World Winter Cities Association for Mayors

Subcommittee on Winter Environmental Issues

- Interim Report -

January 2008

Subcommittee on Winter Environmental Issues

World Winter Cities Association for Mayors

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1. Background of the Subcommittee on Winter Environmental Issues

(1) Discussions at the 12th WWCAM Conference in 2006

At the twelfth Mayors Conference in Changchun, China, discussions were held under the theme of "Winter Environmental Concerns." Worldwide interest in the global environment has increased in recent years, and this has been the case also in China, the host of the Mayors Conference.

The Mayors Conference included presentations by participants on the unique challenges to winter cities, such as the effective use of energy for heating, use of biomass as a fuel, and the need for central heating systems that are kind to the environment.

(2) Changchun Declaration

The Changchun Declaration was adopted on the last day of the Mayors Conference, following discussions by representatives of the winter cities. The Declaration expresses the determination of the winter cities to endeavor to promote environment-friendly activities, stating "Acknowledging that urban activities with reduced energy consumption and with less impact on the environment are important for dealing with environmental issues, each city will deal with these issues with utmost wisdom and effort."

Changchun Declaration

- Environmental issues such as global warming are serious issues that all cities have to urgently deal with no matter where they are located.
- In winter cities, with their low temperatures, heavy snowfalls, and harsh climatic conditions, the consumption of energy for heating and for snow removal and melting is enormous, and with rapid urbanization, excessive energy consumption has been adversely affecting the global environment year after year.
- Acknowledging that urban activities with reduced energy consumption and with less impact on the environment are important for dealing with environmental issues, we, the World Winter Cities Association for Mayors, hereby declare that each city will deal with these issues with utmost wisdom and effort.
- The Association also declares that the ideals of the declaration should be promoted to as many winter cities of the world as possible, and that the Association will make its utmost effort to spread these ideals through education and information.

(3) Establishment of the Subcommittee on Winter Environmental Issues

In response to the discussions at the 2006 WWCAM Conference and to the Changchun Declaration on the activities of the Association, the Subcommittee on Winter Environmental Issues was established at the Conference. The Subcommittee has as its goal to study measures to counter threats to the environment in winter cities. The city of Sapporo serves as the secretariat of the Subcommittee.

2. Activities of the Subcommittee in 2006 and 2007

First Questionnaire Survey

Conducted in June 2006; replies were collected from 16 cities.

Theme: Collection of basic data and a study of the awareness of environmental issues in member cities and of issues that challenge the cities
- Understanding environmental issues in member cities;
- Outline of environmental measures in member cities;
- Action on global warming issues;
- Promotion of environmental countermeasures;
- Status of energy use in daily life, etc.

First Subcommittee Meeting

July 26, 2006, in Nuuk, Greenland
(The meeting was held in conjunction with the Working-Level Officials Meeting)

Agenda:
(1) Report on the results of the first Questionnaire Survey;
(2) Discussion on how to carry out Subcommittee activities in the future;
(3) Presentation of environment-related cases by member cities.

Participants: Changchun, Qiqihar (China); Nuuk (Greenland); Sapporo (Japan); Taebaek (Korea); and Anchorage (U.S.A.)

Second Questionnaire Survey

Conducted in June 2007; replies were collected from eight cities.

Theme: Study of global warming countermeasures in member cities
- Investigated whether the cities have global warming countermeasures or not;
- Environment-related cases and activities to counteract global warming;
- Promotion of environmental education among citizens; collaboration with private businesses and/or citizen groups.

Second Subcommittee Meeting

July 26, 2007, in Sapporo, Japan
(The meeting was held in conjunction with the Working-Level Officials Meeting)

Agenda:
(1) Work on creating an interim-report to be presented at the 13th Mayors Conference;
(2) Analysis of the results of the second questionnaire survey;
(3) Presentation of environment-related cases by member cities.

Participants: Prince George (Canada); Changchun, Harbin, Qiqihar and Shenyang (China); Maardu (Estonia); Nuuk (Greenland); Aomori and Sapporo (Japan); Taebaek (Korea); Tromsø (Norway); and Anchorage (U.S.A.)

