

Construction Scheme of Shinkansen

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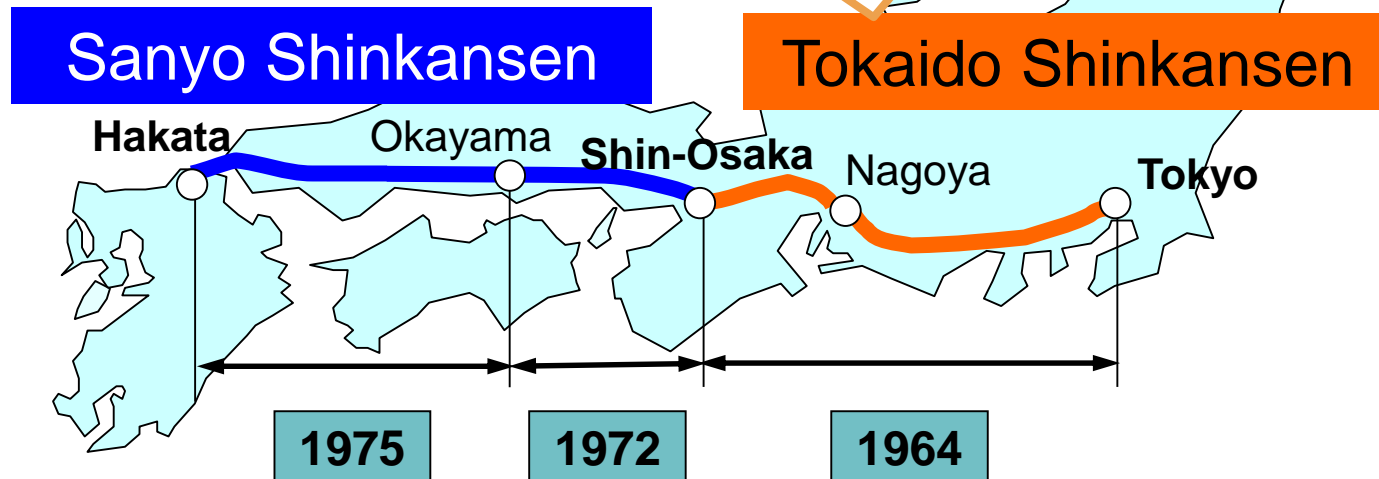
Types of the Shinkansen

		Status	Date of initial plan	Date of revised plan
①	Tokaido Shinkansen Sanyo Shinkansen	Built as extensions to the network of non-Shinkansen lines	—	—
②	Tohoku Shinkansen (Tokyo-Morioka) Joetsu Shinkansen	Built in accordance Nationwide Shinkansen Railways Construction and Improvement Act	1971	1971
③	Five Projected Shinkansen Lines <ul style="list-style-type: none"> • Hokkaido Shinkansen (Aomori-Sapporo) • Tohoku Shinkansen (Morioka-Aomori) • Hokuriku Shinkansen (Tokyo-Osaka) • Kyushu Shinkansen (Fukuoka-Kagoshima) • Kyushu Shinkansen (Fukuoka-Nagasaki) 		1972	1973
	<ul style="list-style-type: none"> • Maglev (Tokyo-Osaka) 		1973	2011

(1) Tokaido and Sanyo Shinkansen

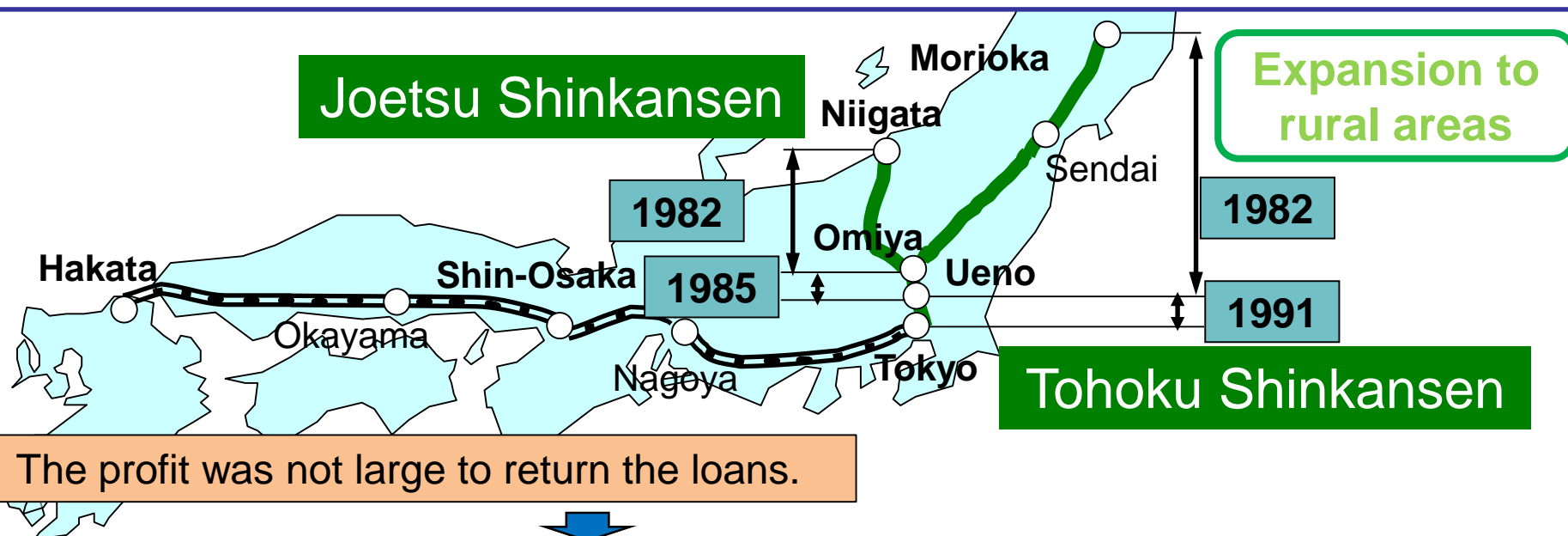
- Built as an addition to JNR Tokaido services to ease congestion
- Funded using loans, including financing from the World Bank

