The Stockholm Environment Programme 2012–2015
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INTERIM TARGETS

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6.3 Indoor noise levels will be reduced.
En route towards a sustainable urban development

Stockholm is an expanding city whose name today is synonymous with long-term, engaged and award-winning environmental work. The city has worked in a structured, documented and goal-oriented way with environmental issues since the 1970s. This is reflected, among many other things, in the fact that Stockholm has high natural values contributing to the attractiveness of the city.

This environmental programme is the eighth in the city’s history. The programme is based in the challenges existing today, among them the fact that Stockholm is an attractive and growing city where the needs of nature and people complement each other in an environment characterized by function, qualities and biodiversity.

The quality of life in Stockholm, both indoors and out, should be sustainable. The goal of the City’s environmental work is clear and frames the challenge that the City’s operations must accept. The overarching environmental goals are formulated together with other political goals in the City’s budget. The function of the environmental programme is to break down the environmental goals of the City into smaller clear goals that are easy to follow up for municipal operations. The environmental programme will then become a guiding document for the City’s environmental work that all municipal committees and boards have to follow. Due to this integration of the environmental programme into the City’s activity plans, the final level of ambition lies in the City budget.

The environmental programme for the City of Stockholm runs from 2012 to the end of 2015. The programme encompasses six overarching quality registries that connect to the national environmental quality objectives. The quality registries are in turn broken down into concrete interim targets that describe how individual or joint municipal committees and/or boards are expected to contribute to the goals of their particular operations.

Sustainable development is a wide concept that includes environmental, social and economic aspects. The City’s environmental programme focuses on the environmental dimension of the sustainability theme. This environmental programme is therefore a fundamental part of a sustainable city development: The environmental programme is connected to, and composes an important step on the way to, the City’s Vision 2030. The vision is that Stockholm continues to develop as a world-class environmental city. A sustainable city development is characterized by a dense grouping of buildings with diverse functionality, a living city environment and functional connections to surrounding natural environments, local commerce and service. Stockholm aims to be a model of sustainable urban construction and to play an important role as a source of know-how and inspiration for international cooperation and export of green technology. Stockholm also has the ambition of developing into a city where buildings and infrastructure include sustainable energy solutions, closed-circuit resource management, smart environmental design and adjustment to climate changes.

During the course of the environmental programme, the project organisation of the environmental showcase area in Norra Djurgårdsstaden is developing methods and goals for how people can be enabled to live and work sustainably.

Realisation and follow-up

The environmental programme is a city-wide regulatory document which breaks down the municipal council’s operations goals into more manageable interim targets. The programme identifies municipal committees and boards that have a key role in implementing and/or following up measures. However, all municipal committees and boards should take measures that lead to target fulfilment within their own operations, regardless of whether they have been given a specific interim target in the environmental programme. All municipal committees and boards are also bound by the environmental programme to clarify their own environmental impact and describe ways to reduce it in an environmental action plan.

The environmental programme is since 2008 integrated into the City’s system of governance and follow-up of operations and economy, ILS. The integration means that execution and follow-up of the interim targets of the environmental programme
takes place in the action plan of the respective municipal committee or board. Municipal committees and boards with a designated environmental responsibility for an interim target are responsible for formulating an appropriate local target, as well as indicators and/or activities that follow up the interim target of the environmental programme. The follow-up responsibility also includes cooperating with other municipal committees and boards when needed. The City Council decides on indicators to measure the targets for each field of activity. The municipal committees and boards decide on indicators to measure the interim targets of the environmental programme in their action plans. The local government administration has the overall responsibility for following up on the environmental programme.

From this follows that municipal committees and boards with a designated follow-up responsibility for interim targets must establish follow-up measures in cooperation with the municipality administration. The indicators are continuously evaluated and complemented or revised if they are judged as less than satisfactory or suitable for the follow-up.

The environmental programme comes with an appendix containing suggestions for indicators to each interim target, and an appendix with complementary facts and figures, as well as a national and international outlook on the subject area of the target. Since the environmental programme seldom prescribes which tangible actions should be taken or calculates the costs for these, municipal committees and boards must themselves judge and decide on the most cost-efficient actions and follow-up measures. The suggestions for indicators hereby serve as a source of inspiration.

**Communication**

The work with the environmental goals of the city should be possible to follow for the public, decision-makers and other interested parties. The city shall work to make the environmental programme and its follow-up more accessible for people with different kinds of disabilities.

Since 2003, there is an environmental barometer on the City’s web site where the targets are presented in a transparent way with the help of assessments and indicators. The barometer also presents data regarding the environmental situation in Stockholm. The Environment and Health Committee has the main responsibility for the environmental barometer.
I. ENVIRONMENTALLY EFFICIENT TRANSPORT

Transports play an important part in our society. We are all dependent on transport and on the opportunities that mobility affords. The inhabitants of the city get to work, schools and preschool, and local businesses depend on access to goods and services.

Efficient, smooth-running transport systems are essential for competitiveness in a global economy. The way in which transports function is clearly connected to the attractiveness of the city. Stockholm is growing and there are capacity deficits in the region’s transport systems. This is true of both important parts of the major road network but also for the streets of the inner city, as well as for public transport and the well-used bicycle paths.

At the same time, road transport has a negative impact on the city environment in the form of noise, hazardous inner-city air, barriers and an increased environmental impact. The goal is to increase the mobility of Stockholm’s citizens through solutions that are sustainable in the long term.

A switch to modes of transport with larger capacity and less environmental impact is necessary. At the same time, work must go on to find smart traffic solutions and modes of communication that are more efficient in terms of resources and energy consumption. Investing in unprotected traffic users leads to a less noisy and safer environment and a city that is more enjoyable to spend time in. It should be easy to choose public, safe and environmentally friendly modes of transport.

Goals for the City of Stockholm

The following interim targets will be met during the programme period:

1.1 The environmental impact from city transports and travel will be reduced

1.2 Municipal vehicles will be environmentally certified and powered by renewable fuels, and the green proportion of city transport contracts will be increased

The City of Stockholm will work towards achieving the following targets during the programme period

1.3 Air quality norms will be met

1.4 Travel on foot and by bicycle will increase

1.5 Increase in the proportion of people who travel by public transport

1.6 At least half of all new private cars sold should be ‘green’. Ten percent of new registrations of heavy vehicles should be environmentally certified. Sales of ‘green’ fuel should be 16 percent

1.7 Reduction in outdoor traffic noise
More about environmentally efficient transport

The challenge here is to create a transport system which is sustainable in the long term. There are positive trends, partly thanks to more stringent requirements for better exhaust emission control. These help reduce emissions of many substances that are hazardous to health, and they improve the air in our cities. New trains and road vehicles are quieter than their predecessors. Alternative fuels and vehicles, as well as low-noise tyres, have firmly entered the market. Better logistics and information can reduce the negative environmental impact of traffic. New technology encouraging teleworking and electronic meetings, and making it easier to order goods and services with the help of computers and smartphones, contribute to a reduction in transport needs. The ‘Green IT’ strategy of the City deals with activities concerning these questions.

The traffic system of today has a series of negative environmental and health consequences. Carbon dioxide from road traffic contributes to the greenhouse effect to the amount of 1.13 tonnes per inhabitant in Stockholm during 2009. Road traffic affects health in the shape of, for instance, heart-lung disease, and traffic is the largest source of noise pollution in Stockholm. Furthermore, noise levels are showing an increase. Also rail and air traffic significantly affect sound levels both indoors and outdoors.

The air quality of Stockholm has improved over the last few decades. Downward trends have been visible for most airborne pollutants.

More stringent demands regarding exhaust limits for vehicles across the EU, reductions in industrial emissions, phasing in of cleaner fuels and ‘green’ cars, together with a congestion charge, have contributed to the improvements. Levels of nitrogen dioxide, NO2, and particles, PM10, are, despite the improvements, still too high in many parts of the city. The levels of carbon monoxide and ground-level ozone are also higher in certain parts of the city than the prescribed norms.

Furthermore, traffic is responsible for the release of a number of pollutants to ground and water. Road salt, fuel spills, toxic products of combustion, the results of wear and tear and of corrosion, road salt and car care products all end up in surface water and wastewater systems, affecting lakes and waterways and reducing the efficiency of waste treatment plants. Nitrous oxides affect both human health and the environment. Nitrous oxides and hydrocarbons also contribute to the production of ozone in the lower air layers. Emissions are expected to decrease, but powerful measures are necessary in order to reach the standards for environmental quality.

Stockholm as a whole can affect the development toward long-term sustainable transports in several ways. The City wields great influence over traffic planning, settlement structure, the localization of various activities and the expansion of the pedestrian and bicycle networks. Condensation of the city reduces the distance to service, public transport and workplaces, and an improved infrastructure for cars, bicycles and pedestrians alike gives us better conditions for shaping the traffic system of the city in a sustainable direction. The city can also influence the need for transport and the conditions for different modes of transport, for example through active parking policies, financial incentives and local traffic regulations, through their responsibilities for road maintenance and through information and campaigns.

The city’s electric-car strategy aims to clear away obstacles and build up the infrastructure for charging batteries for electric cars and plug-in hybrids in the city. Meanwhile, the Environment and Health Committee has carried out an extensive procurement of electric cars with the aim of facilitating their introduction on the market.

As an employer of large numbers of people, the City of Stockholm can also affect the travels of its employees. And as a big market player it can choose green vehicles and green equipment during procurements.

The environmental programme encompasses all types of transport, road, rail, air, sea, bicycle and foot. However, the programme focuses especially on road transport, since these account for the larger part of the environmental impact on the city. The transport sector is responsible for a considerable part of the City’s energy-related environmental impact.

Carbon dioxide is treated in Chapter 3.

Pollution of surface water from traffic is considered in Chapter 4.

1. Environmentally efficient transport

**Interim targets**

1.1 The environmental impact from city transports and travel will be reduced

The ambition of the city is to reduce the environmental impact of its transports. This includes both its own transports and the travels of its employees. Improved access to safe bicycle parking, access to changing rooms and reduced use of private cars for official duties are different ways of reducing the negative effects of work-related travel.

ITS solutions and digital meetings contribute to more optimal transports, a reduced need to travel and a more cost-efficient use of resources.

According to this target:

- The city will work systematically to reduce the environmental impact of its operational transports. Ways of reducing transport work is to better utilise the potential of optimised loading and route planning.
- The city’s municipal committees and boards will adopt a travel policy for environmentally friendly work-related travel.
- The city’s municipal committees and boards will, when possible, utilise digital meeting options.
- The city will develop cooperation forms that create possibilities for efficient logistics and transport solutions.

This target involves all the city’s municipal committees and boards.

Follow-up responsibility: The municipal administration is responsible for following up on the interim target.

1.2 Municipal vehicles will be environmentally certified and powered by renewable fuels, and the green proportion of city transport contracts will be increased

A switch to green vehicles and fuels is one of many ways to adjust the traffic system in the right direction. An increase in the number of green cars will result in more environmentally sustainable road traffic. Reduced emissions can also be achieved through keeping the correct tyre pressure, maintaining a fuel-efficient driving style and saving the car for longer trips.

According to this target:

- Motor vehicles owned or leased by the City’s municipal committees and boards will be green cars according to the definition accepted by the City Council. The number of electric cars in the city’s vehicle fleet will be increased, with the exception of emergency vehicles and special-purpose vehicles.
- 85% of the fuel used will be alternative fuel. The target refers to green cars that can use alternative fuels (hybrid ethanol, biogas or plug-in hybrid vehicles).
- Contracted transport services should to at least 55 percent be accomplished with green vehicles.

This target involves all the City’s municipal committees and boards that use contracted transport services during the programme period.

Follow-up responsibility: The Environment and Health Committee is responsible for following up the target.

1.3 Air quality norms will be met

The air we breathe is of great importance to our well-being and health. The air should be clean enough for no harm to come to human health nor animals, plants or our cultural heritage.

According to this target:

- Levels of particulate matter (PM10) will meet the norm limit of 50 µg/m³ and may only be exceeded on, at most, 35 days per year. The most efficient measure for reducing particulate levels is a reduction in the use of studded tyres. Other measures are decreasing traffic, dust control, speed limitation, optimising de-icing measures and improved road clearance.
- Levels of nitrogen dioxide will meet the norm limit of 60 µg/m³. In order to live up to the environmental quality norm, the limit may not be exceeded for more than seven days per year.

The target affects all the City’s municipal committees and boards.
1. Environmentally efficient transport

Follow-up responsibility: The municipality administration, together with the Environment and Health Committee, is responsible for the follow-up of the target.

1.4 Travel on foot and by bicycle will increase

To walk or cycle is today’s most sustainable mode of transport. If a person with a five-kilometre commute to work cycles instead of driving a normal car, emissions of carbon dioxide are reduced by around 500 kilograms per year. The shortened travel time is one of the bicycle’s strongest advantages compared to other modes of transport, and more activities and incentives are needed in order to increase pedestrian and bicycle travel.

According to this target:

- Travel by bicycle should be doubled at the city’s checkpoints as a result of the City’s efforts. The proportion of pedestrian and bicycle travels should be increased to at least 20 % in the suburbs and at least 50 % in the inner city
- The city should have a well-functioning, comprehensive infrastructure for bicycling
- Good winter road clearance on the city’s bike paths will be achieved. Prioritized bike paths will be identified and cleared of snow
- The city will in large city building projects plan for reduced car use and good conditions for environmentally appropriate transports. The city should demand bicycle parking in prime locations and in sufficient quantities
- Pedestrian traffic will increase as a result of the city’s efforts. The city should consider pedestrians’ needs in construction and traffic projects.

The target affects all the City’s municipal committees and boards who in their work can contribute to better conditions for pedestrian and bicycle travel for citizens and businesses in Stockholm.

Follow-up responsibility: The Traffic and Waste Management Committee is responsible for the follow-up of the target.

1.5 Increase in the proportion of people who travel by public transport

Public transport is a vital part of a long-term sustainable transport system. Public transport has room for significantly more travellers than the individual car, and at a much lower environmental cost. Through city planning built on public transport, more people can settle in suitable public transport areas.

According to this target:

- The proportion of public transport for mechanized journeys (car or public transport) will be at least 78 % in the inner city and 45 % in suburban areas during rush hour. In measurements carried out by SL (Stockholm Public Transport), public transport covers 76 % of mechanized trips in the inner city and 43 % of regional trips
- Favouring public transport will be a natural part of the City’s planning.

The target affects all the City’s municipal committees and boards who in their work can contribute to and increase in the supply of public transport for citizens and businesses in Stockholm.

Follow-up responsibility: The Traffic and Waste Management Committee is responsible for the follow-up of the target.

1.6 At least half of all new private cars sold should be ‘green’. Ten percent of newly registered heavy vehicles will be certified as clean trucks.

Sales of alternative fuels should increase to 16 percent. The target regards sales in Stockholm County. The City will work to reduce the negative affects of traffic by increasing the proportion of environmentally certified vehicles and alternative fuels. Tools at the City’s disposal are many: the City can establish environmental zones, simplify charging of electric cars, include demands for our own procurement of transport services, and so on. The City’s strategy for electric cars provides a foundation for an increase in the charging infrastructure and incentive programs for super-environmental cars.

According to this target:

- The City should act to make it easier to buy and charge electric cars. The efforts of the City has provided a foundation for
developing an infrastructure for alternative fuels and a supply of green cars.

- Sales of renewable fuels will increase and efforts to expand the number of tank stations providing alternative fuels will be prioritized.

This target involves first and foremost the Traffic and Waste Management Committee, the City Development Committee, the Environment and Health Committee and the City Planning Committee.

Follow-up responsibility: The Environment and Health Committee is responsible for the follow-up of the target.

1.7 Reduction in outdoor traffic noise

The City will work to reduce outdoor traffic noise. It is important that as far as possible, noise is reduced at the source, and that there is an improvement both concerning the engine noise of vehicles and the noise from tyres and road surfaces.

According to this target:

- Traffic noise will be reduced. The yearly average at measuring points will serve as a reference point. The target focuses on efforts to reduce noise at its source. This can take the shape of, for example, traffic management, speed regulation, information efforts, use of low-noise tyres, reduced use of studded tyres, noise-reducing architecture and city planning or substitution of road surface material. The City will take noise aspects into account when deciding on speed limitations.

- The City should use road surfaces as an alternative tool for limiting noise. This means, among other things, that noise emissions will be taken into account at maintenance and renewal of road surfaces.

- The City should consider noise concerns when planning new residential buildings and businesses near sources of noise production.

- The City should carry out efforts to reduce traffic noise in proximity to schools and preschools.