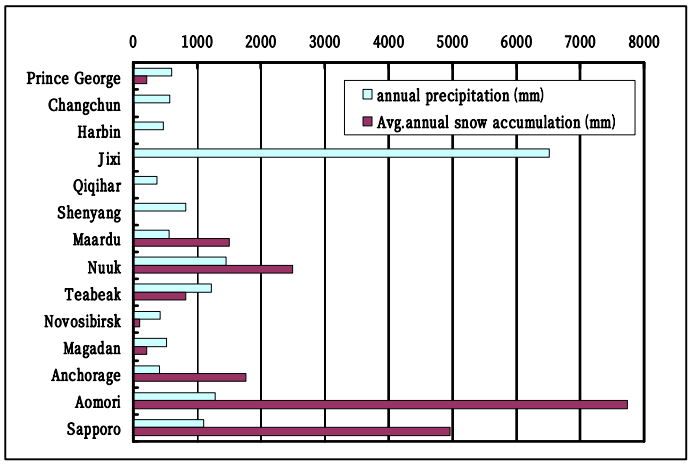
3. Results of the questionnaire survey on global environmental issues in member cities

(1) Outline of member cities and their understanding of general environmental issues

a. About member cities

The chart shows annual precipitation and snow accumulation.
Some Chinese cities have no snow accumulation.

On the other hand, the depth of snow in Aomori is as great as 7.7 meters.



The chart below shows the population and land area of WWCAM member cities. Approximately 9.7 million people live in Harbin, China, and 15 thousand in Nuuk, Greenland.

	Canada	China						Estonia	Greenland	Korea	Russia			USA	Japan	
	Prince George	Changchun	Harbin	Jiamusi	Jixi	Qiqihar	Shenyang	Maardu	Nuuk	Teabeak	Novosibirsk	Yuzhuno-Sakhalinsk	Magadan	Anchorage	Aomori	Sapporo
Population (thousand)	80.0	7,240.0	9,700.0	2,380.0	2,000.0	5,610.0	7,200.0	16.5	15.0	53.0	1,405.6	181.0	99.0	278.0	320.0	1,880.0
Area (km^2)	316	20,571	53,000	32,700	22,531	42,469	12,980	26	105,000	304	506	82	2,950	5,083	825	1,121

b. Environmental issues in member cities

Replies from member cities revealed that the following are major environmental concerns in their cities.

items		Serious issues	Most serious issues
Air pollution	Gas exhaust from factories and other facilities	13	4
	Gas exhaust from vehicles	14	5
Water and soil contamination	Treatment of water drained from daily living	15	8
	Water drained from factories and other facilities	12	3
	River water quality control	12	2
Waste treatment	Treatment of household waste	12	1
	Treatment of waste from businesses and factories	11	2
	Recycling of waste	13	5
	Prevention of the illegal disposal of waste	11	1
	Waste reduction	11	5
Energy conservation	Technological improvement for energy coservation	15	5
	Promotion of energy-saving lifestyles	13	3
Nature and greenery	Preservation of natural environment	16	5
	Tree planting in downtown area and at parks	13	3
Environmental education	Promotion of environmental aducation among citizens	13	5
	Education of peaple who will work for environmental protection locally	11	2
Global warming	Reduction of CO_2 emissions	11	3
Vehicle-related pollution	Control of gas exhaust from vehicle	15	7

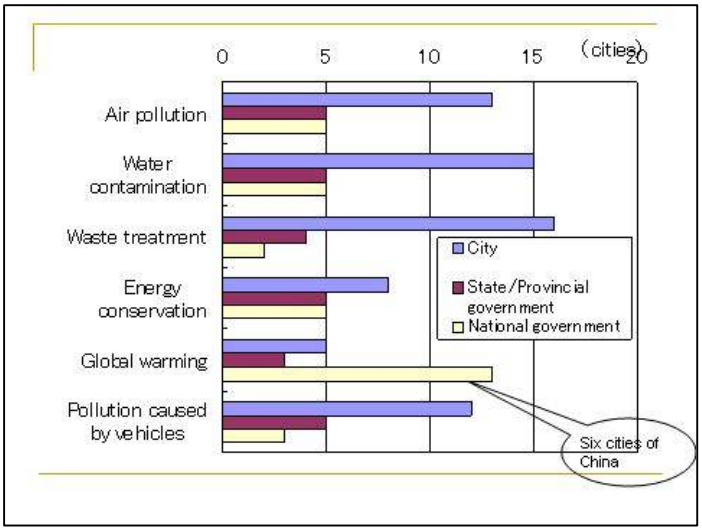
Member cities replied that all the items listed are serious issues to them, which means they are dealing with a multiple number of issues at the same time.

A large number of cities think that “sewage treatment” and “vehicle emissions” are the most serious environmental concerns.

c. Administrative body responsible for environmental measures (national or local)

To the question “Who is responsible for environmental measures, the city or national government?,” most of the respondents stated that the city government has responsibility.

Cities in China, however, indicated that global warming countermeasures are the responsibility of the national government.

