Northern Intercity News

IAMNC Subcommittees Confer

IAMNC Board of Secretaries Meet in Prince George

The Board of Secretaries of the International Association of Mayors of Northern Cities (IAMNC) met in Prince George, British Columbia, October 15 to 17, 2000, to discuss topics ranging from the ninth Mayors Conference and Winter Cities Forum in Lule? and Kiruna; and plans for the tenth conference in Aomori in February 2002; to future activities of the IAMNC. IAMNC subcommittees on Snow Management and on Countermeasures Against Natural Disasters also conferred in Prince George. The meeting of the Board of Secretaries was chaired by Hisashi Sasaki, secretary general of the International Association of Mayors of Northern Cities.

In addition to senior administrators from IAMNC cities, representatives of the Winter Cities Associations of North America and Europe were present at the meeting.

IAMNC Board of Secretaries Meeting in Prince George, Canada in October.

Subcommittee on Snow Management

October 17 marked the inaugural meeting of the IAMNC Subcommittee on Snow Management. George Paul of the city of Prince George is the subcommittee chairperson.

Best Practices Guide

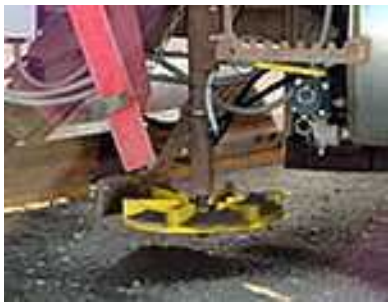
The inaugural meeting of the subcommittee concluded with a commitment by the participating cities to develop a *Best Practices Guide*, which will aim to provide information on snow management practices and procedures in member communities for the benefit of the IAMNC membership.

Participants at meeting of the Subcommittee on Snow Management have committed themselves to complete this work and to provide a report to the IAMNC at the Mayors Conference in Anchorage in 2004. An interim report will be ready for submission at the Aomori conference in 2002. In support of these goals, representatives also committed themselves to continued exchanges of

Committee members representing the cities of Qiqihar, Shenyang, Aomori, Sapporo, Taebaek, Lule?, Kiruna, Stockholm, Anchorage, and Prince George discussed the goals and objectives of the subcommittee and the means by which they can be achieved.

In addition to discussions on future activities of the subcommittee, informative presentations on snow operations in member cities were made by Aomori, Sapporo, and Prince George. Members of the subcommittee were also provided with demonstrations of various pieces of winter road maintenance equipment in use in Prince George. The subcommittee was pleased to also have Patrick Coleman, president of the Winter Cities Association of North America, in attendance at this portion of the meeting.

information, and to provide opportunities for operational staff to visit each other's communities during active winter maintenance operations. Updates on activities of the subcommittee will be provided to members of the IAMNC as this work progresses.



Winter road maintenance equipment is demonstrated in Prince George: a device for applying chemicals on winter streets.

NGO in Consultative Status (Roster) with the Economic and Social Council of the United Nations

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International Association of **Mayors of Northern Cities**

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Members of the Subcommittee on Countermeasures Against Natural Disasters confer in Prince George, British Columbia.

Subcommittee on Countermeasures Against Natural Disasters

Members of the Subcommittee on Countermeasures Against Natural Disasters met in Prince George on October 17 to exchange opinions and share experiences. The goal of the subcommittee is that residents of northern regions enjoy safe and comfortable lives, along with the preservation of the natural environment.

Shoichi Ishihara, director general, Fire Bureau, City of Sapporo, is chair of the subcommittee. Subcommittee members representing Shenyang, Qiqihar, Kiruna, Stockholm, Sapporo (secretariat), Prince George, and Anchorage were present at the meeting. Case reports were presented to the subcommittee by Kjell-?ke Halld?n, principal information officer, Kiruna; Wang Jingying, deputy chief, International Exchange Division, Shenyang; and Makoto Hirano, chief, Disaster Prevention Department, Sapporo.

Case Reports

The city of Shenyang was affected by drought from April through October. August and September, which usually experience the greatest rainfall every year, received only half of the average amount of rain, disrupting agricultural production. The drought also affected urban infrastructure, such as hydroelectric power supplies. As a countermeasure to the drought, Shenyang has reinforced the government administration and initiated steps to counter the effects of drought. These include putting top priority on agriculture and financial assistance and guarding against excessive use of water. Shenyang hopes to learn countermeasures against natural disasters from participation in the subcommittee.

*River Management and Flood Control?*Makoto Hirano

In August 1981, Sapporo suffered serious damage to property and public facilities and loss of life when a powerful typhoon hit Sapporo, dumping a record amount of rain on the city. Excess rain, a total volume of 300 mm, was the major source of the damage.

As a result of that experience, Sapporo has worked to improve facilities and infrastructure to deal with the volume of rain that the city received in the 1981 typhoon, and a new flood control plan has been also implemented. However, natural disaster prevention is difficult, and flood prevention construction requires substantial investments of time and money. In addition, government organizations are limited in what they can do; the involvement of every citizen is important for reducing damage and loss of life in natural disasters. It is important that every

Support by Telecommunications Satellite?Kjell-?ke Halld?n

Fortunately, a large-scale disaster has not occurred in the Scandinavian countries. However, snow slides and landslides have been serious problems, and we want to learn countermeasures against these hazards from the subcommittee. We hope to provide technical assistance and exchange information in the form of forecasting and observation of natural disasters, such as floods, with the use of a telecommunications satellite. Kiruna is proud of its experience in this area; the city has already conducted satellite studies with NASA (National Astronautics and Space Administration) on the destruction of a coral reef in the Philippines and rain forests in Brazil. Kiruna would like to send experts on environmental and astronautic issues to the next subcommittee meeting to exchange opinions.

