

Congress Programs

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WOOD

Schedule

Theme: **New Challenges for Winter**

Congress Schedule Site: Sapporo Dome

Date	Time	Program Item	Exhibitions		Tour
			Indoor Exhibition	Outdoor Exhibition / Demonstration of Snow-Removal Machinery	
27 Jan. (Sun.)					Pre-Congress Tours
28 Jan. (Mon.)	10:00 a.m.	Registration opens (closes at 9:00 p.m.)	—	—	Pre-Congress Tours
	5:00 p.m.	Opening Ceremony	Exhibition Opening Ceremony (6:30 p.m.)		
	7:00 p.m.	Welcoming Reception			—
29 Jan. (Tue.)	9:30 a.m. - noon	Opening Session	9:30 a.m. - 7:00 p.m.	10:00 a.m. - 4:00 p.m.	Technical Visits, Accompanying Person's Tours
	1:30 p.m. - 6:00 p.m.	Technical Session (Oral Presentations)			
30 Jan. (Wed.)	9:00 a.m. - noon	Special Session	9:30 a.m. - 7:00 p.m.	10:00 a.m. - 4:00 p.m.	Technical Visits, Accompanying Person's Tours
	noon - 2:00 p.m.	Technical Session (Poster Session)			
	2:00 p.m. - 5:20 p.m.	Technical Session (Oral Presentations)			
	7:30 p.m. - 9:30 p.m.	Congress Dinner★	—	—	—
31 Jan. (Thu.)	9:00 a.m. - 12:50 p.m.	Technical Session (Oral Presentations)	9:30 a.m. - 4:00 p.m.	10:00 a.m. - 3:00 p.m.	Technical Visits
	2:20 p.m. - 3:50 p.m.	Closing Session			—
	4:00 p.m. - 5:00 p.m.	Closing Ceremony	—	—	—
1 Feb. (Fri.)					Post-Congress Tours
2 Feb. (Sat.)					

*Venue: Royton Sapporo hotel

Road Service

Technical Program Schedule (Dome 1F)

Date	Time	Room 1	Room 2	Room 3	Room 4
28 Jan. (Mon.)	5:00 p.m. - 9:00 p.m.	Opening Ceremony (Dome B2 Indoor Exhibition Site)			
29 Jan. (Tue.)	9:30 a.m. - noon	Opening Session (Dome B2 Indoor Exhibition Site)			
	noon - 1:30 p.m.	Lunch			
	1:30 p.m. - 3:30 p.m.	Topic II	Topic III	Topic V	Topic VI
	3:30 p.m. - 4:00 p.m.	Break			
	4:00 p.m. - 6:00 p.m.	Topic II	Topic III	Topic V	Topic VI
30 Jan. (Wed.)	9:00 a.m. - noon	Special Session (Dome B2 Indoor Exhibition Site)			
	noon - 2:00 p.m.	Poster Session (Dome 1F Poster Session Corner) / Lunch			
	2:00 p.m. - 3:40 p.m.	Topic II	Topic IV	Topic V	Topic I
	3:40 p.m. - 4:00 p.m.	Break			
	4:00 p.m. - 5:20 p.m.	Topic II	Topic IV	Topic V	Topic VI
31 Jan. (Thu.)	9:00 a.m. - 10:40 a.m.	Topic I	Topic IV	Topic V	Topic VI
	10:40 a.m. - 11:10 a.m.	Break			
	11:10 a.m. - 12:50 p.m.	Topic I	Topic IV	Topic II	Topic VI
	12:50 p.m. - 2:20 p.m.	Lunch			
	2:20 p.m. - 3:50 p.m.	Closing Session (Dome B2 Indoor Exhibition Site)			
	4:00 p.m. - 5:00 p.m.	Closing Ceremony (Dome B2 Indoor Exhibition Site)			

Topics

Topic I : Winter Road Policies and Strategies

Topic II: Snow and Ice Management, and Its Costs

Topic III: Winter Road Issues and Traffic Safety in Urban Areas

Topic IV: Environment and Energy

Topic V: Telecommunications Technology

Topic VI: Development of Snow-Removal and Ice-Control Technology

Technical Programs

Opening Session

Date: 9:30 a.m. - noon, 29 Jan. (Tue.), 2002

During this session, three experts will deliver addresses concerning cold, snowy regions and the global environment and road transportation in such regions.

Speakers



Subject: Roads and Road Traffic Control

Mr. Adolf OGI

Former President of the Swiss Confederation

United Nations Secretary General's Special Advisor on Sport for Development and Peace, Switzerland

1972 Chief of the Swiss Ski delegation, Winter Olympic Games, Sapporo

1988-1995 Minister, Head of the Federal Department of Transport and Energy

1993 President of the Swiss Confederation

1995-2000 Minister, Head of the Federal Department for Defense, Civil Protection and Sport

2000 President of the Swiss Confederation (second time)

2001 United Nations Secretary General's Special Advisor on Sport for Development and Peace



Subject: Japan's Winter Road Traffic Policies and New Snow- and Ice-Control Measures

Mr. OHISHI Hisakazu

Director General, Road Bureau, Ministry of Land, Infrastructure and Transport of Japan

PIARC First Delegate, Japan



Subject: The Aurora and the North Pole

Dr. Shun-ichi AKASOFU

Director of the International Arctic Research Center
University of Alaska Fairbanks, U.S.A.

1975 Chapman Medal, from the British Royal Astronomical Society

1976 Japan Academy Award

1979 John Fleming Award, from the American Geophysical Union

Special Session

Date: 9:00 a.m. - noon, 30 Jan. (Wed.), 2002

Theme: Winter Road Service in the 21st Century

At this Congress, the first PIARC International Winter Road Congress of the 21st century, a Special Session will be held to solicit opinions from different countries on the subject of Winter Road Service in the 21st Century. So that participants may seek directions in this new era, various experts and road administrators will be invited as panelists.

Topics

- (1) Mobility in winter and service level of winter roads
- (2) Safety and environment
- (3) Sharing responsibilities among public and private sectors
- (4) New technology and others

Moderators

Chairman: Mr. Hiroshi MITANI
Past President of PIARC
Senior Advisor, Metropolitan Expressway Public Corporation, Japan

Rapporteur: Ms. Ginny CLARKE
PIARC ST3 Co-ordinator
Chief Highway Engineer, Highways Agency, UK

Panelists

Northern Europe	Finland: Mr. Eero KARJALUOTO Director General, Finnish Road Administration PIARC First Delegate of Finland
Western Europe	U.K.: Mr. Mike WILSON Team Leader of Operational Policy, Highways Agency
Baltic Region	Lithuania: Dr. Virgaudas PUODŽIUKAS Director General, Lithuanian Road Administration Ministry of Transport & Communication PIARC First Delegate of Lithuania
Central/Eastern Europe	Hungary: Dr. Péter LÁNYI Head of Road and Bridges Division, Department for Roads, Ministry of Transport and Water Management
North America	U.S.A.: Mr. Elwyn G. TINKLENBERG Commissioner of Transportation, Minnesota Department of Transportation
South/Central America	Chile: Mr. Rolando TOLOZA NORAMBUENA Regional Director of Roads, XI Region, Ministry of Public Works
Asia	China: Mr. FENG Zhenglin Director General, Highway Department, Ministry of Communications PIARC First Delegate of China
Host country	Japan: Mr. Nobuo KATSURA Mayor of Sapporo



Mr. Hiroshi MITANI
Past President of PIARC
Senior Advisor,
Metropolitan Expressway
Public Corporation, Japan



Ms. Ginny CLARKE
PIARC ST3 Co-ordinator
Chief Highway Engineer,
Highways Agency, U.K.

Technical Programs

Closing Session

Date: 2:20 p.m. - 3:50 p.m., 31 Jan. (Thu.), 2002

The Closing Session will conclude and summarize the Congress. Mr. Tadayuki TAZAKI, the C17 Chairman; Mr. Kent GUSTAFSON and Mr. Didier GILOPPÉ, the C17 Secretaries; and the chairperson of each session will summarize research and reports of each session.



