

Global Environment Facility

GEF-6 China Sustainable Cities Integrated Approach Pilot Project Quarterly Newsletter

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Project Progress (As of June 17, 2022)

MOHURD

■ **GEMH-1A:** *“Development and Application of TOD Policies, Technical Standards, and Management Tools in Chinese Cities”* — All six functional modules of the national TOD platform have been developed and integrated as scheduled, including resource library, information, diagnostics, planning, monitoring, and impact assessment. The integrated development covers a website portal, data maintenance system, user management system, access management system, usage analysis system, log system, and a network security mechanism. At present, the platform's functional modules are under trial on the internal network. The platform is expected to be officially launched in the second half of 2022. The research team has solicited opinions from the steering committee on the launched functions and is currently working on the Classified Protection of Cybersecurity.

Beijing

■ **GEBJ-1A:** *“Preparation and Implementation of City-Level Transit-Oriented Development (TOD) Strategy and Project Management Support”* — The intermediate output report for TOD guidelines and documentation of Task 5 and the action plan and operation manual of Task 6 were submitted to the World Bank in May 2022.

■ **GEBJ-2:** *“Corridor-Level and Station-Level Application of TOD Strategy: Research on Optimization of Rail Transit Lines and Land-Use Based on TOD Principles”* — Work related to environmental and social impact assessment is currently being carried out.

■ **GEBJ-3:** *“District-Level Application of TOD Strategy: Urban Regeneration of Life Science Park Near Jingzhang HSR and Changping Metro Line”* — Task 3 “Environmental and Social Safeguards Assessment Report on Urban Renewal Areas around Rail Transit Stations” was completed and passed expert review in April 2022.

Tianjin

■ **GEFTJ-1:** *“Preparation and Implementation of City-Level Transit-Oriented Development (TOD) Strategy and Project Management Support for Tianjin”* — Environmental and social safeguards assessments for Task 9 are currently underway.

■ **GEFTJ-2:** *“Research on Financing a Tianjin Urban Rail Transit Project Applying TOD Principles”* — A total of six tasks have been completed, including the “Economic Evaluation Study on the Integration of Parking and TOD around Rail Transit Corridors” and “Summary Report”. The reports are being revised based on expert opinions.

■ **GEFTJ-3:** *“Demonstration Project of Integrated Planning and Construction of Urban Renewal Areas Based on TOD Principles”* — Tasks 3-5 have been completed and passed expert review for the 2nd Quarter of 2022. Environmental and social safeguards assessments are underway.

Shijiazhuang

■ **GEFSJZ-1:** *“Preparation and Implementation of City-Level Transit-Oriented Development (TOD) Strategy and Project Management Support for Shijiazhuang”* — PMO is working on the Completion Report and carrying out the

environmental and social safeguards assessments is currently underway. The report and the assessments are expected to be completed by the end of 2022.

■ **GEFSJZ-2:** *“Land Adjustment Plan for Shijiazhuang Urban Rail Transit Line 4”*— An expert review meeting for the intermediate output was held in May 2022. The first draft of output report for Tasks 5-7 has been submitted to the Shijiazhuang PMO. The research team is currently working on Task 8 “Public Participation and Promotion” and Task 9 “Summary Report”.

■ **GEFSJZ-3:** *“Research on Applying TOD Strategies to Five Stations and Three Areas Located to the North of Shijiazhuang East Station”*— The first draft of Tasks 2-4 output report was completed in May 2022, with reviews expected for completion in June 2022. Tasks 5-9 are expected to be completed in December 2022.

Nanchang

■ **GENC-1A:** *“Preparation and Implementation of City-level Transit-Oriented Development (TOD) Strategy and Project Management Support for Nanchang”*— Task 9 “Nanchang Transit-Oriented Development (TOD) Environmental and Social Safeguards Analysis Report” was submitted to the World Bank on May 6, 2022.

■ **GENC-2A:** *“Study of TOD Planning and Design for Rail Transit”* — On April 8, 2022, the first draft and summary of the final report were reviewed by experts and are now being revised by the consulting firm in accordance with the expert opinions. The research team submitted the first draft of the environmental and social safeguards assessment report to the World Bank on April 11, 2022 and submitted Task 9 “Corridor-Level Manual” on April 25.

■ **GENC-3B:** *“Study of TOD-Based Regional Planning around Rail Transit Stations”* — Task 4 “Functional Positioning of TOD Areas” and Task 5 “Categorized Planning Guidance Report” were completed on May 9, 2022. Task 6 “Comprehensive Environmental and Social Safeguards Assessment Report on Areas around Rail Transit Stations” was submitted to the World Bank on May 24, 2022. The Nanchang PMO completed the expert review of Tasks 1-6 on June 9, 2022, and the research team is making revisions based on the expert opinions.

■ **GENC-4A:** *“TOD Concept Promotion and Knowledge Dissemination”* — The contract was signed on April 27, 2022, and the project is progressing in an orderly manner as scheduled.

Ningbo

■ **GENB-1:** *“Study on TOD Strategies in Ningbo”* — Several expert seminars have been organized to deepen the research of Tasks 5-6. The next step is to organize a formal review and start preparing the general report. The preparation of the general report will be completed by the end of 2022.

■ **GENB-2A:** *“Consulting Service regarding TOD Implementation for Kaiming Street (Yaoting Street-Zhongshan Road), Xinjie Street, and Shuangliang Community”* — The first draft of Task 2 strategy report has been submitted for expert review. After revision, a formal review will be conducted. All research will be initially completed by the end of 2022.

■ **GENB-2B:** *“Research on Financing Schemes of TOD Implementation for Kaiming Street (Yaoting Street-Zhongshan Road), Xinjie Street, and Shuangliang Community”* — The research team is coordinating with the research task of Package A and plans to organize an expert review for the research on asset ownership and special bond + PPP realization model of Task 1. All research will be initially completed by the end of 2022.

■ **GENB-3:** “*Study of TOD-based Regional Planning round Rail Transit Stations*” — The output of Task 4 has been submitted to the World Bank. A public seminar has been held and the results are currently being improved. The next step is to organize an expert review. All work is expected to be completed by the end of 2022.

