

# **Station Area Development of Mumbai-Ahmedabad High Speed Rail Project**

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**Shuntaro Kawahara, Senior Advisor, JICA**  
**Ayumi Kiko, Deputy Director, Team 1 Urban and  
Region Development Group, JICA**

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# Approaches to TOD & SAD

- Although JICA has supported many railway projects, it has rarely provided fund for relating transit infrastructure or involved local government for urban development.
- Recently, to maximize impact of High Speed Rail (HSR) in India, Gov. of India and relevant states, Gov. of Japan and JICA have started discussion on SAD involving local government bodies, which has ever focused on planning station plaza and access and will cover development of surrounding areas in the next step.

## Improvement of Transport Access      **Urban & Housing Development**

- Public Transport
- Feeder Transport
- Street, Walkway
- Transport Hub  
( Station, Bus Terminal)

- Compact City
- Linear Development
- **Station Area Development (SAD)**

- Urban Renewal
- Sub-division Development
- Commercial Complex
- Housing Development



### Funding Mechanism

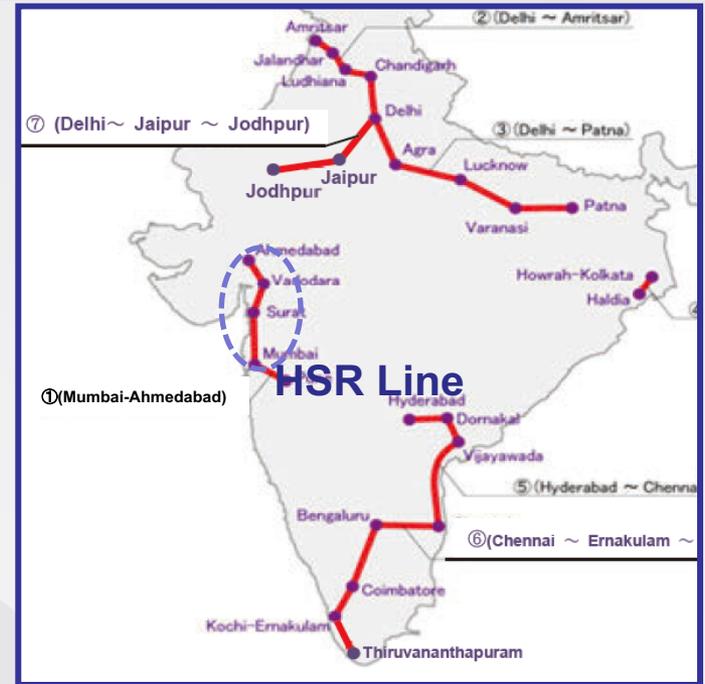
(Gov. Fund, ODA Fund, Fare, Private Fund, Land Value Capture etc)

### Project Proponents

(Gov. Agency, Local Gov., Transport Company, PPP, Developer etc)

# High Speed Rail (HSR) Project in India

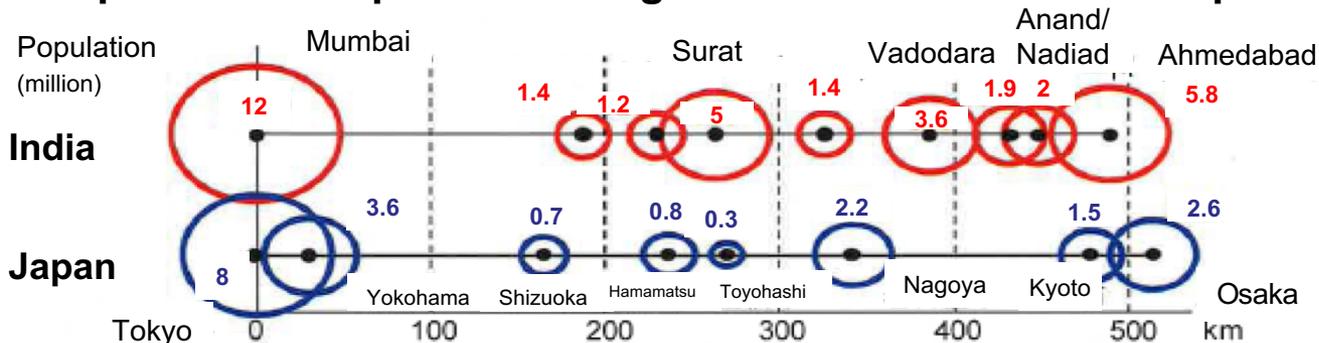
- **Route: Mumbai Station-Sabarmati Station, Ahmedabad city**
- **Distance: 505km**
- **Maximum Operation Speed: 320km/h**
- **Start Operation: 2023**
- **No. of Trains : 10 cars(16 cars in the future)**
- **Design Specification: Japanese Shinkansen System(Digital-ATC etc.)**



