



Tokyo Bay eSG Project

Creating Japan's future from Tokyo Bay

(Version 1.0)

Tokyo Bay eSG Project (Version 1.0) Contents

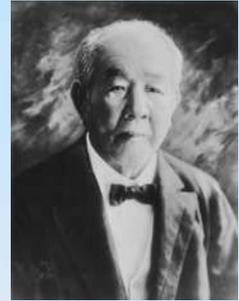
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Taking prompt action to transform the structure of society

- Humanity is now facing a once-in-a-century crisis, the novel coronavirus disease (COVID-19), which has had a major impact on our daily lives and socioeconomic activities. The way society functions as a whole is being questioned, including how to address crowding and workstyle reform. A variety of issues have been brought to light, including the fact that Japan lags far behind in the digital shift occurring in the rest of the world. It has also fallen behind in the area of economic growth. Based on these circumstances, there is a pressing need to fundamentally reform existing systems and approaches.
- Infectious diseases, such as COVID-19, are not the only threat to humankind. With the effects of climate change now touching many aspects of our daily lives, global environmental issues are at a historic turning point, and addressing the climate crisis is an urgent challenge.
- Through discussions with experts from various fields held last year on what post-Covid structural reforms should be implemented by the Tokyo Metropolitan Government (TMG), we received a range of recommendations including “the TMG should work to realize a new future for Tokyo to be made possible by Digital Transformation (DX)”;
- “the TMG should advance a redesign of the city based on lessons learned from the COVID-19 crisis, including improving the city’s harmony with nature”;
- “the TMG should aim to make Tokyo Asia’s strongest economic hub and financial city”;
- and “the TMG should proceed with structural reform with a sense of urgency, aware that if it does not do so now, it will be left behind by the rest of the world.”
- Precisely because we are in the midst of the COVID-19 pandemic, now is the right time to plan the vision for Tokyo’s future beyond overcoming the dual crises of COVID-19 and the climate emergency. To achieve that vision, we must promptly implement concrete reforms to the structure of society. Utilizing the latest technologies, the TMG will advance development that enhances Tokyo’s safety and security and contributes to a sustainable recovery for the economy, which has been damaged by the pandemic.

Overcoming the crises and envisioning Tokyo 50 years, 100 years into the future: Carrying on the spirit of the great people who came before us

- Looking back at history, our predecessors, who built the foundation for Tokyo, sought “sustainability,” and with foresight, firm conviction, and unceasing efforts, they overcame many difficulties to set forth a vision.
- Shibusawa Eiichi, who is called the “father of Japanese capitalism,” worked to achieve a sustainable society under the belief: “Rather than monopolizing the benefits of economic development, it is important to give back to society in order to enrich the entire country.”
- Goto Shinpei, who formulated the reconstruction plan for Tokyo following the Great Kanto Earthquake of 1923, promoted urban development with an eye to the lives of residents 50 and 100 years into the future, taking into account matters such as changes in the movement of people and goods.
- While addressing the dual crises of an infectious disease and climate change, we will carry on the spirit of the great leaders who came before us in drawing up the model for a city in the post-Covid era, and use cutting-edge Digital Transformation (DX) to achieve a balance between “sustainability” and “the economy and finance” and lay out the vision for the shape of Tokyo with an eye to 50 and 100 years into the future.
- In line with this idea, Tokyo will include the following concepts in addition to the original concept of ESG (Environment, Social, Governance) as it advances studies through the Tokyo Bay eSG Project.



Shibusawa Eiichi
(Photo courtesy of the National Diet Library)