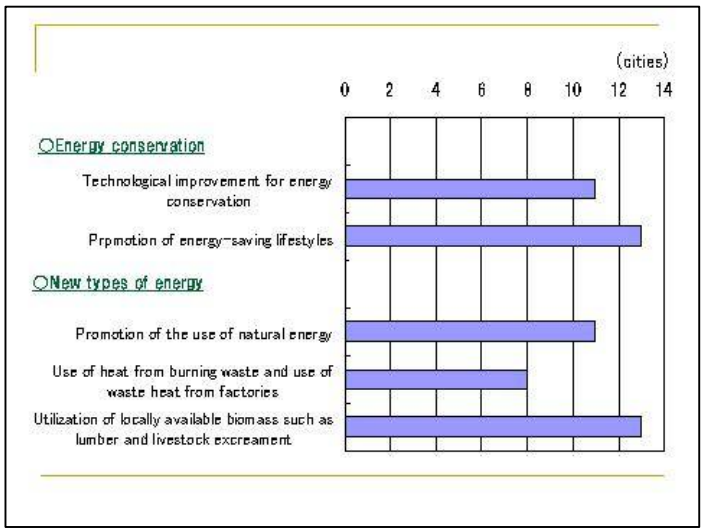


(2) Awareness of global warming

a. Awareness of member cities about issues related to energy conservation and new types of energy

Member cities were asked how they should deal with energy-related issues.

The largest number of cities selected “promotion of energy-saving lifestyles” with regard to energy conservation, and “utilization of locally available biomass” with regard to new types of energy.



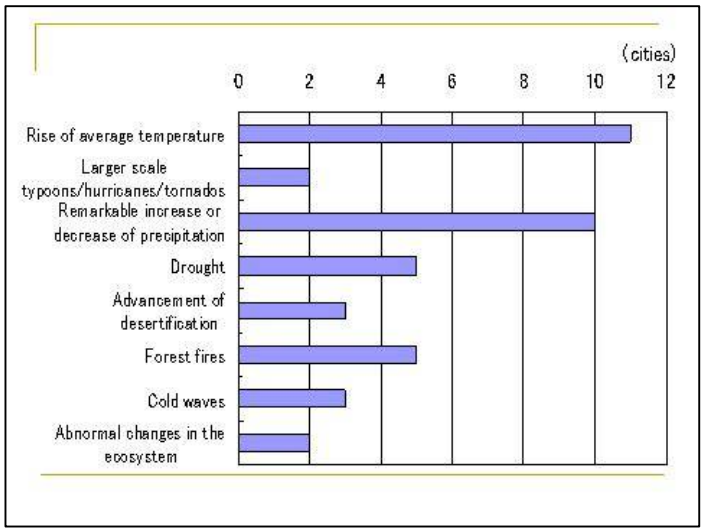
Taebaek, Korea noted that river water contamination caused by water from household drains is a serious problem, and Taebaek also indicated that the city wants to study the utilization of next-generation energy.

Eleven cities indicated that budget limits hinder efforts to solve various environmental issues.

b. Understanding of abnormal climatic conditions

About ten cities chose “rise of average temperature” and “remarkable increase or decrease of precipitation” as indications that abnormal climatic conditions are occurring, which shows that abnormal climatic conditions prevail throughout the world.

The city of Anchorage, U.S.A., responded that a rise in temperature may be responsible for spruce bark-beetle infestation and that dry weather may be responsible for an increased risk of forest fires.

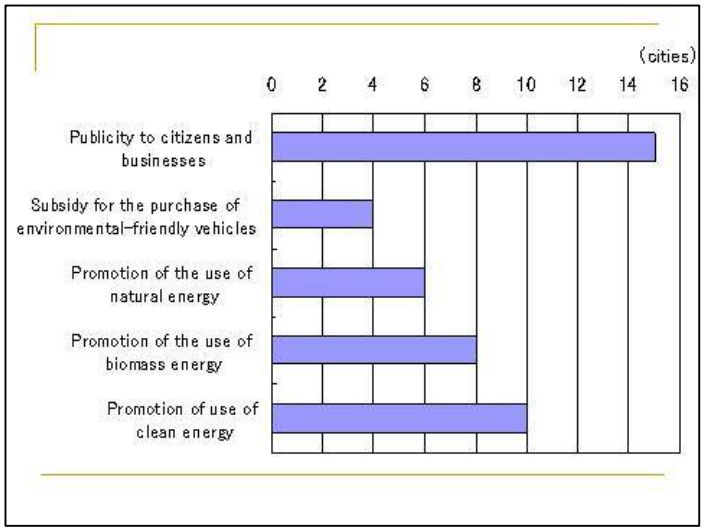


Taebaek, Korea, noted that daily life is affected by yellow dust from the desert in northern China in early spring each year.

Some cities noted that there are different opinions about whether human activity is responsible for abnormal weather. Other cities observed that the United States and Europe are responsible for global warming countermeasures.

c. Projects to counteract global warming

Most member cities are promoting the education of residents about global warming, and more than half of the cities that responded to the questionnaire are promoting the use of clean energy and biomass energy.

