

Korea

Ulsan City Development Project (Railway Division)

Report Date: March 2001

Field Survey: September 2000

1. Project Profile and Japan's ODA Loan



Location Map of the Project Area



Ulsan Station Constructed by this Project

(1) Background

Since the 1960s, a number of industrial parks in South Korea have been designated as specialized industrial zones, which receive concentrated investment. These industrial parks have delivered considerable effects in economic development. The city of Ulsan received such designation in 1962, and it has been growing rapidly, becoming one of South Korea's leading cities for the heavy chemical industry. The Tonghe-Nambu Line, which passes through the center of the city, was crossed by 15 level crossings in the commercial district, causing a major impediment to the city's development. The city also suffered from noise, vibration and other forms of urban pollution. This project relocated the railway, rebuilding the city's transport network and urban space, so that it could develop its metropolitan functions further.

(2) Objectives

This project aims to relocate the Tonghe-Nambu Line(National Railroad), which runs through the center of the city, as an urban planning measure that would separate industrial zones from commercial and residential zones, and alleviate congestion, thereby improving the city's urban functions and contributing to its balanced development.

(3) Project Scope

The ODA loan covered the following elements:

- 1) Relocation of the Tonghe-Nambu Line (11.2km between Tokha and Hogye) to a coastal site approximately 3km to the east, where it runs alongside an industrial area. At the same time, all level crossings with roads are to be eliminated by straightening the line and adding bridges, tunnels and elevated sections.
- 2) The intersections with the freight-only lines (the Changsaengpo, Ulsan Port and HFC Lines) are to be

altered to connect all of them at the new Ulsan station.

- 3) The freight yards, which were split into two locations at Ulsan and Yaum, were unified at (New) Ulsan station.
- 4) Construction of three new stations (Ulsan, Hyomoon and Seonam).
- 5) Implementation of the detailed designs and construction supervision etc. by consultants.

(4) Borrower/Executing Agency

The Government of the Republic of Korea / Ulsan City

(5) Outline of Loan Agreement

Loan Amount/Loan Disbursed Amount	¥4,440 million / ¥3,733 million
Exchange of Notes/Loan Agreement	April 1988 / June 1988
Terms and Conditions	Interest rate: 4.25%, Repayment period: 25 years (7 years for grace period), General Untied
Final Disbursement Date	August 1993

2. Results and Evaluation

(1) Relevance

This project aimed to eliminate railway pollution in Ulsan, which was developing as one of South Korea's leading heavy industrial cities, thereby improving the living environment and enhancing urban functions in anticipation of making a major contribution to the welfare of the citizens. As such, the plan was relevant. The new railway line was altered from the initial plan, but the changes were reasonable, as they were made to preserve the social environment by avoiding areas which had been developed residentially after the initial plan was made.

(2) Efficiency

The plan called for completion of construction in the fourth quarter of 1991, but implementation schedule was delayed by flooding and water damage caused by a large typhoon in August 1991. Construction restarted after the damage was repaired, and was completed in August 1992.

(3) Effectiveness

1) Alleviation of traffic congestion in the city

It was unable to ascertain the state of traffic congestion in the city in quantitative terms. However, the relocation of the Tonghe-Nambu Line, which passed through 15 level crossings in the commercial area before the project, has clearly improved the city's road traffic situation. A new road network has also been developed, and the project executing agency reports that congestion in the city has improved.

2) Environmental improvement after the relocation of the railway

The relocation of the Tonghe-Nambu Line away from residential and commercial areas ended the problems of noise and vibration pollution from the old line. The location of the new line was chosen to pass through non-residential areas, and therefore it does not cause any new problems of noise or vibration pollution.

3) Improvement of living environment

The improvement in the traffic situation in the city has given the residents safer and smoother transport conditions. The ending of noise and vibration pollution from the old line also made a more pleasant living environment for residents living along the old route.

4) Promotion of urban planning projects

After the project was completed, the residential and commercial zones and the industrial zones were clearly separated, where they had been intermingled before. In Ulsan, which is developing into a major metropolitan area, this new zoning scheme makes it easier to plan and implement new urban planning projects, and promotes planning that considers the social environment.

(4) Impact

1) Environmental impact

This project moved the Tonghe-Nambu Line away from residential and commercial zones, ending the problems of noise and vibration pollution caused by the old line. Before the project was implemented it was anticipated that environmental impacts such as water pollution and ground subsidence could result along the new route. Therefore countermeasures were taken in advance, and no notable problems arose.

2) Social impact

The executing agency reports that the project resulted in improved road and transport conditions, with particularly notable effects in reduced congestion and accident incidence in the city center. The area around the new Ulsan station is spacious and undeveloped, but parks and greenery for the public are to be added to the area as one of the city's urban planning projects.

(5) Sustainability

1) Operation and maintenance

Ulsan City Office retains responsibility for urban development projects in the city, but the operation and maintenance of the relocated Tonghe-Nambu Line is conducted by Ulsan Local Office of the National Railroad. There are no notable problems with the systems, abilities or budget used for operation and maintenance.

2) Future

Since this project relocated the railway, the space formerly occupied by the old tracks has already been developed as a new road network. Future development will aim for qualitative improvement in urban functions in the city center, and for both quantitative and qualitative improvements in surrounding areas. This approach is expected to yield balanced urban development for the city as a whole.

Comparison of Original and Actual Scope

Item	Plan	Actual
Project Scope		
1) Relocation of National Railroad Tonghe-Nambu Line	Total distance: 10.9 k m	Total: 12.6 k m
2) Alteration of three intersections with the freight-only lines Changsaengpo Line Ulsan Port Line HFC Line	Ulsan ~ Changsaengpo Ulsan ~ Ulsan Port Ulsan ~ HFC	Same as left Same as left Same as left
3) Unification of the freight yards at (New) Ulsan Station		Same as left
4) Construction of three new stations	Ulsan HyomoonSeonam	} Same as left
5) Implementation of detailed design, construction supervision etc. by consultants		Same as left
Implementation Schedule		
Land acquisition	4th Stage in 1987 ~ 1st Stage in 1989	Apr. 1988 ~ Sep. 1989
Roadbed construction		
Bidding and contract	2nd Stage 1988 ~ 4th Stage in 1988	
Implementation	4th Stage in 1987 ~ 4th Stage in 1991	Nov. 1987 ~ Feb. 1992
Track construction		
Bidding and contract	3rd Stage in 1988 ~ 1st Stage in 1989	National Railroad (Railways Agency) were commissioned
Implementation	2nd Stage in 1989 ~ 4th Stage in 1991	
Construction of facilities etc.	2nd Stage in 1989 ~ 4th Stage in 1991	(Oct. 1990 ~ Aug. 1992)
Consulting service	2nd Stage in 1987 ~ 4th Stage in 1991	Jun. 1988年 ~ Feb. 1992
Project Cost		
Foreign currency	¥3,122 million	N.A.
Local currency	¥7,507 million	N.A.
Total	¥10,629 million	N.A.
ODA loan portion	¥4,440 million	¥3,733 million
Exchange rate	1 won = ¥0.18	