How to Cope With Drought?Wang Jingying

Due to an extremely small amount of rainfall, a large area from the north to south central districts of China has suffered from the effects of drought, significantly affecting farms, agricultural production, and food supplies.

citizen be familiar with crisis management and be willing to evacuate to safe locations in an emergency. For this purpose, the city of Sapporo is publicizing disaster-related information, including safe and hazardous locations in the event of disasters.

Promoting and Organizing Volunteer Disaster Prevention Groups?Makoto Hirano

In January 1995, the Great Hanshin Earthquake struck western Japan. Many volunteers participated in rescue programs that saved many lives, and their work attracted attention throughout Japan. Learning from that experience, Sapporo has been promoting the establishment of voluntary disaster prevention practices utilizing existing community groups. The goal is that local corporations, neighborhood associations, and volunteer disaster prevention groups will work together and, along with assistance from the city government, help communities deal with natural disasters.

So far, these volunteer groups have been organized in approximately 45 percent of the city. The city feels it is important to organize these groups throughout the city as soon as possible, along with support plans that will function effectively during a natural disaster.

The city of Kiruna has expressed interest in observing Sapporo's work in the promotion and organization of volunteer disaster prevention groups, and Sapporo intends to cooperate with Kiruna in this regard.

Subcommittee Plans and

Activities

At its meeting in Prince George, the subcommittee decided, contingent upon agreement of all subcommittee members, to continue its activities with a goal of compiling a report of disaster prevention cases to submit at the Mayors Conference in Anchorage in 2004. A second subcommittee meeting was suggested for Quebec City, Canada in February 2001, on the occasion of the trade fair of the Winter Cities Association.

February 7 to 10, 2002 in Aomori, Japan

"Winter Cities 2002 Aomori"

Plans for the tenth biennial Conference of Mayors of Northern Cities were presented by Aomori mayor Seizo Sasaki at the IAMNC Board of Secretaries meeting in Prince George on October 15. ?Winter Cities 2002 Aomori? is scheduled for February 7?10, 2002 in Aomori, Japan, and will include a Mayors Conference, a Winter Cities Forum, an International Winter Expo, and several combined events, including the Aomori Winter Festival, an urban housing design competition, a symposium on health issues in northern cities, a northern cities art exhibition, and other programs. ?Environment, Culture, and Lifestyle: Fostering Vibrant Northern Living? is the theme for the conference, which will focus on sustainable development.

Winter Cities 2002 Aomori will commemorate the first Conference of

Mayor Seizo Sasaki of Aomori announces plans for Winter Cities Aomori 2002 *at the Board of Secretaries meeting in Prince George.*

ticipants will learn practical policies and suggestions from a wide variety of people. ?City Planning and Lifestyle? and ?Health for All Winter Cities? comprise the main forum topics.

Topics related to city planning and

Mayors of Northern Cities held in Sapporo 20 years ago. The conference aims to provide a forum conducive to the exchange of ideas and information and to learning and the development of international networking. As in the past nine conferences, Winter Cities 2002 Aomori is also based on the feeling that winter is a resource and an asset.

In addition to the 22 IAMNC member cities (October 15, 2000), invitations to Winter Cities 2002 Aomori will be extended to 74 Japanese cities that have expertise in dealing with snow and cold, seven cities in Aomori prefecture, and cities overseas that are affiliated with Aomori. Approximately 50 cities are expected to attend the events.

Tenth Mayors Conference: Sustainable Winter Cities 21

The tenth Mayors Conference in Aomori will comprise meetings of the IAMNC Board of Directors and the IAMNC General Assembly, as well as subcommittee reports, technical tours, and other related events.

The Mayors Conference will open with a keynote on Sustainable Development and Workable City Planning. With ?Sustainable Winter Cities 21? as its theme, the conference will address issues concerned with sustainable development and city planning, with special attention on the environment and lifestyles in northern cities.

Mayors Conference sessions will focus on topics related to the conference theme and on reports from the subcommittees on snow management and on countermeasures against natural disasters. Additional discussion will be based on the results of the subcommittee reports, including an expression of a commitment by lifestyle will include energy and the related problem of greenhouse gasses and energy consumption; transportation in winter, including winter roads and snow management; and community design, including land use and buildings and urban design and other lifestyle issues.

Extreme cold, lack of sunlight, and decreases in opportunities for exercise are health concerns of special interest to winter cities, and these and other topics related to health and quality of life in winter cities will be examined. Healthy city planning in winter will be a topic based on the Healthy Cities Project developed by the World Health Organization.

International Winter Expo

The International Winter Expo will focus on life in winter cities. Winter-related industries will participate, including the top buyers in the industry to promote international business opportunities. The expo theme is ?Northern Lifestyle?Life and Industry in Winter Cities.?

Other Events

An art exhibition will be held upon approval of IAMNC members. The exhibit will comprise displays of northern art to promote cultural awareness and a deeper understanding of the unique culture characteristic northern regions. It is the hope that this first-time event at the tenth winter cities conference will become a feature of future conferences. Other events for Winter Cities 2002 Aomori will focus on winter fun and Japanese culture and history.

For More Information

northern cities to sustainable development in the form of a joint appeal to demonstrate the initiative of northern cities to the world. A round-up forum combining the Mayors Conference and the Winter Cities Forum will also be held.

It is the intention of the organizers that this conference not only promote active discussion, but allow the member cities to return home with positive results.

