

Excerpt from the FY2013 White Paper on the Environment

# Environmental Quality in Aichi Prefecture



## – Introduction –

In 2013, Japan witnessed record heat and destructive typhoons, causing considerable damage throughout the nation. Some experts have argued that such abnormal weather phenomena can be attributed in part to global warming.

Recently there has been growing health concern about fine particulate matter, known as PM2.5, an air pollutant found in toxic smog. To provide its residents with detailed information on PM2.5 levels, the Aichi Prefectural Government has reinforced its air quality monitoring system, including increased monitoring locations.

Now that global environmental issues have a diverse range of impacts on our everyday lives, we need to strengthen public administration as regards environmental protection from a global perspective.

In November 2014, the UNESCO World Conference on Education for Sustainable Development (ESD) will be held here in Aichi Prefecture. This conference is of great significance, in that it will bring together those engaged in ESD from Japan and abroad to conduct lively discussions on this subject under the theme of “Creating a Better Future for the Planet.”

The environmental awareness of the citizens of Aichi Prefecture has been enhanced through international environmental events hosted by Aichi, such as Expo 2005 Aichi Japan in 2005 and the tenth meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD-COP 10) held in 2010. We believe that the UNESCO World Conference on ESD will provide another springboard for the people of Aichi Prefecture to further increase environmental awareness and promote pro-environmental behavior. Taking advantage of the coming Conference, we at Aichi Prefecture are striving to promote our efforts, as an “environmental capital,” to foster human resources who can play leading roles in creating a sustainable society.

The FY 2013 White Paper introduces Aichi Prefecture’s dedicated efforts, as host, towards the success of the UNESCO World Conference on Education for Sustainable Development, and describes in detail the “Aichi Prefectural Action Plan for Environmental Learning etc.,” a policy that sets the future direction of environmental education programs.

The White Paper also gives an introduction to the Aichi Biodiversity Strategy 2020, which promotes the creation of an ecological network by taking Aichi Prefecture’s unique environmental approaches to achieve the Aichi Targets adopted in COP 10, and the Aichi Traffic Pollution Control Strategy 2020, an initiative to promote the diffusion of advanced “eco-cars,” including a new generation of vehicles, and the development of a charging infrastructure for electric vehicles, in order to realize a society in which the use of automobiles is in harmony with the environment.

We hope that this booklet will serve to enhance the reader’s understanding and interest in environmental matters in Aichi Prefecture and that it may be a useful source of reference in undertaking environmental action.

February 2014

Governor, Aichi Prefecture

*Hideaki Ohmura*

Photos: Front cover

One-Year Pre-Event for UNESCO World Conference on ESD (Mochinoki Square in Hisaya Odori Park and around Sakae River banks)	Environmental Learning Coordinator Project (Higashi Hirose Elementary School, Toyota City)
Aichi Green Curtain Competition Highest award winner: Kinugasa Elementary School (Tahara City)	Nature Tour to Tidal Flats (Higashi Hazu Coast)

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## Overview of Aichi Prefecture

<b>Population</b>	7.43 million (as of February 2014)
<b>Area</b>	5,165 km <sup>2</sup>
<b>Economic Data</b>	GDP generated by prefecture: <b>¥31,800,000 million</b> (comparable to that of Australia and South Africa, 2011) Value of farming output: <b>¥294,800 million</b> *(No. 6 nationwide, 2011)

No. 1 in Japan for 35 consecutive years in the value of shipment of manufactured goods: ¥37,015,600 million (2011)



No. 1 in Japan in output of flowers, cabbages




Chubu International airport

## Environmental Issues: History and Action

### ● Japan's Economic Boom and Pollution

Pollution was a major problem in Japan between the late 1950s and 1970, when the country was undergoing rapid economic growth after rising from the ashes of World War II. Mainly on the strength of the heavy chemical industries, Japan's economy underwent dramatic development, significantly enhancing the standard of living of the Japanese people. Meanwhile, discharges from factories, such as smoke and effluents increased tremendously, leading to widespread air and water pollution, as well as destruction of the natural environment. Major pollution-induced diseases emerged throughout Japan. The most notorious were Minamata Disease in Kumamoto Prefecture (Kyushu), Itai-itai Disease in Toyama Prefecture (Hokuriku), Yokkaichi Asthma in Mie Prefecture (Aichi's western neighbor), and organic mercury poisoning in Niigata (Hokuriku). In Aichi, water pollution from papermaking factories, smoke dust and noise from steel mills, and offensive odors from cellophane factories became major problems that drew social attention.

### ● Establishment of Environmental Policies

In this context, in 1967 the Japanese Government laid down the Basic Law for Environmental Pollution Control as a vehicle for promoting comprehensive pollution measures. Pollution-related laws followed, such as the Air Pollution Control Law and the Water Pollution Control Law. Then, at the end of 1970, the "Diet Session on Pollution" laid down fundamental legislation centering on the revision of the Basic Law for Environmental Pollution Control. This was a dramatic leap forward for public administration as regards environmental affairs. Above all the Environmental Agency was set up in 1971, and in 1972, the Nature Conservation Law was enacted. Administration of pollution became administration of the environment, which was now undertaken in a comprehensive and planned manner.

In Aichi Prefecture, the Aichi Prefecture Pollution Control Ordinance underwent a complete revision in April 1971. To improve the prefectural organization, the Department of the Environment was instituted. Concurrently with this change, public health centers were deployed as arms of local governments, executing public administration in environmental affairs. Monitoring and on-site inspections were reinforced regarding sources of pollution.

In April 1973, the Nature Protection Division was instituted in response to rising public interest in nature protection. The Division is dedicated to reinforcing and improving public administration with regards to the protection of nature. This completed the Aichi Government's system of environmental administration bodies.

## ● **Response to Urban and Lifestyle-Related Pollution**

In the second half of the 1970s, industrial pollution saw severely curtailed. Regulation under the various laws that had been enacted, combined with the efforts of the private sector, meant that measures against sources of pollution began to take effect. Benefits were also accrued from drives to become resource and energy efficient.

In contrast, the convergence of the population in cities and changes in people's lifestyles meant that pollution relating to urbanization and lifestyle began to pose problems. Rivers were becoming polluted due to domestic wastewater; vehicle traffic pollution resulted from increased use of automobile transport; noise from neighbors became increasingly problematic due to the overcrowding of people and their housing; refuse increased because of rapid increases in population; and litter, such as empty cans, became a nuisance.

Against this background, in February 1980 the Aichi Government adopted the Aichi Prefecture Domestic Effluent Measures Promotion Plan to prevent eutrophication and pollution by organic matter deriving from domestic wastewater. Advice and publicity were directed at residents. In March 1981, in an effort to regulate noise from businesses so as to protect residents' tranquility of life, the Aichi Prefecture Pollution Control Ordinance was partially amended.

## ● **Promotion of Comprehensive Measures Relating to Environmental Issues**

Lifestyles are undergoing even more change today, and business activities are expanding. Now we face threats to the global environment, the very foundation of mankind's continued survival. To deal with current environmental issues, including global environmental problems and urban and lifestyle-related pollution, in April 1995, the Aichi Prefecture Basic Environment Ordinance was enacted, which sets out the basic direction of environmental administration towards the realization of a society with low environmental load. In August 1997, the Aichi Prefecture Basic Environment Plan was adopted in accordance with the Ordinance. This became the master plan for all future environmental protection measures.

In March 2003, 32 years later, the Aichi Prefecture Pollution Control Ordinance was completely revised. The Ordinance Concerning Preservation of the Living Environment of Prefectural Residents was enacted, and took effect as of October 2003. Provision was made regarding new issues, including urban and lifestyle-related pollution, prevention of global warming, soil and groundwater pollution, and appropriate management of chemical substances.

In Aichi Prefecture, EXPO 2005 Aichi, Japan, the world's first natural environment-themed exposition, was held in 2005, and the tenth meeting of the Conference of Parties to the Convention on Biological Diversity (CBD-COP10) was held in 2010, in which Aichi Targets were adopted as global targets for the conservation of biodiversity. In 2014, we will also host the UNESCO World Conference on Education for Sustainable Development (ESD).

To deal with a declining population, growing resource constraints, advancing greening in economy and society, regional environmental issues, as well as global warming, biodiversity loss and other global environmental issues, it is necessary to develop a diversity of environmental policies. To address these issues more appropriately and effectively, we will revise the Aichi Prefecture Basic Environment Plan in June 2014, aiming at realizing an "Environmental Capital Aichi" through the cooperation and support of everyone in the prefecture.

## **Part I: Feature Articles**

### Feature Article 1: The UNESCO World Conference on Education for Sustainable Development (ESD) -Scheduled to be held in Aichi-Nagoya in November 2014-

#### **1. What is ESD?**

ESD stands for Education for Sustainable Development. To be more specific, the aim of ESD is to foster human resources who can play leading roles in creating a sustainable society.

ESD activities have been promoted around the world, primarily by the United Nations, since the 1992 United Nations Conference on Environment and Development, or the Earth Summit, held in Rio de Janeiro. The scope of ESD goes far beyond environmental education, and includes education for poverty alleviation, human rights, peace, and various other issues that humankind faces today. ESD aims to nurture individuals who can regard these issues as their own, can view the environment, society and economy in a comprehensive and integrated manner, and act towards realizing a sustainable society.

In 2002, the 57th United Nations General Assembly adopted a resolution to put in place the UN Decade of Education for Sustainable Development (DESD), which Japan proposed in the same year at the World Summit on Sustainable Development (Johannesburg Summit). The DESD, spanning from 2005 to 2014, seeks to promote education and development activities in close coordination and cooperation among national governments, UN organizations, NGOs, associations, companies, etc. At the 35th session of the UNESCO General Conference held in 2009, it was determined that the final conference for the DESD will be held in Japan in 2014.

#### **2. Outline of UNESCO World Conference on ESD**

The objective of the 2014 UNESCO World Conference on ESD is to look back on activities implemented in the DESD and discuss measures to be taken beyond 2014.

In September 2011, the Japanese government's Interministerial Meeting on the UNDESD agreed to hold a UNESCO world conference in Nagoya, Aichi Prefecture to mark the end of the DESD.

With this Conference as our motivation, we at the Aichi Prefectural Government will further deepen public understanding of the importance of a "sustainable society," which has already been raised by hosting the Expo Aichi Japan in 2005 and CBD-COP 10 in 2010. We are determined to contribute to the creation of a sustainable society by fostering human resources who can play leading roles in shaping a better future, and strive to promote the further development of Aichi Prefecture by mobilizing all regional resources to ensure that the UNESCO World Conference on ESD will be a great success.

1. Name of Conference: UNESCO World Conference on Education for Sustainable Development
2. Organizers: United Nations Educational, Scientific and Cultural Organization (UNESCO), and the Government of Japan
3. Period: November 10 (Mon.) – 12 (Wed.), 2014: High-level segment, plenary sessions, etc.  
\* On November 13 (Thurs.), a follow-up meeting will be held with the participation of various stakeholders from across Japan.
4. Venue: Nagoya Congress Center (Atsuta Ward, Nagoya)
5. Participants: Approximately 1,000 invited participants including cabinet ministers and members from governmental agencies in Japan and overseas are expected to attend.



Nagoya Congress Center

### 3. Driving Force for the Conference

#### (1) Local support organizations

To ensure great success for the Conference, we established the Aichi-Nagoya Committee for UNESCO World Conference on ESD on May 25, 2012, and announced a support plan for organizing the Conference in April 2013. The local committee comprises a wide variety of stakeholders, such as Aichi Prefectural Government, City of Nagoya Municipal Government, the Nagoya Chamber of Commerce and Industry, the Chubu Economic Federation, the Aichi Association of University Presidents, RCE Chubu, as well as Japanese ministries and agencies, and educational institutions.

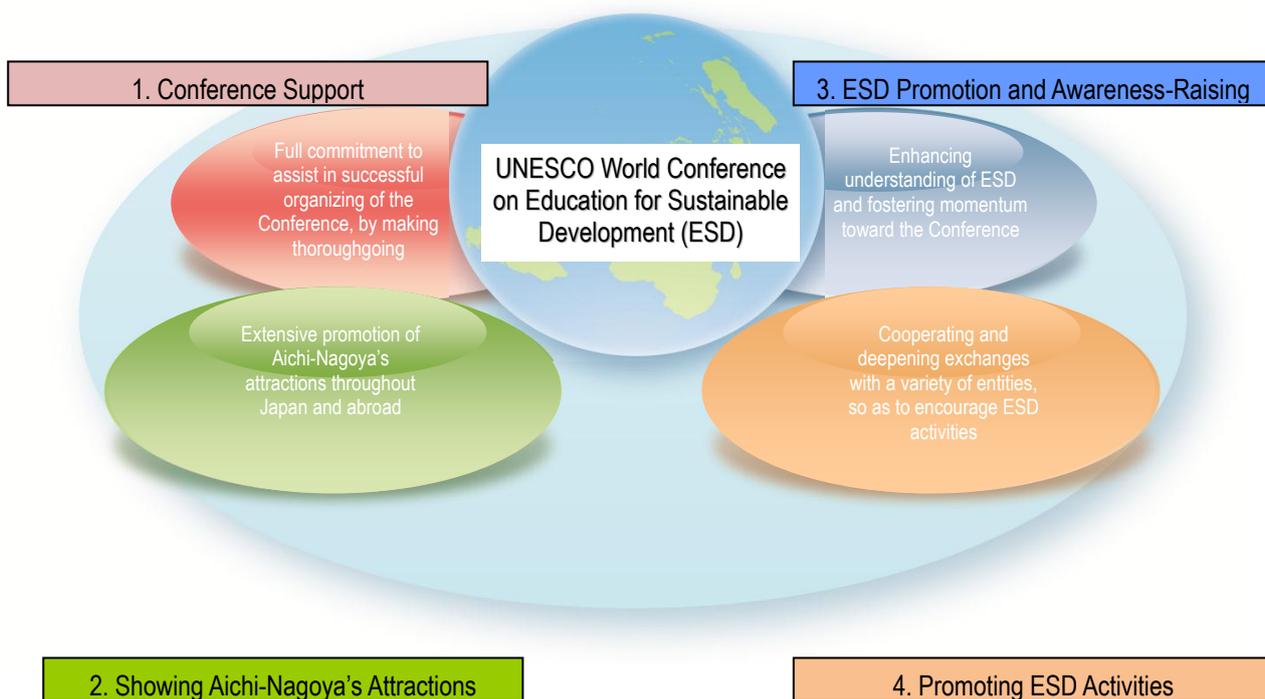
#### (2) Conference promotion organization established within Aichi Prefectural Government

The Executive Meeting of Aichi Prefectural Government for the UNESCO World Conference was established in its Government in November 2011, with the governor as the chairman, in order to create a support system and promote information sharing to ensure the smooth running of the Conference.

#### (3) Cooperation and collaboration with municipalities in Aichi

In February 2012, the Aichi Prefectural Government established the Liaison Meeting of Municipalities in Aichi Prefecture for the UNESCO World Conference, involving all the municipalities within the prefecture, in order to foster momentum towards the Conference and increase efforts to promote ESD throughout the prefecture.

#### 4. Roles of Aichi-Nagoya and Its Preparatory Activities for the UNESCO World Conference on ESD



##### (1) Conference Support

While securing coordination with the organizers, the Aichi-Nagoya Committee for UNESCO World Conference on ESD will support the Conference so as to ensure that it will be organized in a safe, secure, smooth, and comfortable manner, by making thoroughgoing preparations with cooperation and support from the organizations concerned.