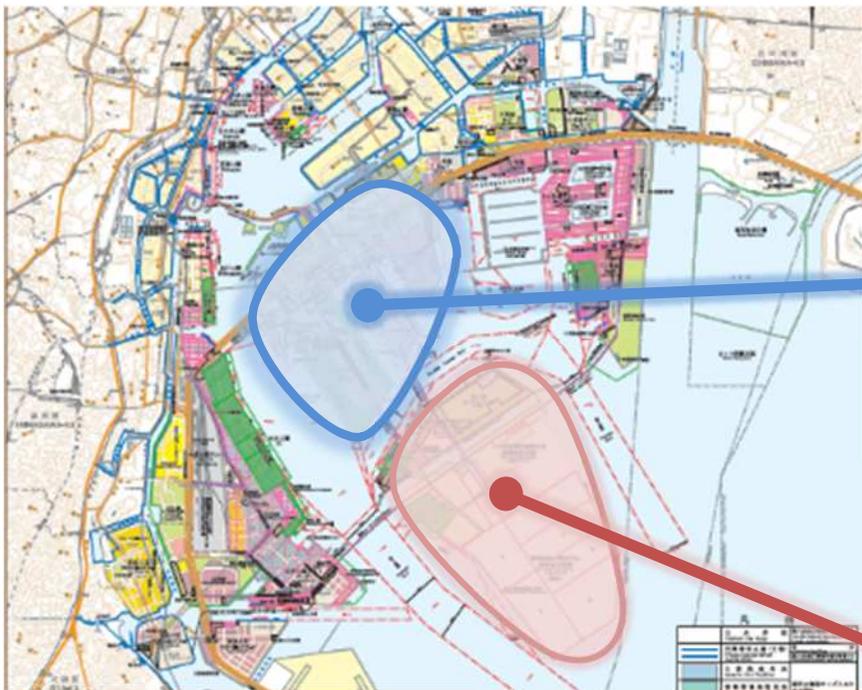
Goto Shinpei
(Photo courtesy of the National Diet Library)

e : Environment, Ecology, Economy, Epo^h-making (innovative technologies that will carve out a new era)

S G : Carrying on the spirit of Shibusawa Eiichi and Goto Shinpei

Building the Tokyo of the future with the Bay Area as the stage

- Tokyo's Bay Area, which is blessed with waterfront nature, not only boasts Japan's leading logistics terminal, it is also home to the Tokyo Waterfront City area which features diverse attractions including commercial, entertainment, and Tokyo 2020 Games-related facilities. Additionally, it has the potential of a vast parcel of new reclaimed land to measure about 1,000ha in the future.
- Leveraging this high potential, we will prioritize the implementation of projects using this field as the stage. People will gather seeking features that can only be found here even in the digital area, and we will realize a sustainable city that has overcome the climate crisis.
- By sharing the model of a city which achieves a balance between sustainability and the economy with society as a whole, and building it together, we will further enhance Tokyo's international presence and promote the image of a city of the future that the world should pursue.



- A city with high potential where places for work, living, learning, and leisure, as well as locations such as parks where people can get close to the water, are situated in a well-balanced manner.
- New attractions have been created, including Tokyo 2020 Games-related facilities. Others such as commercial facilities, hotels, and event venues are being developed by the private sector.



Ariake Arena
(Ariake-kita district)



Tokyo Big Sight
(Ariake-minami district)



Night view from Odaiba
(Daiba district)

- New reclaimed land with unparalleled potential

Redesigning the city: Image of a sustainable city of the future



In Edo (the former name of Tokyo), which was the world’s biggest city, a circular economy was formed in which the recycling and reuse of goods and materials occurred in all sorts of living situations, and a city rich in harmony with nature was cultivated.

By once again focusing on the traditions of the Edo period and the advanced environmental technologies of Japanese companies, and promptly transforming the structure of society, such as making full use of cutting-edge modern technologies (digital technologies and green technologies), we will create a sustainable city that fuses “nature” and “convenience,” which will serve as a model for other major cities around the world.

**A city of human-centered spaces surrounded by rich greenery,
close to the water, and also rich with biodiversity.**

**A city that constantly produces new value through a concentration of
the world's best talent and knowledge.**

A city that is pandemic-ready, disaster-ready, and resilient.



Strategies for realizing the Tokyo Bay eSG Project

① Realize net zero emissions and create a city full of water and greenery

- Through the use of green technologies, such as a smart grid, have 100% of the area's energy needs met by clean energy, mainly renewable energy and hydrogen.
- Enrich the Tokyo Bay Area's waterfront by increasing various types of greenery, including parks and green spaces.