Guiyang

■ **GEFGY-1:** “*Preparation and Implementation of City-Level Transit-Oriented Development (TOD) Strategy and Project Management Support for Guiyang*” — The “Guiyang TOD Strategy Research and Implementation Policy Support”, “Guiyang TOD Planning and Design Guidelines”, and other output reports have been completed. The PMO solicited opinions from city- and district-level authorities and formulated a total of 19 special reports. The research team has conducted four training sessions and plans to complete the remaining five training sessions and all remaining work under the contract by the end of 2022.

■ **GEFGY-2:** “*Study on the TOD Comprehensive Development Planning for Areas along the Rail Transit Line S1 Phase I and Line 3 Phase I Project in Guiyang City*” — The preliminary report for “Guiyang TOD Block Design Guidelines”, the “Research on the Comprehensive Development Asset Empowerment and Revenue Distribution Mechanisms”, and the “Research Report on TOD Implementation Process and Policy Support” have been completed. The urban design of three stations (including Zhongcaosi and Dayingpo) is being carried out.

■ **GEFGY-3:** “*Study on the TOD Comprehensive Development Planning for Areas along the Ring High-Speed Railway in Guiyang City*” — The research on comprehensive development planning and transit integration planning of areas along the urban ring high-speed railway has been completed. The conceptual urban design of Mengguan, Huaxi South, and Baiyun North Stations has been completed, opinions of relevant district governments have been solicited, and the policy research report has been completed.

■ **GEFGY-4:** “*Strategic Environmental and Social Safeguards Assessment for TOD Planning and Research*” — The outputs of the second phase were submitted to the World Bank on April 19, 2022, for solicitation of expert opinions. At present, the research team has completed the on-site work for public participation and is writing and optimizing the report. The first draft of the report is expected to be completed by the end of June.

Shenzhen

■ **GESZ-1:** “*Preparation and Implementation of City-Level Transit-Oriented Development (TOD) Strategy and Project Management Support for Shenzhen*” — Tasks 5-7 were completed, and an expert review meeting was held in April 2022.

■ **GESZ-2A:** “*Research for the Sustainable Development Planning and Construction Management of the Bainikeng Community Based on TOD Principles*” — Tasks 6-11 were completed, and an expert review meeting was held in April 2022.

Project Implementation Progress (As of June 17, 2022)

PMO	Activity	Draft TOR	Final TOR	Bid Announcement	Shortlist Review	Bid Evaluation	Contract Negotiation	Contract Signing	Inception Report	Intermediate Output	Draft Final Report	Final Report
MOHURD	National TOD Platform											
Beijing	City-level TOD Strategy											
	Corridor- and Station-level TOD Application											
	District-level TOD Application											
Tianjin	City-level TOD Strategy											
	Research on Private Sector Engagement in TOD Financing											
	District-level TOD Application											
Shijiazhuang	City-level TOD Strategy											
	Corridor-level TOD Application											
	District- and Station-level TOD Application											
Nanchang	City-level TOD Strategy											
	Corridor-level TOD Application											
	Station-level TOD Application											
	TOD Promotion and Knowledge Dissemination											
Ningbo	City-level TOD Strategy											
	District-level TOD Application											
	District-level TOD Application											
	Station-level TOD Application											
Guiyang	City-level TOD Strategy											
	Corridor-level TOD Application											
	Corridor-level TOD Application											
	Strategic Environmental Assessment for Corridor-level TOD Application											
Shenzhen	City-level TOD Strategy											
	District- and Station-level TOD Application											

LEGEND

Colored cells indicate the progress of each project. Blue cells indicate progress from March 21, 2022 - June 17, 2022.

Capacity Building and Academic Exchanges

On March 24, 2022, the 2022 Seminar on the Application of New Technologies for “Smart City Rail” was held at the Qiushi Emergency Services and Technological Base in Hangzhou City, Zhejiang Province. The content of this seminar included the screening of new technologies and applications in the rail transit sector, the construction of an “AI + rail transit” technology, and product investment incubation platform. The seminar also discussed innovative projects in rail transit sector, including the utilization of big data in smart urban rail transit, innovative applications of automated rail transit systems, application of AI and acoustic technologies in smart urban rail transit, and solutions to rail transit emergency monitoring. The seminar also urged research institutes and technology enterprises to focus on rail transit safety and apply cutting-edge technologies to smart and green urban rail construction. ([Relevant Link](#))



Source: China.com

On April 25, 2022, Xi'an CRRC Changke Railway Vehicles Co., Ltd. held the Xi'an Rail Transit Industry Supply Chain Seminar under the guidance of Xi'an Bureau of Industry and Information Technology and Xi'an Municipal Bureau of Investment Cooperation. Over 70 enterprises participated in this event. The seminar proposed

that the construction of a modern industry system according to Xi'an's conditions is one of the nine key development tasks for 2022. The rail transit industry is one of 19 key Xi'an industry chains. The “Xi'an Rail Transit Industry Chain Development Plan” was compiled to clarify the direction of industry development. The “Guidelines of Xi'an 2022 Special Fund Application for Industry Development (SME)” was issued to provide institutional support for the development of industry leaders and encourage local companies to engage in multi-level cooperation with the leading enterprises. ([Relevant Link](#))



Source: NetEase

On May 7, 2022, Nanjing Municipal Commission of Development and Reform held a special seminar on rail transit with low transport capacity. Nanjing Urban and Rural Construction Committee, Nanjing Municipal Planning and Natural Resources Bureau, and Nanjing Metro discussed the development of rail transit with low transport capacity, network planning, and construction planning. The participants agreed that the development of rail transit with low transport capacity was conducive to driving the multi-network integration of urban rail transit, expanding effective investment, and cultivating new growth. The development of low

transport capacity railway system should be in accordance with Nanjing's conditions.

