



Achieving Smart Cities and Decarbonization through Public-Private Partnerships and City Alliances

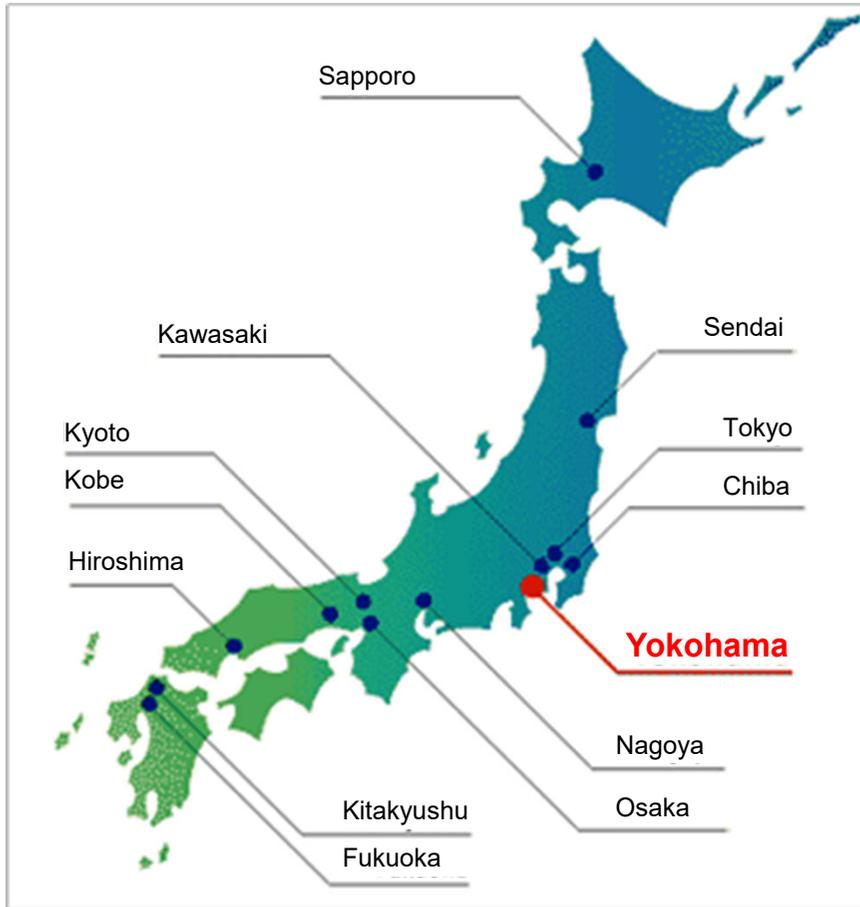
City of Yokohama

Director for International Technical Cooperation

Noriaki Yokouchi

Outline of Yokohama

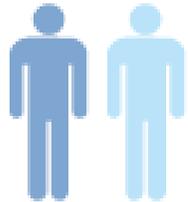
Location of Yokohama



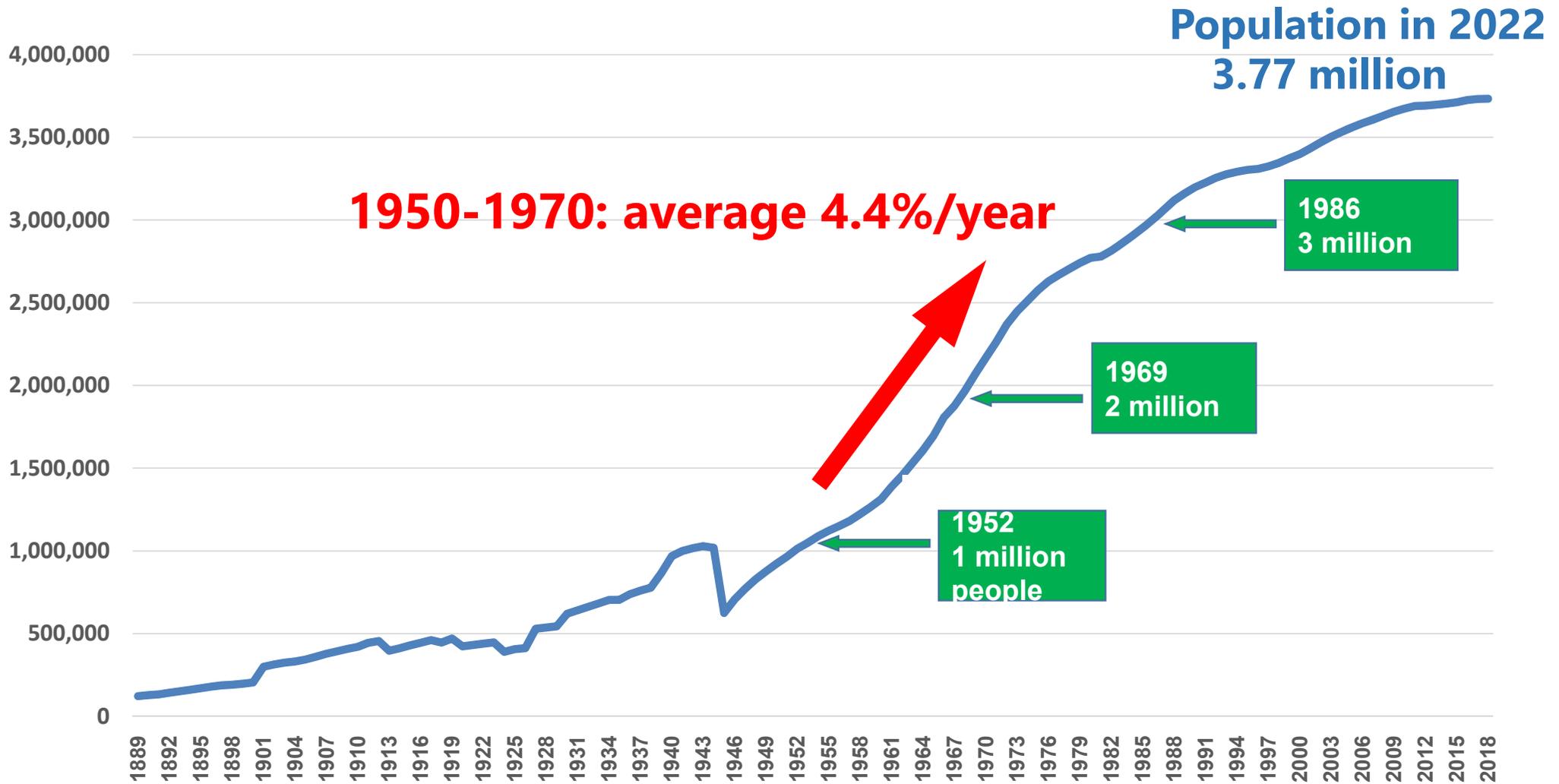
Population: 3.77 million (2022)

