

OEDO LINE (LOOP SECTION), TOKYO, JAPAN

OVERVIEW

LOCATION: TOKYO
 SCOPE: INTER-URBAN
 TRANSPORT MODE: SUBWAY
 PRINCIPAL CONSTRUCTION: TUNNEL
 NEW LINK: YES

PRINCIPAL OBJECTIVES

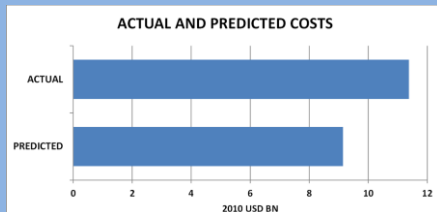
LOCAL TRANSPORT LINK
 ACCESSIBILITY
 LOCAL DEVELOPMENT

PLANNING AND IMPLEMENTATION

PLANNING START DATE: 05/1978
 CONSTRUCTION START DATE: 02/1992
 (LOOP SECTION)
 OPERATION START DATE: 12/2000
 (LOOP SECTION)
 MONTHS IN PLANNING: 239
 MONTHS IN CONSTRUCTION: 106
 PROJECT COMPLETED: 48 MONTHS
 BEHIND SCHEDULE

COSTS (IN 2010 USD) (LOOP SECTION)

PREDICTED COST: 9.15BN
 ACTUAL COST: 11.38BN
 PROJECT COMPLETED:
 24% OVER BUDGET
 FUNDING: 29% PUBLIC : 71% PRIVATE

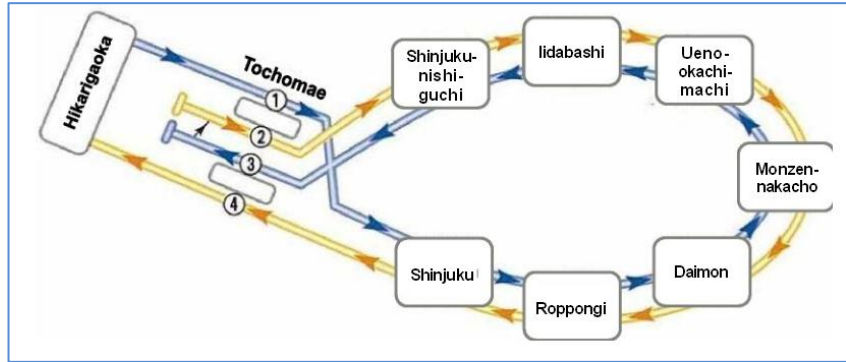


INFRASTRUCTURE QUANTITIES

LENGTH: 27.8KM (LOOP SECTION)
 NUMBER OF STATIONS: 38
 COST PER KM (2010 USD): 0.40BN

PATRONAGE

FORECAST TRAFFIC (1987 FOR 1996)
 985,000 PPD
 FORECAST TRAFFIC (1987 FOR 2006)
 1,213,000 PPD
 FORECAST TRAFFIC (1998 FOR 2000)
 824,000 PPD
 ACTUAL TRAFFIC (2000)
 219,358 PPD
 ACTUAL TRAFFIC (2007)
 781,487 PPD



INTRODUCTION

The OEDO line is a 41km subway line. The 12.9km radial section (financed and built by the public sector) opened in two stages, in 1991 and 1997, and the 27.8km loop section in 2000. The line has 38 stations, of which 26 connect to other subway lines.

BACKGROUND

The main objective of the project was to improve the transport network within Tokyo, providing an orbital route linking existing radial routes, improving accessibility to public facilities and other major destinations, and reinforcing the city's redevelopment plans.

The line is one of 13 identified in the 1972 Tokyo Metropolitan High-speed Railway Network Development Plan. However, the project was frozen due to the economic downturn following the first oil shock in 1973. It was reconsidered by an advisory panel to Tokyo's governor in 1978 and a Liaison Council of eleven ward-mayors was established to promote it in 1981.

In 1985 the government decided to relocate its headquarters and this brought more urgency to the objective of improving the transport network. An investigation committee was set up, reporting back to the government in 1987, when the construction of the loop section was authorised with the release of a formal implementation plan.

A 'third sector' construction body, Tokyo Subway, was set up in 1988 to finance and build the loop section, incorporating private sector management practices into a public-private partnership, with the aim of transferring the completed project to the public sector Bureau of Transportation for operation.