[\(Relevant Link\)](#)

On May 21, Jiangsu Provincial Comprehensive Transportation Society held the launching ceremony of "Popular Science in Action" at Nanjing JSTI Group through video conference. With the theme of "low-carbon transit and more convenient travel," the event further popularized the concept of low-carbon transit and convenient travel through science lectures at both the provincial- and city-level. This series of popular science activities focused on national strategies such as the "dual carbon" goals and biodiversity conservation. By actively implementing the concept of green and low-carbon travel, the activities aimed to better drive the transportation industry to achieve the "dual carbon" goals, develop a green and low-carbon transit system, and effectively improve the convenience of day-to-day travel. [\(Relevant Link\)](#)

On May 22, 2022, the inaugural meeting of the Academic Committee of Chengdu-Chongqing Economic Circle Transportation and Development Research Institute and the China Urban Rail Transit TOD Policy Indicator Seminar was held at Southwest Jiaotong University. The meeting discussed China's urban rail transit TOD policy indicators and proposed that the design of indicators should consider the different level of economic development of cities and the trading and financing characteristics of TOD projects. The experts also discussed issues such as the scoring criteria of TOD policy indicators, the level of

policy planning, the relationship between fiscal policies and TOD concepts, and the applicability of results. [\(Relevant Link\)](#)



Source: School of Public Administration, Southwest Jiaotong University

The Territorial Spatial Planning of Comprehensive Transit System and Integrated TOD Summit was held online from May 27-29, 2022. With the theme of "TOD-led high-level urban development," the forum consisted of keynote presentations, special reports, research papers, and project tours. The forum provided a platform for showcasing and exchanging new theories, models, technologies, and achievements in transportation and TOD engineering and their interdisciplinarity. The topics of the forum included integrated transit system planning, carbon neutrality and sustainable urban development, urban development and renewal under the TOD model, and the technical and economic analysis of engineering technologies such as vibration mitigation and disaster prevention. [\(Relevant Link\)](#)

Industry News

TOD Integrated Development

On April 3, 2022, an official invitation for bids was announced. for the bidding is about the architectural design of the Shanghai East Railway Integrated Transit Hub. The project will focus on creating an international transit hub integrating the transport station, airport, and the city. China Railway and Shanghai Municipal People's Government jointly launched an international invitation for bids. The information was published on February 24, 2022, and a total of 20 consortium bids were received from 63 renowned domestic and international design institutes. [\(Relevant Link\)](#)

In April 2022, Wuhan Municipal Bureau of Natural Resources and Planning issued an invitation for bids to construct Wuhan Tianhe Station into an air-rail transportation hub along the Yangtze River. The aim of constructing Wuhan Tianhe Station is to enhance the influence of Wuhan, and support its development towards a National Central City, a core city along the Yangtze River Economic Belt, and an international metropolis. The planning will focus on the development of station-city integration, comprehensive optimization of regional transit, and the overall design of regional spaces. The project will also focus on constructing both properties over rail and the underground spaces. [\(Relevant Link\)](#)

On April 27, 2022, Shenzhen Municipal People's Government announced an invitation for bids for the design concept of Xili Integrated Transit Hub. The project aims to integrate four high-speed rail (HSR) lines, two intercity railways, and four urban subways. The estimated investment is CNY 17.756 billion (equivalent to USD2.634billion¹).

The project will be developed into an ultra-large integrated transit hub with high level station-city integration and government cooperation. The plan aims to create an efficient and convenient integrated transit hub, a demonstration project with a high degree of station-city integration, a landmark gateway to the core of Shenzhen, and a model city space for future urban living. The iconic green belt-shaped hub realizes the integration of stations, city, people, and the nature. The project the model for HSR station-city integration under TOD 4.0 in China. [\(Relevant Link\)](#)

Strategic Partnerships and Financing

On November 25, 2022, Nanchang Rail Transit Group and Guangzhou Greater Bay Area Rail Transit Industry Investment Group signed a partnership agreement on a cooperation in multi-sector, multi-format projects, and emerging industries in rail transit industry. This partnership covered the construction of smart industrial parks, smart rail transit, and smart O&M. [\(Relevant Link\)](#)

On May 26, 2022, China Resources Land and Shenzhen Metro Group signed a strategic framework partnership agreement to expand the comprehensive development projects along rail lines in accordance with the concept of station-city integration. The agreement hopes to explore and innovate the central-local enterprises cooperation model, strive to play a pioneering and model role with a global vision, jointly formulate a TOD-based future city plan, and create a world-class benchmark for station-city integration with hubs as the core. [\(Relevant Link\)](#)

¹ Based on an exchange rate of USD100=CNY674.13 on August 12, 2022 (Source: China State Administration of Foreign Exchange, <https://www.safe.gov.cn/safe/rmbhlzjj/index.html>)

On May 27, 2022, China Communications Construction and Jinan Rail Transit Group signed a strategic framework partnership agreement through video conference. According to the agreement, the two parties will work together to improve Jinan's integrated transit system and drive the development of the provincial capital's economic circle. They will also work together on Jinan's urban rail transit, infrastructure, urban renewal, integrated area development, and TOD construction.

[\(Relevant Link\)](#)

“Property over Rail” Projects

On March 19, 2022, the first layer of structural slab of the Xingfu Depot platform on Nantong Rail Transit Line 2 was completed, marking the start of construction for the station-city integration project. Xingfu Depot is the first station-city integration TOD project in Nantong and a key city-level urban construction project. It is also the first to adopt a “railway + real estate” development model and will accelerate the development of the city. The scope of the project covers a land lot enclosed by Shanghai–Xi'an Expressway, Tongliu Highway, Chengbei Boulevard, and Xingfushu River. [\(Relevant Link\)](#)

On March 25, 2022, the winner for TOD integrated development project of the Hangzhou Yuncheng Dual Rail was released. The project is located northwest of the Hangzhou West Railway Station.

The of the properties over the Train Maintenance Depot of Hangzhou West Railway Station and the properties over the metro depot are separated by the Tiaoxi Station, together forming a TOD cluster. The solution will solve the core issues of ecosystems, operations, space, and transit. [\(Relevant Link\)](#)

On April 17, 2022, the design and improvement plan of the TOD wetland park project formulated by the Xiamen Municipal Bureau of Natural Resources and Planning passed examination and approval. The project will be developed around the Wetland Park Station of Metro Line 2. The project represents an innovation in urban development, operations, and governance in Xiamen. The demonstration area of Xiamen Rail Transit Group TOD Wetland Park Project is expected to open to the public in Q4 2022. [\(Relevant Link\)](#)

In June 2022, construction of the “Big Platform” of the TODTOWN Tianhui, Properties over Shanghai Xinzhuang Metro Station Integrated Development Project began. The project represents a breakthrough in the application of the air rights transfer. Air right transfer means transferring the rights to the vertical space above the planned land. The project will build a large platform above the scattered land that was originally divided by tracks and stations. The platform will become a complex integrating various business forms and.