Households: 1.78 million (2022)

Area: 435km²



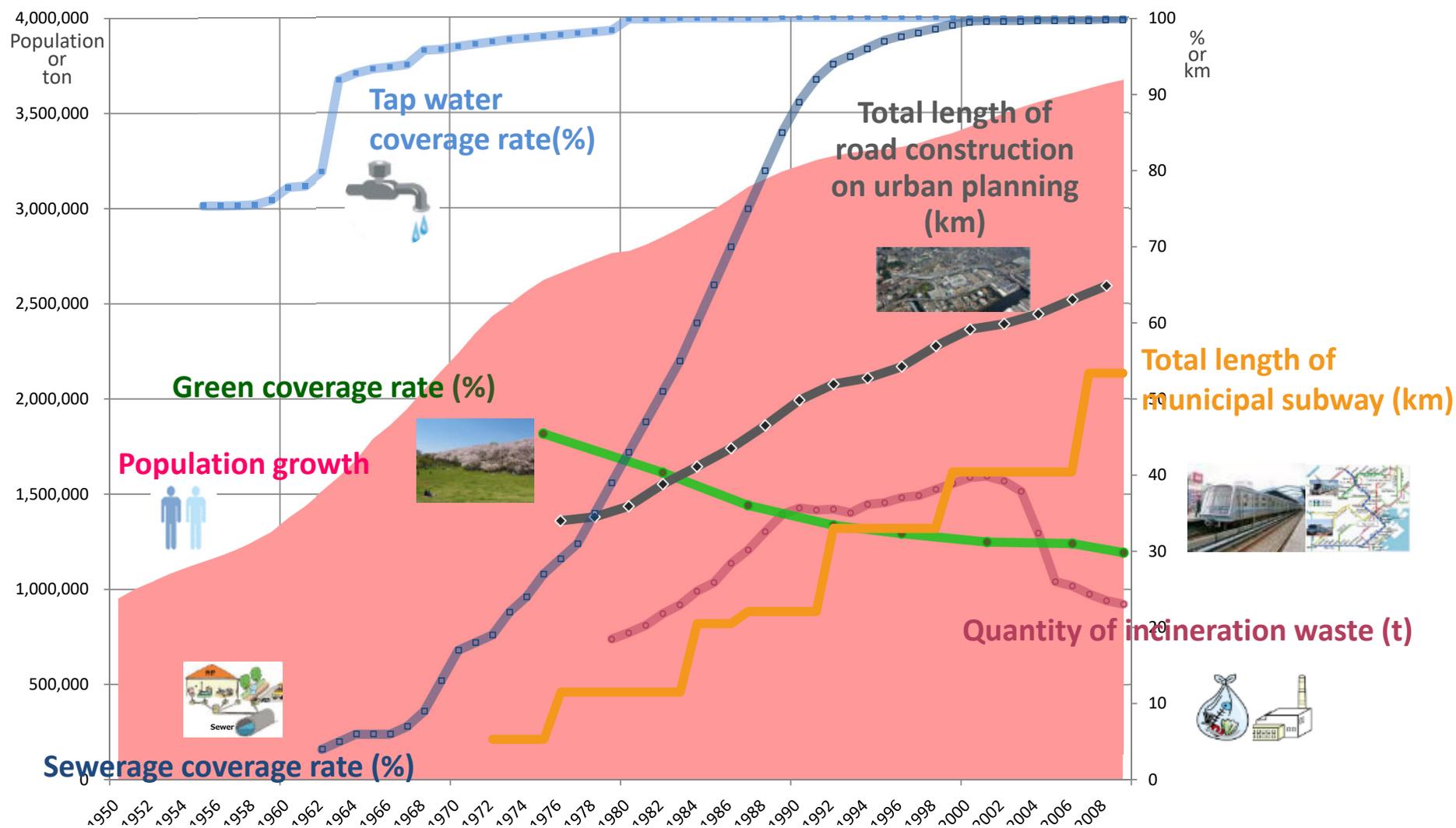
Rapid Population Growth



Challenges Caused by Urbanization



Urban Infrastructure Development



Yokohama Urban Development

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Packaging Yokohama's Strengths → Exporting it overseas

