Stockholm
a sustainably growing city
Stockholm is known for its beauty and for its proximity to water. The City of Stockholm has been working determinedly on urban environment issues for a long time. In 2010 the European Commission designated Stockholm the first European Green Capital.

Stockholm is a fast-growing city. Space is needed for some 200,000 new Stockholmers by 2030. Planning is therefore already under way for around 30 major urban development projects and 100,000 new homes. This entails many challenges if the goal of being a long-term sustainable city is to be met.

The general development plan for Stockholm, entitled ‘The Walkable City’ describes how the city will grow and develop, connecting the inner and outer districts. Entire environmental districts are also emerging in Stockholm, such as Hammarby Sjöstad and Stockholm Royal Seaport, and they are inspiring city developers from around the world.

Stockholm invested in a metro system early on, and was one of the pioneers in introducing a congestion charge for road traffic in rush hours. Further measures are now needed to increase mobility and reduce impact on the climate, environment and residents’ health. One of these is a special focus on the bicycle as a means of transport.

Stockholm is primarily heated by district heating, which has dramatically reduced carbon dioxide emissions. The combined power and heating plants are fired with climate-neutral fuels such as biofuel and household waste. Stockholm’s goal is to be fossil-fuel free by 2050.
The green city

Stockholm is a green city. Parks and green areas are accessible and open to everybody and act as the city’s living room, and Stockholmers spend a lot of their spare time here.

City on water

In Stockholm it is possible to swim and fish in the city centre, and the water can be drunk straight from the tap. Thanks to an ecocycle-based approach, wastewater is converted into biogas, fertiliser and district heating.

e-Stockholm

Stockholm has a unique digital infrastructure which provides access to fixed and mobile broadband throughout the whole city. This benefits residents and businesses alike. The City of Stockholm offers residents more than 100 e-services in several different areas, and Kista Science City has developed into a world-leading innovation zone for wireless technology.

The citizens’ Stockholm

Stockholmers have good knowledge of and are committed to environmental issues. Dialogue with the people of Stockholm is a key issue in all types of projects. When new districts are planned and built, the methods for citizen participation are constantly being developed.

The Stockholm of tomorrow

Stockholm has progressed well towards its Vision 2030 of a sustainably growing world-class city, but many challenges remain. Stockholm therefore takes part in several international collaborations in order to have a say, share our solutions and learn from others.
1. In 2010 Stockholm was the first city to be designated European Green Capital. What has that meant for the city?

I am tremendously proud of the distinction, while it also carries a great responsibility for Stockholm to be a role model for others. The city’s strategy is to share our good examples and learn from the successful accomplishments of other cities. Our aim for Stockholm is to always be a role model, always a green capital.

2. Stockholm is a rapidly growing city. What is the greatest challenge?

As the population increases, we must decrease our burden on the environment. This places tough demands on intelligent systems for transport, energy use waste management, and more.

3. What does it entail to be a climate-smart city?

Making it easy to do the right thing – it should be simple for Stockholmers to be environmentally friendly. For this to be the case, we must use technology to create intelligent, efficient solutions. Our early initiatives in digital infrastructure is one good example of this. It has effects on the whole environment and makes it possible for Stockholmers who use convenient e-services for City authority matters.

4. What are the Stockholmers’ views of urban environment issues?

Stockholmers are very involved in environmental issues and take an active part in the development. Eight out of ten feel the City should place even higher demands on citizens to live in an environmentally friendly way, and they want it to be easy to choose environmentally friendly solutions. For many, being climate-smart is a natural part of a modern urban lifestyle.

5. Stockholm is usually snowy and cold for several months of the year. What kind of heating systems do you use?

We invested in district heating early on, which has led to a dramatic reduction in greenhouse gas emissions. District heating is primarily achieved using climate-neutral fuels such as biofuel and household waste.

6. Stockholm has ambitious environmental goals and aims to be fossil-fuel free by 2050. How will you achieve this?

You need the courage to set high goals for climate work. It is important to think long-term, to plan for energy-efficient development and infrastructure, and to cooperate towards the same goals.

7. How is Stockholm performing in international comparison?

The OECD is impressed that Stockholm successfully combines reduced CO2 emissions with economic growth and an increasing population expansion and we are at the forefront when it comes to green buildings.