② Introduce cutting-edge digital technology

- Realize a sustainable city through public-private sector use of digital technologies that showcase Japan's determination.
- Develop an environment for testing the latest technologies in an urban setting. Open up vast areas for implementation of the latest technologies, such as a huge parcel of reclaimed land in Tokyo Bay.

③ Implement projects utilizing green finance

- Through the use of initiatives such as the Tokyo Green Finance Market (name TBD), work to gather tech companies from around the world and roll out a variety of projects centered on keywords such as "green" and "sustainable."

④ Enhance transportation networks for a sustainable city

- To realize a human-centered, sustainable city, greatly improve access to and from central Tokyo, Haneda Airport, and other locations through means such as building subway lines in the area, and establish a public transportation model that incorporates Zero Emission Vehicles (ZEVs), among other eco-friendly modes of transportation.

1 Realize net zero emissions and create a city full of water and greenery

Along with realizing a city that achieves net zero emissions through the use of renewable energies and green hydrogen, we will increase greenery and enrich the waterfront in the Bay Area.

- The TMG will advance urban planning that incorporates 100% clean energy. We will promote the installation of facilities uniquely suited to the area such as wind power generation and floating solar power generation systems, and advance the use of energy management systems such as smart grids.
- We will have all areas of the socioeconomic structure shift to a decarbonized model by making buildings zero emissions, introducing FC mobility, and other means to realize a sustainable city. Furthermore, 100% of public transportation in the area will be operated by ZEVs.
- In addition to developing parks and green spaces, we will create greenery in every possible location throughout the area, including along roads and around buildings, and create a rich waterfront that enables people to feel nature.
- Along with changing concepts such as the possession of goods and consumption through a sharing economy, we will realize a circular economy in the area. This will include the sustainable use of plastics and other resources and the establishment of new systems for waste management.
- We will transform land that was once a landfill site into an ideal space which is in harmony with the earth's environment and create a world-leading city that achieves a balance between “the richness of nature” and “a prosperous economy.”



② Introduce cutting-edge digital technology

Working with the private sector, we will use digital technologies that showcase Japan's determination to transform Tokyo's Bay Area into a sustainable city where people from around the globe gather.

- To make the area one that continuously generates new value, through the use of the latest technology and innovative design, we will actively make use of startups that seek to create a future that offers hope and dreams to form an ecosystem.
- To advance the digital shift in the area, we will quickly develop an infrastructure to support 5G communications by making TMG-owned assets available for use and advance the implementation of autonomous driving, MaaS, cashless payment, and other cutting-edge technologies to make the entire area a showcase.
- We will open up vast areas, such as a huge parcel of reclaimed land in Tokyo Bay, for implementation of the latest technologies in an urban setting.
- Along with establishing a city operating system (OS), we will recreate the urban functions of the area in virtual reality (VR), realizing a digital twin linked to camera images, data on the movement of people, and other information.
In addition, it will be possible to complete administrative procedures for all levels of government on various personal electronic devices.



③ Implement projects utilizing green finance

We will create an ESG ecosystem that concentrates the three elements of the world's green tech companies, ESG investors, and the wisdom of SDGs, upgrading Tokyo to become the world's first ESG city.

- By utilizing initiatives such as the Tokyo Green Finance Market (name TBD), we will gather venture and startup companies from around the world who are working to create a circular economy and roll out a range of projects centered on keywords such as “green” and “sustainable.”
- The TMG will promote companies actively incorporating ESG into their business and gather funds from around the world to spark a complete transformation of Tokyo from the Bay Area. By conveying the achievements of these projects to the rest of the world, we will attract even more investment and create a virtuous cycle, establishing Tokyo's position as a world-leading financial hub—Global Financial City: Tokyo.
- By gathering highly capable talent who study ESG from around the globe and forming a base for research, new innovation will be born, furthering the depth of the project and stimulating the environment for ESG investment.



④ Enhance transportation networks for a sustainable city

To realize a human-centered, sustainable city, we will greatly improve access to and from central Tokyo, Haneda Airport, and other locations through means such as building subway lines in the area, and establish a public transportation model that incorporates Zero Emission Vehicles (ZEVs), among other eco-friendly modes of transportation.