Winter Cities Forum

The main theme of the Winter Cities Forum will be sustainability. The forum will include research presentations and panel discussions related to the conference theme. However, the forum will not merely be an exchange of technical information; rather it is expected that par-

2002 Northern Cities Conference in Aomori Planning Committee
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The IAMNC Cities

Beginning with this issue, the Northern Intercity News will feature city introductions submitted by the IAMNC members.

Prince George

big city pleasure, backwoods adventure

Visit Prince George and not only will you find wilderness and wildlife galore,

Prince George, population eighty thousand, on the Fraser River.

but you will also discover a modern city in the heart of British Columbia's interior. Prince George combines backwoods adventure with big city pleasure!

With Prince George as your base, you won't spend a lot of time in transit. Ten minutes in any direction takes you to big country adventure. Situated in the midst of an endless spruce forest, the area surrounding Prince George contains over sixteen hundred world-acclaimed lakes. This central British Columbia region offers an outdoor feast that nourishes the soul. Hike or mountain bike rolling hills and mountains, scale rock faces, explore hidden caves, hook trophy fish, snowmobile or ski groomed trails and virgin snow, canoe, jet ski, or jet boat innumerable rivers and lakes, bag trophy game, or just sit lakeside at sunset listening to the loons. There is a very real sense of ?so much to do, so little time? when travelling in this region.

Lots to See and Do

Not even the arts community escapes the lure of the great outdoors. The artisans of this region use the world around them as their inspiration, resulting in flourishing and established arts organizations. Prince George possesses a symphony orchestra, professional and amateur theater groups, the new Two Rivers Art Gallery designed around Prince George's location at the confluence of two rivers, several local art organizations, a newly expanded Railway and Forestry Museum, and the soon-to-be Exploration Place operated by the Fraser-Fort George Regional Museum.

But wait, there's more! Prince George, British Columbia's Northern Capital, is without a doubt the service

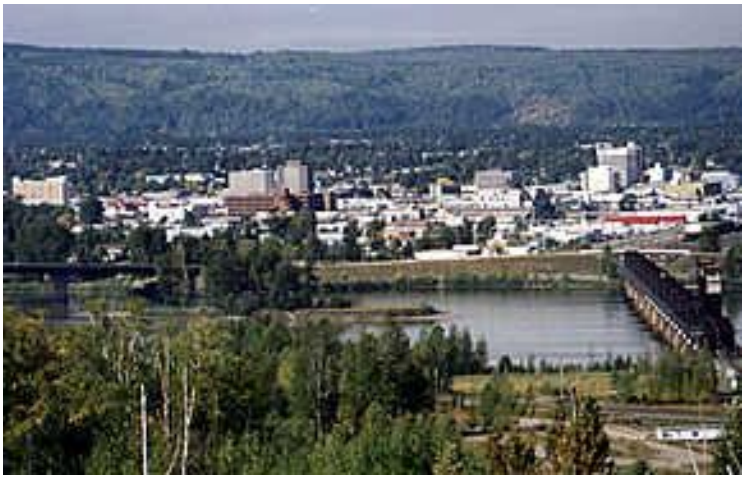


photo: Tourism Prince George & Area

With its riverside layout and generous greenbelt, Prince George is a city begging to be explored. More than 120 parks are located within city limits, a number of them linked by the scenic, 11-kilometer Heritage River Trail. The Heritage River Trail follows the confluence of two of North America's mightiest rivers, the Fraser and the Nechako, and winds through some of the city's most scenic and historic sites. Travel along the trail and you will come upon two major parks, museums, a fish hatchery, and abandoned docking areas reflecting an era when river boats steamed up and down the waterways. You'd never guess you were in the midst of a bustling city centre.

The city of Prince George epitomizes movement and activity. Whether it be the diverging and converging of two of the greatest rivers in North America?the Fraser and the Nechako?or of the busiest highway intersection in Western Canada: Highways 16 and 97.

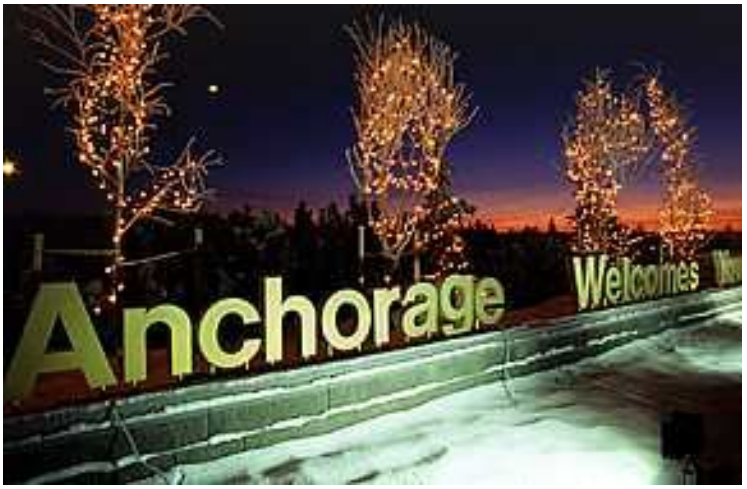
Capital, is without a doubt the service center for the Central Interior of the province, providing the best shopping and amenities in northern British Columbia. With state-of-the-art civic facilities and venues, the city successfully plays host to national and international forums, sporting events, and concerts such as Forest Expo, the Scott Tournament of Hearts, Winter Cities Forum, WHL hockey games, and world-class entertainers like Ray Charles, The Tragically Hip, and Vince Gill. The people of Prince George enjoy showing off the city and greeting visitors with our northern hospitality.