Public Sector Experience in Urban Development



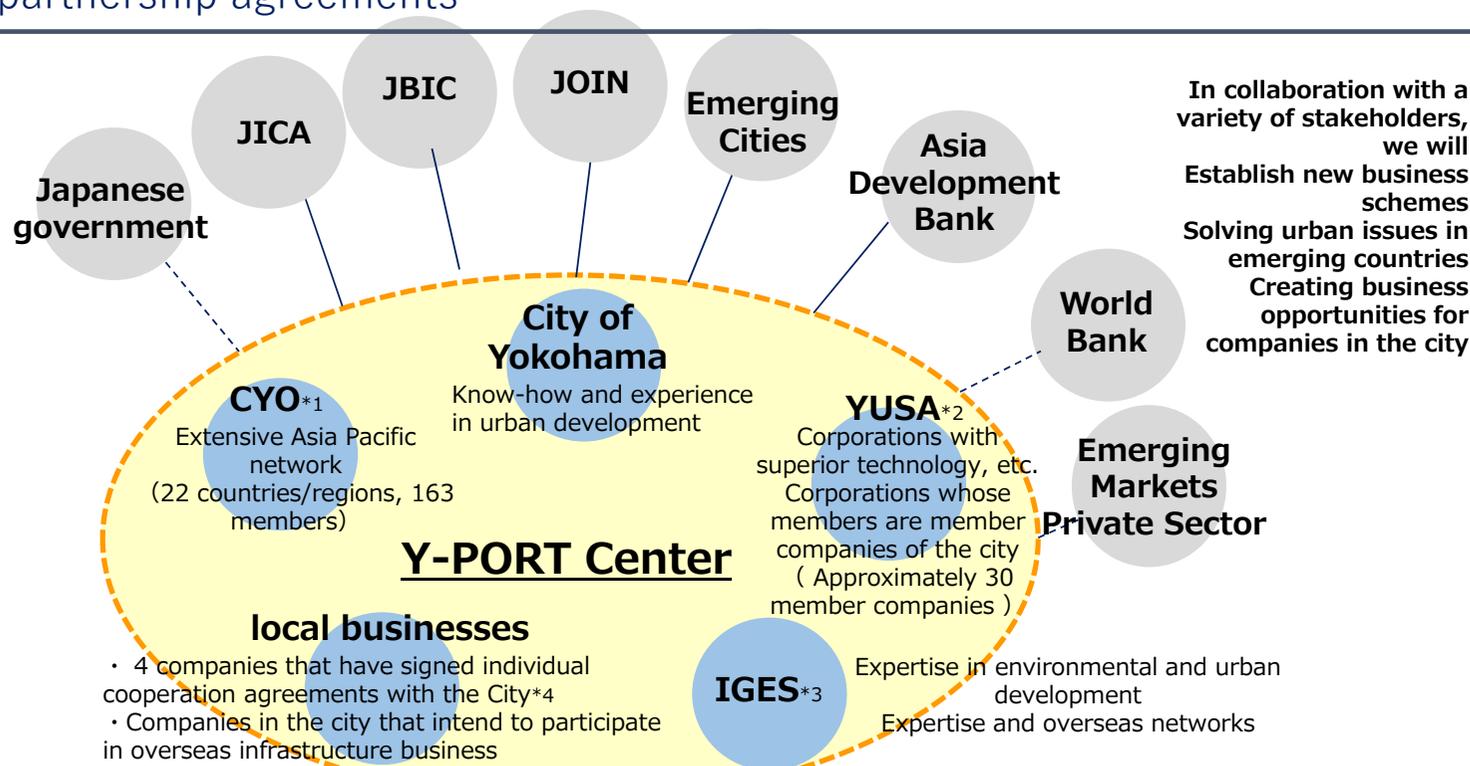
Private Sector Technologies and Services



Platform for exporting Yokohama's urban development expertise as a comprehensive package, established by the City's International Affairs Bureau in 2011

Y-PORT Project Implementation Structure

- Launched in 2015 as a platform for promoting infrastructure business through public-private partnerships
- Established the Office of Public-Private Partnerships in 2017 as a center for collaboration.
(Staff of International Cooperation Division and Ippan Shadan YUSA office are always present.)
- Cooperation with government agencies, international organizations, and companies in the city through partnership agreements





International Cooperation
Division, International
Affairs Bureau, City of
Yokohama



YUSA
(General Incorporated
Association)
YOKOHAMA URBAN
SOLUTION ALLIANCE



**Y-PORT Center Public-Private
Partnership Office
Opened in July 2017**
(Yokohama International Organizations
Center 6F)

* 1 CYO: CityNet Yokohama Project Office * 2 YUSA:(General Incorporated Association) YOKOHAMA URBAN SOLUTION ALLIANCE
* 3 IGES:(public interest incorporated foundation) Institute for Global Environmental Strategies * 4 companies : JGC Global Corporation,
JFE Engineering Corporation, Chiyoda Corporation, Hitachi, Ltd.

