adhering to the principles of an environmental management system / implementing a responsibility programme	53 %	53 %	No changes in the indicator's development
Number of eco-support staff trained / year	62 pers.	152 pers.	The indicator has improved
Percentage of divisions and enterprises where environmental issues are included in the orientation programme	-	70 %	New indicator

Safeguarding biodiversity

Indicator	2023	2024	Definition
Share of natural areas in total land area	39 %	-	Data not yet available for 2024
Total number and area of protected areas and area as a percentage of land area	1 446.5 ha, 2 %	1 504.9 ha, 2,1 %	The indicator has improved
Changes in birdlife in the built environment	-	-	Indicator calculation under development

Soil protection and remediation of contaminated soil

Indicator	2023	2024	Definition
Number of decisions to clean up contaminated land	34	43	No set direction of development

Water protection

Indicator	2023	2024	Definition
Proportion of Helsinki's coastal waters in good condition	0 %	-	The indicator is calculated every four years
Proportion of Helsinki's groundwater areas that are in good condition (available every four years)	80 %	-	The indicator is calculated every four years
Proportion of rivers in Helsinki that are in good condition (available every four years)	0 %	-	The indicator is calculated every four years
Percentage of restored running water	-	-	No information available so far

Climate change, mitigation and adaptation

Indicator	2023	2024	Definition
Total greenhouse gas emissions in the Helsinki area	1,953 kt CO_2-ekv.	1,632 kt CO_2-ekv.	The indicator has improved
Greenhouse gas emissions per capita in the Helsinki area	2.9 t CO_2-ekv.	2.4 t CO_2-ekv.	The indicator has improved
Number of carbon sinks	-73.33 kt CO_2 (2022)	-	No data available for 2024
Canopy cover	29 %	-	No data available for 2024
Permeable areas / surfaces as a percentage of total land area in Helsinki	64 % (2022)	-	No data available for 2024

Air protection

Indicator	2023	2024	Definition
The annual average nitrogen dioxide concentration at the Mannerheimintie measurement station (limit value of 40 µg/m³, as specified in the EU directive)	17.0 µg/m³	16.0 µg/m³	The indicator has improved
The annual average nitrogen dioxide concentration at the Mäkelänkatu measurement station (limit value of 40 µg/m³, as specified in the EU directive)	21.0 µg/m³	18.0 µg/m³	The indicator has improved
Number of days when the limit value level of particulate matter was exceeded at the Mannerheimintie measurement station in Helsinki (EU directive: max. 35 days per year)	20 days/a	9 days/a	The indicator has improved
Number of days when the limit value level of particulate matter was exceeded at the Mäkelänkatu measurement station in Helsinki (EU directive: max. 35 days per year)	27 days/a	15 days/a	The indicator has improved
Annual average amount of inhalable particles (PM_{10}) at the Kallio measurement station	9.07 µg/m³	8.9 µg/m³	The indicator has improved

Noise abatement

Indicator	2023	2024	Definition
Number of residents exposed to road traffic noise (above 55 dB LAeq7-22)	256 541 (2022)	-	Data available every five years
Percentage of residents living in the vicinity of events who find the noise from outdoor concerts to be very or extremely disruptive	14 % (2022)	-	Data available every five years

Promoting responsible procurement*

Indicator	2023	2024	Definition
Percentage of procurements (in number) with environmental criteria	70 %	70 %	No changes in the indicator's development

*Monitoring data on the consumption of meat and dairy products can be found in the 'Procurement' section of this report

Promoting the circular and sharing economy

Indicator	2023	2024	Definition
Percentage of construction project plans with circular economy targets	-	-	Indicator calculation under development
Amount of land mass recycled	790,000 t/a	297,728 t/a	The indicator has deteriorated
Food waste in school and daycare centre food services (Palvelukeskus Helsinkis meal services)	72.18 g/ eater (2021)	60.86 g/ eater	The indicator has improved

Promoting environmental awareness and responsibility

Indicator	2023	2024	Definition
Number of participants in the Harakka Nature and Environment School and guided nature walks	7,371 persons	6,112 persons	The indicator has deteriorated
Number of companies offering circular economy services on the Service Map	64	238	The indicator has improved

Other environmental indicators:

Traffic

Indicator	2023	2024	Definition
Proportion of sustainable modes of transport (walking, cycling, public transport, others)	80 %	78 %	The indicator has deteriorated
Greenhouse gas emissions from transport in Helsinki	528 kt CO_2-ekv.	544 kt CO_2-ekv.	The indicator has deteriorated
Share of fully electric cars in the passenger car stock	6.7 %	9.3 %	The indicator has improved

Energy

Indicator	2023	2024	Definition
Energy consumption per capita in the Helsinki area	19,871 kWh	21,218 kWh	The indicator has deteriorated
Energy savings in the City's own operations (public buildings, vehicles, streetlights), GWh and savings in proportion to target (KETS 2017–2025)	38.5 GWh, 63 % of the objective	55.1 GWh, 90 % of the objective	The indicator has improved
Energy savings of City-owned residential buildings, GWh and savings in proportion to target (VAETS 2017–2025)	39.1 GWh, 70 % of the objective	43.4GWh, 78 % of the objective	The indicator has improved

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