- This line covered **the most densely-populated areas** in Japan.
- The profit was enough to return the loans within 7-8 years of the start of operations.



(2) Tohoku and Joetsu Shinkansen

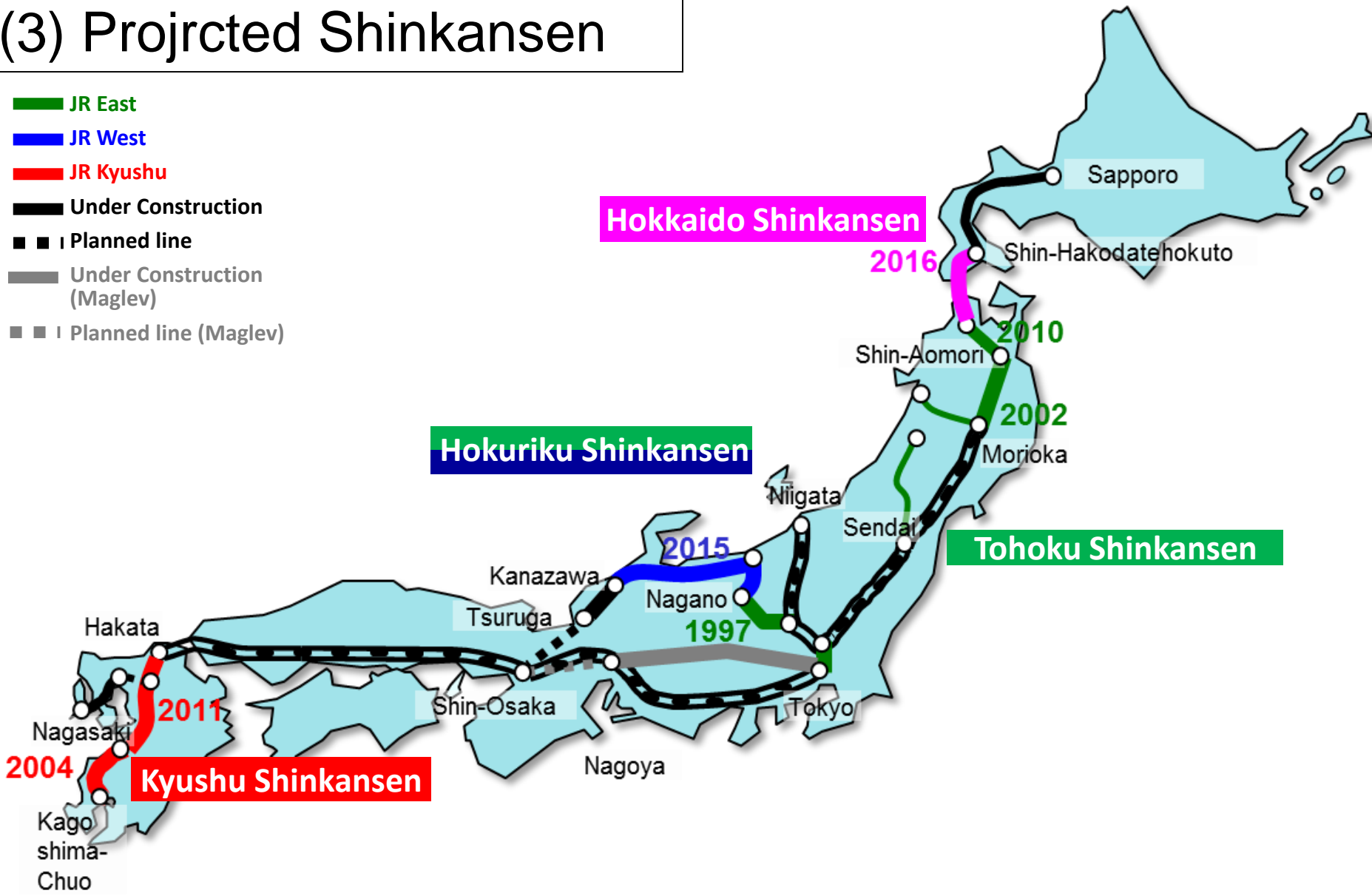
- The success of the Tokaido Shinkansen led to demands to the service to be extended to other regions.
- In 1970, the “Nationwide Shinkansen Construction Act” was passed in order to create a nationwide transport network contribution to the equal growth of all Japan’s regions. The law also established the Japan Railway Construction Public Corporation.
- The majority of the construction expenses were funded by loans
- Construction was greatly delayed due to problems purchasing land and objections from local residents (Tokyo-Omiya) .
- Construction costs were also higher than expected due to difficulties including the construction of long tunnels through mountainous regions.