8. What’s the best thing about Stockholm?

With its location between Lake Mälaren and the Baltic Sea, Stockholm has a unique environment. Few cities in the world can compete with Stockholm when it comes to uniting the vibrancy of a metropolis with clean air, clear water and green spaces.
Stockholm in brief
The city is built on 14 islands and the surrounding mainland, and is a link between Lake Mälaren and the Baltic Sea. Because of its geographical location, Stockholm has a climate of four distinct seasons, where you can swim in the sea during the summer and ski in the winter.

**A fast-growing city**
Stockholm is growing fast. The city’s population is currently 880,000, but by the mid-2020s that is expected to rise to one million – in a wider region of three million. This places tough demands on ambitious, systematic work on the urban environment.

**Cutting edge developments**
The City of Stockholm has been working determinedly on urban environment issues for a long time. Even back in the mid-20th century investments were initiated in efficient new solutions to create a modern city environment with a metro system, district heating and Essingeleden, a road circuit that directed traffic so that it didn’t have to go through the city.
The mid-1990s saw the first biogas bus, ideas for the environmental district Hammarby Sjöstad began to emerge, and several traffic routes were decked over. In the 2000s a city-wide open fibre-optic network was built, laying the foundation for high-speed broadband. Several major infrastructure projects are currently under way. The aim is to establish an efficient physical and digital infrastructure.

**Many challenges ahead**

Stockholm’s geographical conditions and rapid growth entail many challenges if the goal of being a long-term sustainable city is to be met. We need to continue to rationalise energy use and to find transport solutions that work as the population increases. It must be easy to travel by public transport, walk, and cycle all year round. We also need to consider how we can condense the city to make room for all the new city dwellers; we need to build a close-knit city both physically and socially. We must also safeguard the city’s proximity to nature and water, qualities that make an attractive living environment for Stockholmers and visitors alike.
Stockholm – facts & figures

Population: 880,000
Area: 209 km², of which 21 km² water
City built on 14 islands
40% is parks and green areas

A growing city

Up to 2030, 100,000 new homes will be built.

Stockholm is growing by two busloads of people a week.

80% of travellers in rush hour use public transport.

European Green Capital 2010

Stockholm's environmental work serves as a model for many other cities around the world, and in 2010 Stockholm was recognised by the European Commission as the first European Green Capital. The distinction considered a number of areas such as local transport, green areas, waste water treatment, biodiversity and environmental management.

European Green Capital 2010

1 million trees
7 nature reserves
1 cultural reserve
1 national city park (the world’s first)

29 official bathing spots
2,484 cleantech companies in the Stockholm region.
A growing city

Vision 2030 – a world-class Stockholm

Our vision aims to make Stockholm a world-class city by 2030 – a vibrant, humane, creative city where people are happy and can make their own life choices. All the City’s administrations and company boards have a remit to work towards this vision in their particular operations. This includes mapping their own environmental impact and describing how it will be reduced in a special action plan.
A lot is happening in Stockholm right now. There is a great sense of faith in the future and more and more people choose to raise a family here, or move here, from other parts of Sweden and from abroad.

The fact that a lot of people want to live in Stockholm is basically a good thing. However, it also places tough demands on the City of Stockholm as an authority to do everything we can to ensure that more housing is built and other services are established to meet the expectations and requirements of our citizens.

Many unique projects in progress
Around 30 major urban development projects are currently under way or being planned, from the completion of Hammarby Sjöstad to the development of brand new city districts such as Stockholm Royal Seaport, Hagastaden and Söderstaden. All in all we are planning for 100,000 new homes by 2030.

We will also have new transport connections like Citybanan, a new railway tunnel with two new stations to double the rail capacity through Stockholm, and Förbifart Stockholm, a new road.
circuit that will link regional centres in the north and south of Stockholm, as well as extended regional public transport such as a new cross-tramway. We are already planning for, and developing, the municipal services that will be needed in the years to come.

Our vision – a world-class city
Our vision aims to make Stockholm a world-class city by 2030 – a vibrant, humane, creative city where people live a fulfilling life and can make their own life choices. It is a vision that aims to challenge and inspire everyone who has a say in the development of the capital city of the future and the Stockholm-Mälaren region.

In the vision, Stockholm is a vibrant city environment with compact, functional developed areas. There are good communications to shopping and services, workplaces and the surrounding nature. Buildings and infrastructure are characterised by sustainable energy solutions and smart environmental design, and are adapted to future climate change. The city has clean lakes and watercourses, and plenty of parks that are both beautiful and safe.

Everything we do – from planning new residential areas to developing schools and elderly care – is based on our shared vision.