Mr. Tadayuki TAZAKI
C17 Chairman (Japan)



Mr. Kent GUSTAFSON
C17 Secretary (Sweden)



Mr. Didier GILOPPÉ
C17 Secretary (France)

Program

- | | |
|-----------|--|
| 2:20 p.m. | History of PIARC Winter Road Congress and report of PIARC Sapporo
Mr. Kent GUSTAFSON (Secretary, C17) |
| 2:30 p.m. | Topic I Report
Mr. Peter PENGAL (Co-ordinator, Topic I) |
| 2:40 p.m. | Topic II Report
Mr. Ulrich SCHLUP (Co-ordinator, Topic II) |
| 2:50 p.m. | Topic III Report
Mr. Guido Van HEYSTRÆTEN (Co-ordinator, Topic III) |
| 3:00 p.m. | Topic IV Report
Mr. Otmar SPETH (Co-ordinator, Topic IV) |
| 3:10 p.m. | Topic V Report
Mr. Takashi ISHIMOTO (Co-ordinator, Topic V) |
| 3:20 p.m. | Topic VI Report
Mr. Oyvind ANDERSEN (Co-ordinator, Topic VI) |
| 3:30 p.m. | C17 Report
Mr. Didier GILOPPÉ (Secretary, C17) |
| 3:40 p.m. | Closing summary
Mr. Tadayuki TAZAKI (Chairman, C17) |
| 3:50 p.m. | Closing |

Oral Presentations

Oral presentations followed by discussions will be held.

Date: 29 (Tue.) - 31 Jan. (Thu.), 2002

Site: 1F Sapporo Dome, Session Rooms 1 - 4

Poster Session

Technical presentation by posters will be held at the Dome 1F Poster Session Corner (in front of Technical Session Rooms).

Date (discussion time): noon - 2:00 p.m., 30 Jan. (Wed.), 2002

Poster Display Period: 1:00p.m., 29 Jan. (Tue.) - 1:00p.m., 31 Jan. (Thu.), 2002

Session Room



Poster Session Corner



Oral Presentations

1:30 p.m. - 3:30 p.m., 29 Jan. (Tue.)

Room 1

Topic II: Snow and Ice Management, and Its Costs

Chairperson: Ulrich SCHLUP

Co-Chairperson: Tatsuo SUZUKI

- 147 Ludwig NIEBRÜGGE, Germany, *Centralised Winter Service for Motorway Centres*
- 015 Hiroshige OHANA, Noriyasu KANEKO, Kenichi SAITO, Junichi OSHIMA, Japan, *Survey of the Rationalization of the Spreading of Anti-icing Chemical in Niigata Prefecture*
- 069 Seppo MÄKINEN, Tapani ANGERVUORI, Finland, *Minimising Salt Consumption on Ground Water Areas in the Uusimaa Region of Finland*
- 138 Jon DAHLEN, Norway, *Personnel Training-Winter Activities*
- 177 Mohamed M. ALKOKA, William S. BEVERIDGE, Canada, *Winter Maintenance Shift Schedule and Labor Management*
- 158 Shuji MIYAMOTO, Motoki ASANO, Norihide MINOBE, Japan, *Winter Road Management Standards of the Hokkaido Development Bureau*

Room 2

Topic III: Winter Road Issues and Traffic Safety in Urban Areas

Chairperson: Guido Van HEYSTRÆTEN

Co-Chairperson: Rupert RIEDL

- 087 Seiji KAMIYA, Masashi TAKEUCHI, Naoki WATANABE, Japan, *A Perspective of Snow Countermeasures in Urban Areas – Snow-Flowing (Melting) Gutter Facilities for Snow Removal, Construction, Operation and Future Snow Countermeasures in Urban Areas –*
- 213 Günter STROBL, Germany, *Differentiated Winter Service in Cities*
- 209 Hidenori OSARI, Hidenori MOGI, Satoru KAWABATA, Japan, *Snow Removal Strategies by the City of Sapporo to Secure Winter Road Space*
- 191 Kazuyoshi TAKATSU, Hideki NAKAGOMI, Michinori HANKO, Japan, *Snow and Freezing Control System in Metropolitan Expressway*
- 048 Mikko MALMIVUO, Otto KÄRKI, Tapani MÄKINEN, Finland, *Winter Maintenance and Traffic Safety*
- 178 Roberto Abraham TOKUNAGA, Toru HAGIWARA, Yuki ONODERA, Akira TAKAHASHI, Toshiyuki MATSUNAGA, Japan, *Driving Behavior on the Winter Road Surface in Sapporo City*

Technical Programs

Room 3

Topic V: Telecommunications Technology

Chairperson: Anne LEPPÄNEN

Co-Chairperson: Keishi ISHIMOTO

- 152 Yasuhiko KAJIYA, Tadayuki WADA, Yasuhiro KANEDA, Japan, *Greater Sapporo ITS Experimental Project – Smart Sapporo Snow-Info Experiment –*
- 074 Magnus NYGARD, Jorma HELIN, Finland, *Road Weather Information Service in Finland*
- 044 Paul J. DELANNOY, Canada, *Road Weather Systems and Services – An Emerging Technology in Canada*
- 167 Hideki TAKAHASHI, Motohisa SATO, Shinichiro AZUMA, Japan, *ITS on Expressway for Better User Service*
- 140 Märt PUUST, Estonia, *Weather Dependent Road Conditions Cross Borders*
- 142 Masanori YANAGITANI, Toru HATTORI, Takashi SAKAI, Japan, *Fee-Based Realtime Road Traffic Information Provision Service for Mobile Phone and PC*

Room 4

Topic VI: Development of Snow-Removal and Ice-Control Technology

Chairperson: Kent GUSTAFSON

Co-Chairperson: Paul PISANO

- 013 Marilyn BURTWELL, U.K., Gudrun ÖBERG, Sweden, *COST ACTION 344: Improvements to Snow and Ice Control on European Roads and Bridges*
- 067 Nozomu MORI, Seishi MEIARASHI, Toshihiko NAKAMURA, Michiya IRASAWA, Kenichi HAYASHI, Japan, *Snowy and Ice Road Countermeasures Using Anti-Freezing Admixture*
- 040 Leland D. SMITHSON, U.S.A., *Improving Winter Maintenance Operations Using International Scanning Tour Technology*
- 028 Yoshikazu UENO, Nobufumi YOSHIDA, Takeo SUZUKI, Japan, *Development and Practical Use of the Winter Road-Surface Monitoring System*
- 085 Akira YAMAO, Japan, *Development of Automatic Control System for Spreading Anti-Freezing Agent*
- 016 Masaki SAZAWA, Japan, *Functional Recoverable Freeze-Preventing Pavement*

Oral Presentations

4:00 p.m. - 6:00 p.m., 29 Jan. (Tue.)

Room 1

Topic II: Snow and Ice Management, and Its Costs

Chairperson: Ulrich SCHLUP

Co-Chairperson: Tatsuo SUZUKI

- 003 G. CAMOMILLA, P. GORETTI, Italy, *Advanced Management Systems for Winter Operations – S.I.S.M.A Project*
- 163 Hisashi IWATA, Tsutomu NAKANISHI, Toshifumi WATANABE, Japan, *Snow and Ice Control Systems for Japanese Expressways*
- 039 Jean-Jacques ROUSSEL, Jean TANGUAY, Canada-Quebec, *An Original Approach for Choosing and Developing Decision-Making Support Tools for Winter Maintenance*
- 059 Kazunori KONNO, Koetsu TAKATA, Teruhiko MARUYAMA, Japan, *State of the Art Winter Road Management in a Heavy Snowfall Area*
- 027 Wilfrid A. NIXON, U.S.A., *Managing Information for Optimal Winter Service Activities*
- 099 Otmar SPETH, Germany, *Level of Service of Winter Maintenance on Highvolume Motorways – Strategies, Problems and Limits of Implementation –*

Room 2

Topic III: Winter Road Issues and Traffic Safety in Urban Areas

Chairperson: Guido Van HEYSTRÆTEN

Co-Chairperson: Rupert RIEDL

- 110 Morten MEJLHOLM, Kaj THOMSEN, Peter RASMUSSEN, Jørgen VERGOD, Freddy KNUDSEN, Hugo HØYER, Denmark, *Sodium Chloride Dihydrate – A Potential Cause of Slippery Accidents*
- 032 Haraldur SIGTHORSSON, Iceland, *Studded Winter Tyres and Traffic Safety in Urban and Rural Areas*
- 023 Anna BERGSTRÖM, Sweden, *Winter Maintenance Standards on Cycleways – Appropriate Road Condition for Increased Cycling during Winter*
- 143 Yoko SHINTANI, Fumihiko HARA, Yoshimitsu HIRAMORI, Motoki ASANO, Japan, *Pedestrian Behaviors on Crosswalks at Intersections in Winter*
- 050 Timo PERÄLÄ, Timo VUORIAINEN, Finland, *Standard of Maintenance of Pedestrian and Bicycle Routes and a Survey of Falls Suffered by Pedestrians and Cyclists in Finland*
- 086 Ryuichi KYOTA, Japan, *Research on Selection of Mode of Transportation in Winter around Local Core Cities of Hokkaido*