Anchorage

Too Young for Old Traditions

Visualize a crisp winter day in the year 1910. An eagle glides under the short winter sun as moose browse the dense forest. Dwarfed by mountains, hemmed in by icy inlet waters, a young couple struggles to build this city's first structure?a log cabin. Ninety years ago the city of Anchorage was less than a concept. Today, 259,000 citizens live in a community with a sports arena, a convention center, 228 parks, 73 ball fields, 259 miles of trails, a first-class public library, a history and art museum, and a world-class performing arts center. Business professionals watch eagles glide past high-rise windows in buildings overlooking railroad tracks, three airports and a marine port.

We've become the 65th largest city



A view of the city of Anchorage.

A Citizenry That Works Together

The extreme seasons and weather conditions produce challenges as well as pleasures. Citizens strive to enhance the long darkness of winter by decorating their homes and businesses with tiny white lights.

in America in little more than one generation, in spite of a 9.3 (Richter scale) earthquake in 1964 that nearly devastated Anchorage. Occasional hundred mile-per-hour winds, volcanic eruptions, and ground tremors continue to remind us of nature's power.

Incredible are the scenery, the people, the lifestyles, and the challenges. Extreme seasons carve changing panoramas under northern lights. Glaciers melt into lakes, mountain rivers offer the ?best tasting water? in America, and workers catch salmon in a downtown stream on their lunch hour. Teams play softball under the midnight sun. People walk or ski a coastal trail to work, according to the season. Anchorage is a unique urban wilderness.

Our assets?climate and nature?are also our challenges. Hikers share mountain paths with black bear. Occasionally after an extremely deep snow, a moose can be found on a neighborhood rooftop. Sometimes on a hot summer day, a moose can be found cooling off in a child's wading pool. In what other city this size would you hear someone say, ?I was a bit late. I had to stop for a moose on the way to the opera!?

Our boom or bust economy over the years has provided greater challenge, whether gold, oil, or some other source. Boom times were exciting! They brought a diverse group of people to our community. Railroad construction in 1915 brought people from all over the world: Bohemia, Serbia, Hungary, Greece, Russia, and Scandinavia. Although Anchorage has benefited from these booms, a transient population has made developing a healthy community difficult. Our community vision now looks beyond the short term toward

During our short summer growing season, thousands of citizens carefully plant and tend brilliant splashes of colorful flowers throughout the community.

Anchorage is a community of doers, not spectators. The city boasts over 150 activities including the World Championship Sled Dog Races, and citizens also host the annual Fur Rendezvous Winter Festival. Every March, the world watch as hundreds of volunteers help kick off the annual Iditarod Sled Dog Race to Nome. Residents continue to stay busy by contributing over 425,000 volunteer days yearly to help build and maintain city sports fields and facilities. And, over half our winter ski trails are groomed and maintained by volunteers.

Our municipal government encompasses the distinct communities of cosmopolitan Anchorage, the art and ski resort community of Girdwood, the friendly small town of Eagle River/Chugiak, the Native village of Eklutna, and two military bases. Our diversity of age, race, ethnicity, religion, and lifestyle is a challenge we embrace as a community. As a young city, our traditions are still in the making, except that we are always eager to share the unique place we call home with the rest of the world any season of the year.

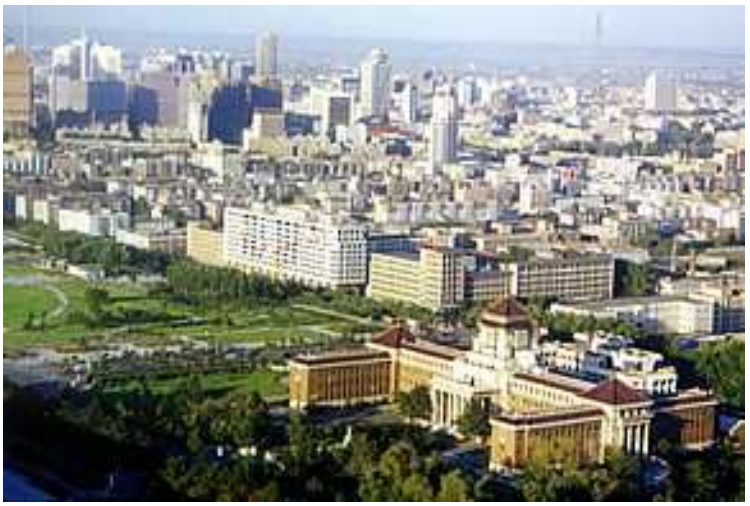
creating a stable economic base, and a safe, clean community to help make our city a place where people will want to stay.

City of Science, Culture, and Education
Changchun

Situated in the heart of northeastern China, Changchun is the political, economic, and cultural center of the province of Jilin. With a population of 6.8 million and an area of twenty thousand square kilometers, Changchun is one of China's sixteen largest and most important cities. ?Automobile City,? ?City of Science, Culture and Education,? ?Movie City,? and ?Forest City??those nicknames aptly characterize the city of Changchun, which is also famous as the hometown of the China's last emperor.

Industry and Science

Changchun's First Automobile Group Company of China (FAW) is the largest research and manufacturing base for China's auto industry. FAW's products, including Audi, Jetta, and Jiefang, account for twenty percent of automobile production of the entire country, and the Changchun city government will host the second China-Changchun International Automobile Exhibition in 2001. Other machinery industries include subway and train cars, tractors, and motorcycles.



The city of Changchun.

Internationally Vibrant

The city of Changchun has expanded international contacts and communication in recent years. Changchun has sister-city affiliations with eleven cities in ten countries, including Little Rock, Arkansas in the United States; Windsor, Ontario, Canada; Sendai, Japan; Ulan Ude, Russia; Minsk, Belarus; and Ulsan, Korea.