Environmental Programme sets the framework
All parts of the City organisation and all employees play an important role in the process of making the vision a reality. Achieving this requires tangible goals and continuous follow-up to ensure we are moving in the right direction.

The City’s Environmental Programme sets the framework for Stockholm’s governance and development. It formulates our overriding environmental goals.

The Environmental Programme for 2012-2015 is the eighth such programme, and it is based on the challenges of today. The starting point is that Stockholm is an attractive, growing city where people’s needs are met, in an environment characterised by long term sustainability.

Along with other political goals in the City’s budget, the environmental goals are broken down into clear, quantifiable interim goals for the City authority’s various activities. All the City’s committees, boards and administrations work towards indicators that are followed up annually. One important long-term goal for Stockholm is to be a fossil-fuel free city by 2050.

“I decided to study in Stockholm. Everyone speaks English here, and KTH is known for being one of the very best technical universities.”

Elena de Pablo Rodriguez, exchange student from Valencia, Spain, is studying Industrial Design at the Royal Institute of Technology/KTH in Stockholm.
Around 30 major urban development projects are currently under way.

Steering documents:
- Vision 2030
- Stockholm City Plan: A walkable city
- Environmental Programme 2012-2015

“Stockholm is a dynamic, relaxed and family-friendly place to live.”

Alexey Lapitsky, engineer at Spotify, moved with his family from Amsterdam to Stockholm because of the work. Alexey originates from Russia.
A city for walking
This is an extract from The Walkable City – Stockholm City Plan, a plan outlining the development of Stockholm. The general plan describes four urban development strategies which will result in a more close-knit urban environment and more attractive parks and green spaces. It focuses on the balance between making room for some 200,000 new Stockholmers by 2030, and developing the city’s existing qualities.

Stockholm was founded as far back as the 13th century. Several buildings from that time remain, alongside development from more recent centuries. In the past 150 years the city has gradually expanded outwards in circles – like annual rings of a tree – from the city centre and the traditional heart of the city, shifting from the grid streets typical of the central parts, to garden suburbs and the Million Programme areas of the outer districts.

An important part of the general plan is to develop new housing areas or brand new city
districts that link the inner and outer parts of the city together. Former industrial areas are being replaced by vibrant new city districts like Västra Kungsholmen, Hagastaden and Söderstaden.

Stockholm has many good examples of how it is possible to grow in a sustainable way. The environmental district Hammarby Sjöstad has long been a symbol of the future Stockholm. The City’s ambitious work to upgrade and improve the energy efficiency of public sector housing from the 1960s and 70s is also generating interest. Development of the next major environmental profile area, Stockholm Royal Seaport, has just begun. Here we will see a new city district emerge, while developing innovative solutions for green building and sustainable city life in partnership with trade and industry.

**Vision for the city centre**
Stockholm city centre is undergoing extensive development, to create a more vibrant environment round the clock. The effort is called Vision for the City Centre. In the vision, the city centre of 2030 is described as the central point of the walkable city. Important aspects of the vision are a more inviting waterfront, a safe and vibrant city centre, more homes, ground-level shops and attractive green areas.

**Outer city initiatives**
Several initiatives are also being carried out in the outer city districts. To make the whole of Stockholm attractive is a long-term process being carried out in dialogue with residents. Special resident dialogues have been carried out since 2008.

Since 2007, the City of Stockholm has been running a project to develop the north-western parts of the city through Vision Järva 2030. Järva is home to a broad diversity of cultures and people from all over the world. The work is carried out in close collaboration with trade and industry, clubs and societies, and not the least dedicated Stockholmers. It is a long-term investment in improving the standard of living in the area and creating positive social and economic development.

Vision Söderort was launched in 2010 and aims at making the area south of the city centre even more attractive and strengthening its positive qualities. Some of the focal points are improved and developed education, stronger trade and industry, as well as greater safety and security.

Since the beginning of 2012, the Hässelby-Vällingby district in the western parts of Stockholm has also worked towards a vision. Greater safety and security, better education and less unemployment are all factors of the future vision.
Hammarby Sjöstad – the first environmental city district

The first ideas for Stockholm’s biggest urban development project, Hammarby Sjöstad, were born back in 1990. The majority of the area has now been completed. Once complete, the district will have 11,000 homes for over 25,000 people.

In terms of city planning, Hammarby Sjöstad is characterised by a combination of closed neighbourhoods of a traditional stone city and modernist architecture. However, Swedish and foreign delegations visit the district year after year primarily for its ecocycle solution, known as the “Hammarby Model”. The model is based on a closed ecocycle where waste and energy use are minimised, and as much as possible is recycled.