[\(Relevant Link\)](#)

Policy Updates

Low-Carbon Transit

On March 30, 2022, the Ministry of Transport issued the “[Work Plan for Facilitating the Implementation of Major Transit Projects Under the 14th Five-Year Plan](#)” (hereinafter the “Plan”), which outlined that the green and low-carbon sustainable transit development project would be a key transit project during the period of the 14th Five-Year Plan. The Plan also mentioned that the implementation of the green and low-carbon sustainable transit development project would help achieve the goal of reducing transport emissions. During the period of the 14th Five-Year Plan, China shall focus on: 1) the sustainable transformation of public transit vehicles, the construction and operation of low-carbon infrastructure, and strengthening transit infrastructure to support low-carbon development; 2) construct smart energy systems in highways, water service areas, ports, terminals, and hubs; 3) support the application of vehicles and ships using renewable energy.

[\(Relevant Link\)](#)

On May 7, 2022, the Guangzhou Municipal Transportation Bureau announced that it would focus on building a green, environmental-friendly, energy-saving, and low-carbon transit system. These goals will be achieved through (1) developing public transit and creating an environment for green travel; (2) promoting the application of new energy vehicles (NEVs) and optimizing the transportation energy structure; (3) constructing an urban green freight distribution system and driving the development of green logistics; and (4) strengthening the prevention and control of traffic pollution. [\(Relevant Link\)](#)

On May 16, 2022, the Department of Transportation of Guangxi Zhuang Autonomous Region issued the “Key Points on the Innovation of Transportation Technology and Development of Smart Green Transportation in Guangxi in 2022” (hereinafter the “Key Points”). The Key Points outlined that in 2022, developing innovative transportation technology and smart and green transportations will be the key themes for development in 2022. To achieve the dual carbon goals, the development of green and low-carbon transit should be promoted.

[\(Relevant Link\)](#)

Regional Integrated Development Planning and Integrated Transit Planning

On March 17, 2022, the Hangzhou Municipal People's Government approved the “[Special Plan for the Comprehensive Utilization of Rail Transit in Hangzhou](#)” (hereinafter the “Plan”). The Plan aims to develop Hangzhou through rail transit and construct a world-class TOD city. The Plan also focus on encouraging, the sustainable and high-quality development of rail transit, improving people’s quality of life, and enhancing the city's development level through the development of Hangzhou on rails. [\(Relevant Link\)](#)

On May 6, 2022, the Shenzhen Municipal Transportation Bureau officially released the “[Action Plan for Building Shenzhen into a City with Effective Transportation \(2021-2025\)](#)”. The Action Plan outlines 44 key tasks and 10 major actions, including railway expansion, road network connectivity enhancement, hub-city integration, low-carbon transformation, and governance improvement. The goal is to construct a city with effective transportation that is open, accessible,

low-carbon, intelligent, and pedestrian-friendly by 2025. The Action Plan outlines the development of the Greater Bay Area on rails. By 2025, Shenzhen will construct a high-speed rail network that connect the entire city and achieve a 81% green transit rate. ([Relevant Link](#))

On May 11, 2022, the Beijing Municipal Comprehensive Transportation Management Team issued the "[Action Plan for 2022 Beijing Municipal Comprehensive Transportation Management](#)." The Action Plan outlines a series of expected outcomes by the end of 2022: 1) the proportion of green transit in the Beijing central area shall reach 74.6%; 2) the proportion of residents whose commute time is within 45 minutes shall reach 56%; 3) the proportion of bus stops with a transfer distance of less than 30m between rail station entrances/exits shall reach 45%; 4) public transit shall account for 51.8% of motorized travel; 5) The average trip intensity of small passenger cars shall drop to 26.5 km. The Plan also proposes 35 specific plans to construct a safe and convenient urban life. ([Relevant Link](#))

On June 2, 2022, Chengdu Municipal Housing and Urban-Rural Development Bureau formulated and issued the "[Measures for Stabilizing Economic Growth of the Residential Construction Sector](#)" (hereinafter the "Measures"). The Measures cover topics of urban rail transit projects, integrated development of rail, and the municipal transit system. The document outlined that it would be necessary to accelerate the construction of the 28 municipal- and district-level TOD projects and the implementation of nine new TOD projects. The total annual investment is expected to exceed CNY 24 billion (equivalent to USD 3.56 billion²). ([Relevant Link](#))

On June 9, 2022, the People's Government of Sichuan Province officially issued the "[Plan Outline for Sichuan Comprehensive Three-Dimensional Transportation Network](#)" (hereinafter the "Outline"). The planning period is from 2022 to 2035. Covering transportation modes of railways, roads, waterage, civil aviation, and postal services, the Outline clarifies the goal of constructing a modernized and high-quality integrated three-dimensional transportation network by 2050. ([Relevant Link](#))

Special Transportation Projects of the 14th Five-Year Plan

On April 8, 2022, the Information Office of the Yunnan Provincial People's Government held a press conference on the "[Plan Outline for Yunnan Comprehensive Three-Dimensional Transportation Network](#)" and the "[14th Five-Year Plan for Integrated Transportation Development](#)" to interpret the planning documents and related policies and measures. The conference outlined that the period of the 14th Five Year Plan, the total length of the network shall reach a target of 360,000 km. The conference also explained the key tasks of improving the modern integrated transportation system, including improving the quality and efficiency of integrated transportation services, transforming and upgrading the integrated transportation system, and improving industry governance systems and capacity. ([Relevant Link](#))

On April 25, 2022, the Hebei Provincial People's Government issued the "[14th Five-Year Plan for the Comprehensive Development of a Modern Transportation System in Hebei](#)" (hereinafter the "Plan"). It outlines that by 2035, an advance integrated transportation system will be formed

² Based on an exchange rate of USD100=CNY674.13 on August 12, 2022 (Source: China State Administration of Foreign Exchange, <https://www.safe.gov.cn/safe/rmbhlzjj/index.html>)

and a modernized transportation governance system and capacity will be basically realized. The Plan identified five key tasks: (1) constructing a high-quality comprehensive three-dimensional transportation network; (2) strengthening the supporting capacity of key areas and regions; (3) providing high-level transportation services, convenient and inclusive travel services, and cost-effective freight services; (4) realizing smart, green, and safe transportation; and (5) driving the modernization of transportation governance systems and capacity. ([Relevant Link](#))

On May 30, 2022, the Fujian Provincial Department of Transportation Technology Center provided interpretation on the “Implementation Plan of the 14th Five-Year Plan for Transportation Informatization in Fujian.” The document outlines that the Implementation Plan focuses on data empowerment, innovation-driven development, and integrated applications for transportation systems. Fujian aims to build and improve the transportation system through perfecting the transport data collection system. ([Relevant Link](#))