Changchun has also made great progress in the area of international economic cooperation. At present, there are over two thousand foreign-invested enterprises in the city, including some well-known international corporations like Pepsi

Changchun has a solid base for science, culture, and education. The city is proud of being the home of 32 universities and colleges, 108 independent research institutes, laser technology, macromolecular materials and bioengineering, and 24 top scientists?members of Chinese Academy of Sciences and the Chinese Academy of Engineering. Since 1999, the Changchun city government has hosted the China-Changchun International Education Exposition, which is the largest of its kind in China, to promote international educational cooperation and exchanges.

Agriculture

Changchun has put a priority on agriculture. Main agricultural products are corn, soybeans, and rice, and increased processing of agricultural products is being promoted. The city government cohosts, with the Chinese Ministry of Agriculture, the China-Changchun International Agriculture and Food Fair once a year to take advantage of the city's abundant agricultural resources.

Culture and Nature

The Changchun Film Studio here is the cradle of China's film industry, and the city has held the China-Changchun Film Festival every year here since 1992. With a 38 percent urban greenery rate, Changchun possesses Asia's largest cultured forest. The city is also well known as the hometown of China•Ls last emperor, Pu Yi, and as a result, there are many historical sites here. As for natural scenery, the city is near the beautiful Changbai Mountain, which is on the border between China and Korea.

Cola and Siemens. What attracts foreign investment is not only the preferential policies here but the excellent investment environment as well. Changchun enjoys the same preferential policies as those entrusted by the state to the open coastal cities. The infrastructure facilities, including air and land transportation, have been found satisfactory by all investors, and the city welcomes more international cooperation for mutual benefit.

The city of Changchun looks forward to welcoming all of our friends to the Spring City of China.

Saving Money and the Environment

Kiruna

Sweden has been a leader in Europe in protecting the environment and Kiruna is one of the best examples of how it is possible to protect the environment and save money at the same time. Emissions from cars have been reduced by 30 percent just by changing the traffic flow so that cars stop on a downward slope. Homes, offices and industrial buildings are now mostly heated with community heating and energy recovered from industry, greatly improving the air quality in Kiruna.

Sweden's first environment protection law was enacted in 1969, but even before that there was cooperation between the Kiruna Town Council and the main industries to protect the environment, and for a hundred years it has been possible to combine heavy industry such as iron mining in the world's largest underground iron mine with untouched wilderness. Today Kiruna also conducts research in the areas of space, the environment, and cold climate studies. Among other things, Kiruna is a center for ozone research in the northern hemisphere. Heavy industry is still a major business sector in the area, however. Nevertheless, politicians and public servants have always put society and the environment first and industry has respected this. One example is that the mining company as early as the fifties had set up its own

Just a little throttle is needed to move off after a downhill stop, and this has reduced the exhaust emissions by a third.

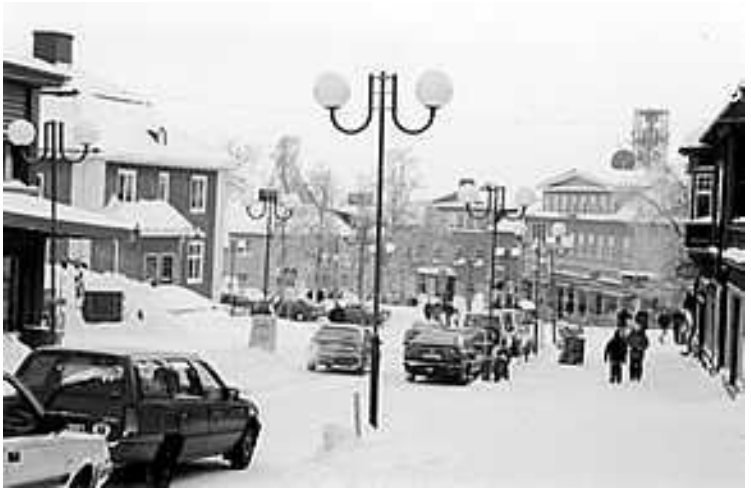


Photo: Mediafolket

Car Exhaust Reduced

It is not only industry that has worked for the environment. Some years ago, traffic in the town center was redirected in a way that became an example for the whole country. Most streets are one-way, to improve the flow of traffic, but that is nothing unusual. What is new is that our traffic planners have managed to plan the flow so that at traffic lights cars nearly always stop on a downward slope. Kiruna is built on a hill, so just a little throttle is needed to move off after a stop, and this has reduced exhaust gases by a third?a sensational figure. Kiruna is one of fifteen towns in Sweden where the air has been continuously monitored over a very long period, and we have done more than any other town in this area.

environmental department with highly qualified staff.

Ninty?Eight Percent Lower

Back in the sixties, the first joint monitoring of the air quality began in Kiruna. This led to companies, the council, and the citizens of Kiruna making investments to save energy, while converting from oil-fired heating to electric and district heating. The content of sulphuric dioxide in the city air has declined from 100 micrograms per cubic meter to 2 micrograms per cubic meter, meaning that the emissions have been lowered by 98 percent. Environmental thinking usually means investments, but in the long run this is often worthwhile economically. For example, in the Kiirunavaara mine, particles in the smoke from the pellets plant caused a lot of wear to the smoke ducts. Now the particles are filtered out, and maintenance is much cheaper.

Savings Greater Than Investments

In general it can be said that savings have been much greater than investment costs. The mining company also installed a fluoride purification plant in the pellets plant. For the fluoride purification to work, a cooling plant was built for the smoke. The cooling plant in turn had a device for heat recovery. All these investments have shown a profit within three years, thanks to energy recovery. Heating of homes, offices, and industrial buildings is now mostly done via community heating, which has greatly improved air quality in Kiruna. The district heating plant has also been converted from the use of imported fossil fuels to local renewable fuels?wood chips and peat.