**Technical environmental solutions involving residents**

Once Hammarby Sjöstad is complete, its residents will themselves produce half of the energy needed. This will be possible by harnessing the heat in the treated wastewater and the energy in the combustible waste that has been separated at source. There are also several solar power plants that meet the need for electricity for the buildings’ common areas.

Residents also produce their own biogas. This is formed in the water treatment plant as the sludge from the wastewater undergoes a digestion process. Roughly 900 apartments currently have biogas cookers, which has led to a 20 percent reduction in power consumption. One family ‘produces’ enough biogas covering their cooking needs.

The Hammarby model – a closed ecocycle for waste and energy.
Stockholm Royal Seaport – the next generation’s environmental district

On the Lilla Värtan strait, in the district that during the 20th century was primarily an industrial and port area, the first stage of Stockholm Royal Seaport is taking shape. Twelve thousand new homes and 35,000 workplaces are being planned, and will be combined with a modern port operation.

Here, the growing city will be united with the values that make Stockholm unique – its proximity to water and nature. Thanks to innovative environmental engineering and creative solutions, Stockholm Royal Seaport will be an environmental profile area with high ambitions. Well-developed public transport, infrastructure for electric vehicles, energy-efficient houses and waste disposal units in every household are just some of the factors that will minimise emissions and environmental impact.

A power supply system, also known as a “smart grid”, is being installed in houses equipped with local energy production. It includes installations of energy stores to support both customers and the supply system. The goal is that the district will be fossil-fuel free by 2030, as much as 20 years before the rest of the city.

“We have become more environmentally aware and think more about simple ways we can make changes and affect our consumption.”

Over two years, the Estmark Holmberg family will be testing the energy-smart home of the future in the Active House in Stockholm Royal Seaport. They can monitor and manage their electricity consumption via smartphones and a wall-mounted panel.
What is city quality?

Urbanisation is happening all over the world, and rapidly. For the first time ever, the majority of the world’s population live in towns and cities. There are all kinds of theories and hypotheses behind why this is, from Nobel Prize Laureate Paul Krugman’s description of the big city’s economies of scale, to sociologist Richard Florida’s theses on the creative class.

Surveys show that Stockholmers associate an attractive urban environment with aspects such as proximity to entertainment and cultural activities, access to water and park environments, and to streets and pedestrianised areas.

New city districts that connect the inner and outer parts of Stockholm.
Mobility strategy
Over the years, the City of Stockholm has taken a number of strategic initiatives that have been crucial both to mobility and to lower emission levels. The early investment in a metro system, which was later supplemented with other rail-bound transport, laid the foundation. Eight out of ten travellers today use public transport during rush hour. The introduction of a congestion charge has led to less congestion in the central city and lower emissions.

Already in the mid-1990s the City initiated a long-term investment in green cars and eco-friendly fuels. All inner city buses today run on biogas or ethanol today, and the aim is for all public transport to be fossil-fuel free by 2025.

New challenges
Population growth places high demands on continued investment. More and more people must start opting for walking, cycling and travelling by public transport. To achieve this the street environment needs to have more public
transport lanes, more cycle lanes, fewer parking spaces and a safer street environment for cyclists and pedestrians.

The City’s goal is for the transport system to be sustainable in the long term with a lower impact on the climate, environment and residents’ health. This will be achieved through new technology, efficient public transport, lower emissions from traffic, and various incentives to change transport behaviour. It should be easy to choose public, safe and environmentally efficient modes of transport.

**Mobility strategy**

At the beginning of 2013, the City of Stockholm presented a mobility strategy for how Stockholm will cope with the increased need for robust and sustainable transport due to the rise of the population. The three areas of focus in the strategy are:

1. **City planning:** dense, varied urban development that reduces the need to travel.
2. **Infrastructure planning:** major expansion of public transport and a road network that directs heavy traffic out of the city.
3. **Transport planning:** optimising the use of the existing infrastructure.

**Stockholm – a city for cycling all year round**

A pivotal element of the mobility strategy is a special focus on cycling. Stockholm has great potential to be a world-class city for cycling, where it is natural to cycle, where bicycles are viewed as natural parts of the transport system along with cars and public transport, all year round. Cycling is cheap, quick, reliable and environmentally friendly, and a growing proportion of Stockholmers’ work-related journeys are undertaken by bicycle. However, there is some congestion on the cycle path network, especially in the central city.