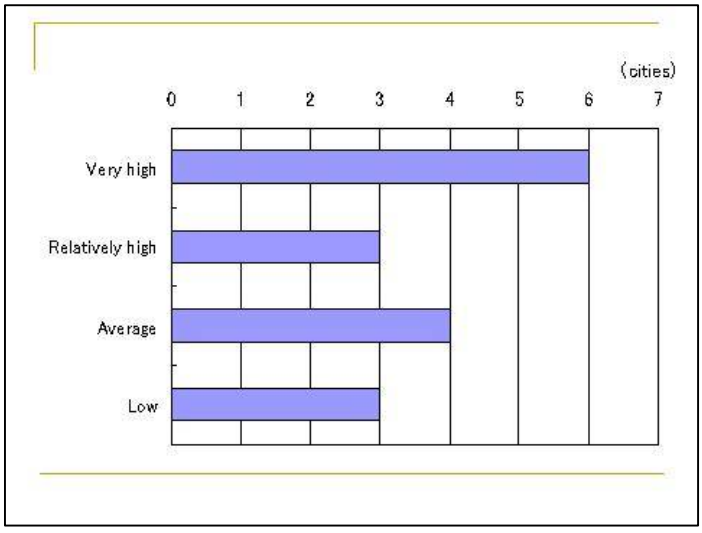


d. Awareness of global warming among city dwellers

In some cities, an awareness of global warming issues among local residents is very high, and residents cooperate with city initiatives.

However, this is not the case in other cities, which struggle to obtain understanding of issues and the cooperation of residents.

Awareness and cooperation vary from city to city.



(3) Details of global warming countermeasures

a. Implementation of global warming countermeasures and numerical goals

Information about the planning of global warming countermeasures and goals at national and local government levels were collected.

At the national level, Greenland, Norway, and Japan, where some WWCAM member cities are located, have plans and targets for reducing greenhouse gas emissions, as the chart indicates.

～ National plan and target ～

Country	Greenhouse gas reduction target	
Greenland	・8% from 1990 levels by the period of 2008 - 2012	Bound by the Kyoto Protocol
Norway	・10% from 1990 levels by the period of 2008 - 2012	Bound by the Kyoto Protocol
Japan	・6% from 1990 levels by the period of 2008 - 2012	Bound by the Kyoto Protocol

At the local government level, six out of eight cities that responded to the questionnaire have plans for reducing greenhouse gas emissions, and goals have been set in most of these cities.

The reason why Prince George, Canada, set its reduction target at two percent is that the majority of greenhouse gas emissions are from industrial sources that are not within the municipal jurisdiction.

～ Regional plan and target ～

City	Plan	Target to be achieved
Anchorage (U.S.A.)	Renewable Resource Program	7% GHG reduction from 1990 levels by 2012
Prince George (Canada)	Energy and Greenhouse Gas Management Plan	GHG reduction target— • Community: 2% of 2002 levels by 2020 • Corporate (municipal operations): 10%

GHG: Greenhouse gas

In Nuuk, Greenland, the waste disposal system has been improved, and a larger combustion plant will be installed by 2012.

～ Regional plan and target ～

City	Plan	Target to be achieved
Aomori (Japan)	Global Warming Countermeasures Action Plan	4.12% GHG reduction from 1999 levels by the period 2000-2004 (new plan being drawn)
Sapporo (Japan)	Global Warming Countermeasures Promotion Plan	GHG reduction target: 6% of 1990 levels by 2010 < 10% by 2017 >

GHG: Greenhouse gas

Targets for reducing greenhouse gas emissions have been established in Anchorage, U.S.A.; Prince George, Canada; and Aomori and Sapporo, Japan.

～ Regional plan and target ～

City	Plan	Target to be achieved
Aomori (Japan)	Global Warming Countermeasures Action Plan	4.12% GHG reduction from 1999 levels by the period 2000-2004 (new plan being drawn)
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GHG: Greenhouse gas

b. Background of promoting global warming countermeasures

Background of promoting global warming countermeasures is also surveyed.

The impact of climate change on south-central Alaska has been staggering the last few years, from millions of acres of forest lost to insect infestation to rapidly retreating glaciers.

Prince George joined the Partners for Climate Protection Program (PCP), which supports local governments in their efforts to reduce greenhouse gas emissions.

～Reason and background～

- Anchorage, U.S.A.
  - Within the last few years, the impact of climate change on southern Alaska has been very serious.
- Prince George, Canada
  - The City was invited to join Partners for Climate Protection Program (PCP), which supports local governments in their efforts to reduce greenhouse gas emissions.