On May 2022, the Lianyungang Municipal People's Government issued the “Lianyungang's 14th Five-Year Plan for Railway Development and Mid- and Long-Term Railway Network Layout Planning” (hereinafter the “Plan”). The document lays out development goals, key tasks, and policies of railway development during the period of the 14th Five-Year Plan. The Plan outlines a series of development goals that include improving outbound passenger transit network and separating regional long-distance passenger transit and freight transit. A one-hour commute circle shall be formed in the city area. Lianyungang aims to form a modern rail transit network with strong outbound transit capacity and smooth internal transportation. ([Relevant Link](#))

On May 7, 2022, the Beijing Municipal People's Government issued the “Beijing Transit Development and Construction Plan during the 14th Five-Year Plan Period.” The document outlines the transit development and construction in Beijing during the period of the 14th Five-Year Plan, serving as an action plan. The Plan outlines that the “new infrastructure” shall become a part of national planning. Beijing aims to construct a comprehensive, green, safe, and smart three-dimensional modern urban transit system. ([Relevant Link](#))

Industry Standards and Technical Specifications

On March 17, 2022, the Ministry of Transport issued the “Evaluation Indicator System for the Construction of a Nation with Strong Transportation Network” (hereinafter the “System”). This document provides scientific assessment and guidance to all regions and industries on how to build a nation with strong transportation network. The System establishes evaluation indicators considering the characteristics of different regions and industries. The System also focuses on the coordination of transportation with the economy, society, and environment. ([Relevant Link](#))

On April 6, 2022, the General Office of Wuxi Municipal People's Government officially issued the “Implementation Opinions on Facilitating the Integrated Development of Railway Stations and the Surrounding Lands” (hereinafter the “Implementation Opinions”). During the 14th Five-Year Plan period, Wuxi will construct three subway lines, the second phase of Metro Line 4, Line 5, and Line 6 to interconnect the rail network. During this period, the Implementation Opinions shall play a key role in the utilization of railway stations and their surrounding land, compacting urban space and optimizing urban functions. ([Relevant Link](#))

On April 11, 2022, the Ministry of Transport issued the “[Administrative Measures for National Demonstration Projects of Urban Public Transit Construction](#)” (hereinafter the “Administrative Measures”). The Administrative Measures will guide the construction of an urban transport structure revolving around public transits. The Administrative Measures also put forward specific requirements regarding planning and construction, vehicle equipment, smart construction, operational safety, and policy support. ([Relevant Link](#))

On May 20, 2022, the kick-off meeting for the formulation of the “Guidelines for the Planning and Design of Station-City Integration Development for Railway Stations” was successfully held. The meeting was organized by the TOD Committee of China Society of Territorial Economists (CSOTE). China Academy of Urban Planning and Design, China Railway Design Corporation, Beijing Jiaotong University, and CCTN Architectural Design took part in the compilation of the Guidelines. The participants held a detailed discussion on the key content of project preparation, work principles, compilation

progress, standard drafts, and standard contents. The Guidelines will include general provisions, terms and definitions, station-city integration, basic contents of station-city integration planning and design, railway passenger stations, station-city functions, station-city spaces, station-city traffic, station-city environments, and station-city mechanisms. The purpose of these standards is to construct a universal guide for experts across different disciplines, especially for professionals and technical personnel involved in urban and rail planning. The content will serve as an innovative guide for multi-network integration.

([Relevant Link](#))

On May 30, 2022, the Guangdong Provincial Department of Transportation compiled and released the “[Detailed Rules for Intercity Railway Design](#)” to promote the construction of an intercity railway network that connect facilities and provide multiple functions and services. The Rules outline detailed requirements for transit organization and operations management, Powered car train-set, limits and loads, lines and stations, as well as tracks and roads. ([Relevant Link](#))

Special Discussion

Public Participation Framework in TOD Planning and Design — Practice in Shenzhen³



³ Special thanks to the Shenzhen Global Environment Facility PMO, Shenzhen Urban Transport Planning Center Co. Ltd., and the Shenzhen Branch of the China Academy of Urban Planning and Design for their contributions.

Editor's Note

Based on the findings published in the Quarterly Newsletter No.10 and a series of follow-up public participation activities in Shenzhen, this special discussion will examine the concept of Life-cycle Public Participation Frameworks for TOD.

Life-cycle Public Participation Framework of TOD Project

1. General Principles

The formulation of the Life-cycle Public Participation Framework for the Shenzhen TOD projects followed the principles of full coverage, wide participation, and normalization. In specific, “full coverage” refers to formulating a plan that considers tasks at all stages; “wide participation” refers to inviting multiple stakeholders to participate in all stages of the project with diverse participation methods; and “normalization” refers to developing a set of action plans that establish public participation as a necessary step in TOD implementation.

2. Identify Key Stakeholders

The first step in developing a public participation plan is to identify key stakeholders. The term “stakeholder” refers to individuals or groups that are directly or indirectly affected by the project, along with those who may have an interest in the project and/or the ability to positively or negatively influence the project results. This includes local affected communities or individuals and their formal and informal representatives, national or local government authorities, politicians, religious leaders, civil organizations and special interest groups, academia, businesses, and more.

Based on the guidelines introduced in the Transit-Oriented Development Implementation Resources and Tools of the World Bank⁴ and the practical experience of Shenzhen, TOD projects in Shenzhen identified four types of key stakeholders (Fig.1), namely government, development enterprises, experts, and residents. Government includes the Shenzhen Municipal Development and Reform Commission, Planning and Natural Resources Bureau, Housing and Construction Bureau, Transport Bureau, Railway Office, and district governments. Development enterprises include real estate developers, affordable housing development groups, metro groups, and local enterprises. Residents specifically refer to general residents and residents in areas affected by TOD projects.

⁴ Global Platform for Sustainable Cities; World Bank. 2018. Transit-Oriented Development Implementation Resources and Tools. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/31121> License: CC BY 3.0 IGO.

The stages of stakeholder influence were summarized (Fig.2) in accordance with the government-led and developer-led stages of TOD projects. In the government-led stage, before project launch, multiple government departments (including the Development and Reform Commission, Planning and Natural Resources Bureau, Housing and Construction Bureau, and Transport Bureau) have a significant impact on the project’s decision-making and urban developmental vision. While experts, residents of the affected areas, and other residents provide a full range of suggestions for pre-planning and project planning and play a supervisory role in the development and implementation stage.