Technical Programs

Room 3

Topic V: Telecommunications Technology

Chairperson: Jean LIVET

Co-Chairperson: Paul DELANNOY

- 010 Masaaki MASHIMA, Yoshiaki HAYAKAWA, Ikuo MUNAKATA, Hiroyuki HARA, Japan, *Sensing of Vehicles Running on Plural Lanes with an Artificial Retina Vehicle Sensor*
- 053 Yoshitaka KOSEKI, Tomoyoshi AIZAWA, Atsushi SAITO, Japan, *Traffic Parameters Evaluation of Video Vehicle Detector Under Snow Condition*
- 091 Yukio INABA, Takaharu TEDUKA, Kunio SHIBAYAMA, Japan, *Development of the Road Surface Observation System*
- 187 Junichi OSHIMA, Chuichi SHIMOMURA, Japan, *Winter Road Surface Management Technology Using Magnetic Sensors*
- 093 Kiyoshi TAKEICHI, Yuya HIRAKOUCHI, Masaki KAMIURA, Jun UOZUMI, Nobuyuki ITOH, Japan, *Study on Discriminant Methods of Winter Pavement Conditions by Image Processing*
- 072 Tadayuki FUKUHARA, Hiroyasu ISHIKAWA, Keizo SUGIYAMA, Hideyuki SHINONAGA, Japan, *Receive Power and C/I Characteristics of DSRC Systems under Heavy Snowy Conditions*

Room 4

Topic VI: Development of Snow-Removal and Ice-Control Technology

Chairperson: Øyvind ANDERSEN

Co-Chairperson: Roberto GIANNETTI

- 041 Skuli THORDARSON, Harald NOREM, Norway, *Design Criteria for Roads in Snow-Drifting Areas*
- 201 Keishi ISHIMOTO, Kyoo MATSUDA, Yasuhiko KAJIYA, Japan, *Slope Benching and Shrub and Tree Restoration as an Avalanche Countermeasure along a Road*
- 103 Florence NAAIM-BOUVET, Mohamed NAAIM, Jean-Charles FRANÇAIS, France, *Integration of Wind and Drifting Snow Numerical Models in GIS Snowdrift Risk on Roads: a Tool for Engineering*
- 205 Koji FUMOTO, Hideaki YAMAGISHI, Fumihiro HARA, Japan, *Study on Prevention of Snow and Ice Accretion to Road Signs and Other Facilities*
- 180 Kiyoshi KIZAKA, Ryuji IMAZU, Tsukasa TOMABECHI, Japan, *Fundamental Study on the Control of Snow Accretion and Snow Cover on Road Related Facilities*
- 057 Kazuhiro TSUCHIYA, Japan, *Cause Analysis of Snowmelt-Induced Expressway Slope Failure through Laboratory Testing*

Oral Presentations

2:00 p.m. - 3:40 p.m., 30 Jan. (Wed.)

Room 1

Topic II: Snow and Ice Management, and Its Costs

Chairperson: Patrick. C. HUGHES

Co-Chairperson: Richard CHARPENTIER

- 098 Max S. PERCHANOK, Canada, *Patchiness of Snow Cover and Its Relation to Quality Assurance in Winter Operations*
- 026 S.S. PORWAL, India, *Snow and Ice Management in Himalayas*
- 125 Paul F. KERANEN, U.S.A., *Optimization of Winter Maintenance in the Minneapolis-St. Paul Metropolitan Area Using Performance Targets*
- 139 Koit TSEFELS, Hillar VARIK, Estonia, *Effects of Technology Improvements on Winter Maintenance of Estonian Roads*
- 164 Hiroshi NAKAO, Muneyoshi KIYOSAWA, Japan, *Snow Removal Dispatch and Low-Speed Leading Snow Removal on Expressways in the Hokuriku Region*

Room 2

Topic IV: Environment and Energy

Chairperson: Otmar SPETH

Co-Chairperson: Harutoshi YAMADA

- 024 Göran BLOMQVIST, Sweden, *De-Icing Salt and Roadside Environment – Strategies for Impact Analysis*
- 047 Masataka NAKADA, Takao NAKAYA, Japan, *Fundamental Research on the Effects of Antifreeze Agents on Roadside Environments*
- 101 Taina NYSTÉN, Pasi HELLSTÉN, Finland, *Migration of Alternative De-Icing Chemicals in Shallow Aquifers*
- 082 Etsuhiro ISOBE, Kazuyuki MINDA, Tsukuru KEINO, Minoru YAMAMOTO, Japan, *Development of Long-Term Underground Thermal Energy Storage Roadway Snow-Melting System*
- 094 Kiichi NUMAZAWA, Nobuaki GOTO, Japan, *Development of Road Snow Melting Technology Using Ground Water as a Heat Source*

Technical Programs

Room 3

Topic V: Telecommunications Technology

Chairperson: Paul DELANNOY

Co-Chairperson: Anne LEPPÄNEN

- 181 Willi SCHMID, Albert MATHIS, Urs KELLER, Switzerland, *Nowcasting the Risk of Snowfall and Freezing Rain with Radar and Ground Data*
- 188 Michel FRÉMOND, Laurent LABBÉ, Patrick LERAT, Rym LASSOUED, France, *Modelling of the Short Term Pavement Surface Temperature by Meteorological Data Transfer*
- 009 Thierry LEDENT, Belgium, *The Thermal Mapping Programme – Decision Support Concerning Salt Spreading*
- 166 Hiroshi SUGANO, Yasuji KYOUGOKU, Katsumi KIKUCHI, Japan, *Thermal Mapping Application for Snow and Ice Control on Expressways*
- 058 John Edward THORNES, U.K., *The Quality and Value of Road Weather Forecasts*

Room 4

Topic I: Winter Road Policies and Strategies

Chairperson: Peter PENGAL

Co-Chairperson: Didier GILOPPE

- 071 Neculai TĂUTU, Romania, *Winter Service Organization Meant to Ensure Road Traffic on Public Highways in Romania*
- 119 Paul PISANO, Gary G. NELSON, U.S.A., *The Federal Program in the United States for Road Weather Management*
- 018 Kalevi KATKO, Markku TEPPÖ, Finland, *Contracting Out Winter Maintenance Operations – Finnish Experiences –*
- 022 Staffan MOLLER, Carl-Henrik ULEGARD, Sweden, *Weather Descriptions and Compensation Model for Winter Road Maintenance*
- 038 François PAQUIER, France, *Cofiroute's Approach to Winter Service Levels*

Oral Presentations

4:00 p.m. - 5:20 p.m., 30 Jan. (Wed.)