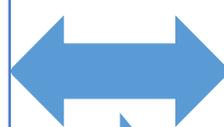
Yokohama Urban Solution Alliance (YUSA)

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YU SA YOKOHAMA URBAN SOLUTION ALLIANCE



City of Yokohama



Cooperation Agreement
between YUSA and
City of Yokohama, 2017

As of 1st June, 2023

Yokohama Urban Solution Alliance (YUSA)

Opened three overseas offices in collaboration with member companies in Bangkok, Thailand; Da Nang, Vietnam; and Cebu, Philippines (July 2022).

Overseas offices provide local coordination, marketing, and proposals for feasibility study schemes to support YUSA member companies in their overseas expansion.



Cyclical Schemes for the Expansion of Business in Infrastructure

1. City-to-City Collaboration
 2. Ties with Companies
 3. Sharing Information
- Promotion of urban solutions and infrastructure business -





Encouraging and strengthening city-to-city collaboration

Cities that have signed a MoU on Technical Cooperation for Sustainable Urban Development with Yokohama

Bangkok



- Bangkok Master Plan on Climate Change
- Installation of rooftop solar generators and energy management systems at factories

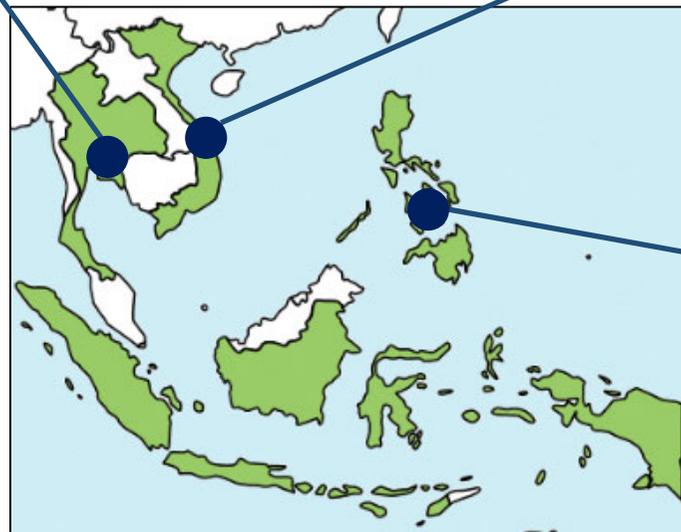
Da Nang

- Da Nang Urban Development Action Plan
- Energy efficiency diagnostic service for hotels, factories, etc.
- Installation of high-efficiency pumps at Da Nang Water Supply facility



Joint Development/Smart City Projects through collaboration with YUSA

Formation of joint development/smart city projects through collaboration with YUSA based on requests for cooperation from private developers in the ASEAN region.



Cebu



- Mega Cebu Roadmap 2050
- Waste plastic recycling
- High-efficiency treatment of septage



Cooperation with Companies in Yokohama

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By overseeing 79 surveys and verification projects, the City of Yokohama has contributed to the business of local companies, which received 24 business orders.

City-to-City Collaboration and Municipal Plan Formulation

Survey and Verification

Building and Expanding Business

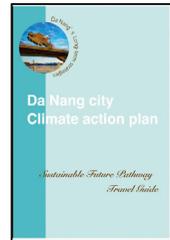
Bangkok



Support for Planning and technical implementation

- JICA promotion of overseas expansion of SMEs
- MoEJ's overseas promotion of waste management and recycling industry

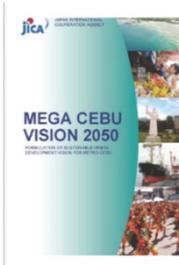
Da Nang



Support for Planning and technical implementation

- MoEJ's JCM-related business feasibility study project
- JICA private sector proposal-based promotion and verification project

Cebu



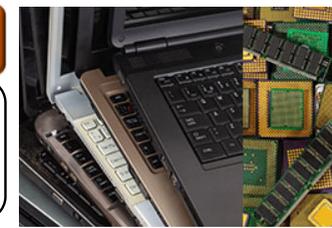
Support for Planning and technical implementation

- MoEJ's' Innovation creation project for emerging countries



Finetech

Supply of electricity via solar panels on facilities (JCM)



KOEI

Overseas branch, conducting survey of proper disposal and recycling of IT equipment



Yokohama Water

Implementation of high efficiency water supply pumps at the water treatment plant (JCM)



OSUMI

Overseas office, offering energy efficiency evaluation and consultation services



JICA ODA Grant Project

Construction of sludge treatment plant

Yokohama Water

Detail design and construction management



GUUN

Recycle plant, producing alternative fossil fuels



International Presence

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Broader and stronger network via Asia Smart City Conference
44 cities and governmental organizations from overseas (2023)

Leadership among Asian cities



Role models for inter-city collaboration

Bangkok

Da Nang

Cebu



Attracting global cities and encouraging companies through cooperation with MDBs



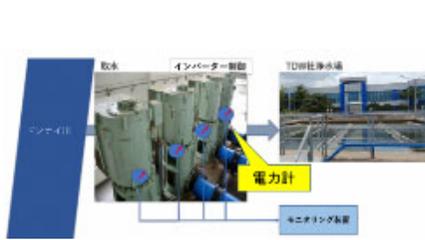
Showcase of companies expanding infrastructure abroad