- Along with working to enhance local transportation and access to central Tokyo and other locations through the Tokyo BRT, autonomous driving mobility, autonomous water transport, and other means, we will introduce zero emission buses and trucks, as well as fuel cell powered boats, to provide services in the area and build a public transportation model that incorporates ZEVs and other eco-friendly modes of transportation.
- We will create human-centered spaces conducive to walking by working to improve the appeal of public spaces, focusing on people, water, and greenery.
- Along with encouraging the start of projects such as Tokyo No. 8 Subway Line (Yurakucho Line) extension and Haneda Airport Access Line, we will conduct studies toward construction of Central Tokyo and Waterfront area subway which will link the central special ward area to the Tokyo Waterfront City area. In addition, we will promote an early start to the development of the Daini Tokyo Wangan-doro Expressway (name TBD) and projects to strengthen the functions of Haneda Airport, among others.
- Through the construction and redevelopment of container terminals, upgrades to facilities utilizing digital technology such as AI, and other means, we will promote improvements to make logistics at the Port of Tokyo more efficient.
- We will implement measures to prepare for natural disasters such as torrential rain, typhoons, or an earthquake which directly strikes the capital to realize a resilient, disaster-ready city.



Steps to Realizing the Tokyo Bay eSG Project

Tokyo Waterfront City area

Central Breakwater Area and Shinkaimen
Landfill Site

Transportation network

From the Tokyo Bay Area, reclaim Tokyo's stature as the world's most advanced city

2021
~
2030

A digital city that leverages spatial expansion

- Provide TMG-owned land for the establishment and testing of an infrastructure to support a 5G network
- Provide innovative services in fields such as business, transportation, and healthcare
- Form a center for sports and live entertainment

A vast area for the implementation of technology

- Through bold relaxation of regulations, we will implement large-scale use of technologies such as drones, flying vehicles, and autonomous driving.
- Using available TMG-owned land and the surface of the water, testing will be conducted related to renewable energy, including wind power generation and floating solar power generation systems.

A multimodal transportation system

- Through the use of modes of transportation such as ZEVs and fuel cell powered boats, access to central Tokyo, Haneda Airport, and other locations will be greatly improved.

Asia's leading innovation center

2030
~
2050

A city where digital technology and innovation converge

- By advancing project initiatives, world-first innovations in fields such as transportation, logistics, healthcare, and energy will be born one after another.

A hub for startups: Startup Village

- In an environment that facilitates large-scale testing of technologies, a major hub that gathers startups from Japan and abroad and functions as a showcase will be formed.

Enhancement of the regional transportation network

- Tokyo No. 8 Subway Line (Yurakucho Line) extension (Toyosu-Sumiyoshi), construction of Central Tokyo and Waterfront area subway (Tokyo-Ariake) and Haneda Airport Access Line.

A model city for the world that continues producing new value

2050
~

The world's first 22nd century style Future City

- The traditional city is replaced by a 22nd century style city where people can reside in the air, below ground, on and below the sea, or anywhere.

A city in harmony with the sea and greenery, which, as a gateway to the world, is a place where people interact

- With universities, entertainment and commercial facilities, among others, the area will serve as "the face of Tokyo," where people, goods, and information gather from around the world.

Transportation network linking the area to all of Japan

- Daini Tokyo Wangan-doro Expressway
- Enhancing the functions of Haneda Airport and access to the airport

Our Vision

Step I (2021~2030): From the Tokyo Bay Area, reclaim Tokyo's stature as the world's most advanced city

A city where GHG emissions are cut by half

- Reduce GHG emissions by 50% through the “Time to Act for Carbon-Half Style” initiatives.

A multimodal transportation system that employs ZEVs

- Employ such modes of transportation as ZEVs and fuel cell powered boats to greatly enhance access between the city center and Haneda Airport and other destinations, as well as mobility in the bay area.

A digital city that leverages spatial expanse

- Provide marine parks and other TMG-owned land for the establishment and testing of a 5G network infrastructure.
- Achieve digital transformation at an early stage to provide innovative services in various fields such as business, transportation and medicine.