Over the years, Nuuk has expanded greatly, making it ever more important to improve waste disposal and combustion opportunities in this capital city.

～Reason and background～

- Nuuk, Greenland
  - Improved waste disposal and combustion opportunities in the capital city
  - rising awareness that taking care of nature in modern times requires better waste disposal systems in the settlements

In Ulaanbaatar, air pollution resulting from urbanization has become a major concern.

Inefficient coal burning stoves for heating and increases in vehicles are the main causes of public health problems and of increased greenhouse gas emissions.

～Reason and background～

- Ulaanbaatar (Mongolia)
  - Estimated national CO_2 emission in 1995 was roughly 6.6 tonnes per-capita.
  - Mongolia may experience a three-fold increase in energy demand by the year 2020.
  - Coal is consumed for heating.
  - 86,000 vehicles causing air pollution

The basic goal of the Environmental Plan in Aomori,Japan is “to create a city with a comfortable environment with abundant forest resources, beautiful sea, and with a decreased environmental load now and in the future.”

～Reason and background～

- Aomori, Japan
  - Further reduce environmental load and control greenhouse gas emissions.
  - Realize a sustainable, circulation-type of society, “city of environment,” making good use of green forest and blue sea — which provides a low environmental load now and in the future

Sapporo has been making efforts to have residents keep the environment and energy conservation in mind, and the city hopes all residents will be good “eco-citizens.”

～Reason and background～

- Sapporo, Japan
  - Reduce CO_2 emissions while encouraging each individual citizen to act in an environmentally friendly way, with a goal of creating a “city of environment that citizens can show to the world with pride.”

c. Activities to counteract global warming

The Renewable Resources Program created the Sustainable Buildings Working Group,which brought together architects, general contractors, interior designers, and energy experts to promote the development of sustainable or green buildings in Anchorage.

～ Anchorage, U.S.A. ～

- A new system was implemented to put the municipal computer monitors “to sleep” when not in use, saving more than $80,000 a year and reducing emissions by more than 1,200 tons.
- In 2006 the Renewable Resources Program created the Sustainable Buildings Working Group.
  - Working to develop a municipal ordinance setting standards for sustainable building design.

In Prince George, the city’s fleet of vehicles was put on a 5 percent bio-diesel blended fuel mix in the winter and a 20 percent mix in the summer.

～ Prince George, Canada ～

- The wastewater treatment center is currently embarking on a project to make beneficial use of digester gas.
- The City is reducing vehicle fleet emissions through the two programs:
  - Anti-idling campaign
  - The fleet is switching to a bio-diesel blended fuel mix
- Energy reduction and audit programs
  - City streetlight dimming project
  - Conversion of traffic and Christmas lights to LED technology

In Tromsø, waste incineration will be ready by 2010, and district heating will be established by 2015.

～ Tromso, Norway ～

- Methane catching from waste depots
- Reduction of private car use
- Use of biofuel and LNG for transport

The city of Shengyang has been making efforts to create an environment-friendly city, while working to save energy, water, electricity, and gas, as well as developing and using renewable resources. A geothermal pump project has been very successful.

～ Shenyang, China ～

- Expansion of the city green area
- Promotion of energy-efficient housing
- Plan to transform crop stalks to fuel in the farmland
- Utilization of geothermal pump
  - nation's pioneer plan

An improved household stove project in Ulaanbaatar has the goal of reducing coal and wood consumption and CO_2 emissions.

The improved stove has been introduced in the local market, promoted among home owners, and a market demand for the product has been created.

～ Ulaanbaatar, Mongolia ～

- Improved household stove project（2001～2007）
  - Design, test, and pilot production of improved efficiency stove for heating
  - Introduction of improved stove to the local market and creation of market demand
  - Quality assurance
  - Capacity building for local manufacturers
  - Monitoring & evaluation

The city of Aomori has designated the second and fourth Friday every month as "no my car day." On these days, city employees who usually commute by car or motorcycle are encouraged to use public transportation or to walk to work.

～ Aomori, Japan ～

- Introduction of low pollution vehicles
- Encouraging city employees to use public transportation for commuting
- Promoting the introduction of new types of energy and energy efficient equipment and facilities
- Aomori Global Warming Countermeasures Action Plan drawn (March 2001)
- Recycling of used chopsticks

In Sapporo, various promotional activities have been carried out to encourage the reduction of CO_2 emissions under the CO_2 Reduction Promotion Projects.

In addition, the city has been promoting environmental education at schools and making efforts to install solar panels on elementary schools to generate electricity.