The target affects mainly the Traffic and Waste Management Committee, the City Development Committee and the City Planning Committee.

Follow-up responsibility: The Environment and Health Committee is responsible for the follow-up of the target.
2. GOODS AND BUILDINGS FREE OF DANGEROUS SUBSTANCES

Chemicals play an important part in today’s society: We use them in numerous ways, as drugs, makeup, washing and cleaning agents, pesticides and paints. Chemicals are also present in goods such as clothes, furniture, computers and construction material. While chemicals have helped to raise our standard of living, they have in a number of cases caused health and environmental problems. It is important that we do not burden our environment with substances created or extracted by society at levels that might threaten our health or the environment.

The challenge for the City lies in avoiding the use of directly dangerous substances and generally handling different types of chemical products and goods in such a way as to minimize the risks. One condition for the target to be achieved is that all of society take its responsibility. Through dialogue and cooperation with the general public, the business community, scientists and society at large, the City can contribute to increasing our knowledge regarding environmental toxins and how their spread can be limited.

Goals for the City of Stockholm

The following interim targets will be met during the programme period

2.1 The contents of substances that are dangerous to the environment and to health will be reduced in procured goods
2.2 Emissions of dangerous substances from buildings and facilities will be reduced
2.3 At least 25 percent of food purchases made by the City of Stockholm will be organic

The City will strive to realise the following interim targets during the programme period

2.4 The spread of dangerous substances from households, commerce, construction and other actors in Stockholm will be reduced
2.5 The proportion of environmentally certified buildings will be increased
More about goods and buildings free of dangerous substances

There is a very large number of chemical substances on the market. Total world production of chemicals amounts to over 400 million tonnes per year. On the European market, there are somewhere in the vicinity of 100,000 substances. More than 14,000 substances exist in Sweden, spread across the roughly 76,000 chemical products produced in or imported into the country. Even more substances enter through other imported goods.

Several substances have a negative impact on the environment and/or human health. These can be, for example, long-living, hormonally or reproductively disruptive, or allergens and carcinogens. Certain substances pass unaffected through waste treatment plants, while others can disrupt the cleaning process or damage the quality of the sludge.

The City has essentially dealt successfully with its specific large industrial emitters, but the environment of Stockholm is still affected by emissions through a diffuse spread of dangerous substances from products and goods. One way in which the City can affect this is by choosing environmentally adjusted goods and services in its procurements. The City can also impose chemical demands for construction materials when designating land for infrastructure and buildings. It can also contribute to reduced chemical use by increasing its use of organically grown foodstuffs. During 2010, only 3.1 % of foodstuffs sold in Sweden were organically produced. An increased public procurement of organically grown foodstuffs would stimulate organic consumption, increase supply of organic products and contribute to the overarching national environmental goal of 25 % of public consumption of foodstuffs being organic.

Stockholm’s environmental target regarding Goods and buildings free of dangerous substances links into several of the national Environmental Quality Objectives (EQOs), primarily the one of 'A Non-Toxic Environment'.

The City has identified a number of newer problem areas and groups of problem areas in the report Stockholm – towards a non-toxic environment. The five areas with the highest priority of these are alkylphenols, antibacterial substances, brominated flame retardants, phthalates and polyfluorinated compounds. They are found in, among other products, common goods and building products.

There are also other reasons for limiting the use of other substances and groups of substances, especially those that are persistent, bioaccumulative and very toxic for waterborne organisms and can be found in materials that are exposed in a way that puts them at risk of leaking into the water environment or the sludge of waste treatment plants. Examples of such substances are copper, zinc, organotins, chlorinated paraffins and polycyclic aromated hydrocarbons.

Even ongoing climate changes can have an impact on the target area. A warmer climate and increased precipitation means larger damage to weather-exposed materials, which in turn can lead to increased emissions of substances such as copper, zinc and phthalates. Increased precipitation can also lead to increased water flows and release of a host of contaminants that have lay bound in the ground and lake-bottom sediment.
Interim targets

2. Goods and buildings free of dangerous substances

2.1 The contents of substances that are dangerous to the environment and to health will be reduced in procured goods

The City will purchase goods and services that are environmentally sustainable, thereby reducing the spread of dangerous substances in Stockholm. The target covers goods with a relatively short cycle time and life expectancy, such as computers, tyres, textiles, office furniture and cleaning chemicals. Goods concerning the building and construction sector are treated in interim target 2.2.

According to this target:

- Goods and chemical products that include dangerous substances will be replaced by environmentally superior alternatives. Chemical-free processes will be considered when possible, for example using wool instead of flame-retardant textiles and microfibre cloths instead of cleansing chemicals for cleaning. Substances that are prioritized in Stockholm (see fact box, appendix 3), “Description of the five highest-prioritized dangerous substances for Stockholm”), substances listed by SIN and substances in the PRIO database of the Swedish Chemicals Agency should be avoided. The procurement criteria of the Swedish Environmental Management Council should be a guide where they are applicable. Alternatively, the goods should meet the equivalent of the standards set by Svanen, Bra Miljöval and EU Ecolabel. Goods for operation and maintenance of buildings can also be environmentally tested in accordance with interim target 2.2.

- When services and tenders are procured, equivalent demands will be put on the contents of dangerous substances in goods and chemical products that the supplier or contractor will be using.

- If goods are chosen that cannot meet the criteria, this must be motivated and cleared by the procuring unit.

- The committees and boards will have routines for follow-up of demands put on procurements. This target involves all committees and boards.

Each procuring committee and board is responsible for following up that all goods and chemical products meet the demands, both those that have been delivered directly and by way of procured services and tenders.

Follow-up responsibility: The municipality administration is responsible for the follow-up of the target.

2.2 Emissions of dangerous substances from buildings and facilities will be reduced

Buildings and facilities have long lives and can affect the environment and health during a long time. Therefore, they should be built with high performance and designed with materials and products that are proven beneficial from a life-cycle perspective, while also being recyclable.

The city is a large owner of land and property, and several committees and boards procure building, construction and renovation work. Established tools that facilitate environmental evaluation and setting of requirements for the environmental performance of building materials shall be used in the procurement process.

According to this target:

- When buying and procuring goods, consultancy services and tenders for building and renovations, the City shall demand that the criteria set forth by the Environmental Evaluation of Building Materials (Byggvarubedömningen, BVB) for recommended or accepted goods (total evaluation) or BASTA be followed. Alternatively, goods should meet the equivalent of the standards of Svanen, Bra Miljöval or EU Ecolabel. Groups of goods that should be prioritized are chemical products (glue, sealant, paint, levelling compounds, etc), floor coverings, insulation material, roof and façade material, and electrical, heat and plumbing (cables, pipes, etc).

- When designating land and drawing up development agreements for production of buildings and facilities, the City will demand the equivalent of the point above. The City will demand that the property owner can show documentation regarding environmentally tested goods after finished construction of the building/facility.
2. Goods and buildings free of dangerous substances

- If goods are chosen that do not meet these criteria, this must be motivated and cleared by the procuring unit.
- In the case of new construction, the use of PVC materials and copper tap-water pipes will be avoided when there are equivalent alternatives. For sheet metal for roofs and façades, copper, zinc and alloys containing them will be avoided. Alternatively, the runoff from the roof must be cleaned.
- In the case of dangerous substances already having been built into the structure or being unavoidable, emissions from buildings and facilities to the environment will be reduced. This means that material must be exchanged where it is environmentally motivated and practical, economical and culturally/historically possible, or that measures are put in place to reduce emissions from the building to the environment, for example through the installation of a separate rainwater treatment system.
- The committees and boards will have routines for follow-up of the high demands placed in the procurement process.

The interim target involves in particular the City Development Committee, AB Svenska Bostäder, AB Familjebostäder, AB Stockholmshem, SISAB, MICASA and the Property Management Committee.

Follow-up responsibility: The municipality administration is responsible for the follow-up of the target.

2.3 At least 25 percent of food purchases made by the City of Stockholm will be organic

Increased consumption of organic foodstuffs contribute to a sustainable development, i.e. is considerate of animals, the environment and the health of humans. Organic foodstuffs are defined as foodstuffs that meet the criteria of EU regulation 834/2007 regarding organic production and labelling of organic products. Certificates who live up to the above requirement are, for example, the Euro-leaf, KRAV, Demeter, MSC or other documentation that can verify the requirements.

According to this target:
- When procuring meals or other mealtime activity for preschool, school, elderly care and other activities, demands will be put requiring at least 25 % organic foodstuffs.
- The procuring units, in procurements and during the course of the programme, places demands of documentation from the supplier proving the amount of organic foodstuffs included in the produced meals. Accounting is done in the City’s financial system.
- The criteria of the Swedish Environmental Management Council regarding sustainable procurements will serve as guidelines when the City buys and procures foodstuffs.

The interim target involves all city districts and the Service Committee, Elderly Services Committee, Sports Committee, Social Services Committee and Education Committee.

Follow-up responsibility: The Environment and Health Committee is responsible for the follow-up of the target.

2.4 The spread of dangerous substances from households, commerce, construction and other actors in Stockholm will be reduced

To reach the environmental target, other actors beyond the municipal activities must be involved, such as commerce, the construction business, the food industry and others, as well as the citizens of the city. The City can influence in other ways, such as through cooperation and information.

According to this target:
- The City will cooperate with actors within commerce, the construction industry and other business sectors to jointly realise a reduction in sales and use of dangerous substances.
- The City will through information efforts contribute to an increase in public awareness of how dangerous substances should be handled.

This target involves primarily Stockholm Vatten, the City Development Committee and the Environment and Health Committee.

Follow-up responsibility: Stockholm Vatten is responsible for the follow-up of the target.
2. Goods and buildings free of dangerous substances

2.5 The proportion of environmentally certified buildings will be increased

The City is planning for extensive new building projects and renovations, for example coming upgrades to the Million Programme. The interim target means that the City will try using environmental certification as a method for ensuring that the City’s buildings arrive at a high standard healthwise and environmentally. This entails, among other things, extensive functionality demands on the indoor environment, checklists and to-do-lists to help identify risk factors and how these can be avoided, as well as how follow-up can be achieved. The experiences made will serve as a foundation for future decisions regarding environmental certification of the city’s buildings.

According to this target:

- A cooperative platform between municipal and other actors will be created with the goal of promoting environmental certification of buildings

The interim target involves in particular the City Planning Committee, the Environment and Health Committee, the Real Estate Committee and the City-owned companies.

Follow-up responsibility: The City Planning Committee is responsible for the follow-up of the target.
3. Sustainable use of energy

3. SUSTAINABLE USE OF ENERGY

Access to energy is essential for maintaining our standard of living. We use energy for our housing, our transports and work. At the same time, energy use is one of the underlying causes of a number of major environmental problems. In particular, the climate question is seen by many as the greatest challenge of our time. The City’s work towards a sustainable use of energy is prioritized, long-term and forward-looking. The City sets a new standard for energy-efficient construction through passing demands for energy use equalling the passive-house standard for new buildings. This raised ambition will in the long run pave the way for the implementation of a level of energy use equalling energy-plus-house standards. The work aims to resolutely reduce climate effects, make energy use more efficient and switch over to renewable energy.

Targets for the City of Stockholm

The following interim targets will be met during the programme period

3.1 The City will through energy efficiency measures reduce energy use in its own operations by at least 10 percent.

3.2 Electricity procured for municipal activities will meet the requirements for eco-labelling.

3.3 In new buildings on land designated by the City, energy use will be at the most 55 kWh/m².

3.4 The City’s buildings will be made energy efficient in connection with major renovations.

The City will strive to meet the following interim targets during the programme period:

3.5 The City will strive to reduce emissions of greenhouse gases to a maximum of 3.0 tonnes of CO₂e per inhabitant of Stockholm.
3. Sustainable use of energy

More about sustainable energy

The biggest energy-related issue is the impact that the use of fossil fuels has on the climate. The greenhouse effect, which is a global issue, is accelerating. For the City of Stockholm, the climate question is a priority and the City has adopted ambitious goals for becoming climate neutral. In the year 2050, Stockholm will be a city free of fossil fuels. On the way there, the City will stake out clear interim targets: by 2015, emissions of greenhouse gases will be limited to 3.0 tonnes per person. Until now, emissions of greenhouse gases have decreased mostly because of fossil fuels being gradually substituted by renewable fuels in district heating. Further reductions will occur when coal use at the Värtaverket power plant is cut in half during the coming 4-5 years. After that, we cannot count on significant reductions within district heating. Therefore, it is important that the City works ambitiously with energy efficiency throughout its property portfolio, and that traffic becomes more and more independent from fossil fuels.

Suggestions for measures are described in Stockholm’s action plan for climate and energy.

Beyond the greenhouse effect, the use of fossil fuels contribute to the acidification of land and water. As a byproduct of the combustion of fossil fuels, air pollutants are created in the shape of nitrogen dioxide, and different hydrocarbons increase the risk of cancer, asthma and heart and lung disease.

The City of Stockholm has an important role to play in the energy arena. The City will plan buildings and infrastructure so that energy-efficient solutions are realised for both residents and transports.

Comprehensive planning and detail plans play a crucial role here. The expansion of Stockholm will rest on the foundation that public transport alternatives will always be available. Together with developer interests, agreements will be drawn up to make Stockholm a model of energy-efficient building and a driving force in the development of technology-neutral, energy-efficient solutions.

The City of Stockholm’s own operations, including the municipal housing companies, have an important role in this development. The impact of the operations as a consequence of emissions from electricity production and heating will be reduced through energy efficiency in buildings as well as through changes to renewable energy sources. In connection with major modifications and renovations, energy-efficient solutions should always be chosen. The City also wields influence over both its own energy use and energy production, not least through it’s part ownership in AB Fortum Värme which is co-owned by the City of Stockholm.

Through long-term planning, the City can influence the conditions for energy efficiency and biofuel supply for the production of electricity and heating.

Stockholm’s environmental target of Sustainable energy use links into the national Environmental Quality Objectives (EQOs) regarding ‘Limited Climate Impact’, ‘Clean Air’, ‘A Good Built Environment’, ‘A Protective Ozone Layer’ and ‘Natural Acidification Only’.
3. Sustainable use of energy

Interim targets

3.1 The City will through energy efficiency measures reduce energy use in its own operations by at least 10 percent.

Through energy efficiency measures, emissions of greenhouse gases will be reduced at the same time as the City saves money due to the reduction in the cost of buying energy. The City’s costs for purchased energy amounted at the start of the programme period to roughly two billion kronor per year. A 10-percent reduction means a saving of around 200 million kronor per year with prices left unchanged. The decrease in greenhouse gas emissions would be around 25,000 tonnes of CO2e per year. The Energy Centre of the Environment and Health Committee supports committees and boards in their work.

According to this target:
- The reduction by at least 10 percent refers to a comparison with the year 2011.
- The Stockholm action plan for climate and energy describes actions that support the target. The City’s Green IT strategy can also, in applicable parts, contribute to achieving the goal.

This target involves all the City’s committees and boards.

Follow-up responsibility: The Environment and Health Committee in cooperation with the Service Committee are responsible for the follow-up of the target.

3.2 Electricity procured for municipal activities will meet the requirements for eco-labelling.

Using eco-labelled electricity has the long-term effect of driving the environmental adaptation of electricity production in Sweden and Europe. This increases the possibility of dismantling electricity production that leads to greater environmental impact.

According to this target:
- Procurement of electricity will follow level 2-3 of the guidelines of the Swedish Environmental Management Council. The City’s procurement of electricity will support the Environmental Quality Objectives regarding ‘Limited Climate Impact’, ‘Clean Air’ and ‘Natural Acidification Only’. This means that the City’s procurements will lead to reduced emissions of greenhouse gases, air pollutants and reduced burning of fossil fuels.

This target involves all the City’s committees and boards.

Follow-up responsibility: The Environment and Health Committee in cooperation with the Service Committee are responsible for the follow-up of the target.

3.3 In new buildings on land designated by the City, energy use will be at the most 55 kWh/m².

The new directives from the EU commission means that all new houses built from 2020 an onwards must have a energy use near zero. For public buildings the demand comes into place in 2018. The directive also applies to conversions and expansions. The City of Stockholm needs to adjust development contracts, land designation contracts and its own operations to the directive.

According to this target:
- The City strives for all newly produced buildings during the course of the environmental programme will have an energy use no higher than 55 kWh/m². The target is stated clearly at land designations.

The target is stated clearly at land designations.

This target involves the City Development Committee, City Planning Committee, AB Svenska Bostäder, AB Familjebostäder, AB Stockholmshem, Micasa Fastigheter AB, Real Estate Committee and SISAB.