A cost-benefit analysis conducted in 1988 estimated that the line would generate benefits of 4.16 times the investment, and create 280,000 jobs. An ex-post evaluation has not yet been carried out.

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TIMELINE

CONCEPTION: 1972: LINE IDENTIFIED IN NETWORK DEVELOPMENT PLAN

CONTEXT: 1973: FIRST OIL SHOCK

DELAY: 1975: PROJECT TEMPORARILY FROZEN DUE TO ECONOMIC DOWNTURN

CONCEPTION: 1978 (MAY): PROJECT RECONSIDERED. DOWN-SIZING STRATEGY BEGAN

CONCEPTION: 1981: LIAISON COUNCIL OF ELEVEN WARD-MAYORS ESTABLISHED TO PROMOTE PROJECT

INCEPTION: 1982: RADIAL SECTION INCLUDED IN TOKYO LONG-TERM PLAN

CONTEXT: 1985: RELOCATION OF METROPOLITAN GOVERNMENT HQ DECIDED

INCEPTION: 1986: PROTOTYPE OEDO LINE CAR LAUNCHED

INCEPTION: 1986: COMPLETION OF LOOP SECTION BY 2005 A GOAL IN TOKYO'S LONG-TERM PLAN

CONSTRUCTION: 1986: CONSTRUCTION OF RADIAL SECTION (PART ONE) STARTS

INCEPTION: 1987: LOOP SECTION IN OFFICIAL GOVERNMENT IMPLEMENTATION PLAN

INCEPTION: 1988: THIRD SECTOR BODY, 'TOKYO SUBWAY', ESTABLISHED TO BUILD LOOP SECTION

CONSTRUCTION: 1990: CONSTRUCTION OF RADIAL SECTION (PART TWO) STARTS

DELIVERY: 1991: RADIAL SECTION (PART ONE) OPENS

CONSTRUCTION: 1992 (FEB): CONSTRUCTION OF LOOP SECTION STARTS

DELIVERY: 1997: RADIAL SECTION (PART TWO) OPENS

INCEPTION: 1998: FINANCIAL SCHEME REVISED

CONCEPTION: 2000: DECISION ON EXTENSION TO LINE, TO BEGIN CONSTRUCTION IN 2015

DELIVERY: 2000: LOOP SECTION OPENS

DELIVERY: 2001: BUSINESS PROMOTION COUNCIL SET UP TO ATTRACT MORE PASSENGERS

CHARACTERISTICS

The initial financial scheme for the loop section was established in 1987 when the cost was estimated at JPY 682.6bn (USD 9.15bn in 2010 prices)ⁱ. The final financial scheme agreed in 1998 was for JPY 988.6bn (USD 11.38bn in 2010 prices).

A strategy of down-sizing trains, tunnels and facilities was adopted early in the planning stage to reduce construction and operation costs, in response to the economic downturn caused by the oil shocks. Land acquisition costs were minimised through route selection, refurbishment of existing stations and facilities, and special policies for government land. However, difficult construction conditions, a prolonged construction schedule and the addition of facilities and higher specification features not in the original plan contributed to increasing costs.

The line uses several innovative new technologies: linear motors, lightweight aluminium bodies, and 'one-person-operated-trains'. Open-cut, caisson and underpinning tunnelling methods were used. Stations are decorated with public arts to create amenity space.

TIMELINE ISSUES

The economic crisis caused by the oil shock was estimated to have caused a four-year delay in delivering the project. The process of land acquisition and negotiations with local residents was lengthy, and the complexity of construction in the central business district also caused delays.

FUNDING

The project was financed by a combination of no-interest loans from the metropolitan government and interest-bearing loans from Japan Development Bank and other financial institutions. The financial scheme involves the Bureau of Transportation purchasing the line from Tokyo Subway in installments, and Tokyo Subway using the payments to repay the interest bearing loans over a period of twelve years from FY2001, and no-interest loans over ten years from FY2011, respectively.

The financial scheme was revised in 1998 to reflect higher costs and lower passenger forecasts, with extra funding from sub-leasing bonds. Passenger numbers were initially well below forecasts but have increased dramatically following a publicity campaign.

ⁱ Costs have been converted to USD at 2010 prices, using historic inflation rates and current exchange rates, to allow comparison between projects.