##### [PR activity at the 37th Session of UNESCO General Conference]

Hideaki Ohmura, Governor of Aichi Prefecture (and Chairman of the Aichi-Nagoya Committee for UNESCO World Conference on ESD), visited France from November 5 (Tue.) to 8 (Fri.) 2013 to meet H.E. Mrs. Irina Bokova, Director-General of UNESCO, and other interested persons to exchange views at the UNESCO headquarters (Paris), where the 37th session of General Conference was being held. He also engaged in PR activities concerning Aichi-Nagoya venue for the UNESCO World Conference on ESD, by holding PR events on ESD and a reception in his capacity as host of the Conference.



UNESCO General Conference



PR event on ESD



Reception held as the host of the Conference

## (2) Showing Aichi-Nagoya's Attractions

On the occasion of the Conference, the Aichi-Nagoya Committee for UNESCO World Conference on ESD will proactively provide opportunities for people from around the world to enjoy the diverse attractions of Aichi-Nagoya, and show such attractions to the rest of Japan, as well as to overseas countries.

## (3) ESD Promotion and Awareness-Raising

The Aichi-Nagoya Committee for UNESCO World Conference on ESD will enhance understanding of ESD and foster momentum towards the Conference, through promotion and awareness-raising events and other activities, by making effective use of the ESD logo and catchphrase.



Logo

### [Aichi-Nagoya ESD Festa 2013 (marking one year before the World Conference)]

To mark one year before the Conference, the Aichi-Nagoya Committee for UNESCO World Conference on ESD held events in three locations (Nagoya, Owari, and Mikawa) in Aichi Prefecture during the three months from September to December. These one-year pre-conference events were designed to foster momentum toward the Conference, deepen public understanding of the intent and purpose of ESD, and enhance locals' awareness that Aichi Prefecture will serve as the venue for the Conference.

One such event was the "Aichi-Nagoya ESD Festa 2013 in Nagoya," which was held under the theme of "Intersection of Environment and Art" in the Mochinoki Square of Hisaya Odori Park and around the Sakae River bank on September 14 (Sat.) and 15 (Sun.), 2013.



One-Year Pre-Conference Event



Exhibition booth

## (4) Promoting ESD Activities

On the occasion of the Conference, the Aichi-Nagoya Committee for UNESCO World Conference on ESD, in cooperation with NPOs, educators, companies, administrative agencies, and other various local entities, will further promote activities toward realizing a sustainable society.

### a) ESD Aichi-Nagoya Partnership Project

To foster momentum toward the Conference, the Aichi-Nagoya Committee for the UNESCO World Conference on ESD will promote the ESD Aichi-Nagoya Partnership Project. Under the Project, programs and events can be registered to help publicize the Conference and promote ESD, in

coordination with the Committee. Approved events and programs will be recognized as part of the Aichi-Nagoya Partnership Project. Through this Project, Aichi-Nagoya will encourage ESD activities undertaken by a wide variety of entities, such as NPOs, companies, and government agencies. (254 programs/events registered as of November 2013.)



Aichi Future Forum: Summer special program for high school students to improve international understanding



Local volunteer group *Kamenoko-tai's* program to spread awareness of the importance of protecting a beautiful sea

### b) Aichi-Nagoya ESD Promotional Events

To further advance ESD activities implemented by diverse entities in Aichi-Nagoya, the Aichi-Nagoya Committee for UNESCO World Conference on ESD will hold events and forums where organizations working in various fields will gather to deepen mutual exchange and disseminate their ESD activities, in conjunction with the Conference.

### c) Children's Conference on ESD

In conjunction with the Conference, the Aichi-Nagoya Committee for the UNESCO World Conference on ESD will organize a Children's Conference, where children on whose shoulders the future of our society rests will discuss the creation of a sustainable society. As part of these efforts, the Children's Forum on ESD was held in FY 2013.



Excursion (Takeshima Island Tidal Flat Observation Tour)



Excursion (Creation of a creatures map)



Group discussion

### d) ESD Activities at Schools

Various ESD activities are under way in kindergartens as well as elementary, junior-high and high schools, with UNESCO Associated Schools—which serve as a base for ESD promotion—playing a pivotal role. Aichi Prefecture will push further forward with ESD activities at schools by enlarging the membership of UNESCO Associated Schools. (Total membership of 54 schools as of November 2013.)

### e) ESD Activities at Companies

As one of the world's leading manufacturing centers, Aichi Prefecture is home to many companies that conduct corporate activities in consideration of sustainability, as exemplified by the development of eco-friendly products. These companies also promote human resource development incorporating ESD perspectives, environmental learning programs in cooperation with NPOs and schools, and other CSR activities, which are compiled into their sustainability reports. In this way, many companies are working on various initiatives relating to ESD.



Environmental education program  
(Aisin Seiki Co., Ltd.)



Nature experience program  
(Toyota Motor Corp.)



Environmental education program for children (UNY Co., LTD)

### f) ESD Activities at Administrative Agencies

To promote the development of human resources who can take the lead in creating an environmentally sustainable society, the Aichi Prefectural Government has made various efforts to build an environmentally sustainable community, including the provision of environmental education.

Recognizing the importance of the roles played by municipal governments in promoting ESD activities in local communities, municipalities in Aichi have developed and implemented ESD-related measures in collaboration with a wide variety of local entities.



Parent-and-child cooking class (Toyota City)



Satoyama nature experience program (Nisshin City)

Furthermore, to use the UNESCO World Conference as a good chance to firmly establish ESD in the community, the Aichi Prefectural Government held ESD Seminars for Local Government Officials during six months from July to December, targeted at the officials of each municipality government who play the leading role in local community development. These seminars were designed for the officials of municipalities to deepen their understanding of ESD and effectively deploy specific ESD-related measures.



General seminar



Observation visit (Toyota City)

Feature Article 2: Aichi Prefectural Action Plan for Environmental Learning, etc.  
~ Developing human resources who can take the lead in creating an  
environmentally sustainable society ~

**1. Background to the Plan**

To resolve environmental issues, it is indispensable for each individual to deepen his/her understanding of the environment and the means of addressing such issues.

To this end, the Aichi Prefectural Government formulated the “Aichi Prefecture’s Basic Policy on Environmental Learning” (Basic Learning Policy) in 2005, based on which Aichi Environmental Learning Plaza (located within Higashi-ote Annex, Aichi Prefectural Government) and Forest School *Morinomanabiya* (within Aichi Expo Memorial Park) were set up as the bases for promoting environmental education.

Meanwhile, the Japanese government promulgated the “Act on Enhancing Motivation on Environmental Conservation and Promoting of Environmental Education” (Environmental Education Law) in June 2011. The government also announced that it will develop an action plan to promote environmental education, etc., emphasizing the importance of cooperation and collaboration in effectively promoting environmental education. With the UNESCO World Conference on ESD to be held in November 2014 providing momentum, Japan needs to accelerate its environmental efforts based on the results it has achieved so far.

In February 2013, to further enhance its efforts to promote environmental education, the Aichi Prefectural Government developed the Aichi Prefectural Action Plan for Environmental Learning etc. in accordance with the Environmental Education Law, after consultation with the Aichi Prefecture Council for Promoting Environmental Education, etc.



Aichi Environmental Learning Plaza



Forest School *Morinomanabiya*

## 2. Outline of the Action Plan

### (1) Objective of the Action Plan

The Aichi Prefectural Action Plan for Environmental Learning etc., which aims to nurture human resources who can take the lead in creating an environmentally sustainable society, sets the direction of efforts to be made for the five years from 2013 to 2017 in terms of promoting environmental education.

### (2) Current Status and Challenges of Environmental Education

Environmental education in Aichi Prefecture has seen a certain level of improvement through efforts made in line with the Basic Policy, such as launching numerous environmental learning programs. However, many of local residents say that although they care about the environment they have not taken any concrete action related to environmental conservation.

To resolve this issue, we need to promote more constructive environmental education that leads to concrete action, by encouraging various entities to continue their environmental education efforts and increasing hands-on learning and other programs, in which participants can realize the importance of environmental conservation first-hand.

In effectively promoting continuous and constructive implementation of environmental education, it is also essential to strengthen cooperation and collaboration among individual entities.

### (3) Important Points to Be Aware of When Tackling Issues

#### a) Incorporation of ESD Perspectives

Environmental education can be promoted more effectively by emphasizing the development of abilities and attitudes necessary for creating an environmentally sustainable society.

The Plus ESD Project implemented by the Japanese Ministry of Environment cites six concepts as the key for realizing an environmentally sustainable society, as well as the seven kinds of abilities and attitudes that should be emphasized when providing education from ESD perspectives. It is very important to promote environmental education incorporating these ESD perspectives.

#### Key Concepts for Creating an Environmentally Sustainable Society (Example)

I. Diversity II. Mutuality III. Finitude IV. Fairness V. Cooperation VI. Responsibility

#### Abilities and Attitudes to Be Emphasized from ESD Perspectives (Example)

- |  |   |
|--|---|
| ① Ability to think critically                              | ② Ability to plan based on a vision of the future |
| ③ Ability to take a multidimensional and holistic approach | ④ Ability to communicate                          |
| ⑤ Attitude to cooperate with others                        | ⑥ Attitude to respect connections                 |
| ⑦ Attitude to participate willingly                        |   |

## b) Utilization of Unique Features of Aichi Prefecture

Aichi Prefecture is home to many of Japan's leading companies in manufacturing and other industries and boasts an agriculture, forestry and fisheries industry owing to its diverse natural environment and abundant water resources.

Aichi is also characterized by various forms of social living, from the metropolitan area of Nagoya, with a population of approximately 2.3 million, to mountainous settlements. To promote environmental education more effectively, it is also important to incorporate hands-on learning activities unique to Aichi Prefecture.

### (4) Three-Pillar Measures

All the entities within society need to provide environmental education in households, schools, workplaces, local communities, and various other settings, by taking advantage of their characteristics and playing appropriate roles. To implement environmental education more effectively, it is also necessary for individual entities to cooperate with one another in a mutually complementary form in their respective realms of expertise.

To this end, the Aichi Prefectural Government has pursued measures under three pillars: 1) promoting environmental education in society, 2) promoting environmental education in schools, and 3) promoting closer cooperation and collaboration.

## 3. Efforts Outlined in the Action Plan

### (1) Promoting Environmental Education in Society

The following are the efforts individual entities are expected to perform and the measures the Aichi Prefectural Government should implement.

#### <Major efforts expected of the people of Aichi Prefecture>

- ① Participate in a wide variety of environmental education and conservation activities
- ② Implement green purchasing (purchase of refillable products, EcoMark-certified products, and other green products)
- ③ Pursue ecological lifestyles (energy saving and recycling efforts)

#### <Major efforts expected of companies>

- ① Provide eco-friendly products and services from a life-cycle perspective
- ② Implement environmental education and conservation activities for employees and/or local residents
- ③ Provide opportunities and venues for contacts between people and nature

#### <Major efforts expected of NPOs>

- ① Engage in environmental education and conservation activities taking advantage of various experiences and expertise
- ② Conduct environmental education activities in cooperation with schools, businesses, and municipal governments

#### <Major measures to be taken by Aichi Prefecture>

- ① Provide environmental education at Aichi Environmental Learning Plaza, the Morinomanabiya (Forest School), etc.
- ② Provide information on environmental education through the "Aichi Library of Environmental Education Information" website, and other tools
- ③ Provide support to environmental education and conservation activities by NPOs and municipal governments

#### <Major efforts expected of municipal governments>

- ① Engage in environmental education and conservation activities taking advantage of the characteristics of local communities
- ② Develop plans to promote environmental education that fits the reality of local communities

## (2) Promoting Environmental Education at Schools

Schools have an important part to play in providing environmental education.

The following are the efforts schools are expected to perform and the measures the Aichi Prefectural Government should implement.

### <Major efforts expected of schools>

- ① Provide environmental education that enables children to acquire basic environmental knowledge and enhance their awareness of the natural environment according to their stage of development
- ② Provide children with experience-based environmental education
- ③ Implement environmental education in cooperation with PTAs, parents and local community
- ④ Provide environmental education and training to teachers

### <Major measures to be taken by Aichi Prefecture>

- ① Work together with businesses and NPOs to continuously and constructively provide environmental education for children according to their stage of development
- ② Implement environmental education activities from an ESD perspective and encourage local schools to be a UNESCO Associated School
- ③ Prepare and distribute supplementary environmental reading materials for children in a higher-grade at elementary school

## (3) Promoting Closer Cooperation and Collaboration

What is important in environmental education is that environmental learning translates into action. To this end, it is very effective to provide environmental education through hands-on experience in real nature and in the local community.

However, few schools, NPOs, businesses, municipal governments or other entities have adequate human resources, opportunities, or programs necessary for providing hands-on experience. Cooperation and collaboration among various entities are critical in promoting experience-based environmental education.

### <Enhancement of Coordination and Cooperation Systems>

The key to promoting coordination and cooperation among various entities is to connect them through “information,” “people,” and “opportunities.”

To be specific, efforts will focus on:

- 1) Reinforcing “capabilities to provide information” on environmental education via the Internet;
- 2) Strengthening “coordination capabilities” by establishing and utilizing a coordination system for providing a consulting service concerning environmental education, and for offering information and matching services concerning instructors and sites for hands-on learning activities; and
- 3) Increasing “opportunities to promote mutual exchange” by utilizing Aichi Environmental Learning Plaza and other facilities.

## 4. Driving Force for the Action Plan

Under the leadership of the Aichi Prefecture Council for Promoting Environmental Education, etc., we will promote the Action Plan by checking and assessing the progress of the Plan on a regular basis and improving our efforts to promote environmental education activities.

## Feature Article 3: Aichi Biodiversity Strategy 2020

### ~ Toward Achieving Aichi Targets ~

#### **1. Background to the Strategy**

Living things are not all the same. Biodiversity is widely defined in terms of ecosystems, species and genes. We human beings, as one of living things, are also supported by the blessings of biodiversity (ecosystem service). Today, however, biodiversity is being endangered by human activities. Against this background, the first meeting of the Conference of the Parties to the Convention on Biological Diversity was held in 1994 to promote the conservation and sustainable use of biodiversity. In 2010, the tenth meeting of the Conference of the Parties to the Parties (COP 10) was held in Aichi Prefecture, in which Aichi Targets (Strategic Plan for Biodiversity 2011–2020) were adopted as global targets for the conservation of biodiversity.

In line with these Aichi Targets, in March 2013 the Aichi Prefectural Government formulated the “Aichi Biodiversity Strategy 2020” to promote the conservation of biodiversity.

#### **2. Outline of the Strategy**

The Aichi Biodiversity Strategy 2020 aims to realize “coexistence between people and nature in Aichi.” By 2020, we are determined to promote “concrete action to halt loss of biodiversity.”

To achieve this end, it is essential to form “ecological networks,” an idea that enables the creation of areas with rich biodiversity by linking disturbed and fragmented habitats for wildlife with green land.

The Aichi Prefectural Government has promoted the creation of ecological networks through Japan’s first efforts, known as the “Aichi Method.”