Icehotel Recycled

On a global scale, these achievements may seem small, but we are very interested in preserving Europe's last wilderness. To someone in densely populated Europe, it is almost unbelievable that we can drink the water in our rivers, and that we can use water from mountain lakes in car batteries. Kiruna has also become famous for clean water in another way. In the Icehotel everything including the church, the crystal chandeliers and even glasses in the bar are made of pure river ice. In spring the entire hotel, accessories, and furniture make their way to the Baltic Sea. Now that is what you may call recycling!

As an extra bonus for the district heating project, it has been possible to make use of the heat surplus from the mining industry. Energy that before was lost through chimneys is now led to sports halls and homes.

Shenyang

• History • Culture • Progress — Shenyang

Shenyang, the provincial capital of Liaoning Province, is the economic, cultural, transportation, commercial, financial, scientific and technical, and information center of northeastern China. Shenyang's strong economic base has made this city of 6.8 million one of the most important economic centers in China.

With its long history, Shenyang has many historical sites. The architecturally unique Palace of Nu'er Hachi and Huang Taiji of the Qing Dynasty is now the Palace Museum of Shenyang, the second most complete structure of its kind after the Palace Museum of Beijing.

Since the founding of new China, Shenyang has become a modern industrial center, and with the city's policy of reform and openness, very positive changes have been taking place.

Solid Industrial and Technical Bases

Shenyang's industries include metallurgy, building materials, vehicles, medicine, petrochemicals, light industry, textiles, electronics, aviation and aerospace, and more.

Plaza in Shenyang.

Transportation, Communications Hubs

The development of its aviation industry is especially conspicuous. Shenyang's Taoxian International Airport is the largest hub in northeastern China and, with its modern navigation equipment, can accommodate the most internationally advanced passenger aircraft. China Northern Airlines has more than 60 flights directly linking Shenyang with important cities in China and overseas. Shenyang's aviation and aerospace industries, manufacturers of the country's first passenger jets, are number one nationwide. Shenyang also has the largest railway hub in northeastern China and the most

Shenyang is home to more than 50 of the largest enterprises nationwide. Shenyang's reform and openness to the world have brought historic opportunities to the development of science and technology here. Shenyang claims 42 scientific research institutions; about three thousand private scientific research enterprises; 30 institutions of higher education; 550,000 scientific research personnel; and many national-level experimental facilities with internationally advanced equipment?giving the city one of the broadest and most complete scientific research systems in China.

Booming Business and Finance

Shenyang's efforts in business and finance include work for the development of a market system, promotion of tertiary industries, and development of wholesale and retail markets. Presently, Shenyang has 56 means-of-production markets and 457 open markets, including 48 markets with annual business volumes of over 9.9 billion yuan. Shenyang also has 13 markets with annual sales over 100 million yuan.

With its goal of becoming the financial center for northeastern China, Shenyang is actively engaged in the reform and opening of financial markets. In 1997, 67 financial organizations of all types were added to the market here, including the ZhongXin Industrial Bank, Shenyang Branch and the China Investment Bank, Shenyang Branch, bringing to 1,945 the number of financial organizations in Shenyang. As a city with open financial markets, foreign-funded financial organizations are also attracted here. An example is the Dutch Commercial Bank.

kilometers of expressway in the country, along which appear many economic and technical development zones and industrial and commercial enterprises.

Shenyang is also the telecommunications hub of northeastern China, with the direct communication available to more than 180 countries and regions.

Increasing Foreign Exchanges

At present, Shenyang has economic and trade relations with more than 130 countries and regions, and has formed affiliations with eleven cities in ten countries. The city is the site for consulates general, and foreign firms have established more than 300 offices here. Investors from more than 20 countries and regions have engaged in over five thousand joint venture enterprises, contractual operation enterprises, and foreign-funded enterprises in Shenyang.

Shenyang in the 21st Century City

Shenyang is increasingly the center of economic development in this part of China?thanks to the great efforts of all its citizens. Shenyang is always open to the outside world!

Qiqihar

With a history of more than 300 years, the city of Qiqihar on the beautiful and richly endowed Song-Nen Plain has long traditions. As one of China's bases of heavy industry, commodity grain, and livestock husbandry, Qiqihar has jurisdiction over nine counties and seven districts with a total area of 42,300 square kilometers and a population of 5.53 million.

Qiqihar has a solid industrial foundation, of which rolling equipment, heavy forging equipment, rolling stock, machinery tools, specialty steel, wooden furniture, hunting guns, ice and snow sports equipment, and linen products enjoy good reputations at home and abroad. Qiqihar also abounds in land resources. The fertile soil pro-duces large quantities of beans, corn, wheat, rice, potatoes, flax, beets, and other agricultural products, and the total amount of grain and beans reaches ten billion fin annually. In addition, the city has rich nonmetal mineral resources such as quartz sand, limestone, pearlite, granite, and diatomaceous earth with a total reserve of 13.9 billion cubic meters. Qiqihar has convenient transportation facilities and developed communication installations, which have enabled the city to become an important communication hub and distribution center among the provinces of Heilong-jiang, Jilin, and Inner Mongolia. Moreover, Qiqihar has

Qiqihar has adhered to an opening-up policy for years. At the same time, it has continuously strengthened economic and technical exchanges and cooperation with foreign countries. In order to attract increasing foreign investment, Qiqihar is conducting economic and trade exchanges with more than 40 countries and districts. In addition, a Development Zone for foreign investment and a High-New Technical Park have been established at the provincial level. Preferential policies provided by these arrangements offer foreign investors special treatment regarding taxes, land, foreign-fund administration, and other business considerations. In recent years, Qiqihar has further enhanced the development of the city's infrastructure, creating a fine environment for foreign investment. It is sincerely hoped that more and more investors come here to join hands with Qiqihar and work to develop together. On the principle of ?mutual benefit and co-development,? Qiqihar is interested in conducting exchanges and cooperation with Chinese and foreign investors, with particular emphasis on the following areas?