Follow-up responsibility: The City Development Committee is responsible for the follow-up of the target.

3.4 The City’s buildings will be made energy efficient in connection with major renovations.

Parliament decided in 2009 on national energy and climate targets. Among much else, energy use in Sweden’s housing stock of 2050 shall be halved compared to 1995. Major renovations are normally only carried out in 40-year intervals. This means that
it is important to undertake far-reaching energy efficiency projects in connection to renovations if the target is going to be achieved on time. In the suggestion from the Swedish Energy Agency on how to implement the directive for near-zero houses, it is suggested that the new regulations can be met through major renovations.

According to this target:

- In major renovations, the building’s energy use shall be reduced to no higher than the BBR building regulations for new buildings.
- In very large renovations, the building’s energy use shall be reduced by at least 50%, while staying within the levels of the BBR building regulations. In the long run, the aim is to attain a reduction to 60 kWh/m².

The calculations for deciding if a modification is large or very large is carried out with the help of a model based on the total modification costs minus VAT, divided by the number of square meters modified. The model is described in more detail in ILS, the City’s system of governance and follow-up of operations and economy.

Gains in energy efficiency through modifications that according to the calculation model are not considered large or very large fall under interim target 3.1.

The interim target involves a raised ambition level in order to live up to the national target of cutting energy use in half in existing buildings. The target involves AB Familjebostäder, AB Stockholmshem, AB Svenska Bostäder, the Real Estate Committee, Micasa Fastigheter AB and SISAB.

Follow-up responsibility: Stadshus AB is responsible for the follow-up of the target.

3.5 The City will strive to reduce emissions of greenhouse gases to a maximum of 3.0 tonnes of CO₂ per inhabitant of Stockholm.

The City of Stockholm has a long-term goal of being free of fossil fuels by the year 2050, at the latest. If this goal is to be reached, emissions of greenhouse gases must be reduced by on average 2.5 percent per year, or by 10 percent during the programme period. Within the sectors of heating and cooling, electricity and transports, however, the need for actions differs. The target encompasses emissions of carbon dioxide from transports, electricity use, heating and district cooling within the boundaries of the City.

According to this target:

- Net emissions of greenhouse gases from the district heating system need to be reduced by 50 percent.
- Energy use in the building stock across the city need to be reduced by 5 percent through energy efficiency measures.
- Carbon dioxide emissions from traffic need to be reduced by 15 % by the year 2015 compared to 2011. Increased efforts are needed to reduce transports powered by fossil fuels.

This target involves all the City’s committees and boards.

Follow-up responsibility: The Environment and Health Committee.
**4. SUSTAINABLE USE OF LAND AND WATER**

Stockholm is widely perceived as an attractive place in which to live and work. Among the reasons for this are its proximity to the countryside and the fact that Stockholm is a city built on water. The parks and open water of Stockholm represent many important ecological functions, as well as quality spaces for recreation. Parks, water and nature provides access to green oases, calm, play and walks. The comprehensive plan has a large role to play here. Flower displays are found in parks in residential areas, in allotment gardens and on city squares, while nature areas provide forest experiences and wild nature. These areas are also educational, particularly for children. The extensive tracts of unspoiled countryside on the outskirts of Stockholm and in its neighbouring municipalities are important for the outdoor pursuits of Stockholm residents, as is access to the scenic areas of Lake Mälaren and the archipelago. Stockholm’s many beaches with good water quality are a huge asset. Fishing opportunities are also very good in the city. Natural areas like parks and green areas also help muffle noise from traffic and other activities, and the plants act as a filter for some air pollution. Water that runs slowly through ponds and wetlands is cleansed of nutrients and some pollutants. Stockholm has good conditions for keeping and developing this green and blue structure. The public accessibility to beaches and water contact is unique for Stockholm, and still has significant development potential. At the same time as conditions are being expanded for more people to live and work in the city, the qualities that make up an attractive living environment must be preserved. Among other parties, the Tree Council plays an important role.

**Targets for the City of Stockholm**

The following interim targets will be met during the programme period:

4.1 Land and water areas of special significance for biodiversity will be preserved and developed

4.2 Land and water areas of particular attraction for recreation will be preserved and developed

4.3 Development of other land and water areas will be minimized and compensated

4.4 Where changes are made in land and water areas, these will be designed with future climate changes in mind

4.5 Maintenance of land and water areas will work to preserve biodiversity, ecosystem services and recreational qualities.

The City will strive to meet the following interim targets during the programme period:

4.6 Improvement of water quality in lakes and waterways
More about sustainable use of land and water

Stockholm distinguishes itself among other capitals by being green and water-rich with high natural values that strongly contribute to the attractiveness of the city. The structure of spaces covered by vegetation and water is a foundation for the city’s biodiversity. It generates ecosystem services as a resource for Stockholmers’ recreation and health, as well as for a climate adjustment of the city. Even in Stockholm, biodiversity is affected by, among other things, the fragmentation of interconnected habitats and dispersal routes. The challenge is to create and maintain good conditions for life in the city and promote a long-term sustainable land and water use that contributes to a positive economic development without losing important environmental assets. It is crucial to take care of and develop a functional and appealing green-and-blue structure in order to preserve the unique qualities of Stockholm.

Therefore, city development should be based on our need of parks and city-adjacent nature areas and to consider the conditions for biodiversity and its ecosystem services. Through well-weighted efforts, recreational and ecological values can also be re-created or compensated in the event of undeveloped land being claimed for construction.

Through information about lakes and other nature areas and how to reach them, use of these areas can be increased. Studies show that green areas have positive effects on people’s health. People with access to green areas in their vicinity have better self-reported health and live longer. Green areas stimulate physical activity, increase concentration ability and lessens stress. In order for green areas to be used regularly they need to be located within 300 meters of homes if they are to be viewed as accessible. The sense of personal safety is also an important concern. Apart from proximity, the most important features necessary for a green space to reduce stress is that it is peaceful, contains natural sounds, is free from litter and other distracting elements, has high biodiversity and gives visitors a feeling of entering ‘another world’.

Neighbourhoods with large green areas close to housing also increases social interaction between people and creates local cohesion. For green areas near residential areas to function as meeting places, however, they need to be large enough to house multiple functions and activities.

As Stockholm grows, the green/blue structure has also gained an increasingly large importance both for the cityscape and for recreation and outdoor life. Through purposeful water preservation efforts during long periods of time, the city can today offer unique opportunities for swimming in the central parts of the city. However, lakes and waterways of Stockholm are still affected by the operations that have been carried out or are carried out in their catchment areas. Traffic, housing and industries all affect both the quantity and quality of the inflowing water. This means larger amounts of nutrients, metals and harmful organic substances than water coming from natural land. Bottoms also contain old built-up pollutants from industries and waste discharges that have now ceased.

According to the EU:s Water Directive, necessary action should be taken to improve the ecological and chemical status of lakes and waterways. Ground water levels and ground water quality is also affected by what is going on within the catchment area. Guidelines for the City’s work on improving water quality in our lakes and waterways are available in Stockholm’s water programme.

Within the target area, the City Planning Committee is responsible for comprehensive planning and detail planning of the city’s land and water. The City Development Committee, through its land ownership, is responsible for development of green spaces and development on City land. The Traffic and Waste Management Committee and Stockholm Vatten AB contribute to the sustainable development through their respective sector responsibilities, while the City District Committees are responsible for administration and running maintenance of parks and natural areas. The Environment and Health Committee is responsible for supervising protected areas (reserves), environmental surveillance and co-ordinating of the water programme.

Interim targets

4.1 Land and water areas of special significance for biodiversity will be preserved and developed

This target is about maintaining and developing the function of the green/blue structure which is a prerequisite for preserving the rich plant and animal life and thereby also the robust ecosystems and their ecosystem services. This structure consists of ecologically significant core areas, dispersal zones and habitats for species meriting protection. Some of these also have a regional or national value.

According to this target:

- Encroachment on irreplaceable functions will be avoided
- Areas of high value will be protected. Protection according to the Environmental Code should be used for the areas of highest value. Other ways of protecting can be through the Planning and Building Act, with for example area regulations or a detail plan.
- Actions to strengthen functions in and between areas, for example weak connections, are carried out in cooperation with planning. Encroachment into areas eligible for compensation within a particularly important structure will be compensated, primarily locally with an equivalent function, secondarily in a different location with an equivalent function for the city’s green qualities. This is preceded by an ecological inquiry to judge the impact, adjustment possibilities and possible reinforcements. The documents available for this judgement are the sociotope map, the biotope map, the habitat network of the Environment and Health Committee, the Artportalen, the Stockholm water programme, ‘Stockholm’s ecological sensitivity’ (the City Planning Committee’s mapping of ecologically sensitive areas according to the Environmental Code of 1995) and the local park plans. In the park programme, there are instructions for how these documents are used. With the basis in these documents, an assessment is made of the need for compensation. Actions can for example be to create from scratch a corresponding nature type or restoration of an environment whose natural values have been reduced.

This target involves particularly the City Development Committee, the Real Estate Committee, the Environment and Health Committee, the City Planning Committee, the Traffic and Waste Management Committee, the housing companies and City Districts with especially valuable land and water areas.

Follow-up responsibility: The City Planning Committee is responsible for the follow-up of the target, together with the Environment and Health Committee.

4.2 Land and water areas of particular attraction for recreation will be preserved and developed

The favourable conditions for maintaining and developing Stockholm’s green character are utilized. Every city district should have good access to play and recreational possibilities for all ages in public green spaces. An interconnected web of parks and green public spaces are connected by green links through and between the districts, as an important part of the vision of the Walkable City. The links and park network connect to the larger outdoor areas and the green wedges outside the built-up areas. In the case of a new development where parks and natural ground is utilized, it is of utmost importance to maintain and develop green connections and structure.

According to this target:

Encroachment into irreplaceable functions is avoided.

- Actions to strengthen functions in and between areas, for example weak connections, are carried out in connection with new planning. It can be new construction or renovation of parks, playgrounds or pedestrian or bicycle paths.
- Encroachment into areas eligible for compensation within a particularly valuable structure are primarily compensated by way of an equivalent function, and secondarily with an equivalent function for the green qualities of the city.
- The documents and data available for this judgement are the sociotope map, the biotope map, the habitat network of the Environment and Health Committee, the Artportalen, the Stockholm water programme.
programme, ‘Stockholm’s ecological sensitivity’ (the City Planning Committee’s mapping of ecologically sensitive areas according to the Environmental Code of 1995) and the local park plans. In the park programme, there are instructions for how these documents are used. With the basis in these documents, an assessment is made of the need for compensation.

- Noise in park and recreation areas should not increase.

This target involves the City Development Committee, the Real Estate Committee, the Environment and Health Committee, the City Planning Committee, the Traffic and Waste Management Committee, the housing companies and City Districts.

Follow-up responsibility: The Traffic and Waste Management Committee, in cooperation with the City Planning Committee, is responsible for the follow-up of the target.

4.3 Development of other land and water areas will be minimized and compensated

Land and water areas outside of the particularly vital structure have to a large extent a supportive function for the city’s biodiversity and thereby also its ecosystem services. Many are for example important to inhabitants having good access to recreational qualities in accordance with the guidelines of the park programme, to climate-adjust the city and as a part of important green connections.

According to this target:

- Encroachment into these areas should be minimized and compensated, primarily compensated by way of an equivalent function, and secondarily with an equivalent function for the green qualities of the city.

- Claimed land and water areas lacking a function for the green qualities of the city do not need to be compensated.

- The documents and data available for this judgement are the sociotope map, the biotope map, the habitat network of the Environment and Health Committee, the Artportalen, the Stockholm water programme, ‘Stockholm’s ecological sensitivity’ (the City Planning Committee’s mapping of ecologically sensitive areas according to the Environmental Code of 1995) and the local park plans. In the park programme, there are instructions for how these documents are used. With the basis in these documents, an assessment is made of the need for compensation.

4.4 Where changes are made in land and water areas, these will be designed with future climate changes in mind

A sustainable city needs a blooming and lively outdoor environment that is beneficial to biodiversity, which in turn can generate important ecosystem services for residents and activities that are adapted to coming climate changes. Expected changes in Stockholm include more intensive precipitation, raised sea levels and more heatwaves, as well as a longer growing season. The City’s efforts with ecological foundations, green area factors and sustainable rainwater management constitute important supports in this work.

According to this target:

- The expansion of the city will be adjusted to withstand future high sea levels as a result of climate change.

- Rainwater systems will have the sufficient dimensions to handle flood rains and intensive periods of precipitation.

- Buildings, streets and farms will be designed with sufficient dimensions for coping with forceful rains and intensive periods of precipitation.

- As a complement to existing nature, new greenery and water environments will be created. Environments will be designed to help level out climate effects, partly through planting trees, and gives a levelling and postponing effect on water flows resulting from flash rains. Surfaces covered in vegetation, as for example green roofs and walls and water surfaces such as dams,
4. Sustainable use of land and water

- Stormwater solutions will be integrated with surfaces that are planned for recreation and green structures, and can also be seen as a resource that can benefit for example watering of urban trees.

This target involves Stockholm Vatten, the City Planning Committee, the Traffic and Waste Management Committee, the Environment and Health Committee and the City Development Committee.

Follow-up responsibility: The Environment and Health Committee, together with the City Planning Committee and the City Development Committee are responsible for the follow-up of the target.

4.5 Maintenance of land and water areas will work to preserve biodiversity, ecosystem services and recreational qualities

Maintenance and restoration of land and water areas are of great importance for the ecosystem services, for example their recreational qualities, as well as for biodiversity. Insufficient, unfavourable or erroneous maintenance ultimately depletes green qualities. A well functioning maintenance is a prerequisite for keeping and developing both ecological and recreational values.

According to this target:

- The City will carry out ecologically oriented maintenance and restoration. Parks and recreational areas will be maintained according to park programs and service plans established by the City Districts.

This target involves primarily the City Development Committee, the Traffic and Waste Management Committee, the Environment and Health Committee, the Sports Committee, City Districts and Stockholm Vatten AB.

4.6 Improvement of water quality in lakes and waterways

Stockholm’s lakes and waterways are of great importance both for the cityscape, for recreation and for outdoor life, as well as for plants and wildlif. The most pressing environmental problems in Stockholm’s lakes and waterways are eutrophication, environmentally harmful substances and physical interference in the water environment. Guidelines for the City’s efforts regarding improvements to the water quality of our lakes and waterways are to be found in the Stockholm water programme.

According to this target:

- The overall level of phosphorus will be reduced or maintained in the City’s lakes.
- Environmentally damaging effects of stormwater will be reduced.
- Re-directing of sewer lines will be reduced and conducted without creating disturbances.
- Existing beaches will have good-quality bathing water.

This target involves primarily the City Development Committee, the Real Estate Committee, the Environment and Health Committee, the City Planning Committee, the City District Committees, the Traffic and Waste Management Committee and Stockholm Vatten AB.

Follow-up responsibility: Stockholm Vatten AB, together with The Environment and Health Committee, is responsible for the follow-up of the target.
5. ENVIRONMENTALLY EFFICIENT WASTE MANAGEMENT

Waste management has gone through major changes during the last decade. The implementation of producer responsibility, successive landfill bans for different waste types, national environmental targets for biological treatment and nutrient recycling, as well as taxes on landfills have together with different private and municipal initiatives contributed to more resource-efficient waste management. However, the amount of waste generated in society is generally still increasing.

All waste must be taken care of in a correct manner in order not to cause damage to human health and the environment. The waste is in many cases a valuable resource if waste management is adapted to the characteristics of the waste. For example, certain types of furniture and other products can be recycled, food waste can be utilised for energy production and plant nutrients, packaging material can be recycled, remaining waste in garbage bags can be burned under controlled circumstances to extract district heat and electricity. The most energy-efficient method, however, is still to prevent the generation of waste in the first place. The City’s waste management shall furthermore contribute to closing resource loops, saving energy and natural resources.

What all these waste management systems have in common is that they should be simple and adapted to those who will use them in order to function optimally. The design of the systems should encourage people to adjust their habits and behaviour to a sustainable waste management, in a sustainable society.

Targets for the City of Stockholm

The following interim targets will be met during the programme period:

5.1 Waste from the City’s activities will be reduced and unavoidable waste will be put to good use

5.2 The proportion of incorrectly recycled hazardous waste will be reduced

5.3 Waste from housing and industry in the city will decrease and unavoidable waste will be put to good use
More about waste treatment and the environment

Municipalities are responsible for collecting and treating household waste and other similar waste. Certain products are also covered by producer responsibility, which means that the companies that manufacture or import the goods are responsible for collecting and recycling any waste that derives from these products. This applies to items such as electrical waste, batteries, packaging, newspapers and tyres. Packaging and newspapers are collected by the Packaging and Newspaper Collection company (FTI).

