Case Study of Integrated Housing and Railway Development (Kohoku New Town and Yokohama City Metro Development)

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City of Yokohama
Brief Introduction of Yokohama

Kanto Region (Greater Tokyo)

Yokohama City
- 3.7 million
- 437 km² (43740 ha)
Brief Introduction of Yokohama

Located in World’s Largest Metropolitan Area

Sagamihara City (0.7mil)

Saitama City (1.2mil)

Special Wards of Tokyo (9.0mil)

Kawasaki City (1.4mil)

Chiba City (1.0mil)

Yokohama City (3.7mil)

Tokyo Int’l Airport

Narita Int’l Airport

Residential and Commercial Complex Area “Kohoku New Town”
Location of the Kohoku New Town in Yokohama City

Residential and Commercial Complex Area “Kohoku New Town”

City Center “Minato Mirai 21 District”

- Yokohama City Metro (Blue Line 40 km)
- Yokohama City Metro (Green Line)
- JR and Private Railways
Description of Kohoku New Town

- Project Area: Approx. 1,340 ha
- Design population: 220,000
- Resident participation in planning process
- Preserve green matrix
- TOD with Metro subways running to the city center
The population doubled in the 20-year period between in Yokohama Between 1960 and 1980 (from 1.37 million to 2.77 million)

Intensification of Sprawl and Urban Problems
Background of the Project

- During the period of high economic growth in the 1960s, housing demand increased in Yokohama, where the urgent issue has been to prevent urban sprawl.

- The Kohoku New Town Project, as one of six major projects in 1965, started with a systematic community development approach.

- The land readjustment project for 1,317ha was carried out between FY1974 and FY2005 (31 years).
Before Development

In the early 1980s

Present
## General Plan

- **Project Area:** Approx. 1,340 ha
- **Households and Population**

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Residential People (a)</td>
<td>11,000</td>
<td>220,000</td>
<td>158,322</td>
</tr>
<tr>
<td>Household (b)</td>
<td>2,500</td>
<td>55,100</td>
<td>60,682</td>
</tr>
<tr>
<td>a/b</td>
<td>4.4</td>
<td>4.0</td>
<td>2.6</td>
</tr>
</tbody>
</table>

(a) People
(b) Household
Framework of the Land Readjustment Project

A, A': Area
H, H': Land price

Mr. A's lot before land readjustment

The contributed portion of the lot

A x H < A' x H'

• Lot area decreases due to contribution
• Land price increases due to the improvement of urban facilities

Contribution to public facilities (used for roads, parks, etc.)

Project costs
• cost of relocation of building and compensation
• cost for constructing roads, parks, etc.
• survey and design costs
• administrative cost
• miscellaneous

Resources
• capital from disposition of reserve land
• municipal expenses
• national subsidy
• shared defrayment of public facilities by management authority
• miscellaneous

Contribution to reserve land
Framework of the Land Readjustment Project

- With the land readjustment project, roads and other infrastructure is built while farmland and forests become building lots (residential). As a result, private land asset prices increase. As a result, if we compare land areas with equivalent values before and after the project, we see that the lots of equivalent value become smaller.

- Through land exchange, a portion of private lands is provided for public use as roads and parks or to be owned by the Implementing Body. The Implementing Body finances the project through sales of these lots.

<table>
<thead>
<tr>
<th>Before project</th>
<th>After project</th>
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<tbody>
<tr>
<td>Farm and Forest (Private lands)</td>
<td>Building lots (Private lands)</td>
</tr>
<tr>
<td>Roads (Public lands)</td>
<td>Building lots (Lands owned by Implementing Body)</td>
</tr>
<tr>
<td></td>
<td>Roads and Parks (Public lands)</td>
</tr>
</tbody>
</table>

Land price rises (Equivalent land area with same price becomes smaller)
## Land Use

### Land Readjustment Project

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Before Development</th>
<th>Land Use Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest/wilderness</td>
<td>Forest/wilderness: 54%</td>
<td>Building lots: 67.8%</td>
</tr>
<tr>
<td>Farm/Paddy</td>
<td>Farm/Paddy: 41%</td>
<td>Roads: 21.9%</td>
</tr>
<tr>
<td>Building lots</td>
<td>Building lots: 5%</td>
<td>Parks: 9.3%</td>
</tr>
<tr>
<td>Total Area</td>
<td>1,317 ha</td>
<td>Rivers/Canals: 0.04%</td>
</tr>
</tbody>
</table>

- Rise of the Land Price
  - Before development: 21,000 JY / 3.3m²
  - Present: 850,000 ~ 3,000,000 JY / 3.3m²
Land Use in Kohoku New Town

Area of Land Readjustment Project: Approx. 1,340 ha

Preserved area for agriculture
Town Center Area with attractive commercial facilities, plentiful public spaces and strong transportation hub
Residential Area and Preserved Urban Agricultural Area
Implementing Body

The land readjustment project was implemented by the **JHC (Japan Housing Corporation)**, which was established under the National Law.

The roles of three bodies

- **The City**: 1) Planning decision
  2) Cost borne for road and sewerage with subsidies from National Government
- **JHC**: Implementation of the land readjustment project
- **Local community (citizens)**: Participation at forums and conferences to discuss the plan with the City and JHC.
Project Cost and Finance

- Overall Project Cost: **Approx. 900 billion Yen**

- Finance
  - Cost borne by the Government
    - Portion by the City: **Approx. 12.5 billion Yen**
    - National Government: **Approx. 12.5 billion Yen**
  - Sale of land by the Implementing Body (JHC): **Approx. 875 billion yen**
Effect of City Tax Revenue

- It was estimated that the total investment cost borne by the city (about 113.5 billion yen) was recouped by the increase of the city tax revenue within 5 to 6 years.

  Cost borne by the City for the Project:  
  Approx. 12.5 billion Yen

  Cost borne by the City for the related trunk roads:  
  Approx. 101 billion Yen

  Annual increase of the City tax revenue:  
  Approx. 21 billion Yen

  (City tax revenues mainly consist of the Municipal Residence Tax (Individual, Corporate), the Fixed Asset Tax, the City Planning Tax, & the Business Office Tax)

- City tax revenues mentioned above are being used for general expenditures including maintenance cost of roads/parks, operational cost of public schools and cost for childcare support, etc.
Strong Transportation

1: Transport Network Map
2: Yokohama Blue Line
3: Trunk road along the Town Center

City Subway

City Planning Roads
Financial Framework of Railways Project

- For Railways (Metro) project, there are subsidies from the National Government and the City for initial investment.
- While, the remained of the project funding was financed by issuing bonds which will be repaid over about 30 to 40 years through rider fares.

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National Government  City  Issue of Bonds

Subsidy  Subsidy  Loan
Investment

Transportation Bureau
(Corporate Accounting)

reimbursement by rider fares
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Yokohama City Metro (Green Line) No. 4 Line (Green Line: Approximately 13 km) cost approx. 240 billion Yen in project funding, as follows:

- National Government: Approx. 23 billion Yen
- City of Yokohama: Approx. 69 billion Yen
- Project implementer (JHC): Approx. 27 billion Yen
- Corporate bonds: Approx. 121 billion Yen

(Corporate bonds are being repaid through rider fares)
Thank you for your attention.

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