Room 1

Topic II: Snow and Ice Management, and Its Costs

Chairperson: Patrick. C. HUGHES

Co-Chairperson: Richard CHARPENTIER

- 126 Ralf ROOS, Germany, *Optimal Use of Vehicles in Winter Maintenance of Autobahns in Germany*
- 035 Espen HAMMERSLAND, Norway, *Evaluation of Measures for the Snow Avalanche Protection of Roads*
- 114 Ibrahim GURER, Turkey, Takeshi SATO, Kenji KOSUGI, Yasushi KAMATA, Atsushi SATO, Japan, *Comparison of the Models of Different Types of Snow Fences in Cold Wind Tunnel*
- 156 Motoki ASANO, Fumihiko HARA, Shintaro TANABE, Shingo YOKOYAMA, Japan, *Evaluation of the Ten Years Since Studded Tires Were Banned in Hokkaido and Future Issues*

Room 2

Topic IV: Environment and Energy

Chairperson: Harutoshi YAMADA

Co-Chairperson: Otmir SPETH

- 004 Francis STAQUET, Didier LAURENT, Belgium, *Influence of Road De-icers on Groundwater in the Walloon Region*
- 076 Eva-Lotta THUNQVIST, Sweden, *Predicting Steady State Concentrations of Chloride in Groundwater and Surface Water*
- 165 Shunichi SUZUKI, Ryushi KUBO, Seigo YOSHIE, Japan, *Environmental Considerations Concerning Anti-Icing / Deicing Agent Application*
- 212 Katsunori KADOYU, Hirohumi ONISHI, Yoshiharu NAMIKAWA, Tomofumi NOZAKI, Shigeyuki NAKAMAE, Japan, *Research on De-icing Chemicals Scatter Patterns / Run-off Quantity*

Technical Programs

Room 3

Topic V: Telecommunications Technology

Chairperson: Keishi ISHIMOTO

Co-Chairperson: Anne LEPPÄNEN

- 112 Hiroshi KIDO, Hisaaki MASAOKA, Yuji OTA, LU Bianli, Japan, *Management of Roads in Winter Using CCTV Camera*
- 029 Raimo AUTTI, Lars WESTERMARK, Finland, *Keiju - An IT Based Central Information Collection System*
- 146 Jan Tore ODD, Norway, *The Use of Real-Time GPS in Re-Opening High Mountain Winter Roads in Norway*
- 051 Nobuaki MIURA, Yoshiyuki ITO, Japan, *Development of Snowfall Measuring Device Based on Image Processing Technology*

Room 4

Topic VI: Development of Snow-Removal and Ice-Control Technology

Chairperson: Igor STARIĆ

Co-Chairperson: Øyvind ANDERSEN

- 159 Katsuyoshi HAYASHI, Hiroshi NOMURA, Yutaka KATADA, Japan, *Development of Snow Removal Machinery in Hokkaido*
- 219 Jack OUDIN, Philippe PECQUENARD, France, *A Study of Rotary Disk Spreaders to Improve Winter Serviceability in France*
- 111 Torgeir VAA, Torggrim DAHL, Norway, *Development of a New Sanding Method Based on a Mix of Sand and Hot Water, and Implementation and Consequences for the Organization of Gritting Operations*
- 100 J. C. WAMBOLD, J. J. HENRY, Zoltan RADÓ, U.S.A., *Friction Measurement Techniques for Snow and Ice Road Operations*

Oral Presentations

9:00 a.m. - 10:40 a.m., 31 Jan. (Thu.)

Room 1

Topic I: Winter Road Policies and Strategies

Chairperson: Didier GILOPPÉ

Co-Chairperson: Urmas KONSAP

- 030 Anne LEPPÄNEN, Olli PENTTINEN, Finland, *Finland's Revised Winter Maintenance Strategies and Quality Standards 2001*
- 097 Sonya SKINNER, Max PERCHANOK, Canada, *Transition of Maintenance Service Delivery to the Private Sector in Ontario*
- 008 Thierry LEDENT, Belgium, *Meteoroutes: Methodology of a new concept in the Walloon Region*
- 192 Peter PENGAL, Mirjam GALIČIĆ, Cveto GREGORC, Jure MILJEVIĆ, Slovenia, *Private-Public Partnership in the Slovenia Winter Road Maintenance*
- 102 Didier GILOPPÉ, France, *The Approach of Organization of Winter Maintenance in France*

Room 2

Topic IV: Environment and Energy

Chairperson: Otmar SPETH

Co-Chairperson: Harutoshi YAMADA

- 106 Masato TANAKA, Kazuma MORIYAMA, Takuo HAYASHI, Japan, *Snow-Melting Using Direct Geothermal Energy*
- 117 Yoshikazu ISHIDA, Japan, *Road Heating Using Natural Energy*
- 173 Walter J. EUGSTER, Jürg SCHATZMANN, Switzerland, *Harnessing Solar Energy for Winter Road Clearing on Heavily Loaded Expressways*
- 185 Osamu YOKOTSUJI, Takeo HIRAKU, Seiichi KAGAYA, Japan, *A Verification Test of Snow-Melting Facilities Using Local Energy*
- 210 Yasuhiro TAKAMATSU, Toshinori YOSHIDA, Makoto MIURA, Japan, *Snow-Melting Technologies in Sapporo Utilizing Waste Energy*

Technical Programs

Room 3

Topic V: Telecommunications Technology

Chairperson: Keishi ISHIMOTO

Co-Chairperson: Jean LIVET

- 136 Keiichi SASAKI, Tohru TAMURA, Kazuo SAITO, Japan, *Measuring Effect of Traffic Safety Improvement Measures Using ITS*
- 043 Yasuyoshi MORITA, Kazuyuki NAKAYASU, Shinya MUNEZAWA, Japan, *LED Traffic Signals in Snowy Areas*
- 162 Mitsuhiro KOTANI, Hiroshi NAKAO, Japan, *Publicity Activities for Safe Driving on Expressways in Winter*
- 153 Masaru MATSUZAWA, Yasuhiko KAJIYA, Yasushi TANAKA, Japan, *Research on the Safe Driving Support System for Winter Roads*
- 179 Majid Habibi NOKHANDAN, Bohloud ALIJANI, Javad Bodagh JAMALI, Iran, *Case Study of the Effects of the Weather Conditions on the Road Accidents in the Mountainous Area of Iran: Haraz Road*

Room 4

Topic VI: Development of Snow-Removal and Ice-Control Technology

Chairperson: Kent GUSTAFSON

Co-Chairperson: Igor STARIC

- 054 Tomio HARA, Kouchi SAKATA, Takashi KANO, Japan, *Present Status and Evaluation of Anti-Icing Pavements in Japan*
- 169 Hisashi IWATA, Toru WATANABE, Tatsuya SAITO, Japan, *Study on the Performance of Porous Asphalt Pavement on Winter Road Surface Conditions*
- 006 Guido Van HEYSTRAETEN, Raymond DIERICX, Belgium, *A Rapid and Effective De-Icing Agent for Open-Graded Road Surfacing*
- 105 Takayoshi KOMAI, Hiroshi TAKEDA, Masakatsu MIYAJIMA, Toshikazu IKEMOTO, Japan, *Structure of Drainage Pavement in Considering Maintenance of Road Surface in Winter*
- 221 Felice GIULIANI, Italy, *Winter Maintenance of Porous Asphalt Pavements*

Oral Presentations

11:10 a.m. - 12:50 p.m., 31 Jan. (Thu.)

Room 1

Topic I: Winter Road Policies and Strategies

Chairperson: Rolf JOHANSSON

Co-Chairperson: Peter PENGAL

- 037 Tapani PÖYRY, Finland, *Technical Exchange in the European Northern Periphery to Identify Best Practices in Winter Maintenance*
- 220 Aldis LACIS, Latvia, *Development of Road Winter Maintenance*
- 215 Anette Heiberg MAHLE, Norway, *NORIKS -A Winter Index for Norwegian Conditions*
- 065 Shigeo OKABE, Shigeyuki NAKAMAE, Nobuhiro UETSUHARA, Japan, *A Study on Evaluation of Public Works for Snow and Ice Control over Roads in Japanese Snowy Regions in Light of Understanding and Evaluation by People in Non-Snowy Regions*
- 002 Karel MELCHER, Czech Republic, *Technological Support and Policy for Winter Service in the Czech Republic*

Room 2

Topic IV: Environment and Energy

Chairperson: Harutoshi YAMADA

Co-Chairperson: Otmar SPETH

- 020 Jarkko VALTONEN, Jari MUSTONEN, Timo PAAVILAINEN, Finland, *The Development of Sanding Materials to Reduce Street Dust*
- 025 Mats GUSTAFSSON, Sweden, *Non-Exhaust Particles in the Road Environment – A Literature Review*
- 055 Teruyuki FUKUHARA, Hiroshi WATANABE, Takao YOKOYAMA, Toshikazu ITOO, Gengo KAWAI, Japan, *Pavement Snow Melting Systems Using Ground Heat at "MICHINO-EKI", HACHI-KITA*
- 075 Hirofumi HIRASHITA, Tadashi YOSHIDA, Yoshiyasu TSUCHIYA, Japan, *Development of a Road Heating System Using Urban Waste Heat*
- 182 Jens Kr. FONNESBECH, Freddy KNUDSEN, Denmark, *Optimization of Salt Sprinkling Method to Minimize Its Consumption*