The construction cost placed a heavy burden on the Japanese National Railways (JNR).

(3) Projrcted Shinkansen

- JR East
- JR West
- JR Kyushu
- Under Construction
- Planned line
- Under Construction (Maglev)
- Planned line (Maglev)

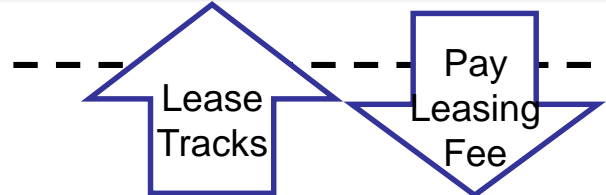
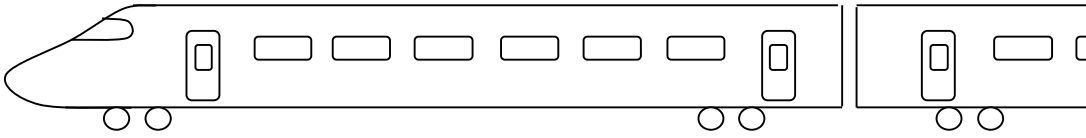


The Tohoku and Joetsu Shinkansen constructed during the JNR era relied mainly on loans to fund construction, which caused severe problems for the finances of JNR.



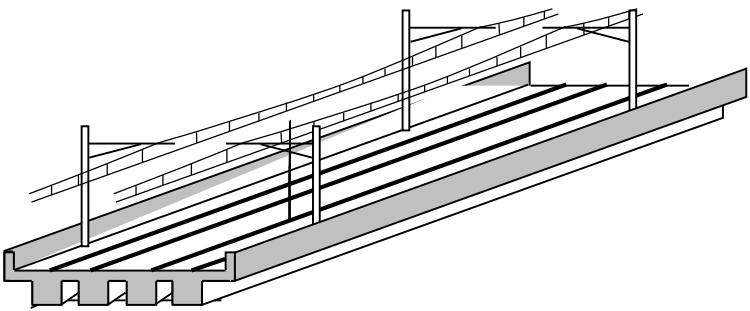
- A construction-operation separation scheme was introduced.
 - Construction funds were supplied by the local and central government
 - JR (the operator) loaned the tracks and facilities to JR (the operator) , with JR paying a leasing fee, capped at the size of its profits, to JR.

JR
(operator)

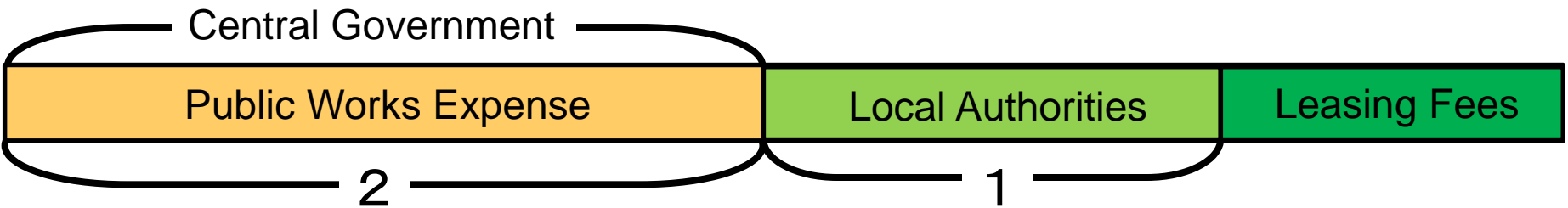


JRTT※
(constructor and facility owner)

※Japan Railway Construction, Transport and Tchnology Agency



<Funding>



Summary of Shinkansen Project Scheme

	Governments	JRTT (Builder and Owner)	JR (Operator)
Construction cost	○	—	—
Completion of construction	—	○	—
Rolling Stock cost	—	—	○
O&M cost	—	—	○
Ridership	—	—	○

Secure prospect of stable financing

Profitability on income and expenditures
(benefits the finances of operating body on average over 30 years)

Investment benefits ($\text{profit} \div \text{cost} > 1$)

Consent of JR as the business entity

Consent of local governments along the railway line to
separating management of parallel conventional line



Work can only start when all of the above conditions have been agreed.