

## Key Measures and Capital Investment in the Fiscal Year Ending March 31, 2019

In the fiscal year ending March 31, 2019 (FY2018), we will continue to place the highest priority on ensuring safe and reliable transportation while steadily moving forward with our efforts in promoting earthquake countermeasures. These include derailment and deviation countermeasures for the Tokaido Shinkansen. We will also carry out large-scale renovation work on civil engineering structures and introduce the N700A (3<sup>rd</sup> edition). Furthermore, so that customers can more conveniently use railway services, we will take initiatives such as enhancing the train operation information provided on our website and expanding the coverage of our Free Wi-Fi service in stations and on trains. Meanwhile, we will look into updating timetables in preparation for operating all the Tokaido Shinkansen trains at the maximum speed of 285 km/h starting in the end of FY2019, move forward with the running tests for the launch of N700S mass-production vehicles scheduled in FY2020, and proceed with the new production of next-generation limited express train rolling stock using the hybrid method for conventional lines.

We will proceed steadily with the Chuo Shinkansen Project involving the Superconducting Maglev System, while giving serious consideration to safety, the environment, and coordination with local communities. We will also make steady steps toward deploying the high-speed railway system overseas. At the same time, in the segment of affiliated businesses, we will operate JR Central Towers and JR Gate Tower in a uniform manner and demonstrate synergic effects to boost earnings.

To steadily move forward with these initiatives, JR Central will continue to work on strengthening its earning power and achieving ceaseless improvement in its technological capabilities. We will also strive to enhance efficiency and reduce costs by exercising wisdom over business execution overall, including making capital investment, with a view to enhancing management capabilities.

### I. Key Measures (refer to the attachment)

- Ensuring safe and reliable transportation
- Enhancing transportation services
- Promoting the Chuo Shinkansen Project involving the Superconducting Maglev System
- Brushing up Superconducting Maglev Technology and cost reduction
- Enhancing sales and marketing

- Promoting technological development, engagement in global environment preservation, deploying the High-Speed Railway System overseas
- Steadily promoting affiliated businesses

## II. Capital Investment Amount

Consolidated: 524.0 billion yen; non-consolidated 495.0 billion yen

\* Capital investment excluding that for the Chuo Shinkansen (non-consolidated) amounts to 245.0 billion yen, of which 185.0 billion is investment relates to safety.

# Ensuring Safe and Reliable Transportation

(Capital investment amount: 147.0 billion yen)

## JR Central will work to further reinforce structures along with earthquake countermeasures.

- Advance construction work for **the installation of derailment-prevention guards** for the entire Tokaido Shinkansen line as part of implementing **derailment- and deviation-prevention measures** based on an improved method that ensures higher safety.
- Proceed with the implementation of **measures to prevent suspended ceilings at stations from falling** in an earthquake and **rebuilding or reinforcing the quake resistance of the Nagoya Workshop, etc.**
- Steadily proceed with **large-scale renovation** of the Tokaido Shinkansen while making efforts to achieve cost reductions by introducing the results of technological development and improving construction methods.



Large-scale renovation

## JR Central will advance initiatives to prevent accidents and better respond to extraordinary situations.

- Make further efforts to **prevent accidents** by being sensitive to and looking deeply into risks inherent in facilities and construction work and re-inspecting safety structures.
- Repeatedly perform **practical training** to be able to respond to various conditions expected in the advent of a disaster, or other extraordinary situations.



Training for recovering a derailed passenger car

(Reference) • Laying derailment-prevention guards: FY2018 approximately 99 km  
• Large-scale renovation: FY2018 37.0 billion yen (FY2016 to FY2019 145.0 billion yen)

• Fall-prevention for ceilings in stations: All 17 Shinkansen stations, 30 conventional line stations (FY2016 to FY2026 approximately 13.0 billion yen)