Technical Programs

Room 3

Topic II: Snow and Ice Management, and Its Costs

Chairperson: Ulrich SCHLUP

Co-Chairperson: Tom ROELANTS

- 199 Tom ROELANTS, Luc MUYLDERMANS, Belgium, *Salt Stock Management Based on an (R,S)-Inventory Policy*
- 194 Kunihiro KISHI, Keiichi SATOH, Japan, *A Study on Hedging the Risk of Snow Removal Cost Fluctuation*
- 060 Norio OHIRA, Kouji OHBAYASHI, Norio HIGUCHI, Japan, *The Efficiency of Mechanized Snow-Removal / Anti-Freeze Chemical Spreading and the Snowfall / Freezing Prediction System*
- 186 Jan ÖLANDER, Sweden, *Winter Index by Using RWIS and Mesan – An Operational Mesoscale Analysis System*
- 118 Hisayoshi MORISUGI, Yasuhisa HAYASHIYAMA, Masaki SAITO, Chikara SATO, Japan, Benefit *Evaluation of Road Snow Removal in the Tohoku Region*

Room 4

Topic VI: Development of Snow-Removal and Ice-Control Technology

Chairperson: Paul PISANO

Co-Chairperson: Raymond DIERICX

- 034 Hiroshi SUGA, Takeo SUZUKI, Japan, *Development of New Chloride Group De-Icing / Anti-Freezing Agents*
- 131 Murray CLARKE, Vince DRAVITZKI, Peter CENEK, New Zealand, *Development of the Safe Application and Usage of Calcium Magnesium Acetate as an Anti-Icing Agent under New Zealand Conditions*
- 174 Jürgen BREITENSTEIN, Karl MORITZ, Germany, *Requirements for Gritting Agents for Use in Practical Winter Road Maintenance*
- 144 Franz GOETZFRIED, Horst BADEL, Germany, *The Effectiveness of Different De-Icing Salts*
- 083 Takeshi MIYAMA, Shigeaki AOYAGI, Tsukuru KEINO, Eiji TAKATA, Yuusi SATOU, Japan, *Development of a Hot Water Panel Heater Type System for Melting Snow on Sidewalks*

Poster Session

Noon - 2:00 p.m., 30 Jan. (Wed.)

Poster Display Period: 1:00p.m., 29 Jan. (Tue.) - 1:00p.m., 31 Jan. (Thu.)

Topic I: Winter Road Policies and Strategies

- 017 Anders NORDSTRÖM, Kari MUHONEN, Finland, *Quality System For Winter Maintenance in Finland*
- 045 Ljiljana HERGA, Polona FAZARINC, Igor STARIČ, Slovenia, *Winter Maintenance Policy in Slovenia*
- 137 Koit TSEFELS, Lembit HARK, Toomas TOOTSI, Estonia, *Legal Acts of Winter Maintenance According to Estonian Road Act*

Topic II: Snow and Ice Management, and Its Costs

- 113 Seiji KAMIMURA, Kazuyuki MOROHASHI, Japan, *A Cost Benefit Analysis Approach Based on Land Value for Snow Control on Urbanized Area in Japan*
- 154 Hisayoshi MORISUGI, Yasuhisa HAYASHIYAMA, Masaki SAITO, Manabu AKOSHIMA, Enrique ALARCON, Teiji GOTO, Japan, *Benefit Evaluation of Road Information Service on Winter Mountain Passes*
- 160 Yuzo MASUYA, Koji URATA, Nobuyuki ITO, Tohru TAMURA, Kazuo SAITO, Japan, *Analysis of Winter Travel Speed in Pass Sections in Hokkaido*
- 172 Sven-Erik HALLBERG, Sweden, *ProData – A Computerized Management System for Road Maintenance*
- 202 Shintaro TANABE, Yasuhisa HAYASHIYAMA, Kunie MORI, Hiroyuki TAMAKI, Japan, *Monetary Evaluation of Various Snow Removal Attributes by Conjoint Analysis*

Topic III: Winter Road Issues and Traffic Safety in Urban Areas

- 046 Maija VÄHÄ-RAHKA, Sini PUNTANEN, Hanna PIKKARAINEN, Mari SIKKONEN, Laura YLI-JAMA, Finland, *"Cool Town – Winter in The City"*
- 049 Östen JOHANSSON, Sweden, *Accidents, Speeds and Salt Consumption on Roads in Winter*
- 141 Hongren CHEN, Yang LIU, China, *Research on Winter Traffic Characteristics and Comparisons with Summer Traffic in Harbin*

Technical Programs

Site: Poster Session Corner in front of Technical Session Rooms

- 155 LU Bianli, Hisa'aki MASAOKA, Toru HAGIWARA, Takashi NAKATSUJI, Shinzo TSUJI, Masaru UYEYAMA, Japan, ***Study on the Analysis of Intersection Traffic Accidents Using Real Traffic Accident Images***
- 157 Yoichi AZUTA, Motoki ASANO, Wataru TAKAHASHI, Japan, ***Characteristics of Winter Roads in Hokkaido: Case Study in the Sapporo Urban Area***
- 193 Ken-etsu UCHIDA, Sei-ichi KAGAYA, Kei-ichi SATOH, Japan, ***Study of Overtaking on Slippery Two-Lane Road***
- 224 Soushi SUZUKI, Hajime SHIBUYA, Hideo IGARASHI, Takayuki KIMOTO, Japan, ***Characteristics of Winter Use of Michi-no-Eki in Hokkaido***

Topic IV: Environment and Energy

- 104 Hiroshi NAKAJIMA, Shuichi KOMADA, Akira MURATA, Masaru KITaura, Japan, ***Development of the Remote-Control System for Melting-Snow Facility Using Radio Packet Communication***
- 108 Pekka VALLIUS, Finland, ***The Biggest Groundwater Protection Project in Finland – The Protections of Highway 25 Costs 3.8 Million Dollars***
- 116 Shigenobu MIYAMOTO, Masanori TAKEUCHI, Japan, ***Snow-Melting and De-icing System on Road Using Natural Thermal Energy Sources***
- 176 Mohamed M. ALKOKA, Khaled KANDIL, Canada, ***Effectiveness of Using Organic By-Products in Decreasing the Freezing Point of Chemical Solutions***
- 195 Xue Feng ZHANG, China, ***Highway Design and Engineer in the Zone of Permafrost in Xing'an Mountains in China***
- 208 Hiroshi MIZUMA, Naoki OZAWA, Koji WAKABAYASHI, Japan, ***Road Heating System Utilizing Natural Energy, A Way It Should be***

Topic V: Telecommunications Technology

- 073 Masahiko YOSHIMOTO, Jiro OGAWA, Koji IITSUKA, Shigenobu SUITSU, Koji KAWAGISHI, Japan, ***Research on the Model of Sharing and Provision of Road Administration Information***
- 092 Ken-ichi MIMA, Yasuhiko KAJIYA, Japan, ***Study on Visibility of Light-Emitting Display Devices and Delineators in Road Traffic in Winter Blowing Snow Conditions***

Poster Session

Noon - 2:00 p.m., 30 Jan. (Wed.)

Poster Display Period: 1:00p.m., 29 Jan. (Tue.) - 1:00p.m., 31 Jan. (Thu.)