Within the EU there is a priority order (waste hierarchy), according to which you should first try to prevent waste (reduction), then re-use it, then recycle or compost it, then energy recover it and as a last resort throw it away (disposal). This order is valid as long as it is environmentally motivated and economically rational. The City should in every given situation strive to climb upwards in this hierarchy.

The City can work with these issues through different actions: economic instruments, development of waste systems and information efforts aimed at increasing awareness and knowledge. Making sure that as little waste as possible is created and reducing the content of dangerous substances leads to environmental gains that are considerably higher than what the waste itself gives when it is re-used or used for extraction of materials, energy or biogas.

Each municipality should have a waste management structure that includes guidelines to how to waste should be handled. There should also be a waste plan containing data on waste in the municipality and actions to reduce quantities and danger levels, as well as information on how to contribute to the regional and national environmental standards.

The City of Stockholm controls the waste produced as a result of its own activities. All hazardous waste should, according to the law, be collected and managed separately. An important question for the future is how the amount of waste should be reduced.

The city’s waste management should be accessible for its users, including the elderly and citizens with disabilities. It should also be cost efficient and environmentally adjusted. The City has an constantly growing population, which places demands on waste being correctly taken care of. Modern waste management demands planning and it is important that waste issues come in at an early stage. The City strives towards automated waste handling and long-term sustainable solutions. Stockholm will create well-adapted and easily accessible collection systems that work well in a city environment, offers a good working environment and is economically and environmentally efficient seen from a life-cycle perspective.

Waste management should be a natural part of the planning process of the City and seen as a part of the overall infrastructure in the same way as, for example, water management systems are.

Stockholm’s environmental goal of Environmentally Efficient Waste Management links into the national EQO on ‘A Good Built Environment’.
5. Environmentally efficient waste management

Interim targets

5.1 Waste from the City’s activities will be reduced and unavoidable waste will be put to good use

The best way of reducing the amount of waste is to see to it that waste is never generated in the first place. This is why prevention of waste generation has the highest priority in the EU waste hierarchy. After that comes re-use, recycling and energy recovery. The waste should in general be moved upwards in this hierarchy. New goods and products can be manufactured with the help of recycled materials, electricity and district heating can be produced from sorted combustible waste, and biogas and plant fertilizer can be obtained from sorted food waste. The city’s operations can, by working with this target, contribute to saving large amounts of energy and natural resources.

According to this target:

- The City’s committees and boards will in their procurements strive to always adopt a mindset that incorporates long-term sustainability and quality when purchasing goods and services. Demands can be put on, for example, goods being packaged in a way so as to generate as little waste as possible.

- Waste from the City’s operations will be so free of pollutants that the best possible material recycling, energy recovery and nutrient recycling is possible. Products and fixtures that are no longer used in operations will to the largest extent possible be put to re-use. Facilities for sorting out packaging (plastic, paper, glass and metal) and recyclable paper (newspapers and paper) will be available at all of the City’s operations.

- All of the City’s operations will, when practically possible and environmentally motivated, sort their food waste for biological treatment aimed at biogas production and nutrient recycling. Needless discarded food can be minimized with the help of careful planning and logistics.

This target involves all committees and boards.

Follow-up responsibility: The Traffic and Waste Management Committee is responsible for the follow-up of the target in cooperation with the municipality administration.

5.2 The proportion of incorrectly recycled hazardous waste will be reduced

Hazardous waste has a special status when it comes to waste management. Its management is strictly regulated and it is of the utmost importance that this waste is collected and disposed of in a correct manner, separate from other waste in order to avoid harm to the environment and people’s health. As with other waste, however, preventing the generation of hazardous waste is what society should strive for.

The City supplies a combination of stationary and mobile collection systems for dangerous household waste. Households have the opportunity to dispose of their hazardous waste to any of the City’s environmental stations, recycling centres, contracted paint dealers, housing unit collection or to the mobile environmental station.

The City’s operations will contract certified transport companies and receiving facilities to take care of its hazardous waste. The term ‘hazardous waste’ in this interim target is defined in the Waste Act and also encompasses batteries and electric waste, although this comes with a producer responsibility.

According to this target:

- The proportion of hazardous waste will continue to decline from today’s already low level.

- The Traffic and Waste Management Committee and other affected committees and boards will inform about what constitutes hazardous waste, how it is sorted and where it should be returned.

- The City’s operations will have an overview of which hazardous waste is produced through its own activities, which quantities are involved and ensure that handling, removal and disposal are carried out correctly.

- The opportunity for the city’s inhabitants to dispose of their hazardous waste to one of the City’s systems will be increased.

- Knowledge among Stockholmers regarding the City’s system for collecting hazardous waste and how these are used will increase.

This target involves all committees and boards.
Follow-up responsibility: The Traffic and Waste Management Committee is responsible for the follow-up of the target in cooperation with the Environment and Health Committee.

5.3 Waste from housing and industry in the city will decrease and unavoidable waste will be put to good use

The best way to reduce the amount of waste is to make sure that it is never generated. Therefore, prevention has top priority in the EU waste hierarchy. Second comes re-use, material recycling and energy recovery. The waste should generally speaking flow upwards in this hierarchy.

New goods and products can be manufactured using recycled material, electricity and district heating can be produced from sorted combustible waste, and biogas and plant nutrients can be made from sorted food waste.

The interim target encompasses household waste and its equivalents from activities, meaning that the municipality is responsible for collecting the waste.

According to this target:

- The City can through information activities and in its own work inspire and motivate to a change in behaviour, aimed at minimizing waste quantities and directing towards increased sorting.
- Differentiated waste fees, weight-based fees and similar actions can inspire and motivate to changed behaviour aimed at minimizing waste quantities and directing towards increased sorting.
- The proportion of collected food waste will increase. The City will strive to reach the national collection target for food waste, which at the moment is 35%.
- The City will strive to increase biogas production in the region.
- The City can participate in creating better conditions for re-use of goods and products.
- Waste from the City’s inhabitants will be so free from pollutants so as to enable the best possible material recycling, energy recovery and nutrient recycling. The proportion of newspapers, packaging and other recyclable material is reduced in garbage bags and bulky waste.

This target involves the Traffic and Waste Management Committee, the Environment and Health Committee and Stockholm Vatten AB.

Follow-up responsibility: The Traffic and Waste Management Committee is responsible for the follow-up of the target in cooperation with the Environment and Health Committee and Stockholm Vatten AB.
People spend a large part of their lives indoors. Therefore, a good indoor environment is of great importance to the health and comfort of people. The standard of housing in Stockholm ranks as very high in international comparisons, and the city’s residential areas are generally perceived as pleasant. In spite of this, health issues related to the indoor environment is a problem in many buildings. The City’s efforts to reduce health-related risk factors and improve the indoor environment of its citizens must continue. More particularly, this concerns noise levels in housing and public premises, bad air quality, indoor temperatures and high levels of radon. It is also important that the ambitious energy efficiency work that is currently underway in the city is carried out in a way that does not impair the indoor environment.

**Targets for the City of Stockholm**

The following interim targets will be met during the programme period:

6.1 The indoor environment will improve

6.2 Indoor radon levels will be reduced

6.3 Indoor noise levels will be reduced
More about the indoor environment

We spend the greater part of our time indoors, and most of it in our homes. The environment in homes, schools and workplaces is therefore important to our health and well-being. Despite improved standards and good levels of comfort in our homes, health problems arising from the indoor environment are still a problem in some buildings.

All municipal committees and boards that own, build, manage and use premises are directly responsible for ensuring that the indoor environment in their own premises is healthy, as it is here that they can have the most significant effect on the environment. The City of Stockholm can also exercise a certain degree of influence on non-municipal players, among other things during new construction, through development agreements and in city planning activities. Furthermore, the City can exercise influence by way of its supervision of property owners and business operators. When steps are taken to improve the indoor environment, solutions should be sought that contribute to a better indoor environment and reduced or unchanged energy consumption.

There are many risk factors in the indoor environment that can affect health, such as noise, radon, poor air exchange/ventilation, damp and mould problems, the presence of particles and allergens and other air pollutants, light pollution and inadequate thermic comfort. One risk factor can be the inappropriate use of the home or premises. A number of factors can also combine to cause cumulative effects. Actions to minimize risks primarily benefit especially sensitive people such as allergy sufferers and children, since there is a correlation between low indoor air quality and hypersensitivity problems.

Health problems related to shortcomings in the indoor environment include asthma, allergies, symptoms affecting the eyes, nose and skin, as well as fatigue or headache.

‘Community noise’ (i.e. the general hubbub of the city) and high noise levels are the environmental problems that affect the greatest number of people in Sweden. Life in a noisy environment can lead to fatigue, concentration problems, headaches, blood pressure irregularities and stress reactions. Long-term exposure to high radon levels increases the risk of lung cancer. Second only to smoking, radon is the most common cause of lung cancer.

Research shows clear correlations between certain risk factors and health effects. However, the correlations are complex. Despite the complexity, scientists agree that if we reduce the risk factors in the indoor environment, we will experience fewer adverse health effects related to our buildings.

Stockholm City’s goal of a Healthy Indoor Environment links in to the national EQOs of ‘A Good Built Environment’, ‘A Non-Toxic Environment’ and ‘A Safe Radiation Environment’.

Interim targets

6.1 The indoor environment will improve

This interim target aims to improve the indoor environment of Stockholm’s schools, preschools, assisted-living facilities and housing, and to reduce the negative human health effects of the indoor environment.

The City can influence its own real estate. Municipal housing companies and the City’s real estate company for preschools, schools and assisted-living facilities should take the lead and be able to show examples of good, preventive work for a good indoor environment.

According to this target:

- Property owners in Stockholm must work actively with risk factors that can adversely affect the indoor environment
- Health problems caused by the indoor environment will decrease
- Air quality, ventilation and the thermic climate indoors will be improved
- Damages to buildings caused by damp will be prevented and cleaned up

This target involves primarily the City’s committees, boards and property-owning companies.

Follow-up responsibility: The Environment and Health Committee is responsible for the follow-up of the target in cooperation with Skolfastigheter i
6. A healthy indoor environment

Stockholm AB, Micasa, Svenska Bostäder, AB Familjebostäder, AB Stockholmshem, the Real Estate Committee and the City Planning Committee.

6.2 Indoor radon levels will be reduced

Approximately 10 percent of Sweden’s population is thought to be exposed to radon levels in their houses that exceed 200 Bq/m$^3$. The national Environmental Quality Standard ‘A Good Built Environment’ specifies two sub-targets for radon: radon levels in dwellings are to be lower than 200 Bq/m$^3$ by 2020 and radon levels in schools and preschools are to be lower than 200 Bq/m$^3$ by 2010.”

According to this target:

- 75 percent of multifamily housing developments will be controlled for radon
- Radon levels in municipally-owned multifamily houses and office buildings will be lower than 200 Bq/m$^3$ of air
- Radon levels in all schools, preschools and assisted-living facilities will be lower than 200 Bq/m$^3$ of air
- The proportion of multifamily housing developments that meet the norm for radon will be increased

This target primarily involves the Environment and Health Committee, the Real Estate Committee, AB Svenska Bostäder, AB Familjebostäder, AB Stockholmshem, SISAB och Micasa.

Follow-up responsibility: The Environment and Health Committee is responsible for the follow-up of the target

6.3 Indoor noise levels will be reduced

Community noise and high noise levels are the environmental problems that affect the greatest number of people, children as well as adults. Noise has a direct affect on humans, both directly and indirectly. Indirect effects are sleep disorders, fluctuations in blood pressure, stress, concentration and learning problems. The disturbances come from traffic (road, rail and air traffic, where road traffic is clearly dominant), installations, larger or small commercial operations and neighbours. Noise disturbances from traffic is dealt with in target 1 Environmentally efficient transports.

According to this target:

- Sound sources in the city need to become quieter. Some sources can directly be affected, such as ventilation units in the City’s housing properties, the City’s schools/preschools and facilities for assisted living operations. Indirectly, the City can affect sound sources through directed supervision of schools/preschools, assisted-living facilities, housing companies, businesses and restaurants, etc.
- Housing developments will be built with adequate sound ratings so that indoor noise disturbances are reduced for the residents
- The sound environment in schools and preschools will become better

This target involves the Environment and Health Committee, the Traffic and Waste Management Committee, the City Planning Committee and the City’s own housing companies.

Follow-up responsibility: The Environment and Health Committee is responsible for the follow-up of the target, in consultation with the Traffic and Waste Management Committee and the City Planning Committee
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Indicators for follow-up

This appendix provides proposals for a number of follow-up indicators. In case the indicator has been used in previous environmental programs, the data presented shows the preceding years. (Provided by the Environment and Health Committee)

1. Environmentally efficient transport

1.1 The environmental burden of City transports and travel will be reduced

1.1.1 Proportion of City committees and boards that have adopted a travel policy for environmentally friendly work-related travel

Description: A travel policy that states how work-related travel will be possible in an environmentally correct way is a fundamental document for directing travel in the right direction. The indicator is related to 1.1.2 which measures adherence to the travel policy. It shows the proportion of the City’s committees and boards that have adopted a travel policy. Target value: 100% in 2012.

Data source: (needs to be provided)

Measuring method: Baseline (needs to be provided)

1.1.2 Proportion of activities with an established program for environmentally efficient journeys and transports

Description: Activities annually report if the have an established systematic way of working to reduce the environmental burden of the City’s own transports and travels.

Data source:

Measuring method: Baseline (needs to be provided)

1.2 The City’s own vehicles will be environmentally certified and powered by alternative fuels, and the proportion of green vehicles in the transport services procured by the City will be increased

1.2.1 The proportion of environmental vehicles in the City’s vehicle fleet

Description: The indicator shows the proportion of green vehicles in the municipal fleet of vehicles, including leased vehicles. A high proportion of green vehicles in the City’s car fleet leads to reductions in emissions of greenhouse gases and other airborne emissions that affect the environment.

Data source: The Environment and Health Administration collects data from Leaseplan, St Eriks försäkring and the City Executive Board, as well as from committees and boards

Measuring method:

1.2.2 Proportion of alternative fuel in the City’s green cars

Description: The indicator shows to which extent (calculated as percent of volume) the City’s green cars have used alternative fuel E85 or biogas. Only cars that can use both alternative fuel and fossil fuel participate in the compilation.

Data source: The Environment and Health Administration collects data from Leaseplan as well as from committees and boards

Measuring method:

1.2.3 Green-car proportion of City vehicle purchases

Description: The indicator shows how large a part of the cars that the City has purchased during the year have been green cars. Emergency vehicles and
special-purpose vehicles are exempt. The large majority of cars purchased during 2010 have been green cars. The green-car proportion among new cars is 99 percent, but non-green car purchases are still being made, which is why the indicator is important.

Data source: The Environment and Health Administration collects data from Leaseplan as well as from committees and boards

Measuring method:

1.2.4 Proportion of the City’s procured transports that are environmentally certified

Description: The indicator shows the proportion of the City’s procured transports (light and heavy vehicles) that are environmentally certified. Emergency vehicles and special-purpose vehicles are exempt.

Data source: The Environment and Health Administration

Measuring method:

1.3 Environmental quality norms for air will be met across the city and climate affects from traffic will be reduced

1.3.1 Number of days of above-norm levels of nitrogen oxide in the air

Description: Nitrogen oxide is hazardous to inhale. This indicator shows the number of days when the daily average level for nitrogen oxide (NO₂) exceeds 60 µg/m³. To meet the environmental quality standard, the average cannot be exceeded during more than 7 days per year.

Data source: The Environment and Health Administration

Measuring method:

1.3.2 Number of days of above-norm levels for PM₁₀ in the air

Description: The projected figure shows the number of days when the level of particulates (PM₁₀) has exceeded the norm value 50 µg/m³, at street-level checkpoints. To meet the environmental quality standard, levels may not be exceeded during more than 35 days per year. The particulates are hazardous to people’s health.

Data source: The Environment and Health Administration

Measuring method:

1.3.3 Proportion of drivers using studded tyres

Description: Measurements of studded-tyre proportions on private cars have been performed since 2004/2005. Data has been gathered through regular sound observations. The values refer to mid-winter values, in other words when all drivers have changed to winter tyres. The levels of inhalable particulates, PM₁₀, consist to a large degree of wear particles. Wear is primarily caused by studded tyres tearing up the asphalt. The particulates can irritate airways. Studded tyres also contribute to noise.