# Enhancing Transportation Services (1)

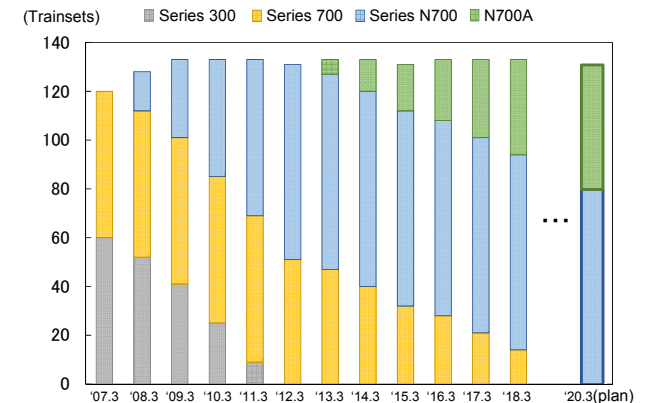
(Capital investment amount: 50.0 billion yen \*Total for (1) and (2))

JR Central will proceed with initiatives to achieve timetables that offer greater convenience.

- Continue to work on setting more flexible train services in accordance with demand during seasons and time frames with increased customer use by applying **the 10 “Nozomi” Timetable**.
- Proceed with the **launch of the N700A (3<sup>rd</sup> edition)**, while moving forward with enhancement work to reflect features of the third-edition trainsets, such as reducing the stopping distance of the Earthquake Brake on existing trains.
- Move forward with the examination to implement timetables that offer increased convenience and stability toward operating **all Tokaido Shinkansen trains with a maximum speed of 285 km/h** by the end of FY2019.
- Flexibly increase the frequency and number of cars in train services to meet demand for **express trains, such as for Shinano and Hida**.



N700A-type rolling stock



Shift in the number of trainsets by series for the Tokaido Shinkansen



Wide-View Shinano

(Reference) • N700A (3<sup>rd</sup> edition): FY2018 7 trainsets (Launch 20 trainsets from FY2016 to FY2019)  
• Enhancement work to reflect the features of the third-edition trainsets: FY2018 52 trainsets (applicable for 111 trainsets from FY2017 to FY2019)

## Enhancing Transportation Services (2)

JR Central will move ahead with the implementation of facilities, etc. so that customers can use railways with a greater sense of security.

- Initiate work to install **movable platform fences** on the Shinkansen platforms **No. 20 through No. 26 at Shin-Osaka Station**. Meanwhile, for conventional lines, advance verification testing for movable platform fences at **Kanayama Station**, and examine specifications with a view to installing such fences.
- Complete **installing braille blocks that indicate where platform edges are located** on the platforms of conventional lines in stations servicing 3,000 or more passengers by moving up the installation plan by two years.
- Promote the **installation of barrier-free facilities** at stations of conventional lines, such as elevators and multifunction toilets.



Movable platform fences undergoing verification testing at Kanayama Station

JR Central will advance initiatives so that customers can use railways with greater convenience.

- **Begin providing information on train services, such as traveling points and any individual train delays** on the Shinkansen and conventional lines, and **the departure status at each Shinkansen station**, on the JR Central website.
- Move forward with the preparations for the expanded area of usage of **TOICA** in the spring of 2019.

Nozomi 29	Depart: Tokyo 11:30	➔	Arrive: Hakata 16:33
<span style="color: red; font-weight: bold;">Currently delayed and traveling between Toyohashi and Mikawa-Anjo</span>			
Stops	Arrival time Departure time	Expected arrival/ status	
Toyohashi			
Mikawa-Anjo			
Nagoya	13:11 13:13	In 35 to 45 minutes	
Gifu-Hashima			
Maibara			
Kyoto	13:48 13:50	In 35 to 45 minutes	

Sample illustration of information (on Shinkansen) posted on the website

(Reference)

- Installation of movable platform fences at Shin-Osaka Station: To be completed in FY2022 for platforms #20 through #26. \*Completed installations on platform #27
- Verification testing of movable platform fences at Kanayama Station: To be performed until the fall of 2018
- Expansion of TOICA's area of coverage:  
Tokaido Line (between Kashiwabara and Samegai), Gotenba Line (between Shimo-soga and Ashigara), Kansai Honsen (between Minami Yokkaichi and Kameyama)

- Braille blocks that indicate where the platform edges are located  
Stations servicing 5,000 or more passengers: Installation completed  
Stations servicing passengers between 3,000 to 5,000 passengers:  
To complete installation in FY2018 (two years ahead of plan)



# Promoting the Chuo Shinkansen Project Involving Superconducting Maglev System

(Capital investment amount: 250.0 billion yen)

With regard to the Chuo Shinkansen Project involving the Superconducting Maglev System, JR Central will proceed steadily with the construction work in respective areas of the line while giving serious consideration to safety, the environment, and coordination with towns and cities along the planned route.