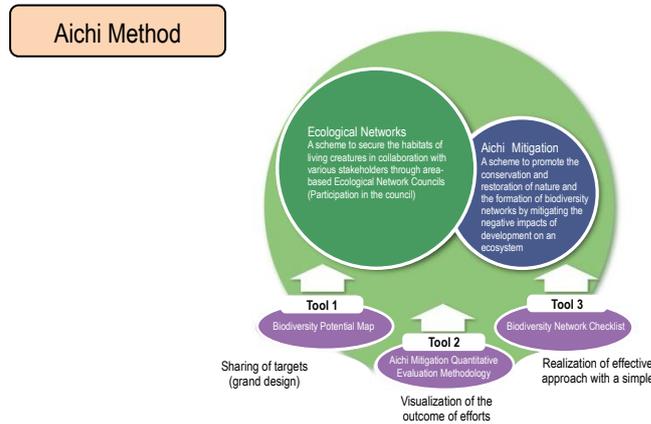
#### **3. Efforts Outlined in the Strategy: What Is the “Aichi Method”?**

The Aichi Method is to realize a society in harmony with nature by promoting cooperation and collaboration among multiple stakeholders—including citizens, businesses, NPOs, and administrative agencies—towards common objectives. To be specific, we devote efforts to conserving and creating habitats for wildlife in a better environment, through which we will enhance public awareness of biodiversity and promote the formation of ecological networks. Such ecological networking also links people with people.

To effectively promote this unique Aichi Method, we formulated the *Guidelines on the Aichi Method* in March 2013, and began implementing the Aichi Method in FY 2013.

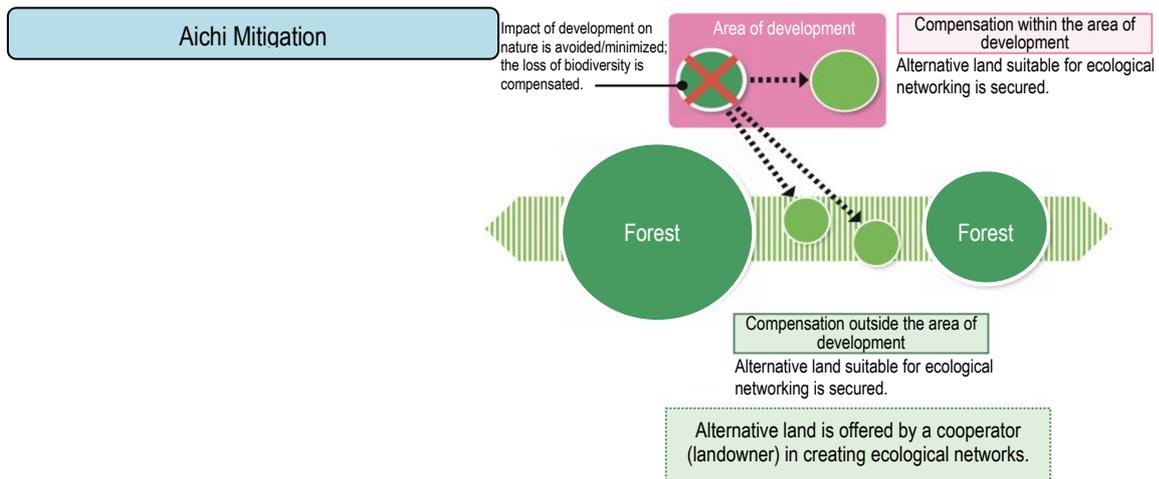
**(1) Toward Conservation and Restoration of Natural Environment**

Based on the Aichi Method, we set up Ecological Network Councils on an area-by-area basis, where a wide variety of stakeholders work together toward the conservation of biodiversity. (The Aichi Prefectural Government provides support for the Ecological Network Councils established within nine sub-regions.) Each Ecological Network Council sets specific common targets for achievement based on a map that shows the habitats of a range of living creatures (Biodiversity Potential Map).



**(2) Compatibility between Economic Growth and Conservation of Biodiversity**

Land developers are required to avoid or minimize the negative impact of development on the natural environment, and, if there is any potential damage, to compensate the loss of biodiversity. If such compensation is not possible within the area of development, the prefectural government and Ecological Network Councils will make the necessary arrangements for securing alternative land and spaces and helping the formation of ecological networks.



**(3) Tools That Support the Aichi Method**

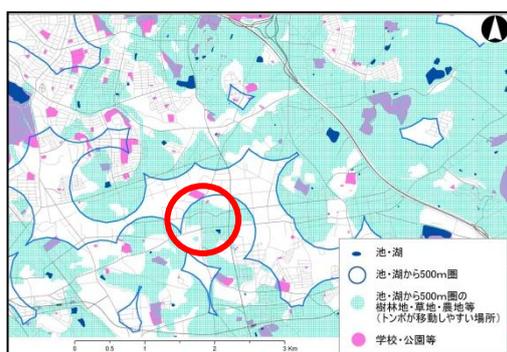
The Aichi Method is supported by three tools: the “Biodiversity Network Checklist,” the “Biodiversity Potential Map,” and the “Aichi Mitigation Quantitative Evaluation Methodology.” The Checklist enables operators to monitor their activities at various levels of operation from the perspective of preserving

biodiversity. The Map helps various stakeholders to more effectively engage in biodiversity conservation activities.

The Quantitative Evaluation Methodology marks scores by assessing effectiveness of biodiversity conservation, by which conservation efforts can be visualized.

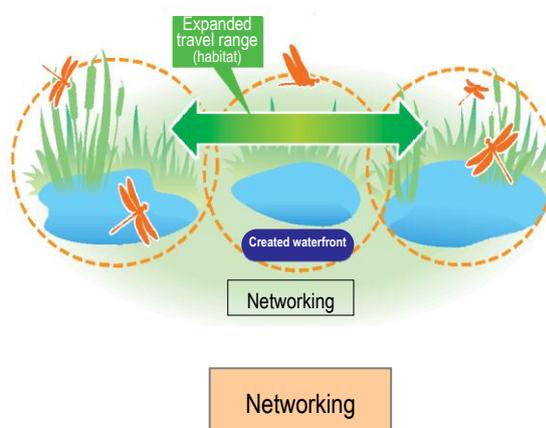
Based on the Aichi Method, we will facilitate cooperation and collaboration toward the realization of “coexistence between people and nature in Aichi” and promote the formation of ecological networks, so that a rich natural environment can be handed down to future generations.

Potential Map of Damselflies



The travel range of damselflies is indicated on the map with a blue circle around it. If waterfronts are created in parks and on school premises based on this map, the fragmented habitat of damselflies can be linked to one another.

Image of Ecological Network (Damselflies)



Newly created waterfronts can link the fragmented habitats of damselflies into one larger habitat.

#### (4) A wide Variety of New Initiatives

##### a) Projects for Maintaining Life for the Future

Efforts to create ecological networks are under way in the nine sub-regions of Aichi Prefecture. One of such efforts was made in a corporate greenbelt 10 kilometers long and 100 meters wide in the coastal area of Tokai and Chita cities on the Chita Peninsula. In FY 2011, the unique “Project for Maintaining Life for the Future” was launched with the aim of turning the corporate green zone constructed about 40 years ago into a habitat of living creatures and managing it as a shared possession of the local community, through collaboration among 11 companies, NPOs, university students, government entities, and so forth.

**b) Aichi Biodiversity Workshop**

In the Owari Tobu Hills Region, 23 local universities are striving to form ecological networks, under the theme of “Town Development by 23 universities to have damselflies and Japanese Luehdorfiafly” with the cooperation of local residents, private sectors, and government entities.

**c) Project to Grow Nursery Trees by Local Residents**

In the Nishi-Mikawa area, companies, residents, and government entities are working together to secure and offer nursery trees necessary for the restoration of nature in the local community.

**4. Driving Force for the Strategy**

For the conservation of biodiversity, which requires various approaches to cover diverse species, it is very important to promote activities through cooperation and collaboration among stakeholders through a common understanding of the natural environment in the local community and a shared goal.

To achieve strategic goals, the Aichi Prefectural Government will conduct monitoring and assessment of activities for the conservation of biodiversity on a regular basis, the results of which will be shared among stakeholders.

To ensure Japan’s first attempt of the “Aichi Method” works properly, we have established the Committee for Promotion of Aichi Biodiversity Strategy 2020, comprising experts and representatives from industry and NPOs.

The committee will monitor and evaluate strategic progress and, if necessary, develop measures to improve and increase efforts for the conservation of biodiversity.

## Feature Article 4: Aichi Traffic Pollution Control Strategy 2020

~ Towards realizing a secure and comfortable life and achieving the harmonious coexistence of automobiles and the environment ~

### 1. Background to the Strategy

The Aichi Prefectural Government formulated the “Aichi Traffic Pollution Control Strategy in the New Century” (hereinafter, the “Older Strategy”), the first of its kind in the nation, in October 2002, and made proactive efforts to control traffic pollution with the target year set at FY 2010.

As a result, air quality, in terms of the emission of nitrogen dioxide and suspended particle matter from automobiles, was significantly improved. However, continued efforts were still required to tackle traffic-related pollution, including the reduction of automotive noise pollution and greenhouse gases. We reviewed this Older Strategy and, in March 2013, forged the “Aichi Traffic Pollution Control Strategy 2020,” with the target year set at FY 2020.

#### (1) The Current Status of the Automobile Society

##### a) Automobile Ownership

As shown in Fig. 1, Aichi Prefecture’s automobile ownership (as of the end of FY2011) is the highest in Japan.

##### b) Passenger Transport Status

As shown in Fig. 2, passenger transport using private cars is significantly high in Aichi Prefecture.

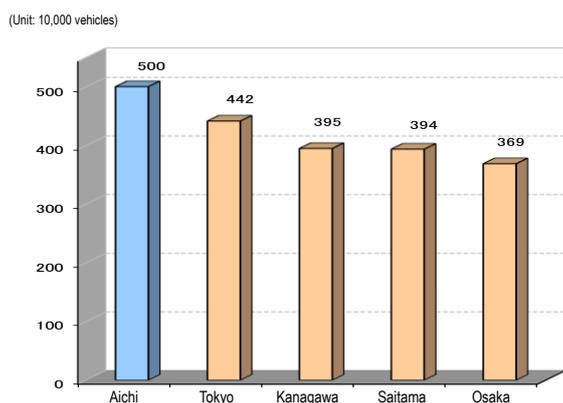


Fig. 1 Automobile Ownership by Prefecture (as of the end of FY 2011)

(Source: “Automobile Ownership Statistics,” Automobile Inspection and Registration Association)

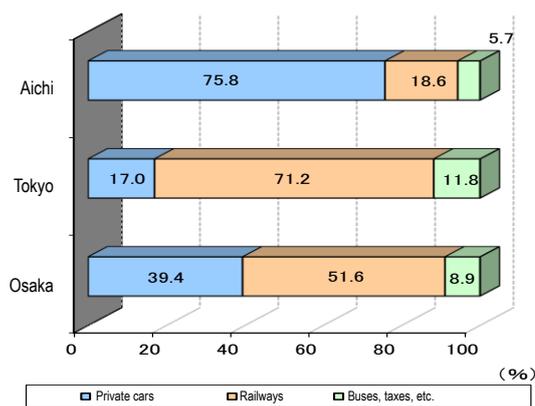


Fig. 2 Passenger Transport Status (FY 2009)

(Source: “SurvTourismey of Regional Passenger Flow,” Ministry of Land, Infrastructure, Transport and)

#### (2) Current Status of the Environment

##### a) Air Quality

Annual average concentration of nitrogen dioxide and suspended particulate matter measured by the Automobile Emission Monitoring Station is on a gradual downward trend, as shown in Fig. 3.

### b) Noise

With regard to the environmental quality standard clearance for automobile noise, the number of households that met the environmental quality standard in both daytime and nighttime has been gradually improved. (See Fig. 4)

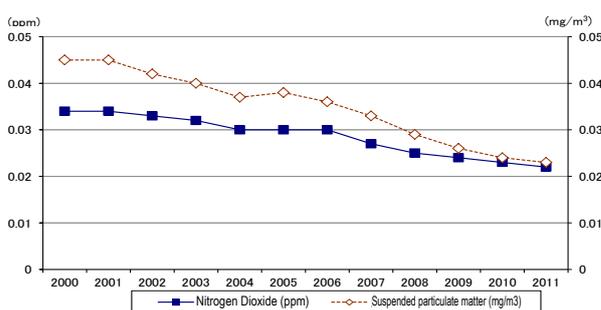


Fig. 3 Annual Average of Nitrogen Dioxide (NO<sub>2</sub>) and Suspended Particulate Matter (SPM) in Aichi (Measured by the Automobile Emission Monitoring Station)

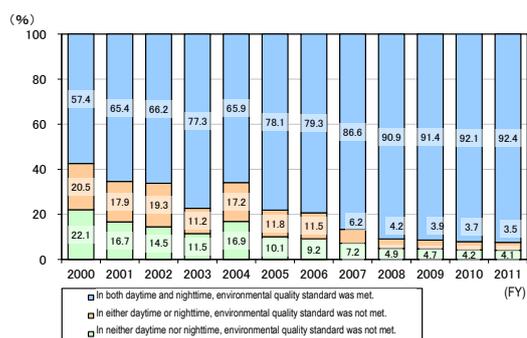


Fig. 4 Environmental Quality Standard Clearance for Automobile Noise in Aichi Prefecture

### c) Greenhouse Gases

Fig. 5 shows the volume of greenhouse gases and carbon dioxide (which accounts for a large part of greenhouse gases) discharged in Aichi Prefecture. The volume of carbon dioxide discharged by the transport sector has been on the decrease since FY 2002. However, levels in FY 2009 were 3.7% higher than in FY 1990.

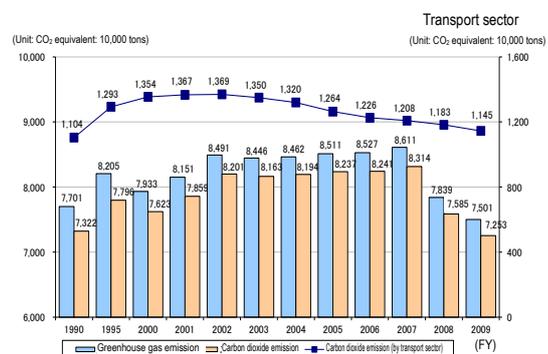


Fig. 5 Volume of Greenhouse Gases and Carbon Dioxide Discharged in Aichi Prefecture

## 2. Outline of the Strategy

### (1) Air Quality Targets and Achievement Status of the Older Strategy

The air quality targets and achievement status of the Older Strategy are shown in Table 1. Some targets were not achieved.

### (2) Change in the Basic Policy Based on the Automobile NO<sub>x</sub> PM Control Law

In 2003, the Aichi Prefecture Total Emission Reduction Plan for Nitrogen Oxides and Particulate Matter from Automobiles (“Total Emission

Table 1 Air Quality Targets and Achievement Status of the Older Strategy

Targets	Target Year	Achievement Status	
Achievement of air quality standards for NO <sub>2</sub> (100%)	2005	Not achieved	Achievement: 98% (achieved by 96 out of 98 stations) [Reference] Achievement: 99% (achieved by 85 out of 86 stations) in FY2010
Achievement of air quality standards for SPM (100%)	2010	Achieved	Achievement: 100% (achieved by all 86 stations)
Achievement of air quality standards for noise (100%)		Not achieved	Achievement: 92.1%
6% reduction of greenhouse gases (compared to 1990)		-	Reduction by 2.6% in FY 2009

Reduction Plan”) was formulated, under which various measures have been taken through collaborations between the national government, the Aichi prefectural government, municipal governments, and public and private corporations. In March 2011, there was a change in the Japanese government’s basic policy based on the Automobile NOx PM Control Law, which required us to revise our Total Emission Reduction Plan.