Examples of commercialization of projects assisted by Y-PORT

 <div> <p>SME</p> <p>12 持続可能な消費と生産</p> <p>13 気候変動に起因する影響</p> <p>17 パートナーシップによる持続可能な開発</p> </div> <p>(1) Waste plastic recycling in Metro Cebu, Philippines: Guun Co., Ltd. (Kanazawa Ward)</p>	 <div> <p>SME</p> <p>6 安全な水と衛生</p> <p>13 気候変動に起因する影響</p> <p>17 パートナーシップによる持続可能な開発</p> </div> <p>(2) Installation of high-efficiency pumps at Da Nang Water Supply in Da Nang, Vietnam: Yokohama Water Co., Ltd. (Naka Ward)</p>	 <div> <p>SME</p> <p>6 安全な水と衛生</p> <p>17 パートナーシップによる持続可能な開発</p> </div> <p>(3) Delivery of sludge dehydrator to sewage treatment plant in Baguio, Philippines: Amcon Inc. (Kohoku Ward)</p>
 <div> <p>SME</p> <p>7 持続可能なエネルギー</p> <p>13 気候変動に起因する影響</p> <p>17 パートナーシップによる持続可能な開発</p> </div> <p>(4) Supply of electricity to factory in Bangkok, Thailand from rooftop solar generator and advanced energy management system: Finetec Co., Ltd. (Midori Ward)</p>	 <div> <p>SME</p> <p>6 安全な水と衛生</p> <p>17 パートナーシップによる持続可能な開発</p> </div> <p>(5) Water leak detection training for Bangalore Water Supply and Sewerage Board staff in Bangalore, India: Suidou Technical Service Co., Ltd. (Asahi Ward)</p>	 <div> <p>YUSA</p> <p>9 産業とインフラの持続可能な開発</p> <p>7 持続可能なエネルギー</p> <p>11 持続可能な都市とコミュニティ</p> <p>17 パートナーシップによる持続可能な開発</p> </div> <p>(6) Consultation in support of smart city development at industrial park for Amata Corp. in Chonburi, Thailand: YUSA (Naka Ward)</p>
 <div> <p>YUSA</p> <p>9 産業とインフラの持続可能な開発</p> <p>7 持続可能なエネルギー</p> <p>11 持続可能な都市とコミュニティ</p> <p>17 パートナーシップによる持続可能な開発</p> </div> <p>(7) Consultation in support of smart industrial park development planning for private sector in Chachoengsao, Thailand: YUSA (Naka Ward)</p>	 <div> <p>Large enterprise</p> <p>6 安全な水と衛生</p> <p>17 パートナーシップによる持続可能な開発</p> </div> <p>(8) Construction of Yen Xa wastewater treatment plant in Hanoi, Vietnam: JFE Engineering Corp. (Tsurumi Ward)</p>	 <div> <p>SME</p> <p>6 安全な水と衛生</p> <p>17 パートナーシップによる持続可能な開発</p> </div> <p>(9) Delivery of water improvement system to hotel in Zamyn-Uud, Mongolia: Toshi Kogyo Co., Ltd. (Minami Ward)</p>

Examples of commercialization of projects assisted by Y-PORT

 <div> <p>SME</p> <p>9 産業・製造業の競争力向上 13 気候変動に由来するリスクの軽減 17 持続可能な消費と生産</p> </div> <p>(10) All-in-one energy efficiency support services for private-sector factories etc. in Da Nang, Vietnam: Osumi Co., Ltd. (Seya Ward)</p>	 <div> <p>YUSA</p> <p>9 産業・製造業の競争力向上 7 持続可能なエネルギー 11 持続可能な都市とコミュニティ 17 持続可能な消費と生産</p> </div> <p>(11) Consultation in support of smart city development in Thailand, Laos & Myanmar for Amata Corp.: YUSA (Naka Ward)</p>	 <div> <p>YUSA</p> <p>9 産業・製造業の競争力向上 7 持続可能なエネルギー 11 持続可能な都市とコミュニティ 17 持続可能な消費と生産</p> </div> <p>(12) Consultation in support of smart city development in Quảng Ninh, Vietnam for Amata Corp.: YUSA (Naka Ward)</p>
 <div> <p>SME</p> <p>6 清潔な水と衛生 17 持続可能な消費と生産</p> </div> <p>(13) Delivery of water pipe leak detectors in Ho Chi Minh City and elsewhere in Vietnam: Suidou Technical Service Co., Ltd. (Asahi Ward)</p>	 <div> <p>SME</p> <p>6 清潔な水と衛生 17 持続可能な消費と生産</p> </div> <p>(14) Delivery of sludge dehydrator to private-sector factories in Metro Cebu and elsewhere in the Philippines: Amcon Inc. (Kohoku Ward)</p>	 <div> <p>SME</p> <p>6 清潔な水と衛生 13 気候変動に由来するリスクの軽減 17 持続可能な消費と生産</p> </div> <p>(15) Energy efficiency improvement for water intake pumps in Ho Chi Minh City, Vietnam through installation of inverters: Yokohama Water Co., Ltd. (Naka Ward)</p>
 <div> <p>YUSA</p> <p>9 産業・製造業の競争力向上 7 持続可能なエネルギー 11 持続可能な都市とコミュニティ 17 持続可能な消費と生産</p> </div> <p>(16) Consultation in support of smart city development in Thailand, Laos, Myanmar & Vietnam for Amata Corp.: YUSA (Naka Ward)</p>	 <div> <p>YUSA</p> <p>9 産業・製造業の競争力向上 7 持続可能なエネルギー 11 持続可能な都市とコミュニティ 17 持続可能な消費と生産</p> </div> <p>(17) Consultation in support Innovative Eco industrial Park in Mong Cai, Vietnam for Amata Corp.: YUSA (Naka Ward)</p>	 <div> <p>SME</p> <p>12 つくば未来のコミュニティ 13 気候変動に由来するリスクの軽減 17 持続可能な消費と生産 6 清潔な水と衛生</p> </div> <p>(19) Installing sterilization equipment (autoclave) to a large-scale vaccination site for COVID-19 in Metro Cebu, Philippines: Guon Co., Ltd. (Kanazawa Ward)</p>