- 096 Shuhei TAKAHASHI, Kinji HYAKUTAKE, Takao KAMEDA, Hiroyuki ENOMOTO, Japan, **Freezing Conditions of Various Road Surfaces in Mountainous Regions**
- 123 Xianguo YAN, Jian LIU, China, **Traffic Leading Sign Setting in Snow Storm Area**
- 175 Mohamed M. ALKOKA, Canada, **Effect of Using Advanced Winter Maintenance Technologies on Accident Rates in the Region of Ottawa-Carleton**
- 207 André CANTIN, Canada-Quebec, **A New Approach in Delivering Weather Information to Winter Road Maintainers of the Quebec Ministry of Transportation**

Topic VI: Development of Snow-Removal and Ice-Control Technology

- 011 Alexander V. SMIRNOV, Vassily I. MESHTSHERYAKOV, Russia, **Steadiness of Granular Materials on Ice-Coated Road Surface**
- 033 Eugen C. FLORESCU, Romania, **Smog Simulation of the Air Streams in Deep Cuttings**
- 042 Harald NOREM, Lars Roar SÆTRAN, Skuli THORDARSON, Norway, **Measures to Reduce the Generation of "Snow Smoke" behind Heavy Vehicles**
- 056 Makoto NUNOBE, Youichirou KAWASAKI, Japan, **Improvement of Performances of Rotary Snow Removing Wheel**
- 062 Tadashi WATANABE, Masato MURAYAMA, Japan, **A Study on Application of Textile Surface Material for Shock Absorbing Pavement**
- 066 Shuusuke SUZUKI, Teruhiko MARUYAMA, Japan, **Amelioration and Examination of Lasting Effects of Pulverulent Chloride Compound-Based Freeze Inhibiting Pavements**
- 084 Thomas ASK, Bernie ASK, U.S.A., **Anti-Icing Nozzle Particle Rejection**
- 089 Masaki KAMIURA, Kiyoshi TAKEICHI, Japan, **An Analytic Study on Sphere of Elastic Materials Used for Freezing Pavement**
- 090 Katsuhisa SATO, Hiroaki HORI, Japan, **Development of Anti-Icing Asphalt Pavements Using Rubber Particles**
- 109 Toshikatsu HIRA, Satoshi IZUMI, Youichi YOSHIKAWA, Goichi AZECHI, Hiroshi MATSUDA, Shinichi HONMA, Japan, **Examination about Snow Melting Equipment with Water Sprinkling on Porous Asphalt Pavement**
- 120 Xiaoguang CHEN, Junchao LI, China, **Study on Snow Disaster Prevention and Treatment along G312 Guozigou Highway in Xinjiang**
- 121 Changlin LI, Junchao LI, China, **Study on Snow Disaster Prevention along the Highway from Tiechanggou to Emin**

Technical Programs

Site: Poster Session Corner in front of Technical Session Rooms

- 122 Zhisheng WANG, Jian LIU, China, ***Computing the Break Point of Snow Slide***
- 168 Satoshi SETOYAMA, Atsushi ICHIKAWA, Susumu YAMADA, Japan, ***The Development of Snow and Ice Control Machinery***
- 170 Toshimi SATO, Atsushi SATO, Makoto MURAKUNI, Masuyoshi MATSUDA, Japan, ***New Method for Evaluation of Blowing Snow Measures through Cold Wind Tunnel Experiment and CCD Image Analysis***
- 171 Hideto TAKEMOTO, Yasunori HAYASAKA, Hiroyasu IKEDA, Masaru MATSUZAWA, Japan, ***Study on the Prevention of Snow and Ice Accretion on Road Structures***
- 196 Jiye HAO, China, ***Influence of Winter on Control of Snowy and Icy Roads in Inner Mongolia***
- 222 Horst SCHAFFHAUSER, Austria, ***The Application of SAMOS – Avalanche Model for Winter Road Protection***

Social Programs

Opening Ceremony

Date: 5:00 p.m. - 9:00 p.m., 28 Jan. (Mon.)

Site: Special Stage in Sapporo Dome Arena

An elevated stage adjoining one section of the stadium will serve as the site for this ceremony. Congress participants are asked to sit in the fixed seats there. Remarks will include those by Mrs. Chikage OGI, Minister of Land, Infrastructure and Transport, and Mr. Olivier MICHAUD, President of PIARC. Gracing the stage will be performances on the theme of "Northern festivals." The Opening Ceremony for the Exhibition will be held at the Indoor Exhibition site on the stadium floor. The Welcoming Reception will follow, during which the Exhibition will remain open.

Schedule

5:00 p.m.

Opening

Welcoming Addresses:

Mr. Olivier MICHAUD, President of PIARC

Mr. Michio SUZUKI, President of the XIth PIARC International Winter Road Congress 2002, Sapporo, Japan

Mrs. Chikage OOGI, Minister of Land, Infrastructure and Transport, Japan

Mr. Tatsuya HORI, Governor of Hokkaido

Mr. Nobuo KATSURA, Mayor of Sapporo

5:30 p.m.

Performances: "Japanese Festivals That Bring Color to Our Northern Land"

6:30 p.m.

Exhibition Opening Ceremony

Opening address by Mr. Michio HIRANO, Director-General of the Hokkaido Development Bureau, Ministry of Land, Infrastructure and Transport, Japan

Ribbon-Cutting

Mr. Olivier MICHAUD, President of PIARC

Mr. Michio SUZUKI, President of the XIth PIARC International Winter Road Congress 2002, Sapporo, Japan

Mrs. Chikage OOGI, Minister of Land, Infrastructure and Transport, Japan

Mr. Michio HIRANO, Director-General of the Hokkaido Development Bureau, Ministry of Land, Infrastructure and Transport, Japan

Mr. Tatsuya HORI, Governor of Hokkaido

Mr. Nobuo KATSURA, Mayor of Sapporo



Yosakoi Soran Festival

Welcoming Reception

Date: After the Exhibition Opening Ceremony - 9:00 p.m., 28 Jan. (Mon.)

Site: Sapporo Dome Arena

Please join the reception, which will feature Hokkaido delicacies.

Attractions

Japanese Festivals That Bring Color to Our Northern Land

Large Taiko

Dancing Snow Nymphs (children)

Sakata Maiko

Sakata, a port on the Japan Sea in Yamagata Prefecture, was a northern center of *maiko* (apprentice geisha) during the Edo period. The *maiko* performed elegant dances at expensive Japanese restaurants, until after World War II. A decade ago they were brought back in an effort to restore local culture.

Esashi Oiwake

The Esashi Oiwake folksong is believed to have originated in a ballad sung in snowy Nagano Prefecture. It became popular in Niigata as the Echigo Oiwake, before crossing the sea to Ezo (Hokkaido). It was combined with another type of folksong Kenryou from Echigo, to become the Esashi Oiwake we hear today. Around 1890,

Kamomejima'kenkoji Toyotaro, a master of the shakuhachi (bamboo flute), established the Koji-ryu style of shakuhachi accompaniment.

Tsugaru Shamisen

This originated as an accompaniment to folk ballads. Audiences become so impressed with its compelling music that it developed into a solo instrument. Although stringed, the Tsugaru samisen is played in a uniquely percussive plucking style.

Yosakoi Soran Festival

This is a new event that combines the Yosakoi Festival of Kochi Prefecture with Hokkaido's Soran-bushi folk ballad. College students in Hokkaido started this festival in 1992. It has grown to become a major event in Hokkaido.

Akita Namahage

The Namahage Festival is held annually in Akita

Prefecture in villages on the Oga Peninsula. On the 15th of the first lunar month or on New Year's Eve, villagers masked as demons and wearing straw capes and boots visit households in the village. The demons roar until the head of the household appears and lets them in. "Any kids here who cry?" the Namahage growl. "Any kids who are lazy?" Although children fear these monsters, Namahage are recognized as deities who expell bad luck, ensure abundant harvests and grant happiness. The festival originated in the legend of a fearsome deity who visited blessings upon villages. The event has been celebrated for more than 1200 years. In 1978 it achieved designation as an Important Intangible Folk Cultural Property of Japan.