To further develop the cycle path network, the City of Stockholm has created a new cycling plan. The process focuses on two main areas: firstly on the infrastructure, ensuring that the cycle path network is cohesive, has a high level of capacity and mobility, and is safe and secure for all cyclists; and secondly on information and communication with travellers and other players such as companies, schools and authorities. One important starting point is that the higher the proportion of cycle traffic, the lower the environmental impact from the transport system overall and the higher the level of service/mobility.
More and more people must choose walking, cycling and travelling by public transport.

**Steering documents:**
- Urban Mobility Strategy for Stockholm 2030
- The Cycling Plan 2012
- Stockholm’s Parking Plan

**Congestion charge: new technology, new opportunities**

Stockholm has had a congestion charge since 2007, following a trial period and a referendum in which the people of Stockholm voted for its introduction. It applies to all vehicles that drive into or out of the central city on weekdays between 06:30 and 18:30. The technical solution is based on a convenient system of fully automated stations. The congestion charge has reduced traffic by around 20 percent, has improved mobility and journey-time reliability, and has reduced emissions. Despite an increased population and unchanged charges, traffic crossing the congestion charge cordon has not increased since 2007.
The clean city
Before district heating was introduced in Stockholm in the 1950s, it was up to the property owners themselves to heat people’s homes and workplaces. The common oil or coal-fired boilers generated fumes that were emitted into the air without being treated.

When district heating was introduced, emissions of greenhouse gases fell dramatically. Since 1990, per capita emissions of carbon dioxide in Stockholm have decreased by almost 40 percent. The single largest reduction is due partly to the transition from oil firing to district heating, but also to the transition to biofuels in district heating.

Today, district heating accounts for almost 80 percent of the total heating requirement in the city of Stockholm, and the network is progressively being expanded so as to further increase this proportion. Energy production in Stockholm takes place exclusively from Fortum’s combined power and heating plants. The plants are primarily fired with climate-neutral fuels such as biofuel and household waste.
From waste to heat
The Högdalen plant in southern Stockholm is one of Europe’s most modern waste sites, dealing with 700,000 tons of domestic and commercial waste a year. The waste is burnt and turned into heating and electricity. When power and heating are produced together, almost 90 percent of the fuel’s energy content can be utilised. The heat that is produced equates to heating for roughly 100,000 detached houses for a year. Emissions to air and water are minimised using sophisticated cleaning systems. Much of the combustion residue from the furnaces is used as filler.

As the Stockholm region grows, both the volume of household waste and the demand for power and heating increase. Planning is under way to start up a new combustion furnace which would increase capacity by a further 300,000 tonnes of waste a year.

Energy efficiency in the Million Programme
During the late 1960s and the first half of the 1970s, more than a million new homes were built in Sweden, called the Million Programme. On average these buildings use twice as much energy as the apartment blocks built nowadays. In addition to general apartment upgrades, the City of Stockholm is therefore also implementing a far-reaching programme of energy efficiency measures.

Solutions such as new heating units, extra insulation, solar panels and water-saving shower heads will reduce energy consumption by an average of 50 percent. There will also be better opportunities for individual households to separate their waste at source.

Plan for a fossil-fuel free Stockholm 2050
Plan for a fossil-fuel free Stockholm 2050 is a proposal report produced by the City of Stockholm in early 2013. The report states that it is possible by 2050 to achieve the goal of no energy of fossil origin being used in Stockholm (the exception being waste combustion of fossil plastics, aviation fuel and fuel for shipping).

Fossil-fuel free means that all fossil fuels should be replaced by a renewable fuel or a fossil-free energy source while at the same time make the fuel usage more energy efficient. However, achieving the goal requires extremely goal-conscious effort and for decisions supporting the goal to be made by the City, the state and individual players well in advance. Moreover, financial assets must be earmarked.

The goal has been divided into clear interim targets. Emissions can be reduced through long-term planning of energy-efficient development and infrastructure. Major climate gains can be achieved by reducing energy use in the City of Stockholm’s own operations and by procuring green electricity. The use of green electricity is driving the development of environmental adaptation of energy production throughout Europe, which means the measures could have a considerable effect.
Stockholm’s district heating is based on climate-neutral fuels.

Steering documents:
- Environmental Programme 2012-2015
- Stockholm’s Waste Management Plan 2013-2016

Great environmental gains
The upgrading of one of the City’s real estate companies’, Stockholmshem’s, apartments in Skärholmen, southern Stockholm, offers a reduction in environmental impact corresponding to 163 times round the world by car per year!