City-to-City Collaboration with Da Nang City

- In 2022, Da Nang became the first municipality in Vietnam to announce its goal of achieving carbon neutrality by 2050.
- Yokohama, in cooperation with Da Nang, is promoting an city-to-city collaboration project supported by the Ministry of Environment for the formation of JCM projects.
- In addition, Yokohama, JICA, and YUSA member companies are working together to conduct surveys and technical cooperation on energy conservation, waste, and sewage treatment.



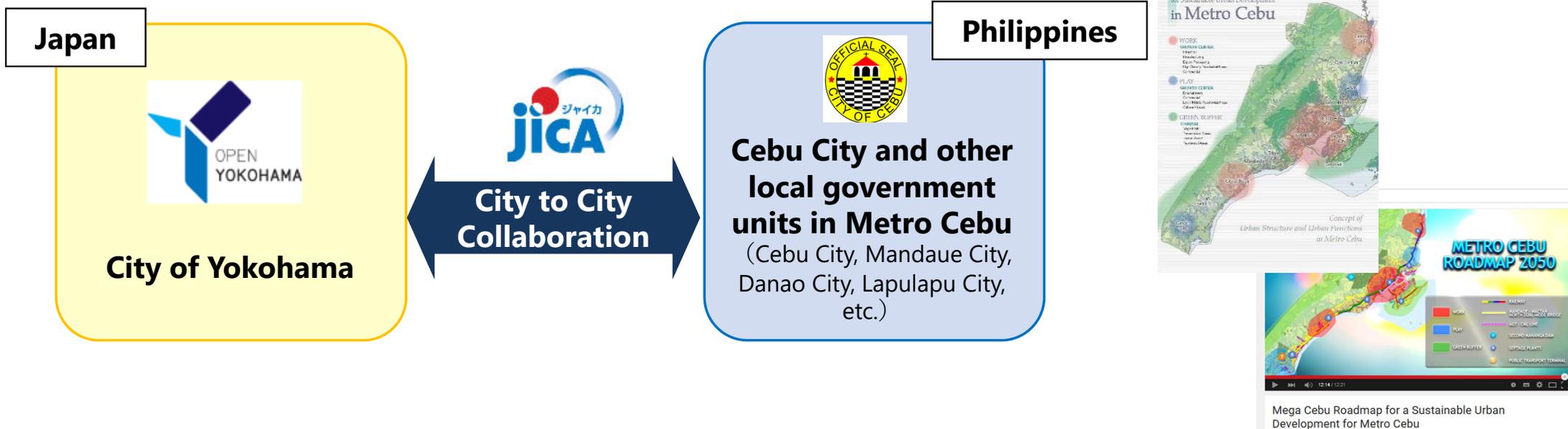
Major recent cooperation in the field of climate change

- Supporting the formulation of the "10-Year Environmental Plan" (2021-2030)
- Supporting the establishment of carbon management system
- Developing smart and sustainable urban planning strategies
- Education for climate change



City-to-City Collaboration with Metro Cebu

- In Metro Cebu, JICA, Yokohama, and YUSA member companies are working together to improve waste management by promoting recycling of organic waste and waste plastics, and to construct a sludge treatment facility.
- In order to create packaged solutions (disaster relief, material recycling, and water wise use) in line with local needs, we are working to promote exchange among companies and create matching opportunities with Metro Cebu stakeholders.



City-to-City Collaboration

with the Bangkok Metropolitan Administration (BMA)

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- The City of Yokohama, in collaboration with JICA, has been supporting the Bangkok Metropolitan Administration's climate change measures for about 10 years.
- On November 15, 2023, an important step towards reducing worldwide carbon emissions was made at the 12th Asia Smart City Conference as the joint declaration, “Yokohama Declaration: Asian Cities Together Towards Zero Carbon”, was announced.
- A city-to-city collaboration project was launched in 2023, supported by the Ministry of Environment of Japan for the formation of JCM projects.

Japan



City of Yokohama



City to City
Collaboration

Thailand



BMA

Major recent cooperation in the field of climate change

- Implementing comprehensive review of “Bangkok Climate Change Master Plan (2013-2023)”
- Developing “Bangkok Climate Change Master Plan (2021-2030)”



The 12th Da Nang Urban Development Forum 2024

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◇Participants

-**Yokohama side: 64 people** (City of Yokohama, **JICA**, YUSA, companies, OECC, Yokohama National University, Consulate General of Japan in Da Nang, WB, ADB, UNSCAP)

-**Da Nang side: Approximately 30 people** (Da Nang City People's Committee, Department of Planning and Investment (DPI), Hi-tech Park and Industrial Zones (DHPIZA), Department of Natural Resources and Environment (DONRE), etc.)