In the developer-led stage, during the early stages of the project, developers such as metro groups, real estate companies, and affordable housing development groups play a key role in terms of research and judgment on investment projections, corporate branding, and public housing investment and financing, directly determining the actual operational methods of the TOD projects. Organs directly related to the railway office, district governments, and sub-district offices play a key role in urban rail and regional development. Together with other experts and residents, they provide continuous suggestions, supervision, and feedback on the planning, design, and implementation stages.

Residents	General residents and residents of affected areas	Government Departments	Shenzhen Municipal Development and Reform Commission, Planning and Natural Resources Bureau, Housing and Construction Bureau, Transport Bureau, Railway Office, district governments, and sub-district offices
	Concerned with the living environment, cost of living, and development prospects of the area		Concerned with the harmonious development of the urban economy and society, along with the improvement of the city’s competitiveness
Experts	Experts in environmental, economic, social, and cultural fields	Developers	Shenzhen Metro Group, MTR Corporation (Shenzhen) Limited, Zhenye Group, Vanke Group, and Shenzhen Talents Housing Group
	Concerned with integrating TOD strategies with urban development principles		Concerned with using the project profit to aid construction, growth of rail transit passenger flow, loosening of development policies, profitability of development projects, and corporate branding

Figure 1. Key stakeholders of the Shenzhen TOD project

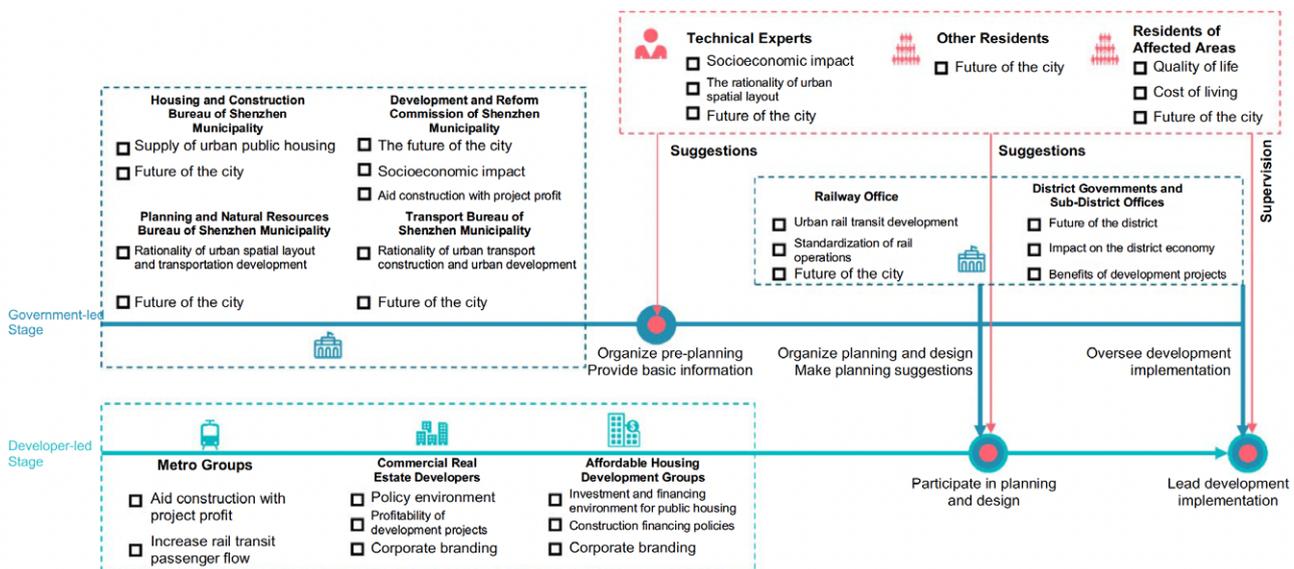


Figure 2. Roles of key stakeholders in each stage of TOD

The stakeholders analyzed above and their participation methods and roles across the entire life cycle of the projects further guide the specific planning and implementation of public participation activities.

3.City-Level Public Participation Activities and Outcomes

For Residents — Questionnaire on TOD Vision

In order to support the formulation of the TOD strategic vision at the city level, the project team distributed paper questionnaires around Shenzhen rail stations on December 8-9, 2020 to solicit opinions from the public on the TOD construction around stations and their vision for the future of TOD in Shenzhen. A week later (December 15-16, 2020), the project team returned to the questionnaire distribution sites for on-site inspection and photo verification. An online questionnaire was then released from January 29 to February 3, 2021 to solicit a broader range of public opinions. A total of 2,074 paper questionnaires and 3,699 online questionnaires were collected, while nearly 1,000 photos of typical sites were taken. This allowed the project team to build a solid foundation and comprehensive understanding of public opinions and recommendations.