- As for the Chuo Shinkansen Project, **maintain sound management and stable dividends**, and take steady steps with a greater sense of seriousness toward completing the project while demonstrating flexibility.
- Continue promoting **close coordination with local communities and carry out measurement, design, acquisition of land, etc.** according to plan.
- Steadily move ahead with construction work, including **tunnel and emergency exit excavation and diaphragm wall work**, of the **Southern Alps tunnel, Shinagawa Station, Nagoya Station, tunnels in mountainous areas, emergency exit sites in urban areas**, and other locations where work is challenging and construction periods will be long. At the same time, **steadily proceed with the various types of construction work** in areas where necessary preparations have been completed, such as electrical work, etc., based on the Construction Plan (2) between Shinagawa and Nagoya Stations of the Chuo Shinkansen Line that was approved in March 2018, by giving serious consideration to **construction safety and environmental protection**.
- Promote efforts to establish sophisticated and efficient operation/maintenance systems for the Chuo Shinkansen.



Inclined shaft excavation at the Southern Alps tunnel (Nagano Section)



Diaphragm wall construction at Shinagawa Station



Shaft excavation at Kita-Shinagawa emergency exit

(Reference) • Diaphragm wall: A continuous reinforced-concrete wall constructed to protect the surrounding grounds before going ahead with a large-scale excavation.

# Brushing Up Superconducting Maglev Technology and Cost Reduction

(Capital investment amount: 4.0 billion yen)

## JR Central will continue brushing up Superconducting Maglev Technology and pursuing cost reduction.

- With the Yamanashi Maglev Line, alternately operate two trainsets by using rolling stock and facilities with commercial line specifications and continue **conducting long-distance running tests**.
- Proceed with verification, etc. toward establishing a maintenance system that can handle commercial services. At the same time, work to further **refine the Superconducting Maglev Technology** and **reduce costs for construction, operation and maintenance**.
- Continue conducting **“Superconducting Maglev Ride”** in a well-planned manner and take steps to further promote understanding of Superconducting Maglev.



Series L0



Superconducting Maglev Ride

# Enhancing Sales and Marketing

(Capital investment amount: 11.0 billion yen)

## JR Central will take initiatives to attract more customers to use online reservation services for the Shinkansen.

- Take initiatives so that more customers become aware of the convenience of **Express Reservation** and **smartEX** and use these services.
- Promote **tourist products**, such as “EX Nozomi Family Hayatoku,” to widely spur demand.

## JR Central will make use of the tourist attractions along railway lines to actively deploy sales and marketing measures.

- **Enhance tourism campaigns and products that convey the attractiveness** of Kyoto, Nara, Tokyo, Hida, Ise-Shima, etc.
- Coordinate with local governments, travel agencies and other parties through the “**Aichi Destination Campaign**” organized by the 6 JR operators, and make efforts to develop attractive sightseeing materials and products and operate sightseeing trains.

## JR Central will take initiatives so that customers from overseas can conveniently use its railroad services.

- Promote expanded use of “**smartEX**” **services for foreigners visiting Japan** as well as work to boost sales of sightseeing value tickets, etc.
- Expand coverage of the **Free Wi-Fi service in stations and on trains** in order to put in place an environment where users can make online reservations and obtain train service/sightseeing information on their smartphones, etc.
- Introduce **station numbering** for conventional lines.