～ Sapporo, Japan ～

- Co_2 Reduction Promotion Project
  Systematic implementation of Co_2 Reduction Promotion Plan
- Promotion of Environment Education
  Education regarding global warming promoted in schools
- Support plan to businesses
  Advisors sent to support corporations considering the environment in their business plans
- Solar Panel Installation Model Project
  Solar panels installed at elementary schools in the city
- Idling-stop Campaign

d. Education of residents and collaboration with private businesses and community groups.

As part of the Renewable Resources Program of Anchorage, the mayor and other city employees have participated in many efforts as shown in the chart.

～Anchorage, U.S.A.～

- Created the City Hall Green Star program to bring municipal employees together to share and implement ideas.
- Cosponsored the Anchorage Business Climate Roundtable (February 2007) to highlight business efforts to reduce emissions
- Organized a public forum (February 2007) on reasonable, concrete, individual and business actions to reduce emissions
- Spoke to the Alaska Wilderness Recreation and Tourism Association annual meeting on the economic benefits of tackling global warming

A Energy and Greenhouse Gas Management Plan was recently completed in Prince George. Public involvement in an Integrated Community Sustainability Plan is next.

Opportunities for ndividuals, neighborhoods, businesses, First Nations, not-for-profits, academic institutions, health agencies, and cultural organizations to participate in sustainability initiatives will be identified and promoted.

～ Prince George, Canada ～

- Increase community awareness of water conservation
  - Distributing information pamphlets to residential areas during peak lawn sprinkling times
  - visiting schools and hosting children's activities related to water conservation
- Public engagement in the context of the Integrated Community Sustainability Plan will be developed next.
- The City has had an anti-idling campaign for two years, which some businesses joined.

The city of Tromsø spends about €250.000 each year cooperating with voluntary actors in educating citizens to behave more environment-friendly.

～ Tromsø, Norway ～

- In cooperation with volunteer actors, the city carries out activities to educate its population to behave in a more environmentally friendly way.
  - reducing waste quantity
  - reduce and recycle
  - using public transportation, and walk and bike

The city of Ulaanbaatar, with cooperation from business sector, has been making efforts to disseminate information on global warming to residents in order to raise their education level on this topic.

～ Ulaanbaatar, Mongolia ～

- Enroll private businesses into an awareness-raising education campaign and involve citizens in the campaign's activities
- Disseminate information on global warming to citizens in order to increase awareness
- Contribute to the improvement of global warming situation with enhanced cooperation from the business sector

(4) Summary of results of questionnaire surveys

a. Awareness of the environmental issues

Environmental concerns are common to all the members of the WWCAM. Results of the WWCAM surveys reveal that all the cities are aware that a wide variety of problems, such as air pollution, water and soil contamination, waste, energy conservation, global warming, and vehicular pollution, are serious environmental issues regardless of the size of the city or its regional characteristics.

b. Awareness of global warming

The phenomenon of global warming (climate change) is generally accepted worldwide as one of the most serious global challenges today. The results of the WWCAM survey reveal that not only national governments but local governments as well are concerned with the threat of global warming.

WWCAM member cities are especially concerned with abnormal climatic conditions and most of them feel responsible for environmental policies. Some cities are disseminating environment-related information and promoting the education of residents on environmental issues, which shows the degree to which local governments are aware of environmental issues.

In China, on the other hand, according to responses to the survey from cities in that country, the national government is responsible for policy making that pertains to global warming. Furthermore, the understanding and awareness of environmental issues by the local population varies from city to city, and local governments may display different levels of awareness of issues related to global warming.

c. Global warming measures by local governments

Six out of eight cities that replied to a second questionnaire have been conducting measures to curtail global warming, which indicates that the planning of the countermeasures by local governments has been progressing. Most of the plans specify numerical goals for reducing carbon dioxide.

Some practical activities carried out by WWCAM member cities are related to energy-saving or new energy (recyclable energy), as well as the reduction of carbon dioxide from vehicles. In addition, the promotion of environmental education and collaboration with private businesses were also mentioned in the questionnaire replies. The secretariat believes it would be useful to collect information about these activities and to share the information with member cities.

4. Future Directions and Activities of the Subcommittee on Winter Environmental Issues

As a consequence of the Changchun Declaration adopted at the 12th World Winter Cities Conference for Mayors in Changchun, China, the Subcommittee on Winter Environmental Issues initiated the slogan “Common awareness of the environmental issues by all the member cities” for activities in 2006 and 2007. In connection with this slogan, the subcommittee conducted two questionnaire surveys and organized two meetings, which were hoped to help member cities understand the seriousness of environmental issues and the importance of the positive attitude of the World Winter Cities Association for Mayors toward contributing to a solution to environmental concerns.

Practical activities of 2008 and 2009 will be based on discussions to be held at the 13th Mayors Conference in Nuuk, Greenland, where the subcommittee’s interim report will be submitted. Details of the activities will be decided at the Working-Level Officials Meeting to be held in summer 2008, and a final report will be submitted at the 14th Mayors Conference in Prince George, Canada in 2010.