### (3) Formulation of a New Traffic Pollution Control Strategy Integrated with the Total Emission Reduction Plan

Since the measures to be taken to achieve the environmental targets of the newly developed traffic pollution control strategy are almost identical to those of the new Total Emission Reduction Plan, we decided to integrate them into a comprehensive traffic pollution control strategy for the whole of Aichi Prefecture in the “Aichi Traffic Pollution Control Strategy 2020.”

### (4) Overview of the Aichi Traffic Pollution Control Strategy 2020

An overview of the Aichi Traffic Pollution Control Strategy 2020 is shown in Fig. 6. This Strategy features measures that help to realize a “society that provides a secure and comfortable life and achieves the harmonious coexistence of automobiles and the environment.”

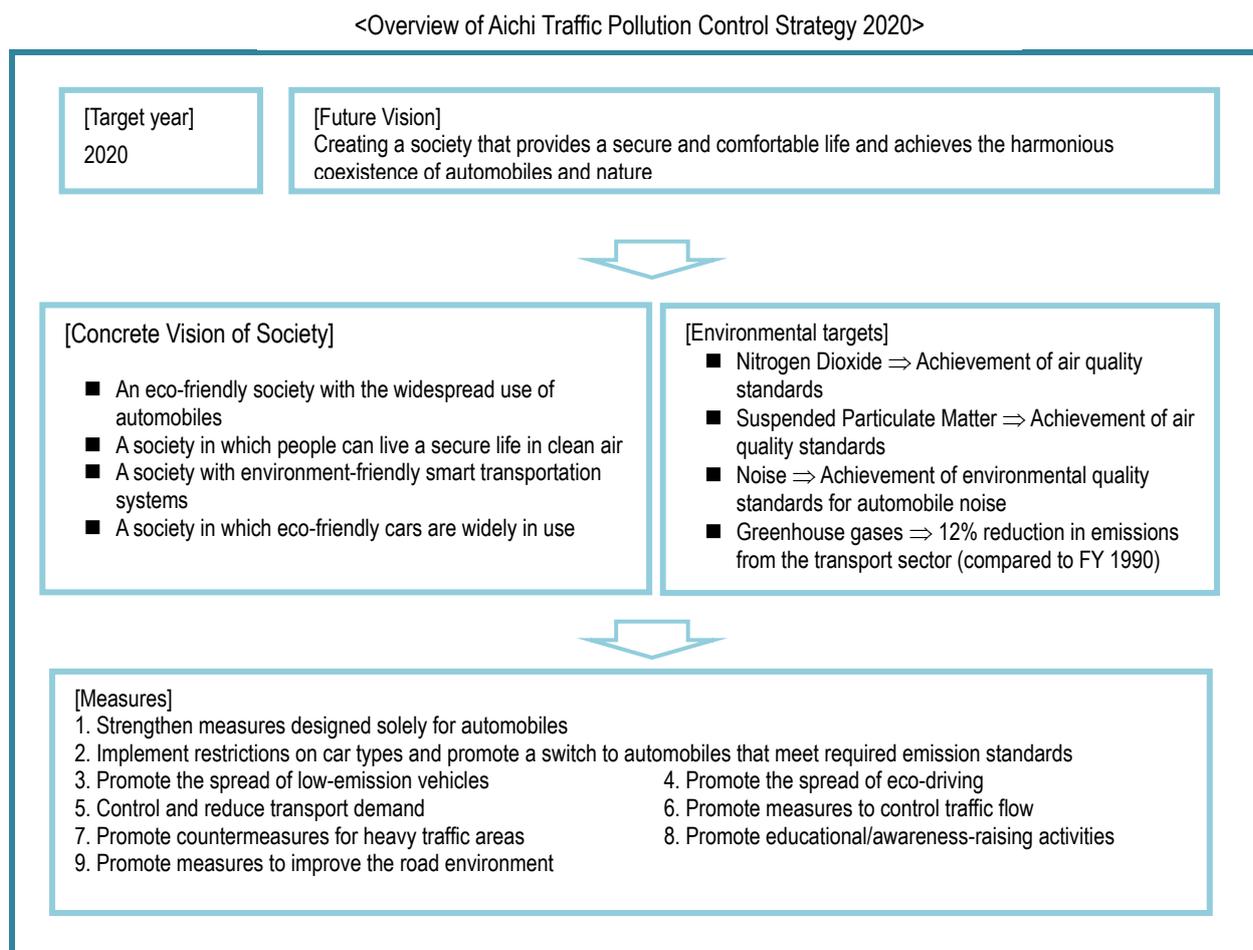


Fig. 6 Overview of Aichi Traffic Pollution Control Strategy 2020

### 3. Efforts Outlined in the Strategy

To achieve the targets set under the Strategy, the Aichi Prefectural Government will implement the following measures in close coordination and cooperation among citizens, businesses, NPOs, and administrative agencies.

#### (1) Strengthening Measures Specially Designed for Automobiles

##### a) Promoting Measures against Diesel-Powered Cars

We will place stricter restrictions on diesel-powered vehicles introduced under old regulations, and promote a switch from conventional vehicles to low-emission vehicles and vehicles that comply with the updated regulations.

##### b) Conduction Educational/Awareness-Raising Activities

We will conduct campaigns against smoky exhaust from diesel vehicles and encourage drivers to have their cars serviced regularly.

#### (2) Implementing Restrictions in Terms of Type of Vehicle and Promote a Switch to Automobiles That Meet Required Emission Standards

We will place tighter control on exhaust emissions and provide support to promote a switch to vehicles that comply with the updated regulations.

#### (3) Promoting the spread of Low-Emission Vehicles

##### a) Promoting the Introduction of Advanced Eco-Friendly Cars, Including New-Generation Vehicles

We will promote the widespread proliferation of “new-generation vehicles and other advanced eco-cars” shown in Fig. 7, with a penetration of 2 million units (a penetration rate of 42%, excluding two-wheeled vehicles) as target. (See Fig. 8 and Table 2)

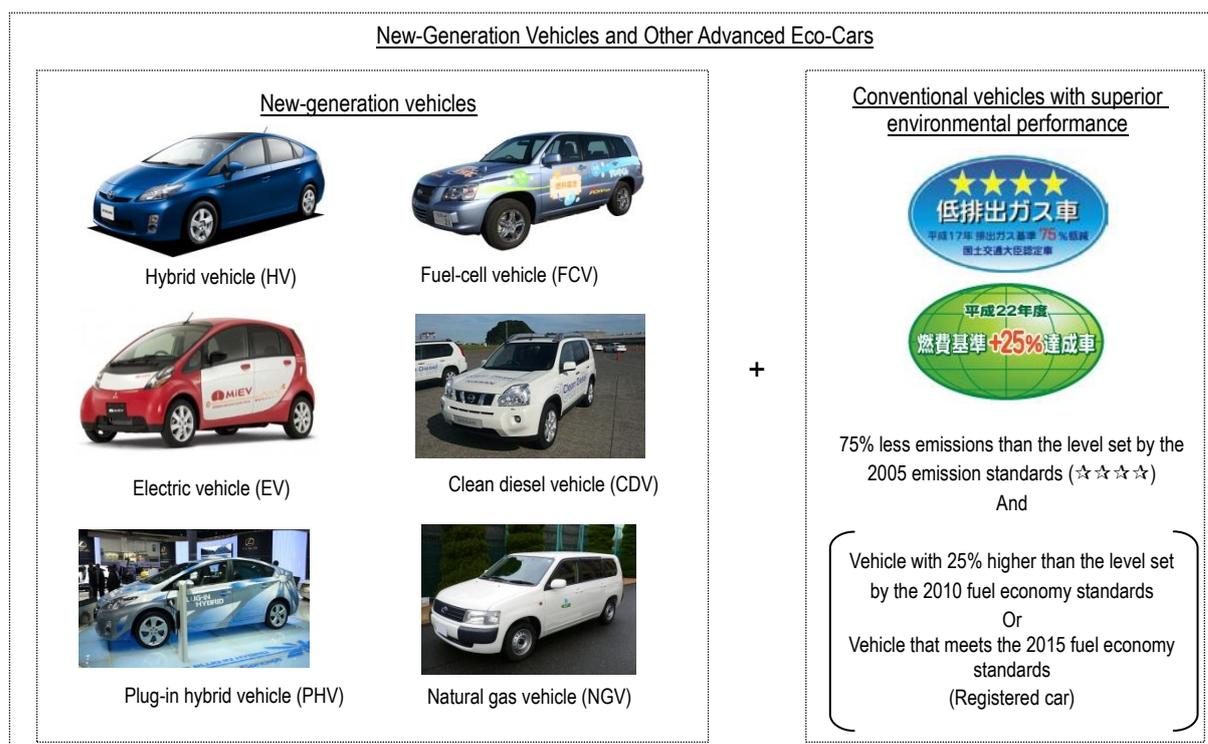


Fig. 7 New-Generation Vehicles and Other Advanced Eco-Cars

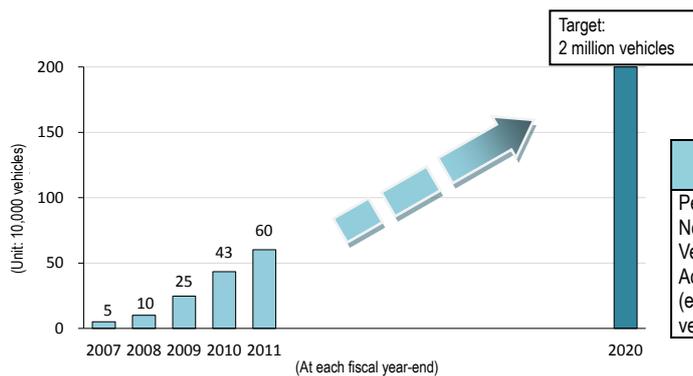


Fig. 8 Diffusion of New-Generation Vehicles and Other Advanced Eco-Cars (Aichi Prefecture)

FY	2007	2008	2009	2010	2011	→	2020 (Target)
Penetration Rate of New-Generation Vehicles and Other Advanced Eco-Cars (excluding two-wheeled vehicles)	1.1%	2.1%	5.2%	9.1%	12.5%	→	42%

Table 2 Penetration Rate of New-Generation Vehicles and Other Advanced Eco-Cars (Aichi Prefecture)

## b) Promoting the development of Infrastructure, Such as Fuel-Feeding Systems

We will promote the construction of infrastructure, such as fuel-feeding systems (charging facilities, natural gas fueling stations, hydrogen supply facilities, etc.), across the board within the prefecture in order to promote the widespread use of new-generation vehicles and other advanced eco-cars.

### ○ Charging facilities

To encourage broader use of electric vehicles (EVs) and plug-in hybrid vehicles (PHVs), we will promote the development of charging facilities by offering subsidies to mass merchandising stores, out-of-town convenience stores, hourly parking lots ready to install charging facilities.

As part of such efforts, we formulated the “Project to Develop a Charging Infrastructure for New-Generation Vehicles in Aichi Prefecture” in July 26, 2013, with a view to constructing 1,600 charging stations, the largest number in Japan, by FY 2020.

### ○ Natural gas fueling stations

To encourage widespread use of natural gas-powered vehicles (NGVs), we will promote the wide-area construction of natural gas fueling stations by providing a subsidy for the installation of such equipment.

### ○ Hydrogen supply facilities

To encourage widespread use of fuel cell vehicles (FCVs), we will facilitate the development of hydrogen supply facilities by reducing infrastructural costs—such as on-site hydrogen production equipment, hydrogen storage tanks, and hydrogen pipelines—and by providing financial support for the introduction and installation of such facilities.

## (4) Promoting the Spread of Eco-Driving

### a) Promoting Eco-Driving Practices

We will encourage eco-driving practices by conducting activities to raise public awareness of eco-driving, holding eco-driving events, and promoting environmental education. (Eco-driving implementation rate in FY 2010: 58.1%)

**b) Developing and Diffusing Eco-Driving Systems**

We will promote the introduction of eco-driving systems, such as development and diffusion of eco-drive support equipment and assessment systems.

**(5) Controlling and Reducing Transport Demand**

**a) Improving Physical Distribution**

To control automobile traffic volume, we will encourage physical distribution that utilizes green shipping and promote improvements to physical distribution bases, etc.

**b) Developing and Improving Public Transportation Systems and Promoting Their Use**

We will develop and improve public transportation systems, such as railways and buses, and promote the use of such systems in order to control the excessive use of automobiles and secure a better automobile environment.

**c) Improving and Diversifying the Use of Automobiles**

We will review and improve the use of automobiles with a focus on control and alleviation of automobile use as well as novel approaches to new-generation vehicles and other advanced eco-cars.

**d) Promoting the Use of Bicycles, etc.**

We will promote the development of cycle paths and the greater use of bicycle rental systems.

**(6) Promoting Measures to Control Traffic Flow**

**a) Dispersing and Alleviating Passing and Inflow Traffic**

To alleviate traffic jams, we will disperse and alleviate passing and inflow traffic by creating inner-city ring road systems, bypass highways, and interchanges.

**b) Promoting the Construction of Environment-Friendly Transportation Systems Utilizing ITS**

We will promote the establishment of environment-friendly transportation systems that utilize ITSs (Intelligent Transportation Systems).

**(7) Promoting Countermeasures for Heavy Traffic Areas**

We will promote various traffic pollution control measures, with particular priority given to areas suffering from heavy traffic and air pollution from automobiles.

#### **(8) Promoting Educational/Awareness-Raising Activities**

To promote greater use of new-generation vehicles and other advanced eco-cars, we will promote educational and awareness-raising activities targeting residents and businesses by disseminating information on the progress of eco-car development and fuel-feeding facilities, such as plug-in stations, and by launching EV/PHV-based eco-town projects.

#### **(9) Promoting Measures to Improve the Road Environment**

With the aim of achieving environmental quality standards for automobile noise, we will advance various environmental measures to road structures and the roadside environment.

### **4. Driving Force for the Strategy**

Traffic pollution control measures cover an extensive scope, from measures against the source of pollution to traffic control measures, road structure measures, roadside environment measures, and awareness-raising measures. We, therefore, need to promote such measures with the cooperation of stakeholders in various stages, from auto manufacturing to the use of automobiles, including private sectors, residents, NPOs, administrative agencies, and so forth.

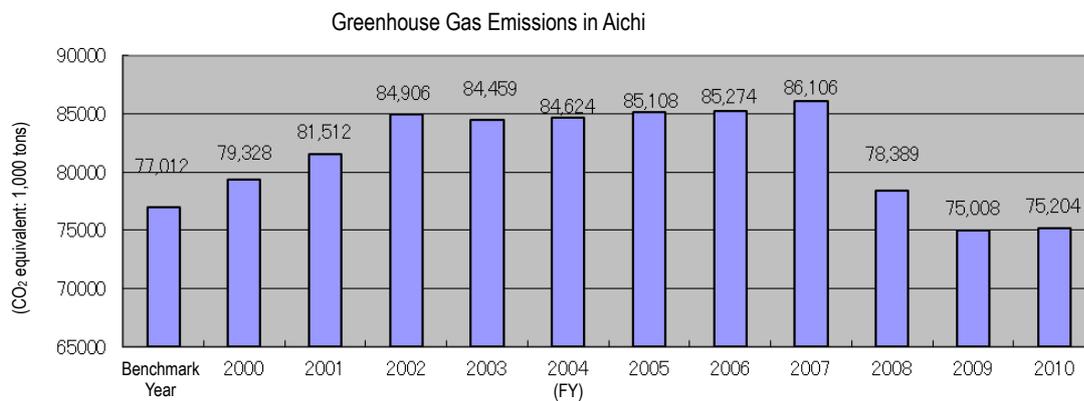
Toward this end, we have established the Council on Aichi Traffic Pollution Control Strategy, comprising relevant citizens and representatives from private sectors, NPOs, and public administrations. To increase the effectiveness of the Council, moreover, a special working-level committee was set up, and a general coordination committee was also launched in order to harmonize measures to be taken under the Strategy.