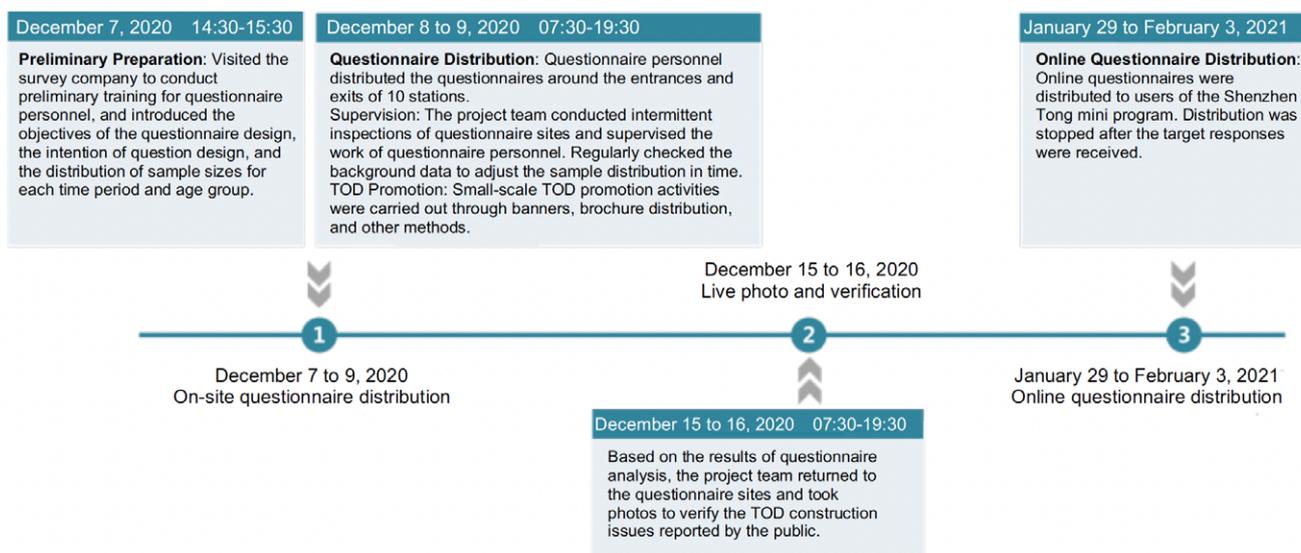


Figure 3. Process of public questionnaire activities



Figure 4. Questionnaire distribution sites

Public opinions on last-mile facilities around the sites: 41% of respondents believed that bus connections should be improved in terms of route design, bus interval, and distance; 35% of respondents expected improved station design, and suggested adding subway entrances and exits, connecting surrounding buildings, and alleviating station queuing; 27% of respondents expected improved accessibility design and the adding of elevators; and 20% of respondents wanted improved pedestrian systems, pedestrian crossings, signal lights, and other crossing facilities, optimized slow traffic systems, and rectified traffic orders in areas such as cycling.

Public opinions on stations connecting bus and cycling: 62% of respondents reported that the interval between bus departures is too long, 48% felt that the number of routes was too few, and 35% expressed that the bus stations were too far away from the subway stations. In addition, 10% of respondents reported difficulties in obtaining information on bus routes and arrival times. With regard to the connection between subway stations and cycling, 49% of respondents reported that bicycle lanes were not contiguous, and 43% reported that the cycling experience was unsafe. Over 20% of respondents felt that bicycle parking around the stations was inconvenient, it was difficult to find sharing bicycles, and detouring required too much physical efforts.

Primary activities of the public for a metro transit journey: Over 68% respondents indicated that they primarily used metro for commuting. The other primary activities were business, eating, shopping, and recreational walking, at 26%, 25%, 23%, and 21% respectively.

Needs of different age groups for TOD service facilities: There is a strong demand for leisure activity facilities across all age groups. Users under the age of 18 are more concerned with integrated commercial facilities; users aged from 18 to 60 are more concerned with employment, day-to-day convenience, business, and housing; while users over the age of 60 are more concerned with medical and educational facilities, along with day-to-day convenience and commercial facilities.

Vision of the public for the future of TOD: The questionnaire also revealed the vision of the public for the future of TOD and their lives. The top three expectations of the public were the easing of housing pressures, increased employment opportunities, and improved urban vitality, at 57%, 39%, and 36% respectively. Other concerns were travel safety, environmental quality, financial risk, and vulnerable groups.

For Government Departments and Development Enterprises — Joint Discussion

In order to understand the challenges, vision, and concerns of government and development enterprises in Shenzhen, the project team held a seminar with government departments and development companies, inviting the Shenzhen Municipal Transportation Bureau, Railway Office, Planning and Natural Resources Bureau, Housing and Construction Bureau, Finance Bureau, branches of Longgang District, metro construction groups, real estate developers, public housing developers, and businesses around the development sites.

	Areas of Concern	Future Vision
Government Departments	Individual interests at the city and district level make the TOD model difficult to implement.	Establish city-district dual-level cooperation mechanisms.
	Last-mile connections have not received proper attention, leading to inadequate development quality.	Form a community of stakeholders, with the municipal government coordinating and clarifying the distribution of interests.
	There is insufficient public housing land around the site, so the TOD land use is unbalanced.	Establish a development collaboration mechanism with users at the core.
	The standard of station-city integration is low, and the degree of TOD refinement is insufficient.	
Development Enterprises	The bidding land acquisition model places high demands on developers.	Metro construction enterprises seek government support to diversify investment and financing models.
	The primary source of funds is land income, with a singular financing channel.	Real estate developers seek government support to coordinate and drive the transformation of industries and communities.
	Land ownership is complex, and themes are difficult to coordinate.	Local industry seeks improved business environments while maintaining low costs.
	Industrial and local transformation will lead to gentrification, resulting in the loss of original local industries.	

Table 1: Areas of Concern and Future Vision of Government Departments and Development Enterprises

4. District-Level Public Participation Activities and Outcomes

The public participation activities require the cooperation and assistance of different stakeholders. To this end, the project team formulated a full-process, multi-theme, and accompanying action plan for public participation. The “Joint Vision of Bainikeng”, “Collaborative Development of Bainikeng”, and “Creating the Future of Bainikeng Together” activities represented the public opinion solicitation, planning participation, and implementation feedback stages respectively. At present, the project has reached the planning participation stage.

Stage 1 — “Joint Vision of Bainikeng”

The solicitation of public opinion targeted affected locals and non-locals of the project implementation area, consisting of (1) a comprehensive resident wishlist card analysis; (2) 10 selected key interviews; and (3) a semi-structured questionnaire.

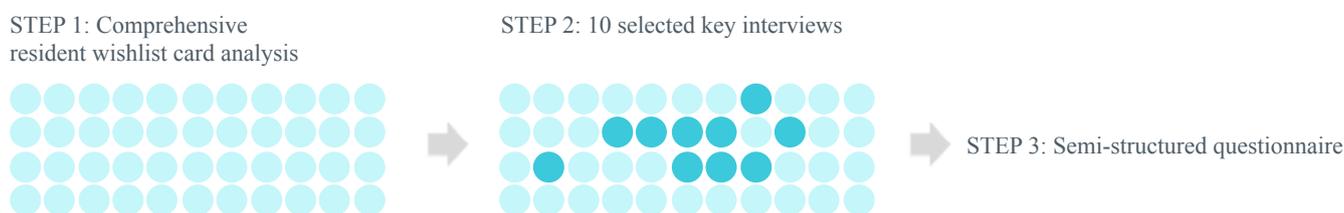


Figure 6. Stages of public opinion solicitation

Comprehensive resident wishlist card analysis: The project team analyzed and summarized the wishlist cards of a total of 1,027 respondents from 8 different groups of people, covering the reasons the respondents liked Bainikeng, the problems they thought Bainikeng needed to solve, and their vision and expectation for the future of Bainikeng, then finally evaluated their willingness to further participate in the follow-up planning.