A vast area for the implementation of technology

- On a site where testing can be conducted with a high degree of freedom through bold deregulation, roll out large-scale implementation of drones, flying vehicles, autonomous driving, and other technologies.

Projects utilizing green finance

- Bring together green tech companies through the “Tokyo Green Finance Market (name TBD)” and other initiatives to roll out various projects.

“A place to play” that appeals to people from around the world

- A place to enjoy everything from pop culture to food culture, traditional performing arts to sports, in both physical and virtual forms.



- Create hubs for sports and live entertainment in the districts of Aomi and Ariake.

Implementation of energy systems uniquely suited to the bay area

- On available TMG-owned land and the surface of the water, roll out field testing related to renewable energies uniquely suited to the bay area, such as wind power generation and floating solar power generation systems and the use of methane gas.

Our Vision: Step I

Rollout of projects that leverage the potential of the Tokyo Waterfront City area

- Roll out priority projects such as implementation of field testing for advanced technologies, development of the 5G infrastructure, and gathering of startups by drawing on the potentials of the Tokyo Waterfront City area.



Collaboration with companies with high technological capabilities



Implementation of cutting-edge technologies



Revitalization of water transport



Autonomous driving and AI traffic control system



Transition to ZEVs as a means to provide public transportation in the area

Tokyo International Cruise Terminal

Tokyo Metropolitan Industrial Technology Research Institute



Service robots



Ariake Legacy Area

Tokyo Big Sight



Sea Forest (Umi-no-Mori) Park and Waterway



100% cashless payments



Digital transformation in healthcare

Rollout of testing related to energy systems

- Taking advantage of the characteristics of the Central Breakwater area, the TMG will provide a testing field to roll out green tech initiatives such as testing related to energies (wind power generation and floating solar power generation systems, methane gas use, etc.) and waste disposal.



Step II (2030~2050): Asia's leading innovation center

A net zero emission city

- Achieve 100% decarbonized energy in the area.

A city where digitalization and innovation converge

- Projects evolve to successively generate the world's first innovations in such fields as transport, logistics, healthcare, and energy.

A hub for startups: Startup Village

- Create a big hub where domestic and foreign startups are gathered in an environment where large-scale testing can be conducted on technologies.

A city to revel in water and greenery

- Support efforts to improve water quality, including those that use green technologies, to realize a swimmable Tokyo Bay.
- Create new appeal, such as opening a camping site where the bay area's "sky" and "ocean" can be enjoyed to the fullest.

Enhancement of the transportation network

- Extend Subway Line No. 8 (Tokyo Metro Yurakucho Line), and develop the Rinkai Subway Line and train lines to provide access to Haneda Airport.

Step III (2050 and beyond): A model city for the world that continues producing new value

The world's first 22nd century style Future City

- The traditional city is replaced by a 22nd century style city where people can reside in the air, below ground, on and below the sea, or anywhere.

A city in harmony with the sea and greenery, which, as a gateway to the world, is a place where people interact

- With universities, entertainment and commercial facilities, among others, the area will serve as "the face of Tokyo," where people, goods, and information gather from around the world.

Collaboration between food culture and technology

- Realize an urban food culture that does not rely on transport through the use of technology, including plant factories and locally sourced Edomae seafood (which also contributes to being a disaster-ready city).

Enhancement of the transportation network

- Build the Daini Tokyo Wangan-doro Expressway, and enhance the functions of Haneda Airport and access to the airport.