For promoting various measures under the Strategy, these entities will undertake due consultations and coordination, monitor and evaluate the progress of the Strategy, and reflect evaluation results in adopted measures.

### ● Greenhouse Gas Emissions in Aichi Prefecture

In FY 2010, the total emission of greenhouse gases in Aichi Prefecture amounted to approximately 75,204,000 tons, 93% of which is energy-originating CO<sub>2</sub>.

This level of emissions is 2.3% lower than that of FY 1990, the benchmark year of the Aichi Global Warming Prevention Strategy adopted in January 2005. Despite some progress, however, we were not able to achieve the target of a 6% reduction compared to the benchmark year.



(Data: Department of the Environment, Aichi Prefectural Government)

### ● Initiatives to Tackle Global Warming

The newly formulated “Aichi Global Warming Prevention Strategy 2020” aims to reduce by FY 2020 the emission of greenhouse gases in the prefecture by 15% compared to the levels of FY 1990. The Aichi Prefectural Government will undertake 17 prioritized measures under four initiatives, with its vision as a “sustainable Aichi where symbiotic relationships are enjoyed among people, industry, and the environment.” With four initiatives as the core, efforts are under way to address global warming by involving diverse stakeholders.

#### ◇ Aichi CO<sub>2</sub> Emission Reduction Manifesto 2020

The Aichi CO<sub>2</sub> Emission Reduction Manifesto 2020 aims to encourage businesses to take voluntary action in order to address global warming. In this program, the Aichi Prefectural Government awards registration certificates to businesses that announce their firm commitments to tackle the issue, in the hope that efforts by such businesses will have positive ripple effects on other companies and other regions. In FY 2012, the previous version of the Manifesto was replaced with this new version, which features the introduction of a system that gives a star ranking according to the outcome of the efforts undertaken. As of FY 2012, 21 companies have received registration certificates.

◇ **“Global Warming Action Plan” Program**

Aichi Prefecture Ordinance concerning the Preservation of the Living Environment of Prefectural Residents (Living Environment Ordinance) requires persons establishing or managing a factory or business establishment with greenhouse gas emissions above a certain level to submit a plan to control such emissions (Global Warming Action Plan), together with a report on action taken in the previous year (Implementation Report) to the governor.

According to the Implementation Reports submitted by FY 2012, the total emission of greenhouse gas for each target year was reduced by 3.2% compared to the level of each benchmark year.

◇ **Promoting the spread of solar power systems**

To promote broader use of domestic photovoltaic power generation systems, in FY 2003 the Aichi Prefectural Government, in association with municipalities, started to provide subsidies to households that install solar power systems. In addition to subsidy programs, the central government introduced a system to purchase surplus electricity generated by solar power in November 2009.

Due partly to support programs such as these, Aichi Prefecture ranked first in the number of installed solar power systems for household use, standing at approximately 86,000 units as of the end of FY 2012.

◇ **Citizens’ Movement “Aichi Eco Challenge 21”**

With the cooperation of the Prefectural Promotion Center for Climate Change Action and the members of the movement for promoting global warming prevention, commissioned by the Governor of Aichi Prefecture to take a leadership role in promoting efforts against global warming (152 members as of the end of March 2013), a wide variety of events were held in FY 2012. They include “Stop Global Warming Classes” for school children, workshops on eco-driving for driving school students, and the “Aichi Green Curtain Competition.” In addition, booths were set up in various events in order to promote eco-friendly lifestyles.

### ● Definition of Air Pollution

Air pollution is caused by various pollutants, such as smoke dust from factories and emissions from automobiles. These pollute the atmosphere, leading to conditions that are likely to damage human health and the living environment.

### ● Air Pollution in Aichi

Aichi Prefecture and the municipalities of Nagoya, Toyohashi, Okazaki, and Toyota have conducted surveys to assess air pollution caused by sulfur dioxide and other substances.

#### ◇ Sulfur Dioxide (SO<sub>2</sub>)

Sulfur dioxide results chiefly from oxidation during the combustion of sulfur contained in fuels such as petroleum and coal.

#### ◇ Nitrogen Dioxide (NO<sub>2</sub>)

Nitrogen dioxide results from oxidation during the combustion of nitrogen contained in fuels and in the atmosphere.

#### ◇ Carbon Monoxide (CO)

Carbon monoxide results chiefly from the incomplete combustion of materials.

#### ◇ Suspended Particulate Matter (SPM)

SPM refers to particles with a diameter of less than 10 μm among the particulates suspended in the atmosphere: SPM results from industrial activities, automobile emissions, and soil and sand rising into the atmosphere.

#### ◇ Photochemical Oxidants (Ox)

Photochemical oxidants refer to groups of pollutants that are secondary products of the photochemical reaction that occurs between nitrogen oxides and hydrocarbons in the atmosphere due to the effects of ultraviolet rays. Weather conditions affect the production of photochemical oxidants. In FY 2012, there were a total of four days when urban ozone predictions were issued, and on two of these days warnings were issued.

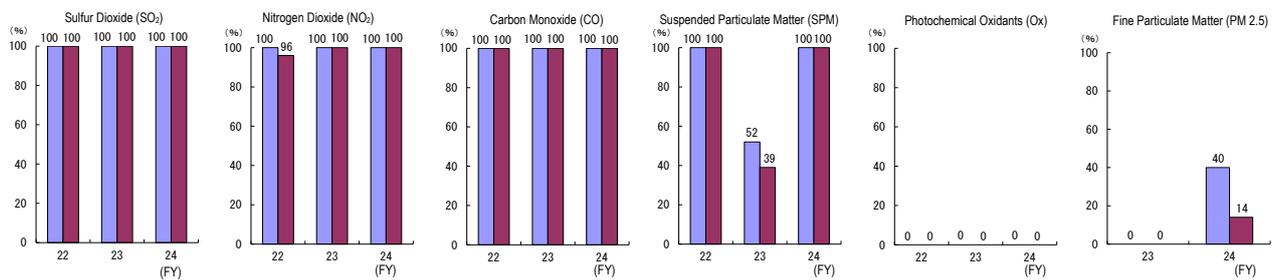
#### ◇ Fine Particulate Matter (PM 2.5)

PM 2.5 refers to particles with a diameter of less than 2.5 μm among the particulates suspended in the atmosphere. The particulates are small enough to penetrate deep into the lungs, triggering health concerns. In September 2009, environmental quality standards for PM 2.5 were established, and constant observation commenced in April 2011. As of September 30, 2013, the number of monitoring stations for PM 2.5 was increased to 34.

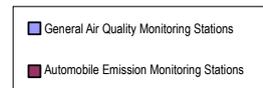
◇ **Other hazardous air pollutants**

With regard to other hazardous air pollutants, air quality standards have been set for four substances: benzene, trichloroethylene, tetrachloroethylene, and dichloromethane. The *Guidelines for Reducing Health Risk from Environmental Hazardous Air Pollutants* have been established for eight substances: acrylonitrile, vinyl chloride monomer, mercury and its compounds, chloroform, 1,2-dichloroethane, 1,3-butadiene, and arsenic and its compounds. The Aichi Prefectural Government has conducted monitoring surveys on these 12 substances. In FY 2012, environmental quality standards and guideline values with respect to these substances were achieved in all monitoring sites.

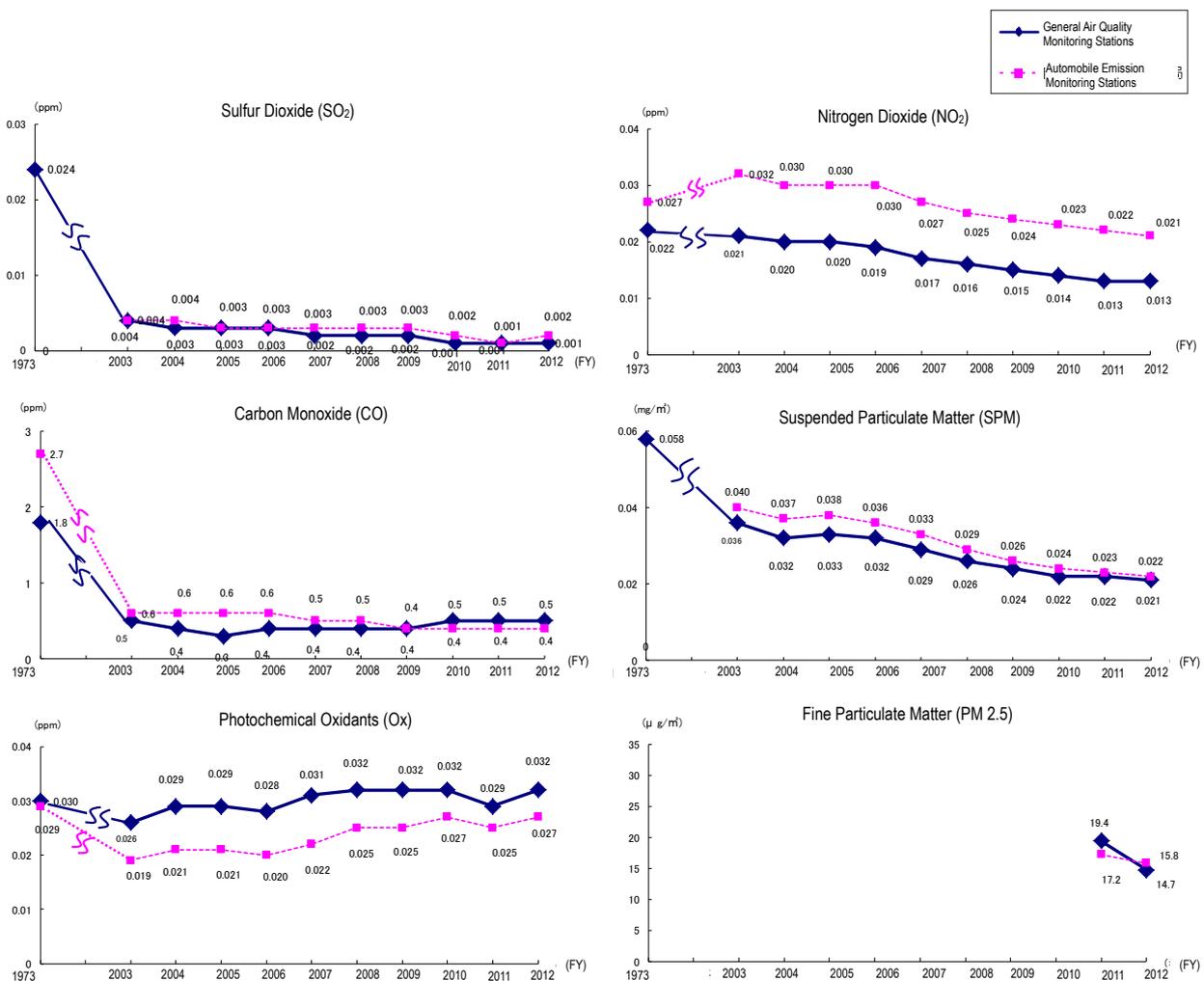
Change in Environmental Quality Standards Clearance



(Data: Department of the Environment, Aichi Prefectural Government)



## Change in Annual Average Values of the Six Substances Monitored for Environmental Quality Standards



(Data: Department of the Environment, Aichi Prefectural Government)

## ● Air Pollution Control Measures

### ◇ Factories and businesses

In accordance with the Air Pollution Control Law, the designated facilities that are major sources of smoke and particulates, including sulfur oxides, smoke dust, and nitrogen oxides, and volatile organic compounds (VOC) are subject to emission control. In accordance with the Aichi Prefectural Ordinance concerning the Preservation of the Living Environment of Prefectural Residents (Living Environment Ordinance), the Aichi Prefectural Government has tightened emission controls by designating more facilities subject to regulation for smoke and particulates and by stipulating prefectural standards on emissions.

### ◇ Asbestos measures

Under the Air Pollution Control Law, asbestos is designated as specified dust, a hazardous air pollutant that can cause serious health problems. Strict regulations have been imposed on the designated facilities and operations that generate or disperse specified dust.

#### ◇ **Automotive pollution control measures**

Following the enactment of the “Law concerning Special Measures to Reduce Total Automobile Nitrogen Oxides Emissions in Specified Areas” (Automobile NOx-PM Law), the Aichi Prefectural Government adopted the “Aichi Traffic Pollution Control Strategy in the New Century” and the “Aichi Prefecture Total Emission Reduction Plan for Nitrogen Oxides and Particulate Matter from Automobiles” (Total Emission Reduction Plan) to tackle the issue of automotive pollution. As a result, the air quality of Aichi Prefecture has been generally improved. However, we need to continue our efforts to meet and maintain air quality standards for nitrogen oxides and suspended particulate matter, and reinforce our efforts to reduce automobile noise and greenhouse gas emissions.

As part of such efforts, we adopted the “Aichi Traffic Pollution Control Strategy 2020” in March 2013, with the target year set at FY2020, into which the older “Traffic Pollution Control Strategy” and the “Total Emission Reduction Plan” were integrated after due consideration.

#### ◇ **Measures to control inflow traffic in areas subject to the Automobile NOx-PM Law**

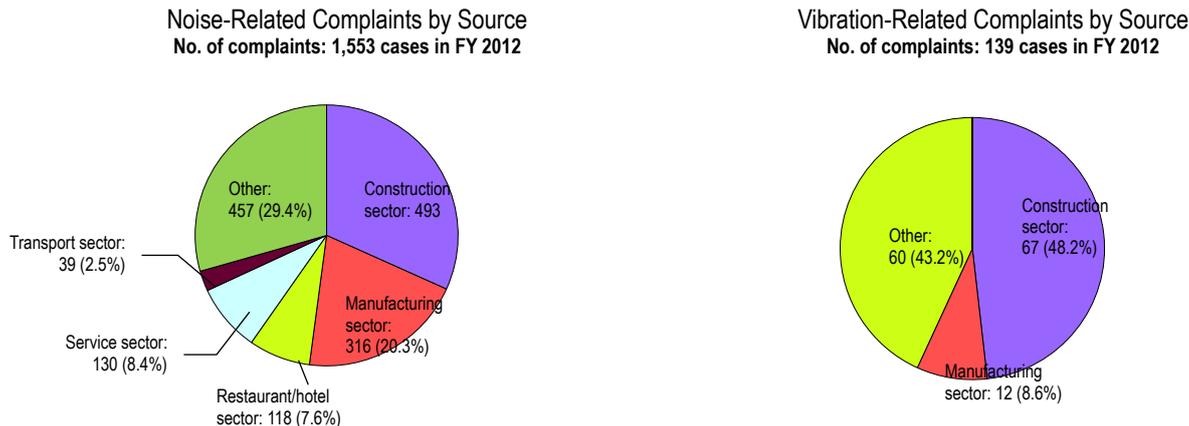
Aichi Prefecture, in coordination with Nagoya and Okazaki cities, developed the *Guidelines on the Disuse of Trucks and Other Vehicles Nonconforming to the Restriction on Car Types* and put them into effect in August 2010.