Data source: The Environment and Health Administration

Measuring method:

1.3.4 Proportion of studded tyres in the City’s vehicle fleet

Description: The proportion of the City’s vehicles that use studded tyres

Data source: Reported by administrations and companies to ILS web

Measuring method: The City’s administrations and companies shall report figures regarding studded tyres to ILS. When measuring the proportion of studded tyres, committees and boards should also gather data to report the proportion of low-noise tyres.

1.4 Pedestrian and bicycle travel shall be increased

1.4.1 Number of bicycle passages

Description: Registrations of the number of bicycle passages in the inner city of Stockholm have been carried out continuously during the last 30 years. This indicator shows the change over time in the number of bicyclists who pass the fixed measuring points. An increase in the number of bicyclists passing the measuring points gives an indication about whether or not the City has been successful in its efforts to increase bicycle traffic.

Data source: The bicycle counts of the Traffic and Waste Management Committee
Measuring method: Measuring bicycle traffic in the inner city cordon, the city cordon, the Saltsjö-Mälardalen cordon and on a number of main streets. Since a few years back, measurements are also carried out at certain selected sites in the inner city. Cyclists are counted manually during a shorter period and weather and other factors can affect the result, which is why a yearly updated five-year value (the average during the last five-year period) is used for comparisons over time. Bicycle passages are also measured at a number of fixed counting stations. These register the flow of cyclists during the entire year, 24 hours a day.

1.4.2 Proportion of Stockholmers who walk or bike to work.

Description: The indicator shows the proportion of Stockholmers who say that they most often or always walk or bike to work or school. The result from the survey shows large differences between city districts. The suburbs in general have a low proportion of walkers and bikers, while the inner city has high proportions. The potential to increase the walking and cycling proportion is high for the entire city.

Data source: Environment and environmental habits in Stockholm, the Environment and Health Committee

Measuring method: Survey conducted at three-year intervals

1.4.3 Number of kilometres biking distance

Description: The indicator shows the number of kilometres of bicycle roads, bicycle paths and bicycle lanes in the City of Stockholm.

Data source: The Traffic and Waste Management Committee

Measuring method: A bicycle road is free of other traffic or has a protective zone of at least tree metres from roads for cars. A bicycle path is a road or part of road which is designated for bicycle traffic and traffic with class-II mopeds. A bicycle lane is a designated street lane that through markings has been set aside for cyclists and traffic with class-II mopeds. Mixed traffic, where bicycle traffic shares a road with motorized vehicles, is not included in the indicator. Baseline: 762 kilometres (2011).

1.5 The proportion of public transport will be increased

1.5.1 The proportion of journeys by public transport

Description: The indicator shows the competetiveness of public transport compared to journeys by car. The measurements are carried out in the direction towards the city centre at 6.00-9.00 a.m. across the inner-city cordon which runs from the tolls and at the regional centre cordon (Stockholm, Solna and Sundbyberg municipalities). By showing how many journeys are made by public transport compared to car traffic, a percentage for all mechanized travel can be calculated. According to the measurements of SL (Stockholm Public Transport), public transport handles 76 % of mechanized trips across the inner city cordon and 43 % of trips across the regional centre cordon.

Data source: SL

Measuring method:

1.5.2 Proportion of public transport users

Description: The indicator shows the proportion of Stockholmers who in the City’s environmental survey said that they always or most often take public transport to work/school. The indicator is followed up by the Citizen/environment survey. In the 2007 version of the survey, 59 % said that they always or most often take public transport to work/school during the main part of the trip. The measurement is carried out continuously in the survey, which is a good way of spotting changes as a complement to SL:s mechanical measurements.

Data source: Environment and environmental habits in Stockholm, the Environment and Health Committee

Measuring method: Survey conducted at three-year intervals
1.6 At least 50 percent of new private cars should be green cars. Ten percent of all new registrations of heavy trucks should be environmentally certified. Sales of renewable fuels should amount to 16 percent of total fuel sales

1.6.1 Proportion of new car sales in Stockholm County that are green cars
Description: The indicator shows the proportion of new cars sold in Stockholm County that are green cars. Statistics of the proportion of green cars in new car sales shows a change in the composition of the vehicle fleet.
Data source: The Environment and Health Administration, Green Cars in Stockholm.
Compilation based on data from the Road Traffic Registry and sector statistics from Bilsweden.
Measuring method:

1.6.2 Renewable fuels as a proportion of total amount of fuel in Stockholm County
Description: The indicator shows sales of renewable fuel in Stockholm County compared to the amount of fossil fuel sold. Many green cars can be powered by fossil fuels, which means that fuel statistics need to be reviewed in relation to green car sales.
Measuring method:

1.6.3 Number of green cars in Stockholm traffic
Description: The indicator shows the number of cars in Stockholm County that are registered as green cars in the Road Traffic Registry. The number of greens cars in Stockholm traffic is increasing and it is important to observe this change over time.
Data source: The Environment and Health Administration, Green Cars in Stockholm.

1.6.4 Proportion of petrol stations offering renewable fuels
Description: The indicator shows the proportion of petrol stations within Stockholm city limits that sell renewable fuels. Today it is possible to fill up with renewable fuels at 60 out of 67 petrol stations in the city of Stockholm. Making renewable fuels available at all petrol stations is a priority.
Data source: The Environment and Health Administration
Measuring method:

1.6.5 Proportion of green cars that pass across the congestion tax cordon
Description: Passages across the congestion tax cordon are registered on weekdays (except Saturdays) between 6.00 a.m. and 7.00 p.m.
Data source: Swedish Transport Agency
Measuring method:

1.7 Reduction of outdoor traffic noise

1.7.1 Annual average for the noise level in Observatorielunden
Description: The indicator shows changes in road traffic noise over time. It gives an indication of how the total outdoor noise situation in the city is changing. The noise measured in Observatorielunden gives a picture of the background noise in the city. The noise level reflects how the city’s outdoor noise, or the general noise, is changed over time.
Data source: SLB, Environment and Health Administration
Measuring method:

1.7.2 Annual average of noise level on Sveavägen
Description: The indicator shows changes in road traffic noise over time. It gives an indication of how
the total outdoor noise situation in the city is changing.

Data source: SLB, Environment and Health Administration

2. Goods and Buildings Free of Dangerous Substances

2.1 Reduction of substances hazardous to health and the environment in procured goods

2.1.1 Proportion of procurements of goods and services (excluding building materials) where demands were set to exclude dangerous substances

Description: The indicator measures the questionnaire on City procurements where criteria from the Swedish Environmental Management Council or an equivalent organisation have been used or where demands have been set for substances in fact box 1, as well as substances listed on SIN and in the PRIO database should be avoided.

Data source: Reported by administrations and companies to the ILS web, the City’s joint follow-up system

Measuring method: The indicator is arrived at by calculating the quotient of the number of procurements made along the above lines and the total number of procurements. The Services Committee is responsible for central procurements. Other data are extracted manually by administrations and companies.

2.2 Emissions from hazardous substances from buildings and facilities will be reduced

2.2.1 Proportion of procurements for building and renovation where demands have been set to exclude dangerous substances

Description: The indicator measures the questionnaire on City procurements where demands have been set to fulfil the criteria listed in connection with interim target 2.

Data source: Reported by the City Development Committee to the ILS web

Measuring method: The Development Committee is responsible for maintaining and developing the City’s land holdings. Developers and real estate owners who are designated land shall have a system and routines to ensure that chosen building materials fulfil the set demands, and are documented. The indicator aims to follow up that such demands have been made by way of land designations and development agreements.

The projected figures measure the quotient of designations and agreements, respectively, where demands have been set and the total number of designations and agreements, respectively. The mentioned demands are those that were specified in connection with interim target 2.

Data source: Reported by the City Development Committee to the ILS web

Measuring method:
2.2.3 Proportion of followed-up building and construction contractors who fulfil the City’s demands concerning control of dangerous substances in goods.

Description: The projected figures measure the results for the contractors where a procuring administration/company has carried out follow-ups by using building materials, and meet the City’s procurement demands concerning goods containing dangerous substances. The follow-ups should primarily be carried out at building sites and encompass both controls of the contractors’ goods declarations, and random samples of goods used at the work sites.

Data source: Reported by affected administrations and companies to ILS web.

Measuring method: The indicator is arrived at by calculating the quotient between approved followed-up contractors and the total number of followed-up contractors. The proportion of followed-up contractors should make up at least 10% of the number of procured contractors. The indicator is extracted manually by all administrations and companies that procure above-mentioned contractors.

2.3 Proportion of City purchases of ecological foodstuffs should be at least 25 percent

2.3.1 Proportion of purchased organic foodstuffs in the city in Swedish kronor (SEK) of the total value of purchased meals and foodstuffs

Description: Organic food is defined as food that meets the criteria, according to EU regulation 834/2007 regarding organic production and labelling of organic products. Certifications that meet the above requirements are, for example, the EU leaf, KRAV, MSC and Demeter. Within the City of Stockholm, it is primarily preschools, schools, social activities and homes for the elderly who buy in foodstuffs. The proportion is estimated with a base in the total cost.

Data source: Reports from administrations and companies via Agresso to ILS web, the City’s joint system for follow-ups.

Measuring method: To the data collected from Agresso (base account 6442 organic foodstuffs) should be added a measuring method for tender-procured meals.

Today, the purchaser demands statistics (once or several times each year) from the meal provider in order to, among other things, control the proportion of purchased and served organic foodstuffs in accordance with the demands that have been set in the procurement. This proportion, stated by the supplier, is not accounted for in the base account for organic foodstuffs. Instead, it is included into the total cost for the tender and should according to the City’s instructions be accounted for on account class 464 which pertains to purchases of support activities and support tenders.

The indicator does not include representation expenses.

2.4 The spread of dangerous substances from households, commerce, building and other actors in Stockholm will be reduced

2.4.1 Metals in sludge

Description: Proportion of five chosen metals that show sinking or unchanged levels in sludge. The metals referred to are lead, cadmium, copper, mercury, silver and zinc. The indicator is a gauge of how well all the targets under target area 2 are followed, except the one on organic foodstuffs.

Data source: Stockholm Vatten

Measuring method: Measured results from the wastewater treatment plants at Henriksdal and Bromma are weighted. Running three-year averages are compared.

2.4.2 Organic elements in sludge

Description: The proportion of 11 selected organic substances that show sinking or unchanged levels in sludge. The substances are DEHP, DIDP, DINP, nonylphenol, PAH, PCB, PBDE, PFOS, PFOA, TBT and triclosan. The indicator is an estimate of how well all goals under interim target 2 are followed, except the one on organic foodstuffs.

Data source: Stockholm Vatten

Measuring method: Measuring results from the wastewater treatment plants at Henriksdal and Bromma are weighted. Running three-year averages are compared. Initially, running three-year averages are not available since not all substances
have been measured during four or more years. This means that the initial value cannot be ideally arrived at. An evaluation of the choice of substances should be carried out later in the programme period, for possible adjustments of which substances should be included.

2.5 Proportion of environmentally certified buildings will be increased

2.5.1 Proportion of environmentally certified buildings.

Description: The City Planning Committee is charged with establishing a follow-up measurement from the interim targets description. The follow-up measurement should be balanced with concerned committees and boards.

Data source:

Measuring method:

3. Sustainable energy use

3.1 The City will through energy efficiency measures reduce energy use in its own operations by at least 10 percent.

3.1.1 Energy use per m²/year in the City’s committees and boards

Description: The City receives accumulated statistics regarding the amount of purchased energy.

Data source: Committees and companies that buy energy, including property electricity but excluding operating electricity, specified in the City’s financial system.

Measuring method: The quotient between purchased energy divided into heating, warm tapwater and property electricity and the number of square meters according to LOA, BOA or BRA.

3.2 Procured electricity in the City’s own operations should meet the demands for environmental certification.

3.2.1 Electricity use per m²/year in the City’s committees and boards.

Description: The City is provided with a joint account of overall electricity use.

Data source: Committees and boards should input their total amount of purchased electricity.

Measuring method: The quotient between the total amount of purchased electricity and the number of square meters according to LOA, BOA or BRA.

3.2.2 Amount of green electricity

Description: Proportion of electricity that meets the requirements of the Swedish Environmental Management Council, level 2-3.

Data source: Procurement agreements

Measuring method: Number of kWh purchased electricity that meets the requirements, divided by the total number of purchased kWh of electricity.

3.3 Regarding land designation, the City should demand that energy use be a maximum of 55 kWh/m².

3.3.1 Proportion of newly built houses that live up to the demand for energy use to be no higher than 55 kWh/m².

Description:

Data source: The City Development Office gathers the statistics every year.

Measuring method: Energy use is estimated by the developer during the project stage according to Sveby’s method (includes how one with sector support calculates heating, warm tapwater and property electricity). In electrically heated houses, according to the definition by the Swedish National
Board of Housing, Building and Planning, a factor 2 should be used for the weighting of the property electricity. The Development Committee gathers calculations from developers in connection with the development agreement and meet annually.

3.4 The City’s buildings should be made energy efficient in connection with large rebuilding projects.

3.4.1 Proportion square-meter area which is made energy efficient in connection with a very large rebuilding.

Description: Provided by the City Executive Board.

Data source: The respective property owner will provide the numbers manually and enter them into ILS web.

Measuring method: The number of rebuilt square meters is divided by the property owners’ total number of square meters. The property owner himself chooses the appropriate surfaces areas. (BOA+LOA for the housing companies. SISAB, Micasa and the City Real Estate Committee choose their own).

3.4.2 Proportion square-meter area which is made energy efficient in connection with a large rebuilding

Description:

The indicator measures the number of rebuilt square meters at a budget cost of at least:

- 18,000 kronor/m² excluding VAT for housing and leads to the reduction of the object’s energy use to less than the BBR:s new-production norm.
- 15,000 kronor/m² excluding VAT for seating arrangements, (2,000 kronor/m² for ventilation projects) and which leads to the reduction of the object’s energy use to less than the BBR:s new-production norm.

Data source: The concerned property owners provide data manually and enter them into ILS web.

3.5 The city will strive to reduce the emission of greenhouse gases to a level no higher than 3.0 tonnes of CO₂e per Stockholmer.

3.5.1 Emissions of greenhouse gases (CO₂e) per Stockholmer

Description: Emissions of CO₂e within the geographical boundaries of Stockholm. The Environment and Health Administration annually monitors the City’s emissions of greenhouse gases regarding carbon dioxide, methane and laughing gas (nitrous oxide) from heating, electricity use and transports.

Data source: The Environment and Health Committee collects data

Measuring method: The CO₂e estimate is arrived at by way of the modell that has been chosen by the Environment and Health Committee.

3.5.2 Emissions of greenhouse gases from traffic

Description: Emissions of greenhouse gases from fossil fuels and biofuels from all sectors are annually calculated by the Air Quality Management Association. Through this projected figure, emissions are monitored for traffic on roads, at sea and in the air, as well as from construction machinery and trackbound public transport. Carbon dioxide contributes to an increase in the greenhouse effect on a global level.

Data source: The Environment and Health Administration, Statistics Sweden

Measuring method: Measurement data are gathered from Statistics Sweden and from the Stockholm-Uppsala County Air Quality Management Association.

4. Sustainable use of land and water
4.1 Land and water areas of particular importance for biodiversity will be protected and developed

4.1.1 Utilised surface of particular importance for biodiversity

Description: Number of square metres utilised annually for surfaces of particular importance for biodiversity

Data source: Statistics for production of residential housing.
Registry of the City Planning Committee.
GIS analysis of the spread of areas of particular importance, the Environment and Health Committee

Measuring method: Finished new production for the year is studied against a map of the structure that is of particular importance for biodiversity. The importance of every utilised surface for the function of the structure is judged. The target should be 0 square metres, but in the balance among planning interests, even areas of particular importance for biodiversity may need to be utilised.

4.1.2 Number of naturally occurring bird species in built-up environments

Description: Number of bird species that occur naturally in built-up and densely populated areas.

Data source: The national database Artportalen and Artarken, the species data archive of Stockholm, the Environment and Health Administration.

Measuring method: A method was developed in 2011 together with the city’s trial, led by the Environment and Health Administration, of the Singapore Index on Cities Biodiversity (CBI).

4.1.3 The number of naturally occurring species – for example vascular plants, birds, butterflies

Description: The number of naturally occurring species among selected species groups, for example vascular plants, birds and butterflies

Data source: The national database Artportalen and Artarken, Stockholm’s species data archive, the Environment and Health Administration.