Our Vision: Step II and III

22nd century style Future City



A city to revel in water and greenery



A net zero emission city



Collaboration between food culture and tech



Food tech



Edomae fish from Tokyo Bay

Swimmable Tokyo Bay



A camping site under the sky and by the ocean

Functions of both the Tokyo Waterfront City area and the Central Breakwater Area and Shinkaimen Landfill Site merge to become an innovation center that leads Asia

Startup Village

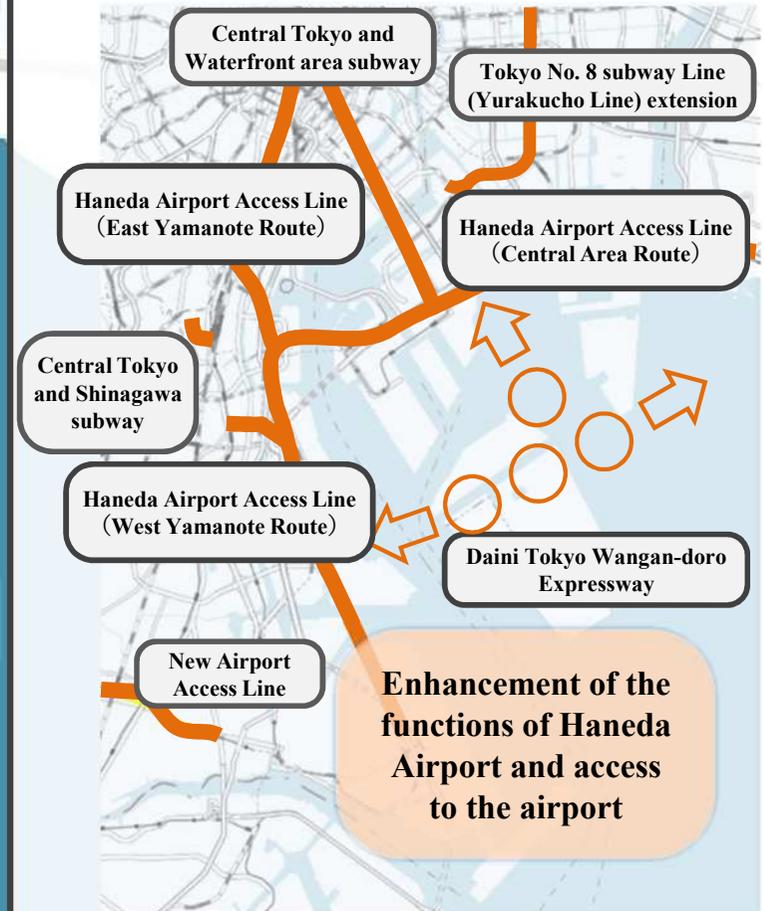


A city in harmony with the sea and greenery



Transportation network around the Bay Area

- Directly connecting the city center and Haneda Airport to further expand the possibilities of the bay area



※ Prepared from Vector data of the Geospatial Information Authority of Japan

Future development of the Tokyo Bay eSG Project

- After releasing the draft version of the project, we widely consulted with the relevant local governments, private firms, and groups, and listened to the views of experts whose bold ideas included foresight for the next 50 and 100 years to formulate “Version 1.0” of the plan.
- Now, with the aim to see our vision materialize, we will establish a system to cooperate with various entities, and from FY2021, we will embark on the “priority projects” that should be speedily undertaken.
- In addition, we will formulate a city planning strategy that lays out concrete measures, including policies for guiding private development, to further promote projects.
- Furthermore, we will manage the projects with agility in accordance with the changing times and conditions and strategically upgrade them.

「Tokyo Bay eSG Project」 (Version 1.0)



Manage projects with agility and upgrade them during the process of implementation

Priority project: Tokyo Waterfront City area

Smart Tokyo Priority Implementation Area

- Roll out projects that leverage the potential and various attractions of the Tokyo Waterfront City area

● Powerfully advance the implementation of leading technologies

- With the aim to implement autonomous driving, support business operators in building business models. Also provide them with undisposed and other land to be used as sites for conducting testing.
- Offer TMG-owned land, including marine parks, to be used as an implementation field to develop the 5G infrastructure.
- Gather startups in the bay area by supporting the expansion of their businesses.

● Promote appeal which draws on the legacy of the Tokyo 2020 Games

- Utilizing the attractiveness of the seaside, construct a pier for ships in the Ariake Legacy Area.
- Leveraging the legacy of the Olympic and Paralympic Games Tokyo 2020, create the “Ariake Urban Sports Park” and a memorial park where the residents can enjoy being close to the seaside.