40% lower energy consumption
60 million litres less water consumption
53% reduction in carbon dioxide emissions
The green city
It is evident that Stockholm is a green city. The water, the parks and the untouched nature are all key features of the city.

To develop in a sustainable way it is important to nurture the city’s many green areas and their values even though the city grows.

Stockholmers’ green living room
Parks and green areas, streets, walking routes and squares are all examples of Stockholm’s public spaces – places that are accessible and open to everyone. The green environments can be seen as the city’s living room, where Stockholmers spend a lot of their spare time. People meet here, barbecue, watch theatre, take a coffee break, play ball or take their children to playgrounds.

From an international perspective, Stockholm’s green environments have a unique public character. They are open to everybody, round the clock. Stockholm’s green spaces bring together people of different ages, from different parts of the city and with different social and cultural backgrounds. Supporting human encounters in
the city is one way of counteracting segregation and isolation. As Stockholm develops, the great potential of the green environments to link city districts together and promote social integration will be used. New green meeting-places will also be created, with spaces for events, festivities and spontaneous encounters.

Cultivation and participation
Stockholmers are very fond of their parks and natural reserves. Recent years have seen a big increase in urban farming, both in Stockholm and internationally.

Alongside the city’s popular allotments and public crop gardens, there are new spaces where Stockholmers themselves have taken the initiative to do gardening – growing vegetables and plants – together – in courtyards, parks and green areas. These crop gardens become beautiful, looked after, safe and vibrant places that also offer a sense of community in the local area and clearly show ways of having a positive influence on the local environment.

The value of a rich flora and fauna
Stockholm’s structure, with wide green and blue wedges in towards the city and a fine-meshed network of interconnected parks, nature and water areas integrated with the city’s districts, creates great conditions for flora and fauna unique for a large city. Surveys show that a rich flora and fauna are highly valued among Stockholmers, and many schools and societies use the city’s varied green areas as outdoor classrooms.

According to the city’s environmental programme, land and water areas of particular significance to biodiversity, will be strengthened and developed. By nurturing and developing the ecological function in the green structure, the city aims at preserving its flora and fauna. Much of the city’s extensive nature areas are protected long-term in seven natural reserves, one cultural reserve and one national city park.

The ecosystems’ services
Stockholm sees a clear trend towards more intensive precipitation, a rising sea level, more heat waves and a longer vegetation period. The ecosystems that help to mitigate the effects of climate change are extremely important – from old hardwood forests and wetlands to mowed lawns and green roofs. They capture and clean surface water, reduce noise, improve the city’s air, support pollination and subdue rises in temperature.
The city’s parks and green areas – a living room for Stockholmers.

The Right of Public Access

In Sweden all people have the right to roam private land in the countryside, camping and picking berries and mushrooms, for example. This right is regulated by law and is called the Right of Public Access or Freedom to Roam. This right carries the responsibility to pay due consideration to nature and animal life, landowners and other people.
City on water
Stockholm’s waterfront is of great significance to the city’s character and identity. Few other cities can offer swimming and boating, fishing and ice skating in the city centre.

More than 10 percent of Stockholm’s surface area is water. The largest watercourses are Lake Mälaren and the Baltic Sea, but there are also 12 smaller lakes. Over the years, Stockholm has successfully nurtured the accessibility of the shores and has developed long, uninterrupted walks along the majority of the city’s waterfront.

Through goal-oriented water preservation efforts over a long period of time, the city can today offer unique opportunities for swimming in the central parts of the city. Stockholm has 29 official bathing spots, all of which are of the highest environmental class.

**Climate-smart ecocycle**
Stockholmers’ water comes from Lake Mälaren and is purified into drinking water in several stages at Stockholm Vatten’s two waterworks. The water in Lake Mälaren is of a high, consistent quality. This lays the foundation of a simple cleaning process at the waterworks, with moderate use of chemicals. The water is of high
quality and tastes excellent. Foreign visitors are often amazed that the water can be drunk straight from the tap.

Stockholm’s two wastewater treatment works receive wastewater from almost a million people and industries in Stockholm and its surrounding municipalities.

The treatment works clean the wastewater in several stages before it is released into the Baltic Sea. Stockholm Vatten places strict demands on wastewater treatment, ensuring that the water released into the Baltic is as clean as possible and will not harm nature.