Measuring method: A method was developed in 2011 together with the city’s trial, led by the Environment and Health Administration, of the Singapore Index on Cities Biodiversity (CBI).

4.1.4 Proportion protected natural land of total area

Description: The proportion of protected natural land.

Data source: Decisions regarding protected areas, the City Planning Administration

Measuring method: Data are gathered with the help of the reported area in each decision regarding area protection.

4.2 Green and water areas that are particularly attractive for recreation will be protected and developed

4.2.1 Proportion of inhabitants who are content with their access to parks and natural areas in their city district

Description: The satisfaction of inhabitants is an indication of a well-functioning green structure, but is not sufficient as the sole indicator since satisfaction depends so heavily on expectations.

Data source: Environment and environmental habits in Stockholm, the Environment Administration

Measuring method: Survey conducted at three-year intervals

4.2.2 Proportion of inhabitants who are satisfied with their access to beaches in their city district

Description: Proportion of inhabitants who are satisfied with their access to beaches in their city district

Data source: Environment and environmental habits in Stockholm, the Environment Administration

Measuring method: Survey conducted at three-year intervals
4.2.3 Proportion of Stockholmers who have access to a park or natural area within 300 metres of their homes

Description: With the help of GIS analysis, the walking distance from each residential address to the nearest ‘green oasis’ on the sociotope map can be measured. Barriers in the shape of major roads are also included in the analysis. The indicator can then be calculated with the help of population statistics.

Data source: The sociotope map, population statistics
Measuring method:

4.2.4 Proportion of Stockholmers who spend time in a park or natural area near their home more than once a week during the summer months (six months)

Description: From a public health perspective, it is positive if existing green areas are used regularly by the inhabitants. It is also a measure of the quality of the areas.

Data source: Environment and environmental habits in Stockholm, the Environment Administration
Measuring method: Survey conducted at three-year intervals

4.3 Intrusion into other green and water areas should be minimized and compensated for

4.3.1 The proportion of projects that claim land with ecological and recreative values that are green compensated

Description: The indicator shows the proportion of projects (%) where ecological compensation measures have been taken in connection with claims to land with values for biodiversity.

Data source: The City Development Administration
Measuring method:

4.3.2 Proportion of projects that claim land with ecological values that are compensated with other ecological values

Description: The indicator shows the proportion of projects (%) where ecological compensation measures have been taken in connection with claims to land with values for biodiversity.

Data source: The City Development Administration
Measuring method:

4.4 When changes are made to land and water areas, these will be shaped with future climate change in mind

4.4.1 Proportion of permeable surface

Description: Percentage permeable surface of total surface. Shows how large a part of total surface is available for climate-balancing effects, in particular flow equalization and postponement of precipitation and high-intensity flows. New indicator for a new interim target regarding climate adjustment.

Data source: The Environment Administration (biotope map)
Measuring method: A method was developed in 2011 together with the city’s trial, led by the Environment and Health Administration, of the Singapore Index on Cities Biodiversity (CBI).

4.4.2 Proportion of area with canopy cover

Description: Percentage area with canopy cover of total area. Shows the proportion of total area which is available for climate-balancing effects, primarily cooling and shading in the case of heatwaves.

Data source: The Environment Administration (biotope map)
Measuring method: A method was developed in 2011 together with the city’s trial, led by the Environment and Health Administration, of the Singapore Index on Cities Biodiversity (CBI).

4.4.3 Proportion of detail plans where consideration has been paid to climate changes

Description: 

Data source:
4.5 Maintenance of green and water areas will strengthen biodiversity and recreative qualities

4.5.1 Area of land per year where clearing and rejuvenation efforts have been carried out regarding deciduous trees

Description: Only rejuvenation efforts for conservation purposes. Much land with thick deciduous trees has deteriorated as a result of overgrowth. Apart from clearing away of competing trees from thick deciduous trees, it is also important to favor re-growth of future generations of thick deciduous trees.

Data source: City District Administrations, the City Development Administration, the City Traffic and Waste Management Administration

Measuring method: Equal to indicator 1.1.3 of the Water Programme. Rolling three-year averages are used to even out differences between the years, owing to variations in weather conditions, for example precipitation. Tests are taken in August.

4.6 Water quality in lakes and waterways will be improved

4.6.1 Total level of phosphorus in lakes

Description: The indicator shows the proportion of lakes where the total level of phosphorus has declined since the 1990s. The proportion of lakes with reduced or unchanged phosphorus levels. The overall level of phosphorus will be reduced in Stockholm’s lakes, or remain unchanged in the lakes that today have low or moderate levels.

Data source: Stockholm Vatten AB

Measuring method: Equal to indicator 1.1.3 of the Water Programme.

4.6.2 Visibility depth in lakes

Description: Proportion of lakes with increased or unchanged visibility depth. The visibility depth will be increased in Stockholm’s lakes, or remain unchanged in lakes with satisfactory visibility depth. Three shallow, small lakes/ponds on Djurgården are exempt.

Data source: Stockholm Vatten AB

Measuring method: Visibility depth is gauged in connection with the regular sampling carried out by Stockholm Vatten each August.

4.6.3 Proportion heavily trafficked road surface with runoff

Description: Proportion of heavily trafficked road surface with stormwater runoff. The proportion will be increased from the current 45 %. Shows the proportion of heavily trafficked road surfaces (roads and highways), starting in the 1990s, where traffic intensity exceeds 15,000 vehicles per day and where traffic stormwater is purified locally (i.e. is not led contaminated to lakes, waterways or waste treatment plants).

Data source: Stockholm Vatten AB

Measuring method: Equal to indicator 1.1.1. of the Water Programme

4.6.4 Proportion of properties with reduced stormwater fee

Description: Proportion of properties that have received a reduction of the stormwater fee. This proportion should increase. Shows the proportion of properties where stormwater is managed locally through postponement, self-purification and infiltration, thereby not feeding and burdening the pipeline network. Stormwater from hardened surfaces can affect water quality in Stockholm’s lakes and waterways.

Data source: Stockholm Vatten AB

Measuring method: New indicator in the environment programme

4.6.5 Overflow of wastewater

Description: Amount of overflow wastewater, estimated as a rolling ten-year average. Overflow should not exceed 325,000 m³/year and should not occur in a way that causes inconvenience. Overflow means that a mix of stormwater and contaminated wastewater is released from the pipeline network. Overflow of wastewater can affect the water quality of Stockholm’s lakes and waterways.

Data source: Stockholm Vatten AB

Measuring method: Equal to indicator 1.1.2 of the environment programme
4.6.6 Swimming water quality in Stockholm beaches

Description: Proportion of swimming water tests without remarks at Stockholm’s beaches will be increased. The value for 2009 and 2010 was 87%, which is the highest value ever. Shows the overall proportion of water tests taken at Stockholm’s beaches that are classified as suitable without remarks, on a three-point scale according to the Swedish Institute for Communicable Disease Control. Data are presented for the period 1996-2010.

Data source: The Environment and Health Administration

Measuring method: Equal to indicator 2.2.1 in the Water Programme.

5. Environmentally efficient waste management

5.1 Waste from the City’s operations will be reduced, and unavoidable waste will be put to good use

5.1.1 Amount of household waste, excluding bulky waste, resulting from the City's operations

Description: Household waste is defined as waste from households and comparable waste, according to the definition of the Swedish Environmental Code (SFS 1998:808). Excluding bulky waste.

Data source: Compilation from the Traffic and Waste Management Administration.

Measuring method: Measurable and relevant.

5.1.2 Amount of household waste, excluding bulky waste, for City operations per user

Description: Household waste is defined as waste from households and comparable waste, according to the definition of the Swedish Environmental Code (SFS 1998:808). Excluding bulky waste. Users are defined as staff within each activity as well as preschool children/residents/visitors, etc for each activity. For example, staff and visitors for a bathing house and preschool children for a daycare centre.

Data source: ILS and a compilation from the Traffic and Waste Management Administration.

Measuring method: Measurable and relevant. Takes into consideration that activities can be added or removed during the course of the programme.

5.1.3 Amount of food waste from the City's operations

Description: Food waste is defined as collected food waste which is used for biogas production with possible nutrient recycling to agriculture.

Data source: ILS and a compilation from the Traffic and Waste Management Administration.

Measuring method: Measurable and relevant. A figure of how large quantities are actually collected and turned into biogas and fertilizer. If activities in the future become responsible for managing their own food waste, this will be presented on the ILS web, if not by the Traffic and Waste Management Administration.

5.1.4 Amount of food waste from the City’s activities per user

Description: Food waste is defined as collected food waste which is used for biogas production with possible nutrient recycling to agriculture. Users are defined as staff within each activity as well as preschool children/residents/visitors, etc for each activity. For example, staff and visitors for a bathing house and preschool children for a daycare centre.

Data source: ILS and a compilation from the Traffic and Waste Management Administration.

Measuring method: Measurable and relevant. A relative figure of how efficient collection efforts are, in other words a figure that is not affected by the number of activities increasing or decreasing. If activities in the future become responsible for managing their own food waste, this will be presented on the ILS web, if not by the Traffic and Waste Management Administration.
5.1.5 Proportion of the City’s operations that collect food waste

Description: Food waste is defined as collected food waste which is used for biogas production with possible nutrient recycling to agriculture. The indicator is measured in part for those activities that prepare and/or serve food and in part for other activities.

Data source: ILS and a compilation from the Traffic and Waste Management Administration.

Measuring method: The earlier indicator for large-scale catering and large canteens only have statistics from one instant in 2009. Therefore okay to switch to indicator that covers more activities. Most attention should be paid to results from activities that prepare and/or serve food. If activities in the future become responsible for managing their own food waste, this will be presented on the ILS web, if not by the Traffic and Waste Management Administration.

5.1.6 Proportion of the City’s activities that sort packaging and recyclable paper.

Description: Proportion of activities with access to sorting of all fractions of packaging (glass, metal, plastic and paper) and recyclable paper (newspapers and paper).

Data source: ILS, data are input by each activity.

Measuring method: Measurable and relevant. Legally mandated.

5.2 Proportion of hazardous waste which is incorrectly sorted shall be reduced

5.2.1 Proportion of hazardous waste in the garbage bag and bulky waste

Description: The indicator is presented separately for the garbage bag and for bulky waste. The indicator is based on and for bulky waste. When it comes to bulky waste results from sampling analyses for the garbage bag, it is in this case based on analyses of the fractions of rest waste and combustible waste from the City’s recycling stations and bulky waste collected from bulky waste disposal units.

Presented separately for the fractions hazardous waste, batteries and electrical waste.

Data source: Compilation from the Traffic and Waste Management Administration. Based on sampling analyses.

Measuring method: Overall indicator with a long monitoring timescale (since 1998 for the garbage bag). Measurable and relevant. This indicator presents hazardous waste that the City is responsible for collecting, as well as hazardous waste that falls under the producer responsibility but still has to be taken care of by the City when it ends up in household waste. Regular sampling analyses, however, are only carried out on the waste in the garbage bag and currently only once every three years. It would be desirable with more frequent intervals, for example every second year in some form. When it comes to the bulky waste, it is harder to perform relevant sampling analyses. Furthermore, most of these bulky waste fractions are post-sorted or controlled at the receiving stations for this material, which offers a certain possibility to discover and sort out the incorrectly sorted hazardous waste there. However, sampling analysis of bulky waste should be performed at least once during the programme period, for example after three or four years. Most attention should be paid to the results for the garbage bag.

5.2.2 Amount of collected hazardous waste, excluding batteries and electrical waste, per Stockholmer

Description: Hazardous waste according to the definition in the Swedish Waste Code.

Data source: Compilation from the Traffic and Waste Management Administration

Measuring method: In order to meet the demands of, for example, the EU directive for electronic waste (2002/96/EC) and for other statistical follow-up, real amounts of collected material, divided by inhabitants, should be measured. See chapter 2.1 above regarding regulations, etcetera. However, the choice of indicator for these measurements may not appear completely logical, but the actual figures can be of interest for, among other things, international and national comparisons and other statistics.

5.2.3 Amount of collected batteries and electrical waste per Stockholmer

Description: Batteries and electrical waste with producer responsibility.

Data source: Compilation from the Traffic and Waste Management Administration and the recycling industry.
Measuring method: In order to meet the demands of, for example, the EU directive for electronic waste (2002/96/EC) and for other statistical follow-up, real amounts of collected material, divided by inhabitants, should be measured. See chapter 2.1 above regarding regulations, etcetera. However, the choice of indicator for these measurements may not appear completely logical, but the actual figures can be of interest for, among other things, international and national comparisons and other statistics.

5.2.4 **Proportion of households in Stockholm that sort out hazardous waste**

Description: Proportion of households in Stockholm that, according to themselves, sort out hazardous waste. Survey.

Data source: Compilation from the Traffic and Waste Management Administration, based on the User survey which is carried out in connection with the sampling analysis, currently every third year. Can be complemented by the survey Environment and environmental habits in Stockholm, which currently is carried out every third year by the Environment and Health Administration – timed not to clash with the Traffic and Waste Management Administration’s User survey.

Measuring method: Measurable and relevant. History since 2002. Desirable to have tighter intervals. Preferably every second year, in connection with sampling analyses. In the survey question, some examples of hazardous waste should be given in order to reduce the risk of idea confusion.

5.2.5 **Accessibility of system for collection of hazardous waste**

Description: Experienced accessibility from a user perspective. Survey.

Data source: Compilation from the Traffic and Waste Management Administration, based on the User survey which is carried out in connection with the sampling analysis, currently every third year. Can be complemented by the survey Environment and environmental habits in Stockholm, which currently is carried out every third year by the Environment and Health Administration – timed not to clash with the Traffic and Waste Management Administration’s User survey.

Measurement method: Measurable and relevant. Desirable to have tighter intervals. Preferably every second year, in connection with sampling analyses.

The question can be formulated and presented as what proportion of inhabitants experience that it is easy to dispose of their hazardous waste in the City’s collection system.

The Traffic and Waste Management Administration will also develop its own follow-up indicators for the actual accessibility of the systems. For example the number of stops that the mobile environmental station makes per inhabitant and year, the number of collection points per inhabitant and similar comparison numbers to be able to relate the systems to other ways in which the city is changing. These figures can then be compared to this indicator for experienced accessibility. A big difference between experienced and actual accessibility can indicate a lack in information or that the systems are not seen as user friendly.

5.3 **Waste from residents and business operators in the city will decrease and unavoidable waste will be put to good use**

5.3.1 **Amount of household waste from Stockholmers**

Description: Amount of household waste per inhabitant and year. In this amount is included the garbage bag and bulky waste from recycling stations and bulky waste collection points. Presented for the fractions household waste (and comparable waste from operations) and bulky waste from households.

Data source: Compilation from the Traffic and Waste Management Administration.


5.3.2 **Amount of recyclable material (packaging, recyclable paper and food waste) in the garbage bag. Proportion of recyclable material (packaging, recyclable paper and food waste) in the garbage bag**

Description: Measured and presented for the different partial fractions packaging, recyclable paper and food waste. Based on sampling analyses.

Data source: Compilation from the Traffic and Waste Management Administration. Based on sampling analyses.
Measuring method: Measurable and relevant. Regular sampling analyses however, are currently only carried out once every three years. It would be desirable with more frequent intervals, for example every second year in some form.

5.3.3 **Amount of collected food waste**
Description: Food waste is defined as collected food waste which is used for biogas production with possible nutrient recycling to agriculture. Divided into households and operations.
Data source: Compilation from the Traffic and Waste Management Administration.
Measuring method: Measurable and relevant. Households produce roughly 2/3 of available food waste.

5.3.4 **Proportion of households that collect food waste**
Description: Food waste is defined as collected food waste which is used for biogas production with possible nutrient recycling to agriculture.
Data source: Compilation from the Traffic and Waste Management Administration, based on subscriptions and survey answers from the User survey and the Citizens survey. Future answers may also come from kitchen waste disposal units from SVAB, although at the moment there is no mandatory sign-up procedure.
Measuring method: Measurable and relevant. Households produce roughly 2/3 of available food waste. One method for gathering figures regarding the proportion of collected food waste through kitchen waste disposal units will be developed.