These Guidelines require the transportation companies, etc. that run trucks, buses, etc. in the areas subject to the Law to use vehicles conforming to the restriction on car types, and require that consigners and consignees request carriers etc. not to use vehicles that do not conform to the restriction on car types. Moreover, consigners etc. above a certain size are required to submit an implementation report every year to the authorities concerned.

## Noise and Vibration

### ● Definition of Noise and Vibration

Noise is a general term for “undesirable sound” and “sound that should not be present” and has both psychological and physiological impacts on people. Vibration refers to “man-made shaking”; like noise, it has psychological and physiological impacts on people. Noise and vibration are called “sensory pollution” as a result of the subjective differences in people regarding what they dislike or how they feel.



(Data: Department of the Environment (Aichi Pref.) and the Environmental Disputes Coordination Commission)

### ◇ Automobile noise and road traffic vibration

The environmental quality standards for automobile noise were met by 94.3% of the monitoring sites in FY 2012. Regarding road traffic vibration, 6.9% of the sites exceeded the Request Limits. The Request Limits for road traffic vibration were met at all of 65 monitoring sites in FY 2012.

**Request Limit:** For noise, the threshold levels are set in accordance with Article 17.1 of the Noise Regulation Law. These values are imposed if the mayor of a municipality considers that the living environment of the area around a road is greatly disrupted due to automobile noise and wishes to request the Prefectural Public Safety Committee to apply measures stipulated under the Road Traffic Law. For vibration, the levels are set in accordance with Article 16.1 of the Vibration Regulation Law. These values are imposed if the living environment of the area around a road is greatly disrupted and a request is submitted to the road management body or the Prefectural Public Safety Committee to apply mitigating measures.

### ◇ Aircraft noise

In Nagoya Airport, which is run by Aichi Prefecture, environmental quality standards were met in 9 out of the 17 sites in FY 2012.

In Chubu International Airport, environmental quality standards were met at all the sites in FY 2012.

In FY 2012, environmental quality standards for Shinkansen Superexpress Railway noise were met in 55 out of the 78 monitoring sites, with an achievement rate of 70.5%.

## ● Measures for Noise and Vibration

In order to regulate noise and vibration arising from the operation of factories and business establishments and from construction work, the Aichi Prefectural Government sets regulation standards and designates areas subject to regulation, in accordance with the Noise Regulation Law and Vibration Regulation Law.

In accordance with the Living Environment Ordinance, the Aichi Prefectural Government is regulating noise from late-night businesses (not regulated by law) and restricting the use of audio equipment, as well as extending the scope of regulatory application to more facilities and construction work. The Mikawa mountainous area of the prefecture has been designated as an area subject to regulation in order to conserve the living environment of the region.

## Offensive Odors

### ● Definition of Offensive Odors

Offensive odor is a general term referring to “disagreeable odors” and “unpleasant odors,” which have both psychological and physiological impacts on people. As with noise and vibration, offensive odors give rise to many complaints every year.

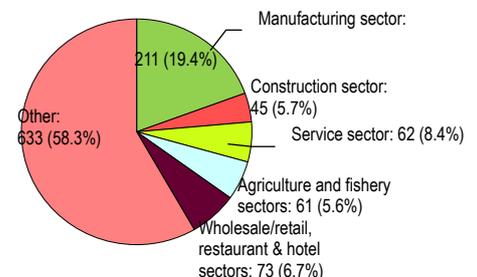
### ● Measures against Offensive Odors

In order to regulate offensive odors that arise from the operation of factories and business establishments and from construction work, the Aichi Prefectural Government sets regulation standards and designates areas subject to regulation, in accordance with the Offensive Odor Control Law.

The Living Environment Ordinance stipulates that factories and business establishments should prevent the diffusion of offensive odors. Factories and business establishments in the 15 business sectors designated under the Ordinances are obliged to submit documentation regarding the structure of facilities, working methods, etc.

### Offensive Odor-Related Complaints by Source

No. of complaints in FY 2012: 1,085 cases



(Data: Department of the Environment (Aichi Pref.) and the Environmental Disputes Coordination Commission)

### ● Definition of Water Pollution

Water pollution refers to the increase in levels of organic materials, harmful substances such as heavy metals and eutrophication-inducing nitrogen and phosphorus in public water bodies, such as rivers, sea areas, and groundwater. The cause of water pollution is effluent from homes, factories and businesses, domestic animal facilities, and farmland.

### ● Water Pollution in Aichi

Environmental quality standards relating to water pollution fall into two categories: those relating to the protection of human health (Health Items) and those relating to the protection of living environments (Living Environment Items). In Aichi Prefecture, Health Items apply to all public water areas, and Living Environment Items apply to 38 rivers (49 water areas for BOD, etc.), one lake and all the sea areas of Ise and Mikawa Bay (11 water areas for COD etc.; six water areas for total nitrogen and total phosphorus). The water quality conditions of Aichi Prefecture in FY 2012 are as follows.

#### ◇ Public water areas (Rivers, lakes, sea areas, etc.)

##### <Health Items>

A survey on 27 health items, including cadmium and lead, was carried out at 141 sites (100 river sites, two lake sites, 39 sea area sites) across the prefecture. Although the environmental quality standards for 1,2-dichloroethane were not met at one site, all other 140 sites met the environmental quality standards regarding all the health items.

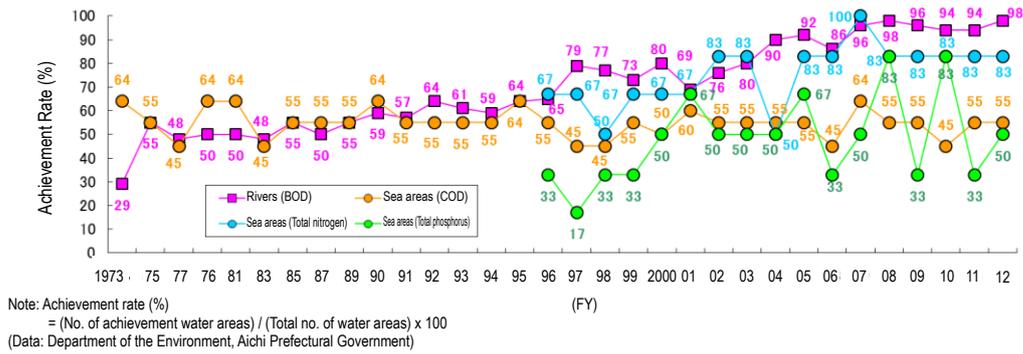
##### <Living Environment Items>

Aiming at the conservation of the living environment, a survey is conducted on 10 items, including biochemical oxygen demand (BOD) and chemical oxygen demand (COD). In FY 2012, 48 out of the 49 water areas surveyed met the environmental quality standards. Regarding total zinc, one of the items of the environmental quality standards for the conservation of aquatic life, Yahagi River areas and the Kiso River system, in which the types of the environmental quality standards are designated, met the standards.

As regards lakes, the environmental quality standards for COD were exceeded at Aburagafuchi.

As for COD in sea areas, environmental quality standards were met at six out of 11 water areas in Ise Bay, Kinuura Bay, and Atsumi Bay (Achievement rate: 55%). For total nitrogen, environmental quality standards were met at five out of six water areas in Ise and Mikawa Bay, and for total phosphorus, the standards were met at three out of six water areas. Trends in the achievement rate of environmental quality standards in terms of COD, total nitrogen and total phosphorus show that achievement rates for all items remain flat.

Trends in Achievement Rate of Environmental Quality Standards in Rivers and Sea Areas



◇ Groundwater

According to a Mesh survey (a survey method in which the prefecture is segmented into 176 survey areas, from which inspection sites are newly selected every year), environmental quality standards for groundwater were met for all items at 97 out of 103 survey sites; six sites exceeded the standards for arsenic, total mercury, 1,4-dioxane, nitrate-nitrogen, nitrite-nitrogen, and fluorine in groundwater. A fixed-points survey, (a survey that is conducted at fixed sites every year to monitor changes over time) showed that environmental quality standards for all items were met at 17 out of 19 sites, but that at two sites, arsenic, nitrate-nitrogen, and nitrite-nitrogen were in excess of standard levels.

The Mesh surveys conducted from FY 1989 to FY 2012 have determined that at 155 out of the 2,294 sites surveyed the environmental quality standards were exceeded in terms of lead, chromium, arsenic, total mercury, volatile organic compounds (trichloroethylene, tetrachloroethylene, etc.), nitrate-nitrogen, nitrite-nitrogen, fluorine, boron, and 1,4-dioxane.

● Water Quality Protection Measures

◇ Regulation and guidance toward factories and businesses

On factories and business establishments that require registration in accordance with the Water Pollution Control Law, regulations are imposed regarding the effluent concentration levels of Living Environment Items (pH, BOD, etc.) and toxic substances (cadmium, trichloroethylene, etc.), as well as the pollution load of effluent (COD, nitrogen, phosphorus, etc.).

Factories and businesses that fail to meet the required effluent standards are called on to improve their effluent treatment facilities or given guidance regarding pollution control.

#### ◇ Promotion of Lake Aburagafuchi clean-up project

The area surrounding Lake Aburagafuchi was designated a Domestic Effluent Priority Area. Based on the 2nd Water Environment Improvement Emergency Action Plan (Seiryu Renaissance II), diversity measures have been taken to improve water quality.

In FY 2012, the COD value of 75% was 7.5 mg/L, showing a trend toward improvement.



Panoramic view of Lake Aburagafuchi  
(Photo courtesy of Kojimagumi Co., Ltd.)

#### ◇ Promotion of water quality improvement in Ise and Mikawa Bay

Ise and Mikawa Bay, which is shallow and the mouth of which is narrow because of the long stretch of peninsula, is a typical closed water area, preventing water circulation between the open sea and the inner part of the bay. In February 2012, the 7th Plan for Reduction of Total Pollution Load was adopted, based on the national government's policy on the reduction of the total pollution load. Under the plan, comprehensive and systematic measures for water quality control have been promoted.

To restore the natural environment of Mikawa Bay, a *satoumi* (community sea) that has provided the area with abundant gifts from nature since ancient times, the Aichi Prefectural Government formulated the Mikawa Bay Satoumi Regeneration Program, under which various measures are underway through cooperation between local residents, NPOs, municipalities, and the prefectural government.

To foster momentum towards the environmental regeneration of Mikawa Bay, the Mikawa Bay Environmental Regeneration Project was launched in FY 2012, in which research activity has been conducted to restore the natural environment of the *satoumi*.

#### ◇ Promotion of domestic effluent measures

The *Guidelines for Controlling Household Effluent* were adopted in accordance with the Living Environment Ordinance. Various PR and awareness-raising activities are under way to promote domestic effluent measures. As part of such efforts, the Aichi Prefectural Government is promoting the appropriate installation of domestic wastewater treatment facilities, including switching from single-treatment septic tanks to combined-treatment septic tanks.

#### ◇ Promotion of groundwater pollution control measures

Mesh surveys and fixed-points surveys have been conducted constantly to grasp the state of groundwater pollution in the prefecture. Under the Living Environment Ordinance, the factories and businesses that handle specified toxic substances are obliged to conduct a survey on soil and groundwater pollution. If the required environmental quality standards are not met, the business must report this to the prefectural governor.

#### ◇ Prevention of water pollution from pesticides used in golf courses

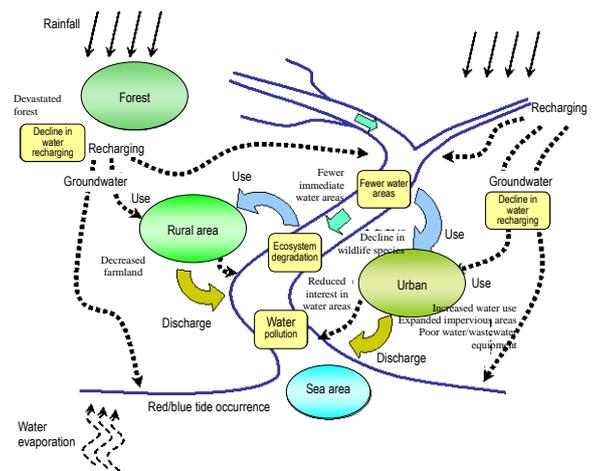
The Aichi Prefectural Government formulated the *Guidelines for Appropriate Use of Pesticides in Golf Courses and the Manual on Appropriate Use of Pesticides in Golf Courses*, under which appropriate use of pesticides for golf courses have been promoted.

## ◇ Regeneration of the water cycle

The rapid development of industry, the advancement of urbanization, and dramatic changes in the environment surrounding forests and farmland have brought about tremendous changes to the water cycle system, giving rise to various problems, including water pollution, ecosystem degradation, and fewer waterfront areas.

Under the Aichi Basic Plan for Regeneration of the Water Cycle launched in FY2005, the Aichi Prefectural Government has promoted efforts to restore a healthy water cycle system, with a view to restoring and fostering a better relationship between people and water. As part of such efforts, the Regional Council for Regeneration of the Water Cycle,

comprising prefectural residents, businesses, NGOs, and administrative agencies, was established to develop an action plan appropriate to the actual situation of the region. The Council has conducted simultaneous monitoring surveys in watershed areas, using the prefecture's unique indices for water cycle regeneration.



Water Flow and Water Cycle Problems

## ◇ Research on aquatic life

An aquatic life research program has been implemented since 1985 for elementary and junior-high school students, with the aim of providing opportunities for experiencing nature in water areas and enhancing interest and awareness about the improvement of water quality.

## Soil and Ground Environment

### ● Definition of Soil Pollution

Soil pollution is the direct mixing of pollutants into the soil or indirect pollution of the soil through the accumulation of pollutants due to air or water pollution. If soil pollution worsens, crop growth may be affected, and crops grown in contaminated soil or polluted groundwater may cause damage to human health.

Recent years have seen an increasing number of soil pollution cases due to harmful substances in urban areas. The Japanese Government introduced the “Soil Contamination Countermeasures Act,” and the Aichi Prefectural Government formulated the “Ordinance concerning the Preservation of the Living Environment of Prefectural Residents” (Living Environment Ordinance), under which various measures have been taken to determine the state of environmental pollution and prevent potential health risks to people.

### ● Soil Pollution in Aichi

Regarding agricultural land, soil inspection sites were set up throughout the prefecture to survey cadmium levels in unpolished rice. In FY2011, a survey was conducted at 10 paddy soil sites, and findings showed that

at all the sites, cadmium levels were below the limits designated for the Soil Pollution Prevention Area of Agricultural Land.

Survey Results: Heavy Metal in Unpolished Rice (FY 2011)

(Unit: mg/kg)

Substance	Maximum value	Minimum value	Average value	Statutory requirements for specified areas
Cadmium	0.13	<0.00	0.04	0.4 or above (From FY2010)

Note: Cadmium levels in unpolished rice (10 sites)

(Data: Department of Agriculture, Forestry and Fisheries, Aichi Prefectural Government)

## ● Soil and Groundwater Measures

Soil Contamination Countermeasures Act requires landowners to conduct a survey on soil pollution. The Aichi Prefectural Government ensures that landowners are fully aware of related laws and regulations, and that regulation and guidance are duly implemented. Any land that is found to be polluted is designated by the governor as an “Area that requires action” or an “Area for which changes in form or nature require notification.” The Living Environment Ordinance also stipulates that any owner of the site of a plant or workplace that has ceased operating must investigate the site and report the results and any emergency measures taken there to the governor. It is also stipulated that when a soil or underground water investigation not required by law or ordinance (voluntary investigation) finds that the soil or groundwater is polluted, the person who conducted the survey should report the results to the governor.