10 selected key interviews: From December 9 to 13, 2020, the project team randomly selected 10 community residents from the participants of the previous stage to conduct video interviews to gain an in-depth understanding on their views of Bainikeng, which was then made into the “Voices of Residents in the Planning and Development of Bainikeng Community” video. The biggest concern among respondents were traffic issues, namely a lack of parking spaces, road congestion, and insufficient sidewalks. When asked about their future vision for Bainikeng, respondents generally expressed a hope to see improved traffic conditions, enhanced traffic safety, and increased supporting facilities such as parks, schools, and shopping malls.

Semi-structured questionnaire: From March 24 to March 31, 2021, the project team dispatched 13 interviewers to visit the community, distribute public information brochures to respondents, and request residents to fill out a semi-structured questionnaire. The suggestions of residents primarily focused on transit, housing, environmental sanitation, and spatial planning, all of which were closely related to spatial planning and hardware facilities. The questionnaire results showed that the willingness of Bainikeng residents to participate in community self-governance required further improvement. Respondents expressed that communities need to strengthen self-governance promotion and organization construction efforts to enhance the enthusiasm of residents to participate in public events.

Stage 2 — “Collaborative Development of Bainikeng”

The planning participation stage was carried out after the preliminary results of regional-level urban planning was formulated. It is made up of three steps, namely (1) organizing a series of public participation workshops, (2) holding project consultation meetings to solicit opinions from all parties, and (3) holding focus group consultation meetings to solicit opinions of government departments, experts, and enterprises.

Public participation workshops: During the workshops, various stakeholders expressed their concerns. Urban regulators were concerned with the development of the fresh food industry in Bainikeng and transit organization; relevant experts and social workers were concerned with how to effectively address the needs of vulnerable groups in the community; while local social organizations expressed the need to retain and pass on the existing culture and characteristics of the community. Relevant local enterprises expressed their hope to leverage TOD to achieve industrial transformation.



Figure 7. Public participation workshops

Project consultation meetings: The Shenzhen PMO invited experts from various fields of the Bainikeng project and relevant departments to two project consultation meetings where the project team reported the outputs of the project stage, and the participating experts and departments commented on the results and provided suggestions from the aspects of urban renewal, industry development, and transit systems. After consultation and discussion, the experts and departments suggested a variety of ideas and solutions for the practical problems faced by Bainikeng.

- Expert Suggestions: The Bainikeng TOD project should focus on the "vegetable basket" function, and consider rail stations, traffic organization, and functional layout from the perspective of urban safety and people's livelihoods to ensure sustainable economic, social, and ecosystem development. Land ownership in the project site is complex, and urban renewal is difficult. It is necessary to encourage the active participation of various stakeholders through institutional and mechanism reforms, while driving coordination at the city, district, and sub-district levels. At the same time, it is also necessary to practice people-oriented concepts, effectively integrate community services with education, healthcare, and eldercare to provide suitable living environments for different resident groups and conduct in-depth research on energy consumption and balance issues.

- Relevant Department Suggestions: The Market Supervision and Regulation Bureau of Shenzhen Municipality highlighted the importance of safeguarding people's livelihoods, the importance of the "vegetable basket town" concept should be considered, and that the project should be driven in a comprehensive and step-by-step manner. The Planning and Natural Resources Bureau of Shenzhen Municipality proposed that the orderly development of industries such as TOD, information, and communications technologies should be guaranteed, the concept of sustainable urban management should be implemented, and high-end industries should be introduced to facilitate industrial transformation.

Focus groups: The project team will hold five focus group discussions. they will discuss the core issues of urban renewal, transportation and circulation, public services, child-friendly design, and industry transformation.

Stage 3 — “Creating the Future of Bainikeng Together”

At present, the work on this stage is still under planning and shall be implemented after the completion of the second stage.

5. Customized and Diversified Promotion Tools

The project team has adopted customized and diversified promotion tools.

“TOD Shenzhen” WeChat Official Account: The project team selected efficient communication channels and they established the “TOD Shenzhen” WeChat Official Account in December 2021. The account intends to provide the latest TOD information, sharing cutting-edge domestic and international TOD progress, provide channels for public participation in TOD, and promote the implementation of TOD in Shenzhen. The WeChat Official Account includes three major sections, namely TOD strategy, TOD practice, and public participation.

Driving the Online Operation of the Shenzhen TOD Platform: The launch of the Shenzhen TOD platform will help broaden promotion channels, providing the public with more convenient and efficient feedback, strengthening the communication and interaction between governments and residents, and driving the orderly implementation of TOD strategies and actions.

Publication of Multimedia Promotional Videos and Guides to Actively Popularize TOD Concepts and Principles: The project team used various forms of media such as gifs, embedded videos, and explanatory images to attract more readers with an interest in the urban development of Shenzhen and further popularize TOD concepts. The “Voices of Residents in the Planning and Development of Bainikeng Community” video was made to record the different views of residents on traffic conditions, daily life, leisure venues, facilities, and other aspects of Bainikeng.

Conclusion: Practical Experience Summary of the Public Participation Framework

(Before Public Participation) Theoretical Research to Guide Plan Formulation: Integrate research methods such as literature retrieval, practical experience reference, and power-interest grid to quickly clarify the most directly relevant stakeholders of the project, project the demands of all parties, and formulate consulting strategies for different stakeholders in advance to ensure the selection of suitable and effective forms of public participation.

(During Public Participation) Normalization and Diversification of Activities: From the start of formulation, the public participation plan should cover all stages of the, forming a normalized public participation mechanism with different activities for corresponding stages, while retaining flexibility. The specific form of activities should be adjustable in accordance with the progress.

(After Public Participation) Directly Support Research with Results: Record each public participation activity in a timely manner through photos, videos, press releases, memos, and other forms. Conduct timely qualitative and quantitative analysis of these records and questionnaire data to provide a key foundation for the formulation of a TOD vision all levels.

Upcoming TOD Related Events

**4th International Symposium on Urban Planning and
Architectural Design of Integrated Station Development,
July 8-9, 2022, Shenzhen, China**
(Relevant Link)

**TOD Model and Urban Development Summit,
held online on June 23, 2022**
(Relevant Link)

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