5.3.5 **Proportion of re-used material from the City’s collection system for bulky waste**
Description: Re-used material that had otherwise been disposed of in regular collection systems for bulky waste. This means material collected for re-use at any of the city’s recycling centers or similar collection points.
Data source: Compilation from the Traffic and Waste Management Administration.
Measuring method: Re-use is the second most desirable end for waste in the EU waste hierarchy, after preventing waste production. There are many ways for the city’s inhabitants to recycle materials and products, for example giving things away to friends, selling them online, selling at flea markets, arranging for pickup from, or delivery to, a non-profit organisation. All this recycling is hard or impossible to measure. This indicator measures what is re-used of what the inhabitants themselves have decided not to deal with in one of the above manners. In other words, this is material and products that people apparently do not find it worth the trouble to try to sell or actively re-use in some way. This means that these products are seen more or less as waste from the perspective of the user. So, this indicator is interesting in that it shows what is re-used among the things that inhabitants transport to the city’s recycling stations and re-use centres or similar collection system for bulky waste. Currently, in April 2011, there is an opportunity to re-use furniture through a procured contractor at the recycling station in Bromma. This system will most likely be implemented at all city recycling stations. The system might also end up including other items than furniture, for example bicycles. There are also thoughts and intentions regarding creating an re-use centre in Norra Djurgårdsstaden.

5.3.6 **Proportion of recycled waste from the City’s collection system for bulky waste**
Description: Proportion of material from the bulky waste that is material recycled, meaning it is not re-used but made useful in a better way through energy recycling.
Data source: Compilation from the Traffic and Waste Management Administration. This indicator shows what is being material recycled from bulky waste. By for example material recycling of plaster instead of dealing with it as a rest fraction, it is made useful in a better way, meaning that a step is taken up the EU waste hierarchy.

5.3.7 **Accessibility of system for collection of waste (garbage bag, bulky waste, food waste, packaging and recyclable paper)**
Description: Experienced accessibility, from a user perspective, to collection of waste (garbage bag, bulky waste, food waste, packaging and recyclable paper). Divided into all these fractions. Survey
Data source: Compilation from the Traffic and Waste Management Administration, based on the User survey which is carried out in connection with the sampling analysis, currently every third year.
Can be complemented by the survey Environment and environmental habits in Stockholm, which currently is carried out every third year by the Environment and Health Administration – timed not to clash with the Traffic and Waste Management Administration’s User survey.

Measuring method: Measurable and relevant. Preferably every second year, in connection with sampling analyses. The question can be phrased as how large a proportion of the city’s inhabitants experience it as easy to dispose of their waste in the City’s collection system.

### 6. A healthy indoor environment

#### 6.1 The indoor environment will be improved

**6.1.1 Proportion of ventilation systems with approved obligatory ventilation controls (OVK) in schools, preschools, assisted-living facilities and housing**

Description: Controls the function of the ventilation system. No property owner in the City of Stockholm today has all ventilation systems ‘approved’.

Data source: Property owners provide the figures. Property Management Committee, SISAB; Micasa, municipal housing companies.

Measuring method: Definition of proportion estimate: The number of inspected systems not required to undertake an independent follow-up inspection (approved) divided by the total number of systems that are subject to inspection. Counting day is the last day of the year.

Systems with respites from the City Planning Committee to not carry out the inspection are counted as ‘systems required to follow up/not approved’ if there is activity on the premises. If there is no activity on the premises, systems that have not been given respites are not included at all.

Properties or systems with ongoing renovations that make it impossible to inspect the ventilation systems are not counted at all. This means they are neither included in the ‘total number of systems for inspection’ nor the ‘systems with demands for follow-up’.

#### 5.3.8 Sludge re-use in agriculture

Description: Phosphorus recycling from sewage sludge.

Data source: SVAB

Measuring method: Measurable and relevant. The City will meet the All Party Committee on Environmental Objectives’ proposed national environmental targets regarding nutrient recycling from sewage sludge. This means that at least 60 percent of phosphorus in sewage in the year 2015 will be utilised and recycled to productive land, at least half of which will be recycled to fields.

### 6.2 Indoor radon levels will be reduced

**6.2.1 Proportion of multi-unit housing developments in the city (overall) that have a radon level below the benchmark of 200 Bq/m³ of air**

Description: The indicator follows up on the target that radon levels in homes must be lower than 200 Bq/m³ by the year 2020, at the latest. The radon level refers to the annual average of the home. The indicator refers to multifamily housing developments with radon results registered in the radon registry of the Environment and Health Administration.

Data source: The Environment and Health Administration

Measuring method: The indicator refers to all multifamily housing developments within the City of Stockholm with radon results registered in the radon registry of the Environment and Health Administration, and that meet the benchmark value for radon. The properties should be approved for radon through measurements carried out along the methodology described by the Swedish Radiation Safety Authority for housing, and the annual average should be equal to or below 200 Bq/m³ of air.
Appendix 1 - indicators

Initial values: Of a total of 10,585 multifamily housing developments in the City of Stockholm, roughly 5,000 have been inspected for radon (47 percent). Out of these, 3,810 properties have completed inspections (36 percent), meaning that all of them reported radon levels below the benchmark (200 Bq/m$^3$).

6.2.2 Proportion of multi-unit housing developments in the municipal housing companies that have a radon level below the benchmark of 200 Bq/m$^3$ of air

Description: The indicator follows up on the target of radon levels in homes being lower than 200 Bq/m$^3$ by the year 2020, at the latest. Radon levels refer to the annual average of the home. The indicator refers to multifamily housing developments with radon results registered in the radon registry of the Environment and Health Administration.

Data source: The Environment and Health Administration

Measuring method: The indicator refers to all multifamily housing developments within the City of Stockholm with radon results registered in the radon registry of the Environment and Health Administration. The properties should be approved for radon through measurements carried out along the methodology described by the Swedish Radiation Safety Authority for housing, and the annual average should be equal to or below 200 Bq/m$^3$ of air. The indicator includes the proportion of Stockholmshem’s, Svenska Bostäder’s, Familjebostäder’s and Micasa’s property portfolios that meet the benchmark value for radon.

Initial values: Initial value 2010:
- Familjebostäder: 253 of 397 properties (64 percent)
- Svenska Bostäder: 414 of 591 properties (70 percent)
- Stockholmshem: 280 of 358 properties (78 percent)
- Micasa: 43 of 46 properties (93 percent)

6.2.3 Proportion of preschools and schools that have a radon level below 200 Bq/m$^3$

Description: Stockholm has not yet reached the national interim target that all preschools and schools in 2010 should have a radon level lower than 200 Bq/m$^3$ of air. The indicator refers to all preschools and schools in the City of Stockholm. There are around 300 elementary and secondary schools in the registry of the Environment and Health Administration. SISAB is the property owner for about 190 of them. There are an estimated 980 preschools in the registry of the Environment and Health Administration. SISAB is property owner and manager of around 400 of these.

Data source: The Environment and Health Administration, SISAB

Measuring method: The target refers to radon levels when the ventilation system is running and there are people on the premises. The fundamental thing is to inspect the school’s annual average by means of a long-term measurement. If the annual average exceeds 200 Bq/m$^3$, a continuous short-term measurement should be carried out to ensure that the radon level does not exceed the benchmark during daytime hours when students are present on the premises. If the occasional room in for example a basement has elevated levels of radon, one step can be to not use that room for school activities. A radon level of 200 Bq/m$^3$ or below means that the benchmark has been met.

Initial values: The number of schools and preschools that have been inspected for radon (2011) is 227 and 802, respectively. Of these, 73 schools and 24 preschools had radon levels above the benchmark.

6.3 Indoor noise levels will be reduced

6.3.1 Proportion of those who have been exposed to noise levels in excess of 62 dBA facade who have benefitted from lowered traffic noise levels due to directed noise protection measures.

Description: Facade and window measurements are an indication that those who are exposed to noise receive a real improvement in their living environment. The measures help against all noise sources outside of the property.

The City of Stockholm has 2010 lowered the limit for noise protection measures from 65 dBA to 62 dBA facade.
Measurements that have been taken at individual homes and multi-unit properties on the initiative of the property owners themselves have been exempt.

Data source: Data are available at the Traffic and Waste Management Administration, Department for Non-Building Structures, Unit for Art Structures. Data regarding the number of people who will receive an improved indoor environment through erection of a noise screen or financial help with window improvements are kept at the unit. The information is updated annually and also reported to the Swedish Transport Administration.

Measuring method: Calculations on how many people who have achieved an acceptable sound level in properties that have received grants for improving windows compared to those exposed to noise. There is no initial value compiled at this time.

The indicator assumes that the Traffic and Waste Management Administration gathers and compiles data. The City Planning Committee needs to deliver information about the number of screens to be built in connection to new developments. The City Planning Committee keeps information about private noise screens.

6.3.2 Proportion of newly built properties in locations with noise disturbances resulting in better sound classification than sound class C

Description: In properties with better sound class than sound class C, residents will enjoy a better sound environment. The lowest requirement is sound class C, according to BBR building regulations issued by the Swedish National Board of Housing, Building and Planning.

Data source: Specifics about sound classification for new buildings can be found at the City Planning Administration, presented in construction permits. These figures are saved in each individual case and not in any register.

Measuring method: A suitable starting year must be chosen. The later the starting year, the larger the proportion of properties that have a sound class better than sound class C.

Sound classification in new properties can differ in several respects. For example, the property can have sound class A when it comes to sound isolation toward the street but sound class B for footstep sound levels.

The proportion of properties with sound class A or B in relation to all building permits registered since, for example, 2008.

Data exists, but there is currently no calculated initial value.

Assumes that the City Planning Administration compiles the data in individual building permits.
Appendix 2 – targets, regulations and facts

APPENDIX 2 – TARGETS, REGULATIONS AND FACTS

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1 Energy-efficient transport

Targets and regulations

International

The United Nations’ Climate Convention is a framework for measures to prevent climate change. The Kyoto Protocol is included in the framework.

Sweden has ratified the convention and the protocol.

In EU directive 2008/50/EG regarding air quality and cleaner air in Europe, air quality regulations from an earlier directive have been compiled and party renewed. The objective of the air quality directive is to prevent and reduce harmful health and environmental effects caused by air pollutants, maintain good air quality, streamline follow-up of air quality and improve access to information concerning air quality.

The Renewable Energies Directive (2009/28/EG) aims to promote energy from renewable energy sources up to the year 2020. In 2020, at the latest, 49 percent of Swedish gross energy use should be covered by renewable energy, according to the directive. When it comes to transports, the proportion should amount to at least 10 percent.

The Noise Directive 2002/49/EG concerning evaluation and management of environmental noise aims to coordinate noise efforts within the EU and should be a foundation for noise-reducing efforts, among them traffic noise. European Parliament regulations EG 443/2009 and EU 510/2011 aim to set emissions norms for new private cars and new light commercial vehicles, and is a part of a coordinated strategy to reduce carbon dioxide emissions from light vehicles.

National

The national long-term target is to achieve a vehicle fleet independent of fossil fuel by the year 2030. Sweden’s transport sector will by 2020 achieve a level of 10 percent renewable energy and 20 percent energy efficiency gains. Meanwhile, Sweden will reduce its overall emissions of climate
Appendix 2 – targets, regulations and facts

gases by 40 percent by the year 2020, compared to the baseline year of 1990.

Sweden’s air quality regulation (2010:477) regarding outside air aims to protect the health of humans and the environment. Municipalities are responsible for monitoring air quality for most environmental quality standards and to make accessible current information regarding pollution levels.

According to regulation 2004:675 on environmental noise, there is an obligation to, through mapping of noise and establishing an action plan, strive for environmental noise to not damage people’s health. This is an environmental quality standard according to the Environmental Code.

**Facts**

**NO**: Is a generic name for nitrous oxides (NO and NO₂) that are a result of combustion at high temperatures. The dominant source is road traffic. High levels of NO₂ are harmful to human health because the gases cause irritated airways. Emissions of NO₂ also contribute to acidification of land and water, eutrophication and to the creation of ground-level ozone.

Levels of NO₂ have during a long time shown a declining trend thanks to cleaner vehicles. The decrease has halted lately, most likely due to the increase in the number of diesel-powered vehicles, which leads to larger emissions. In order to live up to the norm, measures are necessary to reduce city traffic in combination with reduced emissions from engines. The Environmental Quality Standard for nitrogen dioxide in the Environmental Code is 60 µg/m³ as a daily average, a level that may be exceeded no more than seven times per year.

**Particulate matter.** Inhalable particles often have a size of roughly 10 µm or less. The level of particles with these dimensions in each cubic metre of air is usually called PM₁₀ (Particulate Matter 10) and PM₂.₅.

Particles are created through low-quality combustion and wear from tyres, brakes and road surfaces. Exposure to particles can give rise to ailments of the airways, reduced lung function, deterioration of asthma and other lung diseases. Increased levels also increase mortality from heart and lung diseases, primarily among the elderly. The Environmental Quality Standard for PM₁₀ has been set to 50 µg/m³ as a daily average, a level that may be exceeded no more than 35 times per year.

Environmental Quality Standard and EU directives protecting human health are adhered to all across the city for benzene, bensoyrene, sulphur dioxide, lead, arsenic, cadmium, nickel and fine particles, PM₂.₅.

**Traffic noise.** Traffic noise can cause a number of health effects, of which sleep disorders are some of the most serious. Other effects include stress reactions, fatigue, irritation and blood pressure fluctuations.

The character of road traffic noise varies depending primarily on how many vehicles pass, the noise characteristics of the vehicles and the way they are driven. Higher speed, uphills, wet road surface, cold weather and use of studded tyres are examples of conditions that increase noise levels. Also the construction of roads can bring specific noise, for example the type of road surface material, impact noise from transition constructions for bridges, manhole covers, etc. Furthermore, the wind has a great significance for the direction in which the sound spreads.

In most cases, engine noise is dominant at low speeds, but from 40–50 km/h for private cars and 60–70 km/h for trucks, noise from tyres and road surface are more prominent. The character is also affected by the dampening of the sound between the vehicle and the place where it is heard. The benchmark value for outdoor traffic noise in existing built-up areas has been set to 65 dBA equivalent level.

**2 Goods and buildings free of dangerous substances**

**Targets and regulations**

**International**

REACH. The joint European Union Regulation on chemicals and their safe use, REACH (1907/2006) which came into effect in all of the EU in 2007, deals mainly with chemical products but also includes certain rules concerning chemicals in products.

Today, producers are responsible for providing knowledge and disseminating information regarding health and environmental effects of their
products. Chemicals produced in quantities larger than 1,000 tonnes per year must be registered with the new European Chemicals Agency in Helsinki and for certain particularly dangerous substances, permission for use must be obtained. Substances that can become the object of such a permission procedure are listed in the so-called Candidate list, which is continuously updated.

The substances that appear on the Candidate list are classified as carcinogenic, mutagenic or reproducitively disruptive (CMR) or persistent, bio-accumulative and toxic (PBT), or very persistent and very bio-accumulative (vPvB), or have other serious properties, for example hormone-disrupting effects.

Read more about REACH at www.kemi.se.

The EU Water Framework Directive (2000/60/EG). In December 2009 the Swedish Water Authorities set forth environmental quality standards for water. There are standards for ecological status and chemical status. For certain particularly dangerous substances, there are limits that the City must adhere to.

National and regional

Regulations in this sphere are to be found, among other places, in Chapter 2, paragraph 4 of Sweden’s Environmental Code, which deals with the product choice principle, and in Chapter 14 on Chemical products and biotechnical organisms, as well as in the requirements for demolition plans in the Plan and Building Act. The County Administrative Board of Stockholm is assigned to coordinate regional efforts to achieve the national environmental quality goals.

Facts

Description of Stockholm’s five highest priorities when it comes to substances harmful to the environment and health:

Alkylphenols/alkylphenol ethoxylates, for example Nonylphenol/Nonylphenol ethoxylates. Nonylphenol damages reproduction in waterborne organisms. Its use is banned in the EU but the substances are present in imported textiles, concrete, cosmetics and products for cleaning and hygiene.

Anti-bacterial substances is a group consisting of a wide array of substances, for example triclosan which can cause long-term effects in the water environment and is suspected of contributing to bacteria becoming resistant to antibiotics. Triclosan is used in toothpaste, deodorants, sports shoes and textiles. Silver ions are very toxic to fish and other waterborne organisms. They are used in the health care industry and in textiles, refrigerators, cosmetics and hygiene products.

Brominated flame retardants, for example PBDE (polybrominated diphenyl ethers) and HBCDD (hexabromocyclododecane). Many of these are hard to degrade, bioaccumulative, reproduction-disrupting and toxic to waterborne organisms. Used in textiles, furniture, plastics and in electronic products.

Phtalates such as DEHP, DINP and DIDP. Some phthalates are reproductively disruptive and are banned in all types of toys and child-care products. Used (or previously used) primarily as a softener in plastics and rubber but also as a solvent in perfumes and pesticides.