If soil or groundwater pollution is found as a result of voluntary investigation or an investigation conducted in accordance with Soil Contamination Countermeasures Act or the Living Environment Ordinance, the Aichi Prefectural Government issues a public notice, advises the owner of the site on taking the necessary measures, and on investigating water wells around the groundwater pollution site, thereby preventing harm to human health resulting from such contamination.

Areas Designated Pursuant to Soil Contamination Countermeasures Act (as of the end of FY 2012)

Category	Area that Requires Action	Area for which Changes to Form or Nature Require Notification
No. of areas of land designated to date	6 (1)	59 (11)
No. of areas of land whose designation has been cancelled to date	4 (1)	23 (1)
No. of areas of land being designated	2	36

(Note 1) The figure in parentheses indicates the number of areas of land designated or whose designation was cancelled in FY 2012.

(Note 2) Cases in government-ordinance-designated cities (Nagoya, Toyohashi, Okazaki, Ichinomiya, Kasugai, and Toyota) are included.

(Data: Department of the Environment, Aichi Prefectural Government)

## ● Definition of Ground Subsidence

Ground subsidence is a phenomenon that occurs due to excessive withdrawal of water, mainly in areas where there is a thick clay bed and soft ground. When an excessive amount of groundwater is pumped up, the underground water level drops and water pressure declines in the aquifer, through which the pumped water

passes towards the lower pressure. The water contained in the clay bed above and below the aquifer drains into the aquifer. The clay bed shrinks and subsidence results. Once subsidence occurs, there is no recovery and the ground can slowly sink over a large area. Therefore, it is not always noticeable to residents.

Aichi Prefecture has vast areas that lie at sea level in the Nobi Plain and in the coastal parts of the Mikawa area. Such areas are exposed to a much greater risk from disasters such as flooding, high tides, and tsunamis. Subsidence prevention is therefore extremely important.

● **Ground Subsidence in Aichi**

As a result of various subsidence prevention measures, including groundwater pumping regulation, taken pursuant to the Industrial Water law and the Aichi Prefecture Ordinance on Pollution Control (the present Living Environment Ordinance), ground subsidence has come under control by and large. However, in the western part of the Owari area, where there is a thick layer of soft clay bed, subsidence continues to be observed in some areas.

Maximum Annual Depth and Area of Subsidence in the Past Five Years

Year	2008	2009	2010	2011	2012
Maximum annual depth (cm)	0.89	0.94	0.70	0.90	0.99
Area with subsidence of 1 cm or more (km <sup>2</sup> )	0	0	0	0	0

(Data: Department of the Environment, Aichi Prefectural Government)

● **Ground Subsidence Measures**

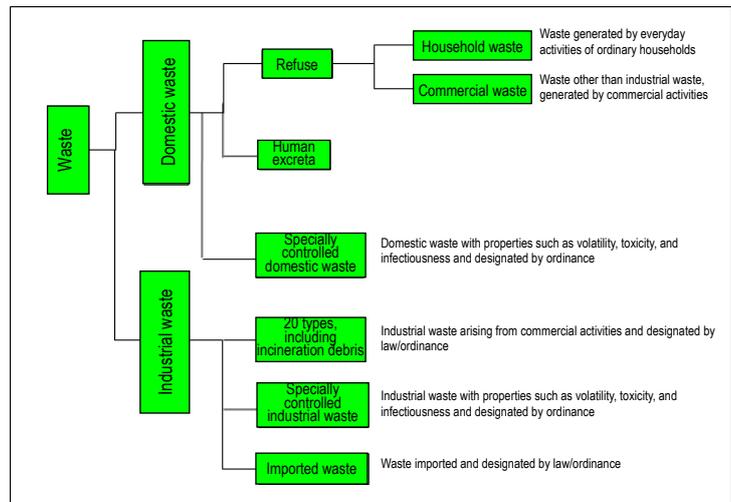
Because severe ground subsidence has occurred before in the Owari area, the Aichi Prefectural Government has been regulating groundwater pumping through recourse to the Industrial Water Law and the Living Environment Ordinance. In 1985, the Japanese Government, for its part, adopted the “Nobi Plain Subsidence Prevention and Other Measures,” following a meeting of cabinet ministers concerned, and in 2010 decided to continue the Measures.

The prefecture has promoted a wide variety of subsidence-related activities depending on the situation. These range from monitoring changes in ground structure, groundwater levels and the amount of pumped groundwater, to regulating groundwater pumping under the Industrial Water Law and ordinances, and disaster-prevention measures, including reinforcement of coastal and river embankments.

## Waste Disposal and Recycling

### ● Definition of Waste (Material)

Waste is material that has become unneeded because it cannot be used for oneself or sold to others. Waste can be categorized into two groups: 1) domestic waste, which refers to the refuse and human excreta generated by households; 2) industrial waste, which refers to combustion residue, waste oil, polluted sludge, and other waste generated in the process of commercial activities carried out by factories, etc. The disposal of domestic waste is the responsibility of municipalities; disposal of industrial waste is the responsibility of the business proprietor.

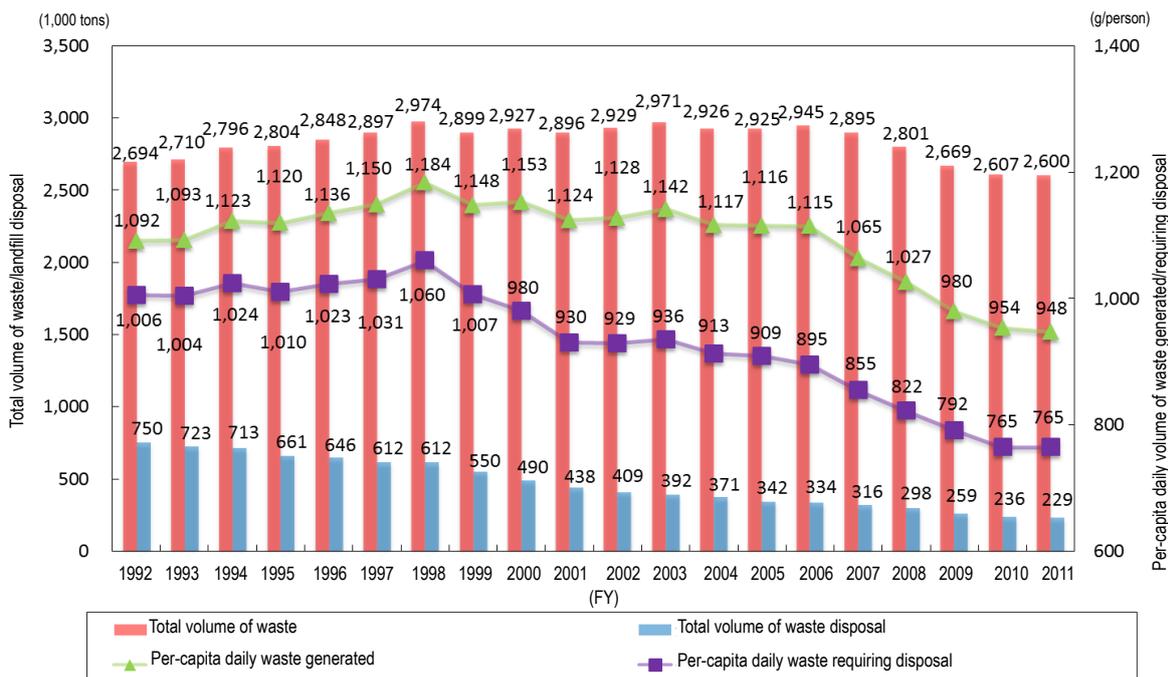


### ● Waste Disposal in Aichi

#### ◇ Domestic waste

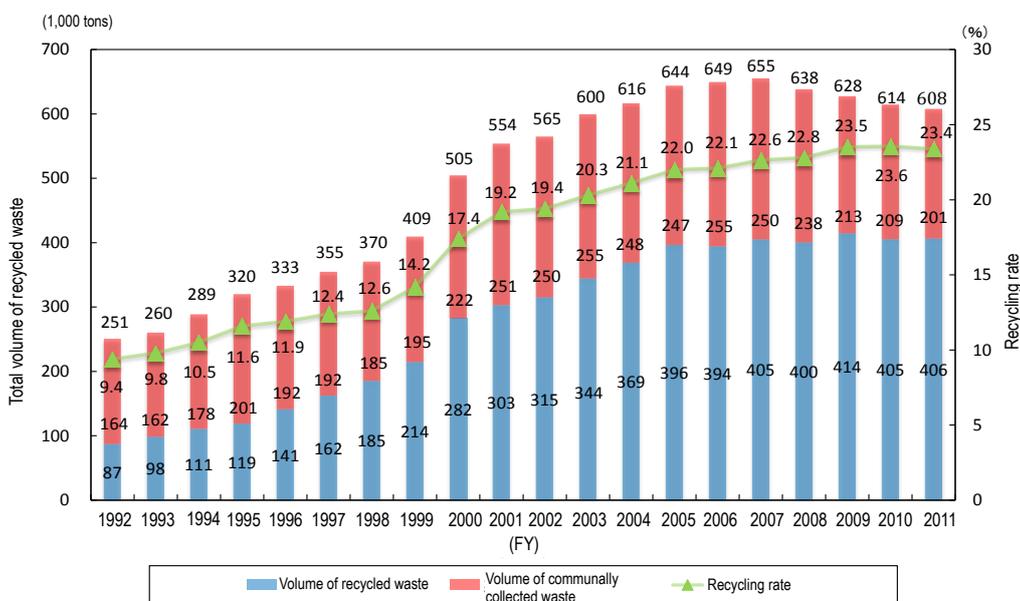
The total amount of domestic waste generation has recently been on the decrease. The volume of waste generated in Aichi Prefecture in FY 2011 totaled 2.6 million tons, or 948 g per person per day. Due to strong efforts to reduce and recycle waste, the recycle rate for FY 2011 was 23.4%, and this rate has remained steady in recent times.

Change in Total Volume of Waste and Landfill Disposal



(Note 1) “Total volume of waste” includes collected waste, brought-in waste, self-disposed waste, and communally-collected waste.  
 (Note 2) As of FY 2007, “population” is defined to include the number of registered foreign nationals, in addition to the number of Japanese nationals on the Basic Resident Register.  
 (Data: Department of the Environment, Aichi Prefectural Government)

Change in Recycling Volume and Rate

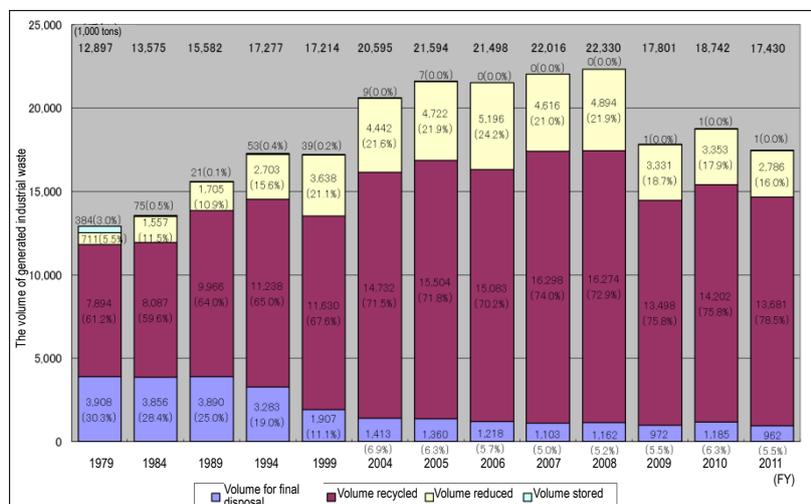


(Note 1) “Total volume of recycled waste” refers to the volume of recycled waste plus the volume of communally collected waste.  
 (Note 2) Recycling rate = (total volume of recycled waste / (volume of collected waste + volume of brought-in waste + volume of communally collected waste)) x 100  
 (Data: Department of the Environment, Aichi Prefectural Government)

## ◇ Industrial waste

In FY 2011, the volume of industrial waste generated, the volume reduced and recycled through intermediate treatment, and the volume for final disposal all decreased compared to the previous year.

Change in the Volume of Industrial Waste Generated, etc.



(Data: Department of the Environment, Aichi Prefectural Government)

## ● Waste Disposal and Recycling Measures

### ◇ Creation of a recycle-oriented society

#### • Promotion of the Aichi Eco Town Plan

The Aichi Prefectural Government reviewed the “Aichi Eco Town Plan” adopted in September 2004 and relaunched it as the “New Aichi Eco Town Plan” in 2012. The objective of this new plan is to facilitate the installation of leading and effective recycling facilities and promote the reuse and recycling of unused resources within the region to create new products or energy, while taking advantage of the region’s characteristics. To make this plan a reality, a range of efforts are being undertaken, such as holding a conference to promote the creation of recycling business; providing subsidies to leading and effective recycling businesses; granting the “Aichi Environment Award” to companies that are committed to promoting the recycling of resources and reducing environmental burdens through superior technology, education, and business activities; and opening the Aichi *Kankyo-juku* (Environment Class).

#### • Promotion of the Aichi Zero Emission Community Plan

To enhance the sustainability of the region based on our own efforts by promoting the Aichi Zero Emission Community Plan, it is necessary to develop and implement projects taking full advantage of characteristics of the region. As part of such efforts, nine progressive business models have been presented, including the “creation of an area-wide energy network” and the “promotion of fuel recycling in urban and other areas.”

- **Domestic waste**

To ensure the appropriate disposal of domestic waste, the Aichi Prefectural Government provides technical and financial support to municipalities regarding the reduction of waste generation and recycling promotion: for example, systematic development of waste treatment facilities utilizing subsidies for promoting the formation of a recycle-oriented society.

The Aichi Prefectural Government conducts on-site inspections of waste incineration and other facilities installed by municipalities, and offers guidance on structural, maintenance and management standards stipulated by the Waste Disposal Law, as well as on compliance or improvements in relation to the emission standards stipulated by the Law on Special Measures against Dioxins.

In cooperation with municipalities, various promotional and awareness-raising programs have been implemented, such as a campaign against abandoned motor vehicles.

- **Industrial waste**

The Aichi Prefectural Government offers guidance for planning for industrial waste reduction and appropriate disposal to businesses that generate large volumes of industrial waste.

In accordance with the Ordinance on the Promotion of Proper Waste Treatment, which was adopted to promote the appropriate disposal of industrial waste, we hold meeting to explain to local residents when incinerators or final disposal sites are constructed. We are also endeavoring to tighten regulations, such as requiring the registration of mini-incinerators.

Industrial waste tax income has been used to further reduce industrial waste generation, promote the reuse and recycling of industrial waste, and for installing final disposal sites.

The Recycling Screening System was introduced in July 2008. When industrial waste and by-products are distributed or used as recycled products, a notification must be submitted in advance to the prefectural government so that their environmental safety can be examined.

- **Securing final disposal sites through public-sector involvement**

It has become difficult to secure sites for the final disposal of industrial and domestic waste. The Aichi Prefectural Government constructed a final waste disposal site at its Kinuura Port No. 3 site in Taketoyo-cho, Chita-gun, in order to dispose waste collected from around the prefecture. It went into full-scale operation on March 1, 2011.