Sakata Maiko



Esashi Oiwake



Akita Namahage

Social Programs

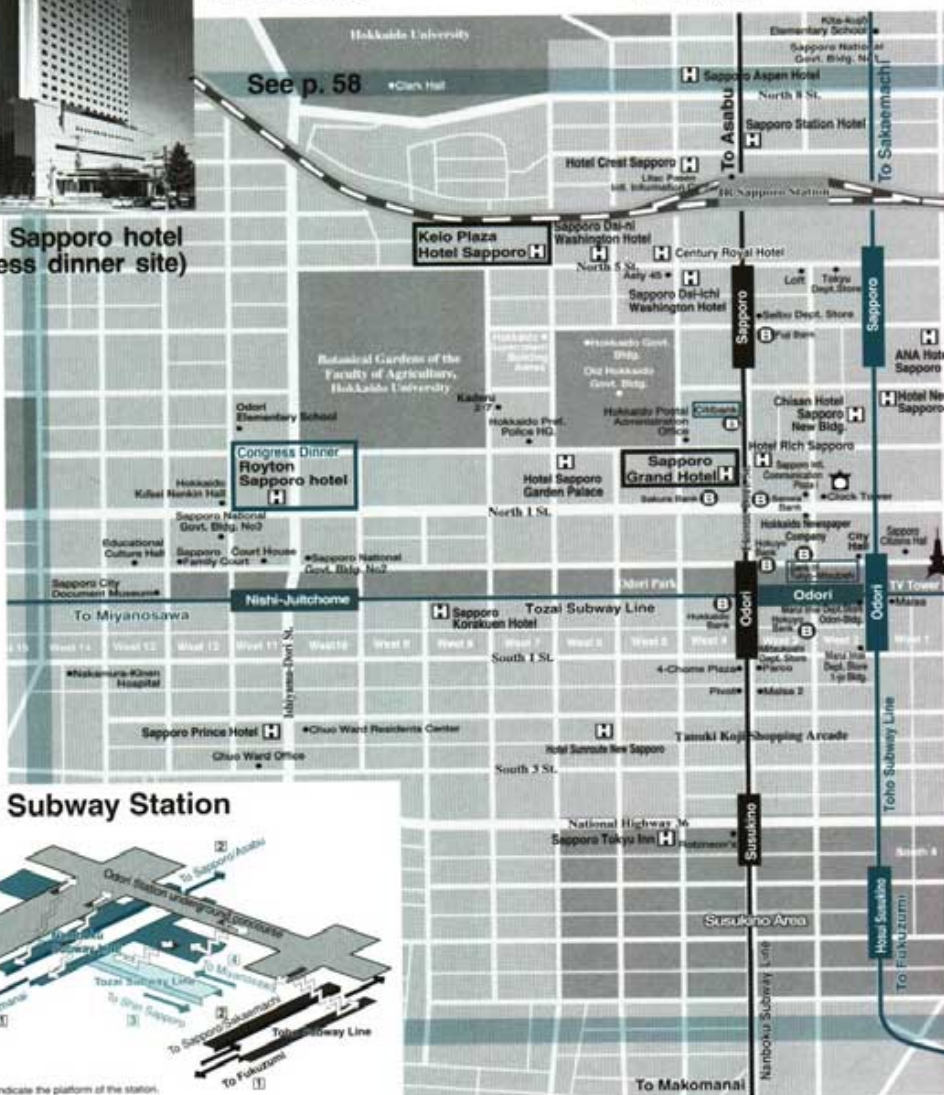


Royton Sapporo hotel
(Congress dinner site)

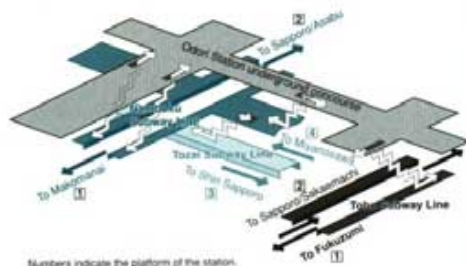
Hotels

 Congress Official
Hotel

See p. 58



Odori Subway Station

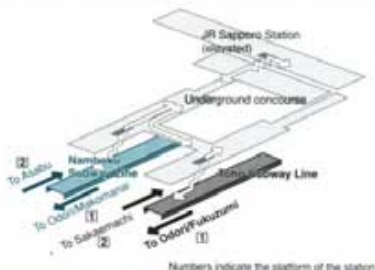


Numbers indicate the platform of the station.

Congress Dinner

A buffet dinner is scheduled for the evening of 30 January, to which Congress Full-Registrants and Accompanying Persons are invited. The participants will be greeted with several cultural performances.

Sapporo Subway Station (Japan Railway (JR) Sapporo Station)



Date: 7:30 p.m. - 9:30 p.m., 30 Jan. (Wed.)

Site: Royton Hall, 3rd floor of Royton Sapporo hotel

Invitation to Congress Dinner

Please bring your **Congress Dinner Participation Ticket**, which will be issued at registration to Congress Full-Registrants and Accompanying Persons (see pp.18 and 19).

Attire

Gentlemen: jacket and tie.

Ladies: semi-formal dress.

Traffic Access

Diners arriving by subway should get off at the **Nishi-Juitchome Subway Station** on the Tozai Line. It is a 5-minute walk from **Exit 1** of the subway station to the Royton Sapporo hotel. Shuttle buses will operate between the other Congress Official Hotels (Sapporo Grand Hotel and Keio Plaza Hotel Sapporo) and the Congress dinner site.

Shuttle bus schedule

Royton Sapporo hotel ↔ Sapporo Grand Hotel and Keio Plaza Hotel Sapporo

Before the Congress dinner

(Sapporo Grand Hotel and Keio Plaza Hotel Sapporo → Royton Sapporo hotel)

Keio Plaza Hotel Sapporo D 6:30 p.m.

Sapporo Grand Hotel D 6:30 p.m.

After the Congress dinner

(Royton Sapporo hotel → Sapporo Grand Hotel and Keio Plaza Hotel Sapporo)

Royton Sapporo hotel D 9:45 p.m.

Note: No supplementary bus service will be available even if the bus becomes full of passengers. In such a case, you will be requested to take the subway or a taxi.





• Clark Hall

Central Sapporo

Hotel Crest Sapporo

Li'lac Pa
Intl. Information

**Keio Plaza
Hotel Sapporo** 

Sapporo Dai-ni
Washington Hotel 

North 5 St.

Asty 45 •

Sapporo D
Washington

Botanical Gardens of the
Faculty of Agriculture,
Hokkaido University

Hokkaido •
Government
Building
Annex

•Hokkaido Govt.
Bldg.
Old Hokkaido
Govt. Bldg.

Hokkaido Post
Administratio
Office

**Congress Dinner
Royton
Sapporo** 

Odori
Elementary School

Kaderu
2•7 •

Hokkaido Pref.
Police HQ.

 Hotel Sapporo
Garden Palace

**Sap
Grand**

Sakura E

North 1 St.

Hokkaido
Kōsei Nenkin Hall

Sapporo National
Govt. Bldg. No.3


Educational
Culture Hall

Sapporo Court House
•Family Court

•Sapporo National
Govt. Bldg. No. 2

Sapporo City
Document Museum •

Nishi-Juitchome

 Sapporo
Korakuen Hotel

Tozai Subway Line


To Miyanosawa

West 14 West 13 West 12 West 11 West 10 West 9 West 8 West 7 West 6 West 5

•Nakamura-Kinen
Hospital

South 1 St.


Ishiyama-Dori St.