The Subcommittee will do its utmost to collect useful information, mainly regarding measures to counter global warming, with the objective of sharing information among member cities. An attempt will be made to narrow the areas of information that are gathered in order to provide information that is as useful as possible. However, the interests and experiences of all member cities will be taken into account, and this includes the ways they educate residents about global warming measures appropriate to winter cities.

The cities of Shenyang, China, and Ulaanbaatar, Mongolia have expressed interest in experiences and success stories of other cities with regard to air pollution, noise pollution, and water contamination. As a result, the Subcommittee will try to collect related information, as well as information on global warming.

Summary of Presentations made by member cities at meetings of the Subcommittee on Winter Environmental Issues

First meeting: July 26, 2006

1. Nuuk, Greenland
2. Anchorage, U.S.A.
3. Taebaek, Korea

Second meeting: July 26, 2007

1. Anchorage, U.S.A.
2. Prince George, Canada
3. Maardu, Estonia
4. Sapporo, Japan

First meeting of the Subcommittee on Winter Environmental Issues

1. Nuuk: "Environmental Measures in Nuuk"

(1) Background

Based on a variety of research, environmental issues have been identified, visions created, and action plans written. To make plans practical for the municipality, the city government asked Nuuk residents for their opinions, believing that by soliciting their opinions, the residents would pay more attention to and think about environmental concerns.

(2) Environmental Measures

The municipality of Nuuk hopes to be a leading environmental actor in Greenland, with the expectation that Nuuk's efforts will benefit the inhabitants of the city as well as the global environment.

The city's environmental policy is to reduce and eventually prevent environmental pollution within the scope of economic feasibility, to keep updated action plans for the environment, waste, and wastewater, and to reduce consumption of resources in the daily work of the municipality under the environmental management system.

Energy and water supplies are managed not by the city of Nuuk but by other organizations; however, the city understands the importance of resource management and plans to pursue further studies on this issue. To counteract concerns regarding wastewater in Nuuk, the construction of a new sewage system is underway.

2. Anchorage: "A Model City for Sound Environmental Practices"

(1) Global warming and Its Impact

Scientists have produced hard data that show the dramatic impact of global warming on Alaska. A large area of Alaska has melted since 1979, and as a result sea ice is 40 percent thinner and glaciers are rapidly receding. An impact on wildlife has also been reported.

In addition, reduced snowfall has changed the ecology here as well as the daily life of native people of Alaska.

(2) Global Warming Countermeasures

In June 2006, the mayors of Seattle and Anchorage met and agreed to join a national effort

to reduce greenhouse gas emissions, which contribute to global warming.

One of the most visible initiatives to reduce energy consumption and be more environmentally friendly is the new convention center under construction in Anchorage. The center will be a state-of-the-art model of energy efficiency with innovative heating, ventilation, and air conditioning system, and with computerized controls. Another initiative is the installation of a methane gas collection systems at the landfill, which is expected to help generate electricity. Anchorage is in the process of erecting wind turbines to generate electricity, and it is formulating a city ordinance that calls for energy efficiency in public buildings.

Anchorage also has a new initiative to encourage recycling among city employees. Each floor of the city hall contains recycling bins for white paper, newspapers, plastic bottles, and cans; the products are collected weekly and recycled.

3. Taebaek: "Environmental Issues in a Highland Resort Town"

(1) Environmental Measures

Taebaek is in the process of transformation from a coal mining town to a center of tourism, leisure, and sports because of a decrease in coal production.

In the past there were serious issues such as air pollution caused by dust from the coal mines, and polluted water in contaminated streams. Waste treatment was also a big concern. At present, the city enjoys better environmental conditions because a large number of the mines have been closed; water quality has been improved with the installation of sewage treatment facilities; and a volume-rate waste treatment system has been established.

Because of increases in the price of oil, an increase in coal consumption has occurred along with a recognition of the need to conserve energy. Also, the city has been working toward promoting energy conservation by establishing three "daily mottos" and six "practical mottos."

In addition, the city has been developing wind farms to generate electricity as a renewable source of energy.

(2) Challenges and Future Directions

Taebaek's environmental directions include a study on how to purify mine water, how to manage closed coal-mine facilities, how to utilize bio-mass fuel, and how to remove snow with care for the environment. Taebaek is keen to learn from experiences of WWCAM member cities.

Taebaek hopes to build its highland as a leisure and sports hub in the future by introducing next-generation energy, by planning an environment-friendly garden city and an "atmosphere + water + ground" purification system, and by controlling development.