## Conservation of the Natural Environment

### ● The Natural Environment in Aichi

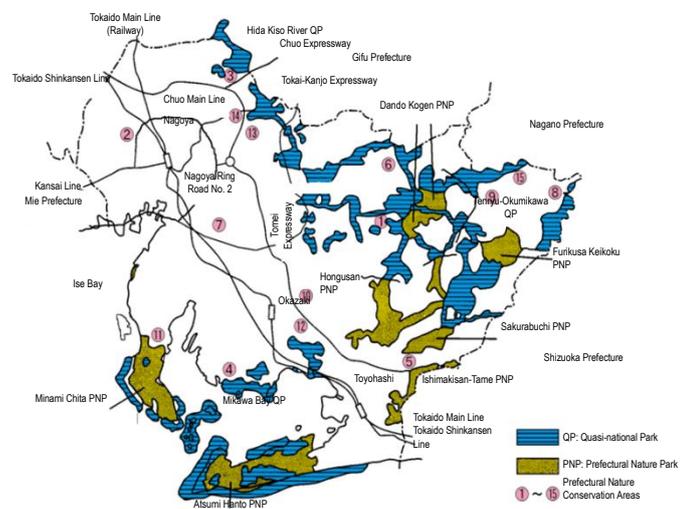
Aichi Prefecture, situated on the Pacific coast of central Honshu (Japan's main island), looks out onto Ise Bay, Mikawa Bay and the Pacific Ocean. The total area of the prefecture is 5,165 km<sup>2</sup>, extending 106 km from east to west and 94 km from north to south. It has a coastline stretching about 598 km, of which some 37 km is natural coastline, where there are roughly 2,062 ha of tidal flatlands and 859 ha of seaweed beds. The natural environment is very varied in Aichi, from the Oku Mikawa mountainous areas, through the *satoyama* (community forests), and down to the plains. Animal species include 64 species of mammals (including marine mammals), 398 species of birds, 15 species of reptiles, and 20 species of amphibians. (These numbers do not include non-native species.) Approximately 2,720 species of plants have been identified.

### ● Protection and Use of Nature Parks

In Aichi Prefecture, there are four quasi-national parks designated by the Natural Park Law and seven Prefectural Nature Parks designated by the Aichi Ordinance on Prefectural Nature Parks. The total land area of these parks is 88,873 ha, comprising 17.2% of the total area of the Prefecture.

In order to protect the beauty and scenery of our nature parks, the Aichi Prefectural Government regulate changes to the current state of a nature park that may adversely affect the scenic beauty or landscape quality. (The prefectural government's permission is required for any changes.)

Conservation of Nature Parks and Natural Environment in Aichi Prefecture



### ● Protection of Nature Conservation Areas

#### ◇ Designation of protection of nature conservation areas

In accordance with the Ordinance on Nature Conservation and Promotion of Greening, the Aichi Prefectural Government designates areas with rich natural environment as a Nature Conservation Area, and endeavors to protect them.

#### ◇ Protection of rare species

The Aichi Prefectural Government designates those wildlife species that are in need of immediate protection from among endangered species as “rare species of wild animals and plants,” and regulates the capture and extraction of designated species. For species that require the protection of habitation and habitat areas, sanctuaries or reserves have been set up to secure and protect their immediate environment.

The prefecture published the *Red Data Book Aichi 2009*, a document that describes the wildlife species found in the prefecture that are in danger of extinction, which can be viewed on the official website of the Aichi Prefectural Government.

◇ **Measures for alien species**

The Aichi Prefectural Government designated 29 species of plants and animals which are unnaturally introduced by human activities and may have significantly adverse effects on ecosystems, as alien species. We have also published *The Handbook of Alien Species in Aichi Prefecture*.

◇ **Protection and management of wildlife**

Under the 11th Wildlife Protection Project Plan, the Aichi Prefectural Government is engaged in activities such as the designation of protected areas for wildlife. With respect to wild boars, Japanese monkeys, Japanese deer and antelopes, the four animal species that have considerably increased in number and posed a serious threat to agriculture and forestry, the Aichi Prefectural Government has developed the Specified Wildlife Management Plan, under which appropriate protection and management activities have been undertaken.

◇ **Protection of greenery: growing forests and greening**

The Aichi Prefectural Government seeks to create an “Aichi with a rich natural environment.” To this end, diverse measures have been taken under the 5th Aichi Prefecture Basic Greenery Plan. These include efforts to create more greenery in parks, along roads and rivers, around schools and other public facilities; provide grants to municipalities and private-sector businesses for their greening activities; enhance prefectural residents’ awareness; and encourage the production of trees for planting.

Utilizing the Aichi Forest and Greenery Tax, we have implemented the Aichi Forest and Greenery Project, which was devised in FY 2009 to create and protect forests and greenery that would support the safe and pleasant lifestyles of citizens. This project aims to pass on to future generations Aichi’s forest and greenery in a healthy state.

## Environmental Risk

### ● Appropriate Management of Chemical Substances

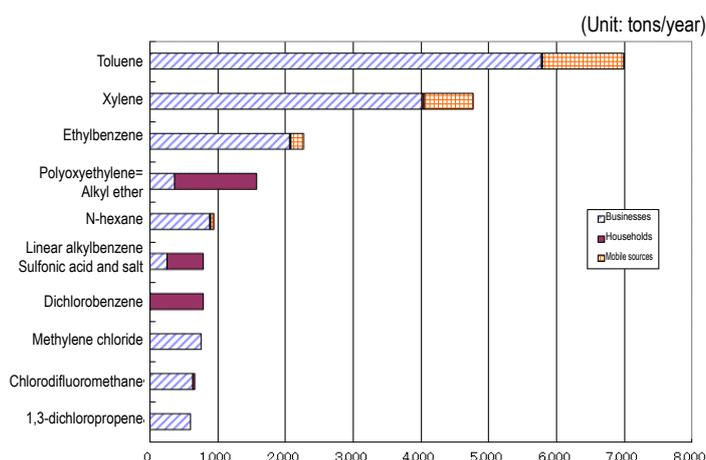
#### ◇ Reduction of environmental risk from chemical substances

There are tens of thousands of different types of chemical substances, which are used in diverse ways in industrial and everyday activities. In each process of their manufacture, distribution, use and disposal, if they are not managed appropriately they may cause environmental pollution and have harmful effects on both human health and the ecosystem. It is essential to control chemical substances properly.

#### ◇ Release amounts, etc. of chemical substances in Aichi Prefecture

Under the PRTR (Pollution Release and Transfer Register) system, business proprietors keep track of the amount of each chemical substance released to the air, water, and soil during their operations, as well as the amount transferred off-site for disposal. The results are reported every year to the Japanese government via prefectural governments. In Aichi Prefecture, there were 2,118 businesses that submitted registrations in FY 2011. The volume released was approximately 12,000 tons (7.2% of the nation's total), roughly 95% of which was released into the atmosphere. The volume transferred totaled approximately 23,000 tons (10.1% of the nation's total), more than 99% of which was removed from the business establishments as waste. Chemical substances for which large amounts were reported were toluene, a chemical substance widely used as a solvent and synthetic raw materials.

Volume of Top 10 Chemical Substances Registered under PRTR (Release and Transfer) by Source of Generation (FY 2011)



(Data: Department of the Environment, Aichi Prefectural Government)

### ● Measures for Polychlorinated Biphenyl (PCB) Waste

The Law on Special Measures concerning Promotion of Proper Treatment of PCB Wastes (PCB Special Measures Law), promulgated in June 2001, sets the period for handling PCB waste handling as March 2027 and requires businesses handling PCB waste products to appropriately store them up until the time of their

disposal, and to report the status of storage and disposal to the authorities concerned. In FY 2012 in Aichi Prefecture, there were 3,579 businesses that submitted registration in accordance with the law.

Under the Basic Plan for PCB Waste Treatment formulated by the Japanese government in April 2003, PCB waste is treated by the Japan Environmental Safety Corporation (JESCO), which operates five regional facilities across the nation. In the Tokai Region, including Aichi Prefecture, JESCO's Toyota PCB Waste Treatment Facility, which commenced operation in September 2005, undertakes the treatment of waste transformers for high voltage use and PCB waste.

## ● **Dioxins**

In accordance with the Law on Special Measures against Dioxins, the Aichi Prefectural Government conducts environmental surveys, site inspections of business establishments and publication of measurements taken by businesses. The environmental survey conducted in FY 2012 showed that environmental quality standards were met at all the sites except for two river and lake sites.

## ● **Environmental Radioactivity**

### ◇ **Measures for environmental radioactivity**

Under commission from the Nuclear Regulation Authority (NRA) (from the Ministry of Education, Culture, Sports, Science and Technology until FY 2012), the Aichi Prefectural Government measures radioactivity levels every year at two monitoring posts: Aichi Environmental Research Center (Nagoya City) and its Higashi Mikawa Branch (Toyohashi City).

Since the Great East Japan Earthquake in 2011, the Aichi Prefectural Government has reinforced the monitoring of environmental radioactivity, in addition to the measurements commissioned by the NRA. The Aichi Environmental Research Center also increased the frequency of measurement of radiation quantities in fallout and tap water. Radiation in the atmosphere one meter above the ground was measured, and radiation in seawater was examined at five spots off Ise Bay, Mikawa Bay, and others. The Center's Higashi Mikawa Branch carried out radiation measurements in fallout, tap water, and suspended dust in the atmosphere.

The Aichi Prefectural Government (Department of Health and Public Welfare) conducted measurements of the radioactivity concentration of seawater (from FY 2011 to 2013) and the air radiation dose rate of the beach (FY 2011 and 2012) at 23 bathing beaches in the prefecture, the results of which were released.

Measurements of the Air Radiation Dose Rate (Aichi Environmental Research Center)

Period	Monitoring Sites	Monitoring Post Measurements ( $\mu\text{Sv/h}$ ) <sup>1)</sup>
April 2012 to Sept. 2013	Aichi Environmental Research Center (Nagoya City)	0.037 - 0.066 (Average: 0.040)
	Higashi Mikawa Branch, Aichi Environmental Research Center (Toyohashi City)	0.035 - 0.068 (Average: 0.040)
	Nishi Mikawa Citizens Affairs Office	0.071 - 0.111 (Average: 0.078)
	Atmospheric Measurement Station, Kisogawa Fire Department (Ichinomiya City)	0.048 - 0.109 (Average: 0.053)
	Shitara Branch, Shinshiro-Shitara Construction Office (Shitara-cho)	0.048 - 0.093 (Average: 0.053)
National measurement values (FY 2010) <sup>2)</sup>		0.004 - 1.500 (Average: 0.041) (N-49) <sup>3)</sup>

(Note 1) In monitoring posts, measurement values are shown by the unit “nGy/h,” but in this document, the values have been converted into “ $\mu\text{Sv/h}$ ” (1  $\mu\text{Sv/h}$  = 1,000 nGy/h.)

(Note 2) For national measurement values, data was used from Japan Chemical Analysis Center’s website page “Environmental Radioactivity and Radiation in Japan.” (<http://www.kankyo-hoshano.go.jp/>)

(Note 3) “N” indicates the number of monitoring sites.

(Data: Department of the Environment, Aichi Prefectural Government)

## Promotion of Environmental Learning, International Environmental Cooperation & Infrastructure Programs

### ● Major Activities Relating to Environmental Learning

- With the Aichi Environmental Learning Plaza (1st floor of Higashi-ote Annex, Aichi Prefectural Government) and the Morinomanabiya (Forest School) (within the Expo 2005 Aichi Commemorative Park) as the hub for environmental learning, the Aichi Prefectural Government has implemented a wide variety of hands-on environmental education programs, including classes featuring practical experiments, forest tours, Kids Club activities, and parent-and-child workshops.

- Since FY 2007, a competition has been held in which the public is invited to create an *Aichi Environment Picture Book* using the environment as its theme. With the section “Picture story show” newly established in FY 2012, there were 103 entries from across the nation, and prizes were awarded to 10 works.



Prize-winning books in the 2012 Aichi Environment Picture Book Competition

- The Aichi Library for Environmental Learning and Information, established in FY 2007, disseminates diverse information to promote environmental learning.

(Aichi Library for Environmental Learning and Information URL: <http://www.aichi-kankyo-gakushu-plaza-unet.ocn.ne.jp/>)

- June is designated as “Environmental Month” by the Japanese Government, and is when the Aichi Prefectural Government holds various events each year to enhance public interest and awareness concerning the environment.

## ● **Support for Private-Sector Environmental Protection Activities**

The Aichi Prefectural Government has implemented low-interest financing programs for small and medium-sized enterprises to encourage their environmental protection activities. Soft loans are provided for the improvement of facilities to prevent pollution; plant relocation; purchase of eco-cars; installation of new energy facilities to help prevent global warming; rooftop/wall greening, etc.

## ● **Promotion of International Environmental Cooperation**

Utilizing the wealth of knowledge and experience gained thus far on pollution control by combating serious pollution problems, the Aichi Prefectural Government has been promoting its environmental collaboration with the Japan International Cooperation Agency (JICA) and other organizations.

## ● **Major Activities for Pollution Prevention and Health Damage Relief**

The Aichi Regional Pollution Prevention Plan (March 2012) has been developed for seven cities, including Nagoya. Based on this plan, regulations and monitoring of sources of pollution and other problem sites have been tightened and improved. In addition, various measures have been comprehensively promoted, including improvements to sewerage systems and dredging rivers and ports.

The Aichi Prefectural Government will continue to promote efforts, with “air pollution control in urban areas,” “traffic pollution control,” “water pollution control in Ise and Mikawa Bay and basin streams,” and “water pollution in Aburagafuchi” as the top priority issues.

In accordance with the Law for Settlement of Environmental Pollution Disputes and the ordinance governing the establishment of the Aichi Pollution Panel, the Aichi Prefectural Government set up the Aichi Pollution Panel and is working to achieve speedy and appropriate settlement of environmental pollution disputes. In addition, In accordance with legislation governing compensation for those suffering ill-health due to pollution, the Aichi Prefectural Government pays compensation to certified claimants.

## ● **Environmental Impact Assessment System**

In accordance with the Environmental Impact Assessment Law and the Aichi Prefecture Ordinance concerning Environmental Impact Assessment, the Aichi Prefectural Government has implemented an environmental impact assessment system for large-scale construction work and improvements, and other projects that may have significant adverse effects on the environment.

In July 2012, the Aichi Prefecture Ordinance concerning Environmental Impact Assessment was partially amended to include stipulations concerning the establishment of procedures for submitting an environmental impact statement at the planning phase. It has also been made obligatory to release information on the environmental impact assessment method to be adopted on the Internet and hold a meeting to explain to stakeholders about the method.

## ● **Major Activities Relating to Environmental Surveys/Research**

The Aichi Environmental Research Center conducts monitoring of air pollution, water pollution, and noise. It is also engaged in joint research with local research institutions, including Nagoya University.

**Towards the Success of the 2014 UNESCO World Conference on ESD!**



Dates : November 10 – 12, 2014 Ministerial-level meetings,  
November 13 plenary sessions, etc.  
November 13 Follow-up meeting  
Venue : Nagoya Congress Center  
Organizers : United Nations Educational, Scientific and Cultural  
Organization (UNESCO), and the Government of Japan

For inquiries: Aichi-Nagoya Committee for UNESCO World Conference on ESD  
TEL.052-951-5350 <http://www.esd-aichi-nagoya.jp>



**Aichi Eco Challenge 21**

Work together to stop global warming!