- making joint efforts to renovate the traditional industrial base;

- co-developing agricultural and mineral resources, and speeding up

developed finance, customs, and insurance institutions and is an ideal place for foreign investment and has great potential for economic development.

the exterior-oriented agriculture;

- introducing investment in urban construction and renovation; making full use of Qiqihar's resources to develop the tourism sector;

- introducing investors from home and abroad to run enterprises in the Development Zone and the High-New Technical Park.

Qiqihar is both an old city with a long history and a new city under development. With the first rate investment opportunities and high level services, the city welcomes all friends from home and abroad in all fields to Qiqihar for research, visits, sight-seeing, and investment.

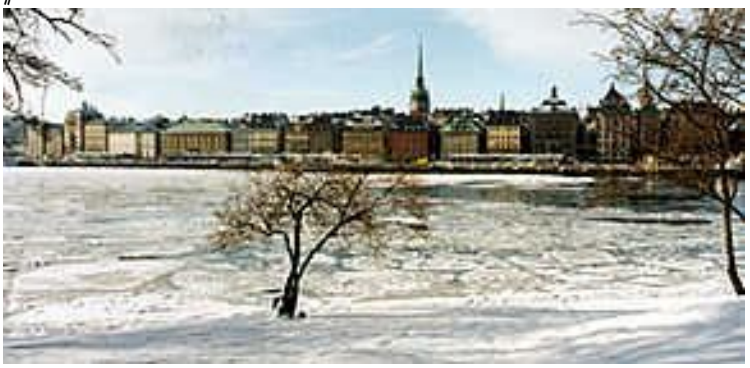
Stockholm

Characterized by Innovation

a model of sustainable development

Urbanization came late?but fast?to the Swedish capital, where the population rose from 70,000 in 1790 to 250,000 in 1890, and then to today's total of 730,000. Of modest size, compared to its European counterparts, Stockholm is, nonetheless, the core of a metropolitan region comprising twenty-five municipalities and 1.8 million people?close to twenty-five percent of Sweden's total population.

Stockholm has opted for a strategy based on combining innovation with quality of life and the environment. While Sweden's long tradition in the



Winter view of Stockholm.

Quality of Life, Sustainable Development Approach

The clear success of the Cities Local Agenda 21 process brought Stockholm the European Sustainable City Award in 1997, and since then it has

sphere of research and innovation is symbolized by Alfred Nobel and the Academy that bears his name, the country's current dynamism is clearly rooted in the region's ability to adapt to today's system via networks of remarkably efficient economic actors.

Protector of the Environment

The city of Stockholm has a long tradition of environmental protection, from legislation to programs for action and concrete measures. The overall goal being to make Sweden's capital a sustainable city, Stockholm opted long ago for excellence in terms of quality of life. The main driving forces behind this process have been a more exigent environmental and innovative approach to urban planning and the recent introduction of advanced environmental technology. People in Stockholm are generally very alert to their living environment and very well aware of the need for actions that promote a sustainable future.

continued to pursue and develop a strategy based upon the quality of life. The approach now is to establish indicators for assessing progress towards sustainable development.

Sustainable development can only be reached in a step by step process in partnership with several different organizations, businesses, and even countries. That cooperation is the key to success is clearly stated by the political leaders in the city. The Hammarby Sj?stad project symbolizes this. The creation of this new residential zone on former industrial land close to the city centre is exemplary in environmental terms. Protection of the environment is built into every stage of the project?materials, systems for distributing and recycling energy, waste-processing methods?in combination with the latest technology and design concepts.

Environmental work often tends to be problem oriented and thereby gets locked into a difficult position without visions. Stockholm tries to begin the development by identifying the idea of what the city can and is willing to do in order to contribute to a lasting process, both from a national and an international perspective.

High-Tech Bridge Set to Improve Lifestyle, Support Sustainability

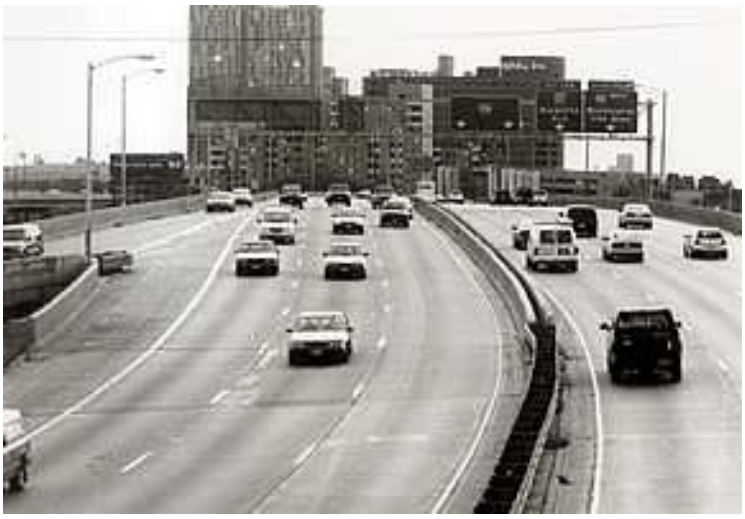
A bridge that spans the Mississippi River on U.S. Interstate 35W here in Minneapolis, Minnesota has been fitted with a computerized system that sprays potassium acetate on the bridge deck when data from sensors and a road weather information system (RWIS) determine that hazardous winter driving conditions are imminent. The eight-lane, 594-meter-long bridge is the first in the United States that has been equipped with this particular system.