Sapporo Prince Hotel 

•Chuo Ward Residents Center

Chuo Ward Office


Hotel Sunroute New Sapporo

 Tanuki H
Shopping 7

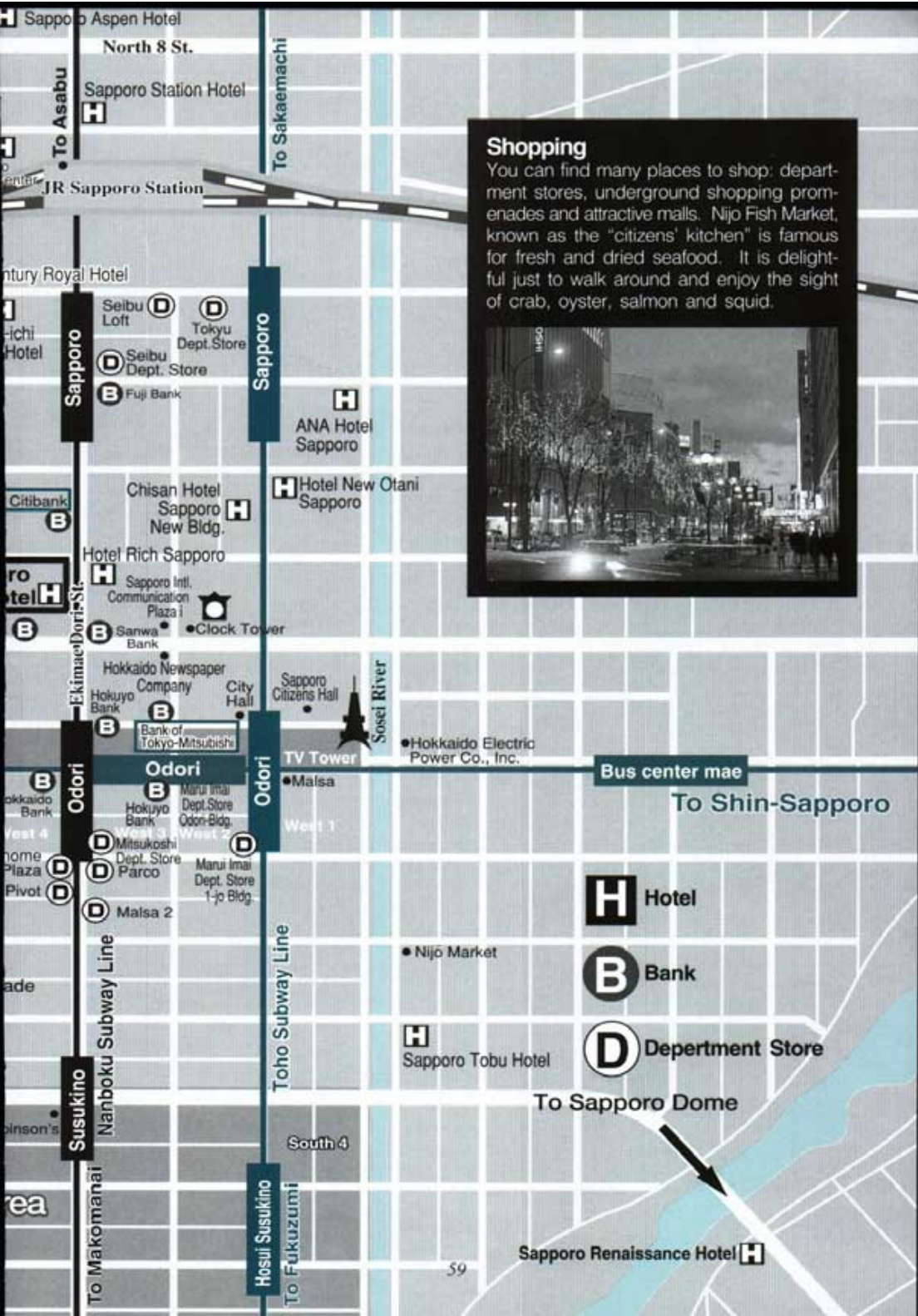
South 3 St.



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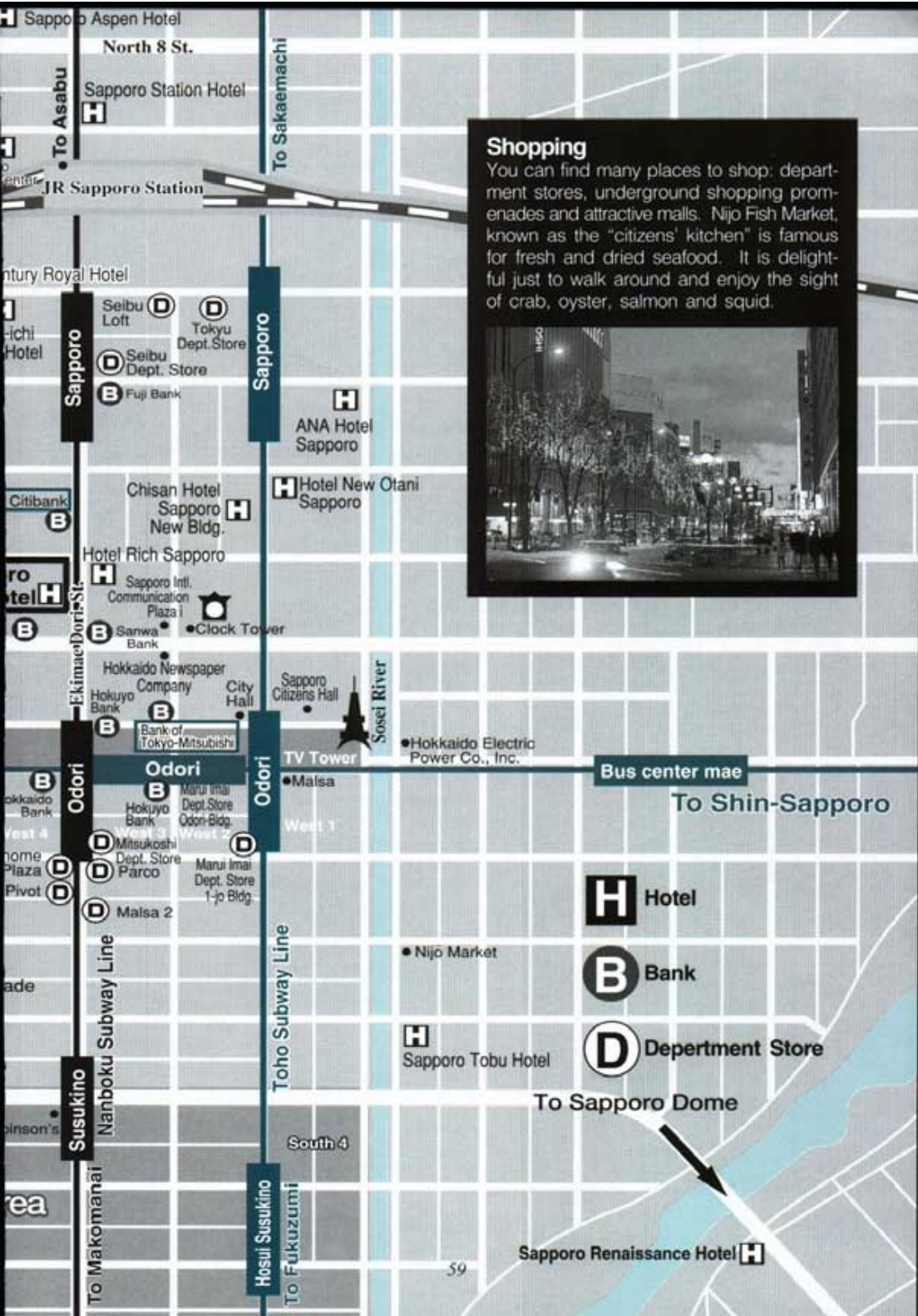
National Highway 3
Sapporo Tokyu Inn 

Susukino



Shopping

You can find many places to shop: department stores, underground shopping promenades and attractive malls. Nijo Fish Market, known as the "citizens' kitchen" is famous for fresh and dried seafood. It is delightful just to walk around and enjoy the sight of crab, oyster, salmon and squid.



Social Programs

Closing Ceremony

Time: 4:00 p.m. - 5:00 p.m., 31 Jan. (Thu.), 2002

Site: Sapporo Dome Arena

The Closing Ceremony will follow the Closing Session. It will include addresses by the President of PIARC and by the President of the XIth International Winter Road Congress and an introduction of the next Congress venue.

Program

- | | |
|-----------|---|
| 4:00 p.m. | Address by Olivier MICHAUD, President of PIARC |
| 4:10 p.m. | Introduction of the XXII nd World Road Congress in Durban, South Africa in 2003 |
| 4:20 p.m. | Presentation on the International Road Federation (IRF) Conference in Bangkok, Thailand in 2005 |
| 4:30 p.m. | Introduction of the XII th International Winter Road Congress in Sestriere, Italy in 2006 |
| 4:40 p.m. | Handover Ceremony from Sapporo to Sestriere |
| 4:50 p.m. | Closing address by Michio SUZUKI, President of the XI th International Winter Road Congress 2002, Sapporo, Japan |

Introduction of Sestrièrè, Italy, the Next Congress Host Sestrièrè, Italy

Piedmont is one of Europe's snowiest regions, the ideal venue for the XIIth PIARC International Winter Road Congress in 2006.

It is not by chance that the Torino-Sestrièrè region has been chosen as the venue for the Olympic Games in 2006 with its 600 km of ski slopes in a natural setting which is unique in the world. It offers visitors many sites of historical and cultural heritage that have always been devoted to tourism. The Congress will be the best venue for exchanges of information and technologies among experts from around the world.

La Regione Piemonte è una delle zone più innèvate dell'Europa, sede ideale per lo svolgimento del XII Congresso della Viabilità Invernale AIPCR.

Non a caso, il comprensorio Torino-Sestrièrè è stato scelto come sede delle Olimpiadi Invernali del 2006, con i suoi 600 km di piste inserite in uno scenario naturale unico al mondo, che offre luoghi ricchi di storia e tradizioni, da sempre dedicati all'ospitalità dei turisti.

Il Congresso sarà un'occasione ideale o scambio di informazioni e di tecnologie fra esperti di tutto il mondo.