Polyfluorinated compounds, which include PFOS (perfluorooctanesulfonic acid) and PFOA (Perfluorooctanoic acid), are very hard to degrade and, among other things, reproductively disruptive for both humans and animals. Its uses include impregnation against water and dirt in clothes, shoes and furniture.

More information is available in the project report ‘Stockholm towards a non-toxic environment’. www.stockholm.se

Tools for establishing demands in a procurement:

- BASTA is the building sector’s own database and lists roughly 60,000 products that meet the standards concerning environmental and health hazards. It also includes suggestions to how demands can be framed in environmentally adapted building. See www.bastaonline.se.

- The Environmental Evaluation of Building Materials is the property owners’ equivalent of BASTA. It encompasses the same criteria regarding chemical contents as BASTA. Also includes a life-cycle analysis for goods and a database with project sites to document which building materials have been used in a building project. The system is used by a majority of large property owners in Stockholm, as well as by public property owners and big construction companies such as Locum, SL, Skanska, Peab and NCC.
The environmental certification system Miljöbyggnad (earlier Miljöklassad Byggnad) is a system for environmental certification of buildings, which is adapted to the demands of Swedish authorities and building regulations. It encompasses the areas Energy, Indoor environment and Materials and chemicals, and is applicable to both new and existing buildings regardless of size.

Environmental certification. Svanen, Bra miljöval, the EU leaf and EU Ecolabel. The criteria established within these environmental classification systems can be used as a support in procurements.

3. Sustainable energy use

Targets and regulations

International
At the meeting of the European Council in Brussels in 2007, the heads of state and government of the EU agreed on new climate targets. The agreement calls for a reduction of the EU’s greenhouse gas emissions by 30 % by the year 2020, provided that other industrialised countries pledge to comparable reductions. In anticipation of a global agreement, the Council established that the emissions of greenhouse gases should be reduced by at least 20 % by the year 2020, compared to 1990 levels. An extensive energy action plan was adopted for 2007-2009 with two binding targets – 20 % of the EU’s energy consumption should come from renewable sources by 2020 and the proportion of biofuel should in the same year reach 10 %. A goal was also established to become 20 % more energy efficient by 2020.

The EU Commission has passed a new energy directive which entails that houses built after 2020 should have an energy use near zero. For public buildings, the demand comes into effect already 2018. The directive also includes renovations and additions to existing houses.

National
Sweden has adopted the target of having a vehicle fleet independent of fossil fuel by 2030.

Targets for the Swedish climate and energy policy until 2020 is:

- that at least 50 percent of Swedish energy will be renewable
- that emissions of greenhouse gases in Sweden are reduced by 40 percent compared to the year 1990
- that energy efficiency is increased by 20 percent compared to the year 1990

4. Sustainable use of land and water

Targets and regulations

International
The Noise Directive 2002/49/EG
The EU framework for water (2002/60/EG) aims to safeguard and improve water environments throughout Europe. The Water Directive encompasses both surface water and groundwater.

The EU strategy for biodiversity (11978/11 – COR 1) is the EU’s most important instrument for reaching its new target of protecting biodiversity by 2020. The strategy aims to stop the loss of biodiversity and the destruction of ecosystem services in the EU by 2020, and to the largest extent possible restore them.
The EU strategy for sustainable use of natural resources (KOM (2005) 670) aims for a more efficient and more sustainable use of our natural resources through their entire life cycles.

The Birds Directive (79/09/EEC) encompasses all naturally occurring bird species of the member countries and aims to protect these. The Bird Directive means that the member countries must take measures and designate special protective areas for threatened bird species.

The regulation on environmental noise (SFS 2004:675)

The Habitats Directive (92/43/EEC) aims to protect natural habitats and threatened animal and plant species.

The Fish Directive (78/659/EEG) aims to protect and improve the quality of sweetwater so as to sustain fish stocks.

The Drinking Water Directive (98/83/EC) aims to secure the quality of drinking water so that it is free of microorganisms, parasites and substances harmful to human health. The directive establishes minimum demands for certain parameters that must be fulfilled within a certain time.

The Directive on Bathing Water Quality (2006/7/EG) aims to secure good bathing water quality at all EU beaches. Limits for good bathing water quality have been made more stringent and are measured on a four-degree scale. Results from bathing water measurements are published on the Internet. The directive also means that bathing water profiles for identification of possible sources of fecal contaminants shall be available for EU beaches.

National and regional

According to Chapter 3 of Sweden’s Environmental Code, land and water areas that are particularly sensitive from an ecological standpoint shall as far as possible be protected against actions that can harm the natural environment. This includes areas of importance for their natural, cultural and recreational values. The need for green areas in and near built-up areas shall be paid particular attention.

Areas that are of national interest because of their natural, cultural or recreational values shall be protected against actions that can harm the natural or cultural environment.

The Bird Directive and the Habitats Directive have been incorporated into the Swedish Environmental Code and in the regulations regarding area protection and species protection, respectively.

Fishing water is managed through the regulation on fish and mussels water (2001:544). The regulation contains environmental quality standards for different substances that can harm fish.

The EU Water Framework Directive has been incorporated into Swedish law through the Environmental Code, the Plan and Building Act, and the regulation on management of water environment quality (SFS 2004:660). During 2009 the Swedish Water Authorities decided on environmental quality standards for ecological and chemical surface water status, as well as chemical and quantitative groundwater status. The quality demands for drinking water are decided by the National Food Agency and are based on the EU Drinking Water Directive.

Facts

Areas of particular ecological importance. Many factors, among them an area’s size and/or location, make up the basis for the assessment of what is a particularly important area. An area of particular ecological importance may for example be very species-rich, or an important breeding area for a species that requires special consideration according to the Species Protection Ordinance (SFS 2007:845). It can also be a more species-poor area whose strategic location in the landscape makes it particularly important from an ecological standpoint.

Ecosystem services is a term for all the benefits or ‘services’ that man derives from nature and that all people depend on. The ecosystem services often require a variant of an ecosystem, species and genes, in other words biodiversity. It is possible to divide all ecosystem services into four categories: Provisioning services, for example water, food and wood.

Regulating services, for example air and water purification, water flows, erosion barriers, the pollination of bees, the greenery’s regulation of the microclimate and pest control.

Cultural services, such as recreation, pedagogy, appreciation of beauty.

Supporting services are about the fundamental functions of the ecosystems which constitute the basis for all other ecosystem services, for example photosynthesis and biochemical cycles.

Ecological function is a term used on many different levels (scales) in the landscape. It deals with one or more functions that a nature type, nature-type mosaic, species/species group, nature elements or locations in an ecosystem and/or in the
ecological infrastructure has. Certain functions are described as irreplaceable and unable to compensate for since it is impossible to recreate them at all, such as flat-rock areas, or impossible during a reasonable amount of time, such as large oaks.

Very hardened surfaces, such as city squares covered in concrete, are judged to lack any ecological function.

**Protected land.** The total area of the City of Stockholm amounts to barely 22,000 hectares, and more than half of this, 12,000 hectares, is green space. Out of this area, water areas make up around 2,800 hectares. The city has 4,016 hectares of protected land and water according to the definition of the Environmental Code, in the form of a national urban park, seven nature reserves and one culture reserve. Which areas are of particular interest for biodiversity is currently being mapped, and the work is expected to be finished during 2011. [UPPDATERING BEHÖVS!]

**The Singapore Index on Cities’ Biodiversity (CBI)** is an international indexing system designed by a group of experts put together by the secretariat of the UN Convention on Biological Diversity and the National Parks Board of Singapore. Stockholm is one of many cities around the world testing the CBI.

**Particularly important structure.** The basis for the city’s biological diversity is the concise structure of vegetation- and water-covered surfaces, in other words Stockholm’s ecological infrastructure, which is the city’s network of habitats for a multitude of plants and animals. In this infrastructure there are areas that have particularly important functions for plant and animal life, and thereby strongly influence the conditions for biological diversity in the city. The network of these areas constitutes the particularly valuable structure, which in turn is affected by what is happening in the rest of the vegetation-covered and water-covered structure.

**Time spent in parks and nature areas.** Stockholmers have a broad interest for spending time in parks and nature areas. Almost 60 percent of them visit one of the city’s parks or nature areas daily or several times a week. A large majority of Stockholmer’s, around 90 percent, state that they are content with the access to parks and nature in their own city district. This goes for both outer areas and the inner city. Methods for ascertaining which areas are especially attractive for recreation are available in the city’s parks programme, which will be further developed during 2011 and 2012.

**Lakes and waterways.** There are 15 lakes within the City of Stockholm, ten of which lie completely within the boundaries of the municipality. Parts of Lake Mälaren and Saltsjön and their bays, parts of two larger waterways and a few smaller waterways, plus a larger wetland area, all lie within the municipality. Lake Mälaren has a significant impact on the water quality of the inner archipelago thanks to its large efflux of nutritive salt. The water quality of Lake Mälaren has not improved during the last few years, the amount of nutritive salt has instead increased during the last five years. The water quality of Saltsjön has improved after the expansion of regional treatment plans. The last few years, the trend has been toward increasing nitrogen levels and reduced visibility depth at the innermost measuring points close to Stockholm. This is a sign of influence from Lake Mälaren, internal stress and that the influx of nutrient-rich water is having an increasing importance for the water quality of the inner archipelago.

The trend for the lakes and waterways of Stockholm is varied, but for a majority it is slightly positive when it comes to improved water quality. The natural inertia of the water systems means that effects of completed actions are not immediately obvious and measurable. Continuous actions to reduce the stress on Lake Mälaren are necessary to improve water quality in the long run. Actions are also needed to improve nitrogen fixation at the regional treatment plants, maintenance and restoration measures for the lakes and waterways of Stockholm and flow equalization for catchment water, including stormwater.

**More information**

In the Stockholm park programme, the sociotope map, Stockholm’s Water Programme, the database for Stockholm’s biotope map, Artarken – the species data archive of Stockholm, Stockholm’s ecological sensitivity, the Habitat network and the Beach inventory has more information about the target area.

**Climate change**

A climate compilation for Stockholm County presents expected climate changes for the period up until the year 2100.

Annual average temperatures are expected to increase by, on average, around 4–6°C toward the end of the century with primarily warm winters as a result.
The change in annual average precipitation lies, on average, on an increase of 10 % to 30 % toward the end of the century. The largest increase in precipitation takes place during the winter months. The number of days with snow on the ground is expected to decrease by between 65 and 100 days and the maximum water content of the snow is calculated to decrease by roughly 70 % during the century.

Seasonal discharge variations are trending toward higher flows during autumn and winter, and lower spring floods. Summers may see an increased risk of drought and water shortages. The ground water situation is affected to a corresponding degree.

Analyses of extreme precipitation shows a large geographical spread. The average value for the change in intensive short-duration precipitation and extreme daily precipitation is around 20 % for the century. The estimated future 100-year flow is expected to decrease in most of the municipality’s waterways.

Based on current knowledge, a rise in sea water level is estimated at around 0.5 meters, after adjustment for land rise, toward the second half of the century and an increase in the most extreme sea levels can be expected.


5. Environmentally efficient waste management

Targets and regulations

International

The EU Waste Framework Directive (2008/98/EG) is of great importance to the Swedish waste rules. It governs large parts of the 15th chapter of the Environmental Code and the Waste Act. In 2008, it was decided that a new framework directive was needed. The new directive highlights the waste hierarchy as a priority order for legislation and policy in the waste area, which among other things means that waste primarily should be prevented.

The EU Waste Electric and Electrical Equipment Directive (2002/96/EC) establishes that a separate collection of electronics waste will be implemented with at least 4 kilos per inhabitant and year.

Within the EU there is a consensus on which waste types should be classified as dangerous. The objective is to create conditions within the EU for a similar and safe recycling of other waste. The EU’s rules regarding dangerous waste are incorporated into Swedish legislation, partly through the Waste Act.

National


Every municipality should have a sanitation ordinance. The sanitation ordinance should include a waste plan and regulations to govern the municipality’s waste management. The waste plan should include the municipality’s recommendations for reducing the amount and danger of waste.

The City will during the programme period be bound by the All Party Committee on Environmental Objectives’ proposal for environmental targets, stating that food waste should be reduced by 20 percent by 2015 compared to 2010.

The All Party Committee on Environmental Objectives also suggests a new national environmental target regarding collection and treatment of food waste. At least 40 percent of the food waste from households, canteens, supermarkets and restaurants in 2015 should be treated biologically so that plant nutrients and energy can be utilised.

Facts

Waste amounts and distribution. Sampling analyses show that roughly half of all household waste in ‘the garbage bag’ consists of food waste that could be treated biologically. After that, a fourth of the household waste consists of packaging and newspapers that really are covered by the producer responsibility and should be recycled via the collection system of FTI.

Targets regarding collection and recycling degrees will start to be incorporated in the new Waste Plan that is under production and becomes active in 2013.
6. A healthy indoor environment

Targets and regulations

International

The EU Programme of Community action in the field of public health (2008–2013) guides Sweden’s public health work.

The Noise Directive (2009/49/EG) regarding judgement and treatment of environmental noise (noise from roads, railways and air traffic, as well as industrial activities) aims to coordinate the noise work and be a foundation for efforts to reduce noise.

The EU Energy Performance in Buildings Directive (2002/91/EG) aims to reduce Europe’s dependence on imported energy, as well as to reduce CO₂ emissions. The introduction of energy declarations will promote a more efficient use of energy and a good indoor environment in buildings.

The WHO issued a recommendation in 2010 regarding lowering the benchmark value for radon from 1,000 to 100 becquerel per cubic metre (Bq/m³) of air.

National

The recurring national environmental health reports from the National Board of Health and Welfare aims to describe the environment’s affect on health. The environmental health reports act as decision support for authorities’ actions and priorities in their work reducing environment-related risk factors, and to promote overall public health.

The Environmental Code regulates the operator’s self-control in order to ensure a sound indoor environment, with among others features, the Environment and Health Committee as the supervising authority. The law demands regular, obligatory ventilation control (OVK) of the ventilation system.

Parliament has decided on a law regarding energy declarations where questions about energy use, ventilation and radon should be presented. The aim of the law is to promote efficient energy use and a good indoor environment in houses.

In the building rules of the Swedish National Board of Housing, Building and Planning (Boverket) the highest allowed radon level is set at 200 Bq/m³ in new houses. For existing older buildings, the National Board of Health and Welfare gives a benchmark value of 200 Bq/m³ for what can be seen as an inconvenience to people’s health.

In proposition (1996/97:53) Infrastructure direction for future transports, the Swedish parliament approved benchmark values for traffic noise that normally should not be exceeded in connection with new construction or considerable renovation of infrastructure (30 dBA) equivalent indoor noise level, and 45 dBA maximum level indoor at night. The benchmark values should guide, among other things, the physical planning and treatment of individual permission requests according to the Plan and Building Act. These benchmarks coincide with the benchmarks of the National Board of Health and Welfare for outdoor noise (SOSFS 2005:6) which apply to installation noise and other smaller-scale activities.

According to the regulation on environmental noise (2004:675), there is a responsibility to map noise and to establish an action plan with the goal of environmental noise not leading to harmful effects for human health. There is an environmental quality standard according to the Swedish Environmental Code – a so-called set point standard.

Facts

Radon. A noble gas that gives rise to ionising radiation. Radon is naturally occuring in the ground in large parts of Sweden and can penetrate into buildings through leaks in the foundation or basement. Radon can also seep from alum shale-based autoclaved lightweight concrete, which was used between 1929 and 1978. Radon does not smell, is invisible and has no taste, and it can only be detected through measurements. In Sweden, roughly 500 people annually contract radon-related lung cancer, which represents about 15 percent of all lung cancer cases.

The 3H project (Stockholms väg mot Hälsomässigt Hållbara Hus – Stockholm’s road to healthy, sustainable houses). The study was carried out in 2005 to provide a view of how indoor environments and health was experienced in the city’s multi-unit housing developments compared to the years 1991-1993 when the same survey was taken, but also to see how the change has played out in houses built during different time periods. The study shows how many houses have achieved the target that at least 80 percent of residents should be content with the
indoor climate when it comes to thermic comfort, air quality, sound and light conditions (WHO).

The worst results concerning thermic comfort, odour and sound conditions was measured in flats built between the years 1965 and 1975. (Environment and environmental habits in Stockholm)

Every third year since 2001, the Environment and Health Committee carry out surveys with the intention of mapping Stockholmers’ attitudes, knowledge, behaviours and habits in the city, as well as to see how these have changed over time. The latest survey was carried out in October, 2010.