-**Business Matching Seminar: 150 people** (online and face-to-face)

◇ Programme

15th January (Mon) **Thematic Meeting Sessions**

Theme 1: Eco Industrial Park

Theme 2: Solid Waste Management

Theme 3: Smart City Development

Theme 4: SDGs/VLRs (Voluntary Local Reviews)

16th January (Tue)

• **Business Matching Seminar**

• **Courtesy Call**

• **Main Forum**

Session 1: Keynote Speech

Session 2: Report on the results of the each session and comments from related organizations

17th January (Wed)

• **Site visit (transportation, port, waste management)**

• **VLR Workshop**



Examples of Urban Solutions by Yokohama at the Forum

Eco Industrial Park:

- Introducing carbon management system and decarbonization technology in eco industrial parks
- Demonstration project for high-efficiency blowers at wastewater treatment plants
- Demonstration project of water quality improvement equipment in collaboration with universities

Solid Waste Management:

- Policy recommendations for improving waste management in accordance with legal revision

Smart City Development:

- Traffic improvement using new traffic counting system and signal control system
- Recommendations for Urban Resilience through Flood Control and JICA Projects



Resources and Waste Recycling Bureau, City of Yokohama



Da Nang Hi-tech Park and Industrial Zones (DHPIZA)



Institute for Global Environmental Strategies (IGES)

Business Matching Seminar

- Co-organized by YUSA, JPRSI (Japan Platform for Redesign: Sustainable Infrastructure) and Da Nang YBA (Young Business Association)
- 7 companies presented their technologies and had productive discussions with the Da Nang side.



12th Asia Smart City Conference (ASCC)

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The Result of the 12th Asia Smart City Conference at Y-SHIP 2023

- ◆ Mayor Yamanaka, as a **board member of the Global Covenant of Mayors for Climate and Energy** and a **member of the OECD Champion Mayors for Inclusive Growth**, jointly **declared with the Governor of Bangkok** a strong partnership with Asian cities for decarbonization, endorsed by **43 overseas cities and government institutions**.
- ◆ Approximately **30 sessions, mainly in the green transformation field**. Discussions by 50 diverse and distinguished speakers invited from Japan and abroad.
- ◆ In cooperation with the WB and the ADB, **102 people from overseas cities visited Japan** to discuss urban development **and exchange business with 28 companies** at their exhibition booths. Japanese companies **and 23 foreign companies (from the Philippines and Vietnam)** **made business pitches** in the areas of water business, energy, and waste management.

Outline of the event

Date: November 14 (Tuesday) - 15 (Wednesday), 2023

Number of participants: 2,000 on-site participants/approx. 700 online viewers

Participating countries: Approx. 50 countries

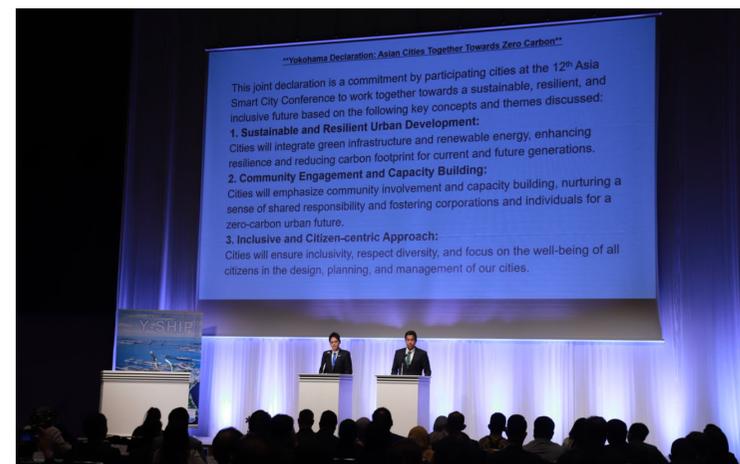
【Main Session】 Joint Declaration on Decarbonizing Asia

【Joint Declaration on Decarbonization by the City of Yokohama and Bangkok Metropolitan Administration】

- ◆ Joint declaration, “**Yokohama Declaration: Asian Cities Together Towards Zero Carbon**” was announced, proposed by the City of Yokohama, Japan and the **Bangkok Metropolitan Administration, Thailand**
- ◆ Joint Declaration endorsed by **43 participating cities and organizations** from across Asia



Speech by Mayor of Yokohama



Joint Declaration by the City of Yokohama and Bangkok Metropolitan Administration

Collaboration with ADB, ADBI, WB TDLC, etc. Gathering of key players for decarbonization in Asian cities

【Conducting Sessions in Collaboration with Diverse Institutions】

- ◆ **102 participants from 44 overseas cities and institutions** attended the conference in collaboration with the ADB, ADBI, and the World Bank TDLC, which are the joint operators of the conference.
- ◆ Sessions organized by Smart City Institute, IGES, CityNet, and the City of Yokohama.
- ◆ The ADB and ADBI held a session on "**Urban Management to Achieve Carbon Neutrality**" and the World Bank held a session on "**Designing Livable and Prosperous Cities**".



ADB・ADBI session



WB TDLC session



CITYNET session

GX Business Networking Meetings and Exhibit Booths

- ◆ **GX Business Exchange** On November 14 and 15, a total of **23 Japanese and overseas companies (from the Philippines and Vietnam)** made presentations for business matching in the fields of water business, energy, waste management, etc.
- ◆ **Corporate exhibit booths** Under the themes of "Green Transformation", "Cutting-edge Technology," "Urban Solutions," and "Innovation," a total of **28 exhibitors**, including embassies, domestic and foreign companies and organizations, local companies, and start-ups, displayed booths on both days, creating a diverse business exchange.