● Establish sports and entertainment hubs

- Establish hubs in the Aomi and Ariake districts to create lively atmosphere.

● Implementing the use of FC commercial vehicles

- Roll out initiatives to implement the use of FC commercial vehicles other than FC buses.



Concrete initiatives	Yearly Plan			
	FY 2021	FY 2022	FY 2023	Up to FY 2030
Implementation of advanced technologies	Build business models for autonomous driving, and provide sites for conducting testing			Autonomous driving services, etc.
	Develop and implement the 5G infrastructure			
	Support startups in expanding their businesses			
Promote the appeal of the legacy	Study and develop water transport access			
	Build legacy facilities and start operation			
Sports and entertainment hubs		Develop		Sequentially open
Commercial FC mobility	Study		Field testing and implementation	

Priority project: Central Breakwater area

- The TMG provides a field site, and green tech companies and other organizations roll out initiatives such as testing related to energy systems

● Create a vast area for the implementation of technology

- Implement a large-scale use of technologies in an area where testing can be conducted with a high degree of freedom as a result of bold deregulation.
- Using available TMG-owned land and the surface of the water, centering on the Central Breakwater area, the TMG will back startups involved in the development of new technologies and other activities.
- Study the development of the data collection infrastructure including sensors, and provision of access to data. Examine measures to improve access from the surrounding areas such as autonomous driving.
- Build an ecosystem that continuously creates new value.

Concrete initiatives	Yearly Plan			
	FY 2021	FY 2022	FY 2023	Up to FY 2030
Testing sites for energy systems, etc.	Study schemes Conduct market soundings	Recruit business operators	Conduct field tests	
Development of the data collection infrastructure	Study	Develop	Operate	
Study provision of new access to the testing sites	Study schemes Conduct market soundings	Recruit business operators	Operate	

Testing sites uniquely suited to the bay area



- While continuing to use the area as a waste disposal site for as long as possible, utilize the area as a site for implementing technologies for the foreseeable future, taking legal and technological constraints into consideration.
- In the future, by leveraging the unique characteristics of the area, develop a futuristic city surrounded by the ocean and greenery that exists in harmony with nature—a city which can only be experienced in Tokyo's Bay Area.

From the Bay Area to the world: Promoting the vision of a city that will serve as the benchmark for the future of humankind

From the perspective of sustainable recovery, promote the Tokyo Bay eSG Project's city model, which contributes to the transformation and development of society as a whole, including industry, economy, and culture, to the rest of the world

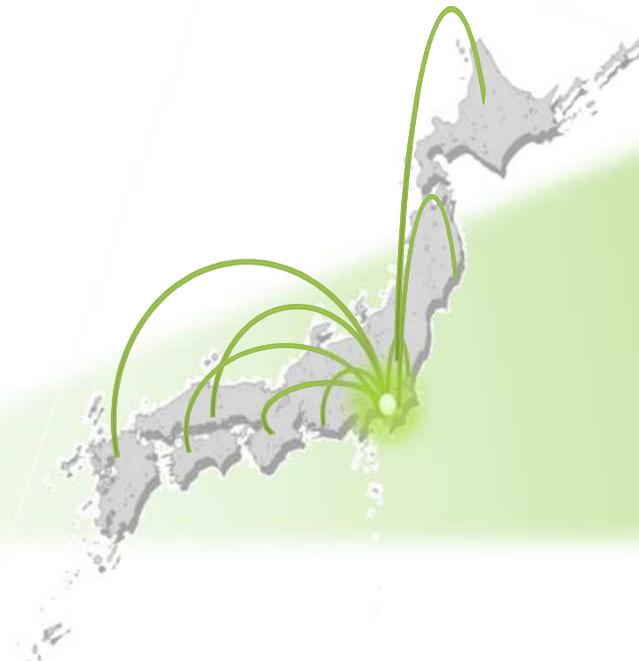
The Bay Area⇒Tokyo

Implement the ideal image of a city in the 21st century



Model for Japan

Create ripple effects of the project's outcomes throughout Japan



Model for the world

The Bay Area becomes the benchmark of the future