Stockholm Vatten’s ecocycle-based approach means that the waste products that arise in the process are dealt with and returned to come to good use in society. At least 97-98 percent of the organic substances, particles and phosphorus and at least 70 percent of the nitrogen is removed in the treatment process.

Wastewater into biogas...
During wastewater treatment, the organic matter is separated from the water in the form of sludge. When the sludge is digested (broken down in an oxygen-free environment), biogas is formed. The biogas is used as an environmentally friendly vehicle fuel, for example.

...a nutrient-rich sludge...
The sludge is rich in nutrients with a high phosphorus content and is ideal for use as an agricultural fertiliser.

...and district heating
Before the wastewater is released into the inner Baltic, the heat is recovered as district heating.

Challenges of the future
Stockholm’s lakes and watercourses are, however, still affected by the operations that have taken and still take place in their catchment areas. The environment is affected by traffic, buildings and industries, and the amount of pollutants and nutrients in the water is still increasing. The City therefore needs to take strong action against eutrophication and the occurrence of environmentally hazardous substances in the aquatic environment.

Different methods are used to purify surface water and bind phosphorus in the bottom sediment in an eco-friendly way. Adaptation to future climate changes entails the City building to handle future high sea levels, where buildings, streets and courtyards are being designed to cope with heavy precipitation.
Before the treated wastewater is released, the heat is recovered as district heating.

Stockholm is a meeting-point between the salt water of the Baltic Sea and the fresh water of Lake Mälaren. The water flows are regulated by locks at three locations. The risk of flooding in Lake Mälaren is already high, and is expected to increase as the result of an anticipated rise in sea level by around a metre in the next 100 years. This entails a risk for the access of the drinking water supply and the infrastructure in the Mälaren valley. To reduce the flood risk, a reconstruction of the Karl Johan locks in central Stockholm is now being planned. This will make it possible to increase the drain-off capacity from Lake Mälaren from 300 cu.m./sec to 1,400 cu.m./sec.
e-Stockholm
One important aspect of sustainable urban development is a well-developed infrastructure for IT. Stockholm has one of the world’s biggest open fibre-optic networks, and access to fixed and mobile broadband throughout the whole city. This attracts knowledge-intensive companies in the service sector, IT and also clean engineering. With 1.25 million kilometres of fibre, the network would stretch 30 times round the world.

Modern urban development has become increasingly dependent on availability, communication and a well functioning social infrastructure. The term Smart City is increasingly used to describe the importance of IT and the social and environmental resources needed for a city to be competitive.

Making life easier with e-services
IT is playing an increasingly important role in our lives. A long-term focus on IT and e-services is crucial in order to continue offering high-quality service as the city rapidly grows and develops.
It should be easy to be a Stockholmer – to have access to the information you need, when you need it, and to be able to easily choose the services that best suit your needs. The City of Stockholm therefore offers more than 100 online e-services in several different areas.

**Innovative IT region**
With modern IT services, we also benefit trade and industry. With Kista Science City, the Stockholm region has become a world-leading innovation zone and an international centre for wireless technology, broadband and mobile applications. Stockholm holds the most dense concentration of researchers focusing on IT in Northern Europe. There are some 9,000 companies here, and almost 1,200 of them operate in the ICT sector. Ninety per cent of the ICT companies are export companies, a very high figure compared to other industries. This clearly indicates how very important Kista Science City and the ICT sector are to the growth of the Stockholm region.

**Green IT**
Green IT is an umbrella term for measures aimed at reducing environmental impact with the help of IT. It is partly about using information technology to reduce environmental impact, and partly about reducing energy consumption and environmental impact within the IT sector as a whole.

Stockholm has a worldwide reputation for its environmental consciousness and good living environment, partly to energy-efficient buildings, environmentally efficient transport and environmentally friendly travel. As the fibre-optic network in Stockholm is open to everybody, companies and authorities too can rent and design their own networks. For instance, the county’s hospitals have been able to cut their costs for data and telecommunication by half.

**Continued IT initiatives**
Continued successful IT initiatives are an important tool in achieving Vision 2030 of a world-class Stockholm. In 2013, the City of Stockholm will decide on a new IT programme focusing on areas such as:

- Availability and service for citizens, enterprises and visitors
- Better opportunities for compiling and reusing information
- Training and systems development
- Collaboration with other authorities and organisations
- Innovative operational development

There are 1,200 ICT companies in Kista Science City.
Stockholm has one of the world’s biggest open fibre-optic networks.