“TRY! EX” poster



Sakura (cherry blossoms) version of the Kyoto Campaign (Kajuji Temple)



Sticker to indicate the availability of the Free Wi-Fi service at stations

(Reference)

- Number of members of “Express Reservation”: 3.37 million; Number of persons registered in “smartEX”: 610,000 (both as of February 28, 2018) Total usage: 170,000 items/day (actual for February)
- Free Wi-Fi service coverage: On the Tokaido Shinkansen N700A type and Express “Hida”, in 17 Shinkansen stations and in 24 conventional line stations (including 6 stations servicing both Shinkansen and conventional lines)
- Number of stations applicable for station numbering: 176 conventional line stations



# Promoting Technological Development, Engagement in Global Environment Preservation, Deploying the High-Speed Railway System Overseas

(Capital investment amount: 1.0 billion yen)

JR Central will strengthen efforts in technological development that contributes to enhancing safety and reducing costs and in promoting global environment preservation.

- Conduct **running tests using N700S validation test vehicles** and perform final checks toward finalizing the specifications for mass-production cars.
- Move forward with the **new production of a testing vehicle for next-generation limited express rolling stock that uses the hybrid system for conventional lines** to increase safety and comfort, as well as promote a reduction in total costs.
- Implement **more advanced and power-saving inspections and maintenance** that utilize condition monitoring technologies. Also, promote technical development that can lead to cost reductions for maintenance and upgrading of facilities.
- Carry out **technological development to further heighten safety** against disasters, etc.
- Promote various policies that contribute to **global environment preservation**, such as shifting to the N700A and other energy-saving rolling stock.



Verification test vehicle for N700S

JR Central will work to deploy the high-speed railway system overseas.

- Promote **technical assistance**, including formulation of technological specifications, to the main development entity of the **Texas Project in the U.S.** through the local subsidiary (HTeC) while bolstering **promotional activities** for the use of the Superconducting Maglev system in the **Northeast Corridor Project in the U.S.**
- Continue to proceed with the **technical consulting services** for the renovation work for the operation control system, etc. for the **Taiwan High Speed Rail.**
- Advance **initiatives to make the Japanese high-speed railway system**, which is based on the principle of Crash Avoidance, **a global standard.**



Providing technical assistance by HTeC

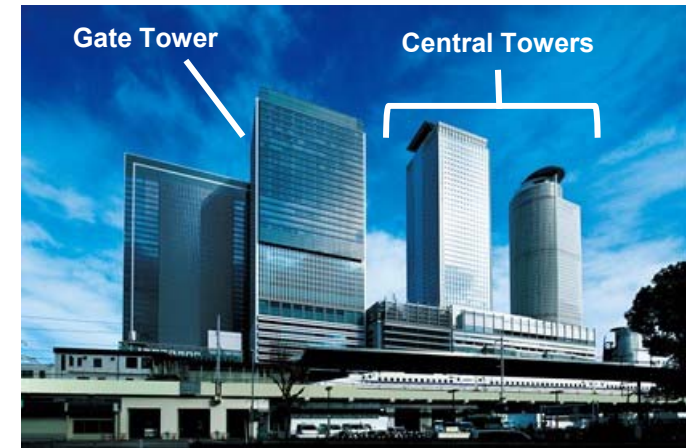
(Reference) • N700S: Considering launch of commercial trainsets in FY2020  
• Next-generation limited express rolling stock that uses the hybrid system for conventional lines: Complete the running test vehicle at the end of 2019 and perform testing for about a year. Consider launching the mass-production vehicle in FY2022.

# Steadily Promoting Affiliated Businesses

(Capital investment amount: 32.0 billion yen  
(including capital investment of 29.0 billion yen by consolidated subsidiaries))

JR Central will promote affiliated businesses, with JR Central Towers and JR Gate Tower at the core, to further enhance customer satisfaction.

- **Operate JR Central Towers and JR Gate Tower in a uniform manner** and respond to diverse needs by demonstrating synergistic effects to the fullest, including existing businesses, to boost earnings.
- **Revitalize merchandizing businesses and commercial facilities of station buildings**, work to **make effective use of land owned by the Company** and strive to further increase earnings. In addition, take initiatives to expand business zones, such as developing lots under the viaduct, to strengthen the earnings base.



Central Towers and Gate Tower



Central Garden Residence Gifu Kano

(Reference) • Tokyo Gourmet Zone: Scheduled to open on the 2<sup>nd</sup> floor of First Avenue Tokyo Station in June 2018  
• Central Garden Residence Gifu Kano: Start selling in March 2018