Second meeting of the Subcommittee on Winter Environmental Issues

1. Anchorage: "Tackling Global Warming at the Local Level"

(1) Impact of the Global Environment in Alaska

The impact of the global warming in Alaska has been much larger than in any other area in the world. One example is that glaciers are rapidly receding. Because of the frequency of storms, some villages are at risk of submersion. Wildlife is threatened, and the listing of the polar bear as an endangered species is under consideration. Cultural and traditional activities such as dog-sled racing are disrupted by the environmental changes.

(2) Initiatives by the City of Anchorage

Anchorage has been acting to reduce greenhouse gas emissions and focusing particularly on energy-related policies. An energy audit of the city hall is underway, which will result in a retrofit project estimated to save the city over $100,000 a year. Installation of a methane gas collection system at the city landfill is also underway, and when completed, the gas will provide enough electricity to power 2,500 homes for 40 years.

The recycling program has been intensified, and a promotion team consisting of city staff has been established. As a result, the city has been awarded a "Green Star."

Without a statewide global warming policy, local leaders have been working to reduce greenhouse gas emissions. Thirty-five mayors in the U.S., including mayors in Alaska, have convened to share information on global warming and successful environmental policies.

2. Prince George: "Energy and Greenhouse Gas (GHG) Management Plan"

(1) Management Plan

Local governments in Canada have voluntarily committed to GHG management plan, and 149 communities across Canada currently participate in the Partners for Climate Protection (PCP) program, which defines goals at the local level to achieve GHG reductions.

The municipality of Prince George will work together with communities to reduce energy consumption and GHG emissions. Co-benefits of GHG reductions include air quality improvement, energy efficiency, and reduced energy expenses.

If the current CO_2 emission level continues, the total amount of CO_2 will be 1.35 million tons by 2012. However, under the GHG management plan, the total amount of CO_2 will be 1.21 million tons.

(2) City Action Plan

Under the Action Plan, the municipality created a Community Energy System that includes an energy reduction plan in civic facilities, the use of bio-based fuels, and the conversion of conventional traffic lights to LEDs. The effects of the pine beetle epidemic have prompted proactive measures. City Council has engaged new partnerships to examine bio-energy, and city parks that have been affected by the mountain pine beetle are being replanted.

Water conservation is another challenge that the municipality is dealing with. However, as the city has an abundant water source, it is difficult to have citizens understand how water consumption is related to environmental measures.

3. Maardu: Environmental Policies in Maardu

(1) Government-Level Plans to Curtail Global Warming

In Estonia, there is a national program that has as its aim to curtail global warming. Plans to build a park of wind power generators and to construct new or to renovate existing hydro power stations are already under way, for example. In addition, the large-scale introduction of new technologies has taken place in the energy-related industries; for example, related technology for burning combustible shale in a circulating fluidized bed (CFB) has been established at shale-oil thermal power plants.

(2) Initiatives by the Town of Maardu

In the near future, Maardu plans to develop a program to counter global warming in accordance with the requirements of the EU. At present, the Maardu municipal government plans, within the framework of "Maardu Agenda-21," to determine existing emissions and to draw up a balance of emissions of CO_2, other greenhouse gases, dust, and other contaminants in the region of the town of Maardu that originate from a thermal power plant, a quarry, and sewage treatment plants.

The major issue concerning environmental protection in the region of Maardu is air pollution, and an integrated system of monitoring air pollution will have to be organized. Main sources of environmental risks in the region are the seaport, the railway, the flow of traffic on the highway, the thermal power plant, the territories of the former industrial complex.

Sapporo: Countermeasures Against Threats to the Global Environmental

(1) Countermeasures Against Air Pollution

Smoke and dust caused by the use of coal for heating was a serious issue in Sapporo in the 1960s. In the 1980s, studded tires were used to provide a drivers with a grip on winter roads, and these tires ground up the road pavement and created a dust that polluted city air. However, problems with smoke and dust were solved thanks to the promotion of use of smokeless fuels and the enforcement of the "Sapporo Smoke and Dust Prevention Ordinance" and the "Ordinance on the Control of Use of Studded Tires."

(2) Countermeasures Against Global Warming

The municipality has been taking diversified approaches, including energy conservation and vehicle-related measures, environmental protection, ISO 14001 certification, and promotion of environmental issues among residents and businesses. Since approximately 60 percent of the total CO_2 emission in Sapporo originates from households and offices, efforts among residents to curtail CO_2 emission are a very important contribution to protection of the environment.

"Eco-Life 100,000 Persons" promotion campaign was carried out from 2004 to 2007 with the purpose of encouraging residents to understand "eco-life" and commit to an eco-friendly lifestyle. At the end of March 2007 about 125,000 citizens had made commitments. Another initiative of the city against global warming includes the installation of 10kW-power solar panels at six elementary schools in the city.