Intelligent Community

In 2009, the City of Stockholm was awarded the prestigious Intelligent Community of the Year award by American think tank Intelligent Community Forum. Stockholm received the award due to its long-term vision of focusing on knowledge and innovation with a well-developed broadband system, and the long-term investments in the area of IT to increase the quality of life in the city.

Aspects that were particularly noted were the range of e-services and the long-term approach, such as the expansion of the open fibre-optic network.
The citizens’ Stockholm
The vision for Stockholm envisages a city with tremendous attractiveness — a city that attracts people from around the world.

People decide to live in Stockholm for different reasons. Many are attracted by the dynamic labour market and education opportunities, others by broad range of culture and entertainment. Stockholm offers all the qualities of a big city but is also a green city, with close access to untouched nature, parks and water. Stockholmers say that the city’s green qualities and the water are the aspects that they themselves value most highly about their city.

Committed Stockholmers
Every three years a survey is conducted by the Environment and Health Administration, looking at the environment and environmental habits of Stockholmers. One clear conclusion is that in many respects, Stockholmers have good knowledge of, and are committed to environmental issues.

The latest survey, from 2010, shows that seven out of ten Stockholmers are interested in environmental issues. 82 per cent think it is good that
the City conducts active environmental work, and 76 per cent feel the City should impose tougher demands on citizens to live in an eco-friendly way.

In the survey, Stockholmers say that whether or not they live in an eco-friendly way has some significance for the environment. Nine out of ten Stockholmers feel it is important, as individuals, to save energy.

Another survey conducted by the City shows that seven out of ten Stockholmers would consider making a green new year’s resolution. Above all they are prepared to be better at separating and recycling their waste, reducing power and water consumption, travelling more by public transport and picking up litter.

Ongoing dialogue and participation

The dialogue with Stockholmers is a key issue in all kinds of projects, from early planning stages to maintenance and development issues. The City works consciously with citizen dialogue to increase its knowledge of how areas are being used and what needs and shortcomings exist.

When new city districts are planned and built, and when the city is condensed, the methods for citizen participation are constantly being developed – from traditional consultancy meetings to social media – in order to reach more Stockholmers with different needs and demands, of different genders and ages, and with different ethnic, cultural and social backgrounds.

The dialogue is an opportunity for the City to receive new ideas, and to anchor and refine plans and suggestions.
We want to maintain a close dialogue with the Stockholmers.

Steering documents:
- Vision 2030
- Stockholm City Plan: A walkable city
- Stockholm’s Communication Programme 2012-2015

“It’s easy being able to deal with all kinds of matters using the City’s e-services. As a parent with young children, it made life far easier to be able to compare and choose a pre-school online. There are a lot of different establishments, but the e-services make it easy to quickly get an overview.”

Katja Koivukoski, Stockholm
The Stockholm of tomorrow
The City Council’s ambitions continue to be high – we need to have a common approach to goals and goal orientation, and to continue focusing on environmental initiatives. We also need to involve others, in and outside the City of Stockholm, even more.

Stockholm takes part in several international collaborations in order to have a say, to share our solutions and learn from others.

The City of Stockholm has been a member of Eurocities since 1995, which enables us to influence work in the EU and to position Stockholm as a model city in Europe. The City has also signed the Covenant of Mayors, whereby European cities pledge to work to reduce greenhouse gas emissions to a greater extent than EU decisions dictate.

Another strategic collaboration is taking place within the framework of C40 – Climate Leadership
Group. C40 – Climate Leadership Group is committed to implementing meaningful and sustainable climate-related actions locally that will help address climate change globally. The focus is exchanging experiences, highlighting best practice models and being a role model for other cities that have not progressed quite as far in their work.

Alongside Paris, Chicago and Kitakyushu in Japan, the City of Stockholm participates in the OECD Green Cities Programme for green growth. The aim of the programme is to be able to better judge how urban green growth and environmental policy can help improve economic results and environmental quality, and thereby increase the cities’ contribution to national growth, quality of life and competitiveness. The City of Stockholm has also decided to invite relevant players in the region as well as national authorities, to take part in the study.

The OECD is impressed in the study that Stockholm successfully combines reduced CO₂ emissions with economic growth and rapid population expansion.

The investments in environmental profile districts is highlighted as an important foundation for driving innovations to reduce climate impact in urban environments. The development of the city districts is also regarded as a fine example of how industrial land can be reclaimed and renewed.

The study’s recommendations include urging the city and the region to increase collaboration and draw clearer connections between economic growth and environmental issues.