Company Presentation



Exhibit booths

Collaboration with local universities

- ◆ **Presentation of Joint Proposals on Urban Issues by Students from Yokohama City University and Overseas Universities:** Yokohama City University students presented the results of their joint proposal on urban issues with Southeast Asian universities at the IACSC (International Academic Consortium for Sustainable Cities) established by Yokohama City University. In addition, JICA staff participated as reactors and shared their knowledge from the perspective of international cooperation and urban development practice.
- ◆ **Student volunteers:** 20 student volunteers from Yokohama City University



Student Presentation



Comments by JICA



Participants at the venue²⁸

Tour of Yokohama City Urban Infrastructure Facilities

- ◆ **Site Tour for Invited Overseas Cities:** About 100 participants from invited cities visited facilities in Yokohama as part of four different courses. In the Minato Mirai 21 district, which has been certified as a “Decarbonization Leading Area”, participants learned about efforts to create a model for decarbonization, and at a sewage treatment plant and sludge recycling facility in Tsurumi Ward, they learned about recycling-oriented society technologies, thereby communicating Yokohama's urban infrastructure technologies to the world.



Green Energy Facilities of Yokohama City Hall



Yokohama's Water Circulation Technology

Humanitarian Aid to Sister City in Ukraine

Cooperation with Odesa city toward various cooperation with Yokohama companies and JICA.

① Provision of Mobile Water Purifiers, Winter clothes

Provide emergency assistance that meets local needs.



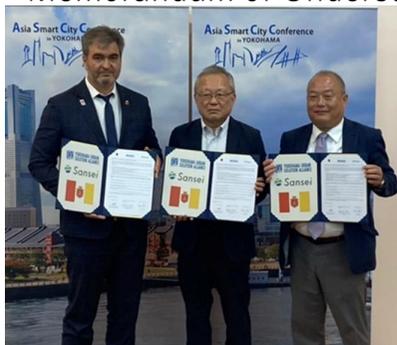
② Restoration of Kindergarten

Support in cooperation with citizens and Yokohama companies is being considered and prepared.



③ Free rental of Medical Containers

YUSA, Sansei Corporation, and Odesa city signed a Memorandum of Understanding (May 2023)



④ Technical Cooperation for Infrastructure Reconstruction

Signing of Memorandum of Understanding (March 2023), Conducting site visits and face-to-face consultations.



Establishing a knowledge hub: Y-PORT Center

Innovative Urban Solution Developed by Yokohama

Towards comprehensive support to cities in emerging economies



Solutions for Urban issues

Yokohama Urban Solutions

- Support from the Japanese Government and Development Organizations
- Technical capacities of private firms in Yokohama
- Knowledge, experience, and expertise of the City of Yokohama

Background and Goal

- The City of Yokohama has established Y-PORT Center to provide smart urban solutions to cities in Asia and the world. One of the main objectives of Y-PORT Center is to co-create and provide "best available" smart urban solutions through dialogue with private firms in Yokohama with cutting-edge technologies, cities in emerging economies, and global think tanks.
- For the past few years Y-PORT Center has been undertaking city-to-city collaboration with cities in emerging economies including Cebu (Philippines), Da Nang (Vietnam), Bangkok (Thailand) and Batam (Indonesia).
- During the fiscal years 2016 and 2017 in particular, the City of Yokohama conducted site-visits, technical seminars, and business matching seminars with over of 71 Japanese firms in Da Nang (Vietnam), Batam (Indonesia), Metro Cebu and Cagayan de Oro (Philippines). Through these initiatives the City of Yokohama and participating private firms undertook intensive dialogue with city officials, technical experts, and firms in these cities. Through these dialogues, integrated smart urban solutions have emerged in the form of innovative "packages" based on the high quality technologies of the private sector and urban management expertise of the City of Yokohama.
- This brochure will provide a prototype concept for these smart urban solutions provided to cities in emerging economies by the City of Yokohama and private firms. The target areas of work are: (1) waste separation and recycling promotion, (2) wastewater treatment systems, (3) green buildings and factories, (4) smart energy management, (5) efficient mobility, and (6) disaster prevention/reduction. We believe that with further refinement based on respective local social, economic, and financial conditions, these prototypes can serve as "best available" integrated infrastructure packages.



Providing Smart Urban Solution to Cities through PPP and Dialogue

Y-PORT CENTER

Yokohama Urban Smart Solution



Establishing a knowledge hub for smart city management

The City of Yokohama, in collaboration with international research institutions, industry networks, and leading private firms in Yokohama, has established the Y-PORT Center to provide smart urban solutions to cities in Asia and the world. The Center actively conducts collaboration with diverse agencies, global think tanks and urban centers worldwide.

What Y-PORT Center offers

- Providing best available urban information and providing smart urban management knowledge to cities in emerging economies.
- Co-creating urban solutions through dialogue with practitioners with cutting-edge technologies, firms, and global think tanks.
- Enhancing communications with and gaining support from the government of Japan and other agencies in the area of smart urban development.

Please visit our website:

• <https://yport.city.yokohama.lg.jp/>



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City of Yokohama, Japan
Email : ki-yport@city.yokohama.jp