The I-35W bridge was a candidate for the high-tech treatment because of the high incidence of winter traffic accidents on the bridge. The bridge is more susceptible to black ice and slippery conditions because of moisture from the Mississippi and from nearby power plants and industrial facilities, and because of the high volume of traffic on the bridge. In addition to traffic safety, the system also contributes to sustainability, because the chemical used is environmentally less toxic and corrosive than salt.

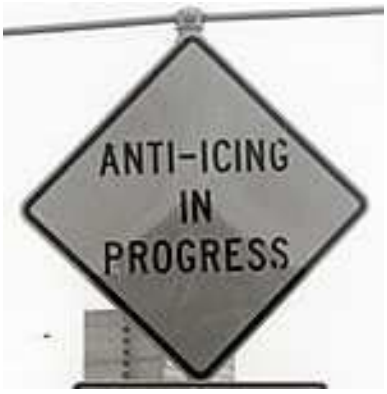
Sensors and RWIS

The bridge anti-icing system works with a combination of sensors, RWIS weather stations, a computerized control system, and a series of 38 valve units and 76 spray nozzles that apply potassium acetate. A 12,113-liter tank of potassium acetate is located in a small control pump building next to the bridge.

The high-tech bridge is equipped with two types of sensors: active ground and pavement temperature and wetness sensors, and ice formation temperature sensors that use moisture in the air to create ice at a few degrees below the bridge deck temperature. The sensors give advanced warning that approaching



Bridge spanning the Mississippi River that is equipped with an automated anti-icing system. Signs and signals at bridge entrances caution drivers when anti-icing is in progress (below).



The RWIS weather stations' optical precipitation sensors measure the air temperature and detect the presence and intensity of rain, sleet, or snow. Information collected by the sensors and weather station is transmitted to a computer.

The spray valves on the bridge are programmed to use information from the sensors and weather stations to take action on their own to forestall icing conditions by spraying the chemical on the bridge deck when it is needed.

weather may produce hazardous driving conditions on the bridge.

U.S. Gets Winter Road Lessons from Overseas

A high-tech bridge in Minneapolis that automatically sprays the bridge deck with potassium acetate when a computerized system determines weather conditions may result in hazards to vehicles on the bridge exemplifies recent trends in winter road maintenance in the United States.

The bridge, which spans the Mississippi River here, utilizes the concept of anti-icing, which has been determined to be an effective and economical way to treat winter roads under many conditions. The bridge also makes use of meteorological data to forecast snow or ice and to permit application of chemicals prior to a winter storm or other potentially hazardous driving condition. Anti-icing and weather forecasting are two trends that are gaining popularity in winter road maintenance in the United States.

The bridge also exemplifies another characteristic of winter road maintenance in the United States. The technologyfor the bridge system was imported from abroad, just as much of the impetus for applying new concepts in winter road maintenance here have come from overseas.

Although the U.S. Federal Highway Administration (FHWA) was involved as early as 1987 in small ways with allocation of funds to study winter road maintenance, including anti-icing and road weather information systems, it was not until a 1994 International Winter Maintenance Technology Scanning Review tour to Sweden that states here realized how much they lagged behind in this area. In Sweden, great progress in winter road maintenance was demonstrated, and it was at that point that the United States jumped on the bandwagon.

Since 1994, many of the states have made great strides in implementing new concepts and technology for winter road maintenance, and the FHWA and state organizations have been influential in encouraging progress here.

Computer Monitoring

A computer responsible for automatically recording the data that is received from the bridge is located in a suburb of the Twin Cities where the Minnesota Department of

Investment

The system that the bridge utilizes involved a considerable investment. Initial cost for the system was 537,000USD for installation, hardware, software, the pump house, operation

Transportation monitors the operation of state highways.

An alarm on the computer informs personnel that conditions for anti-icing have been met, but the system for the most part works independently and without human intervention.

Into Action

Once the software that controls the anti-icing system has initiated action, lights flash at entrances to the bridge to inform drivers that the system has been activated. As a precautionary measure, the system next checks for leaks in the valves. If no leaks are detected, the system begins to spray the bridge. Each of the thirty-eight valve units on the bridge deck contains two liters of potassium acetate and the valve units discharge the chemical through 76 spray nozzles.

The valves do not release the chemical all at once; the bridge utilizes a double loop system. The computerized control system also allows for spraying action according to varying conditions on the bridge. The computer may direct the system to release the chemical from every other nozzle or to spray only the northern or southern portions of the bridge. The entire operation of the system takes from 10 to 12 minutes; however, the actual spraying time is very brief: each of the nozzles releases the chemical for only about two seconds.

manuals, and one year of support and training. The Department of Transportation here estimates a cost of approximately 100USD each time the bridge is sprayed, and electricity supply is about 350USD per year. True operating costs will be determined when the system has been in use for a substantial length of time.

For two reasons, conclusive data has not been collected yet about the success of the bridge in reducing traffic accidents: the bridge anti-icing system was in operation for only a limited period late last winter, and during that time the winter weather was uncharacteristically mild. The Minnesota Department of Transportation hopes to have full use of the system this winter so that it can collect data on the effectiveness of the system.

The bridge has attracted a lot of attention from departments of transportation in other states, and it has brought visitors here from overseas. For the Minnesota Department of Transportation, however, the bridge is just one step in its effort to utilize new technology to make winters more livable here and at the same time to contribute to sustainability.