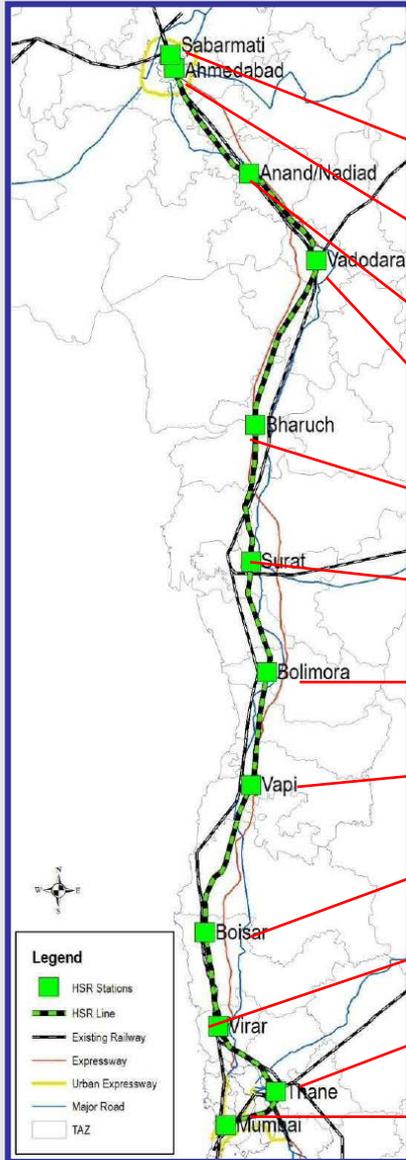
India HSR

- **Cities with more than 1 million population located along HSR stations**

## Comparison of Population along HSR between India and Japan

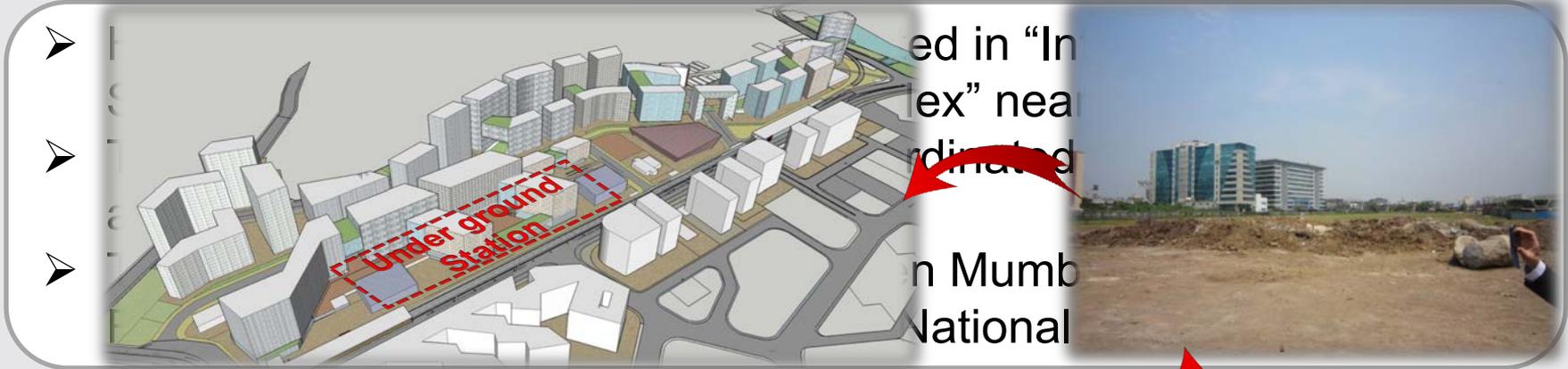


# Location of HSR Stations



| No. | Station Name | Population (Million) | Location of Station   |
|-----|--------------|----------------------|-----------------------|
| 12  | Sabarmati    | 6.30                 | Brown field, Attached |
| 11  | Ahmedabad    |                      | Brown field, Attached |
| 10  | Anand/Nadiad | 0.85                 | Green field, New      |
| 9   | Vadodara     | 2.00                 | Brown field, Attached |
| 8   | Bharuch      | 0.22                 | Green field, New      |
| 7   | Surat        | 4.50                 | Green field, New      |
| 6   | Bilimora     | 0.05                 | Green field, New      |
| 5   | Vapi         | 0.10                 | Green field, New      |
| 4   | Boisar       | 0.15                 | Green field, New      |
| 3   | Virar        | 1.20                 | Green field, New      |
| 2   | Thane        | 1.20                 | Green field, New      |
| 1   | Mumbai       | 12.00                | Semi-brown field, New |

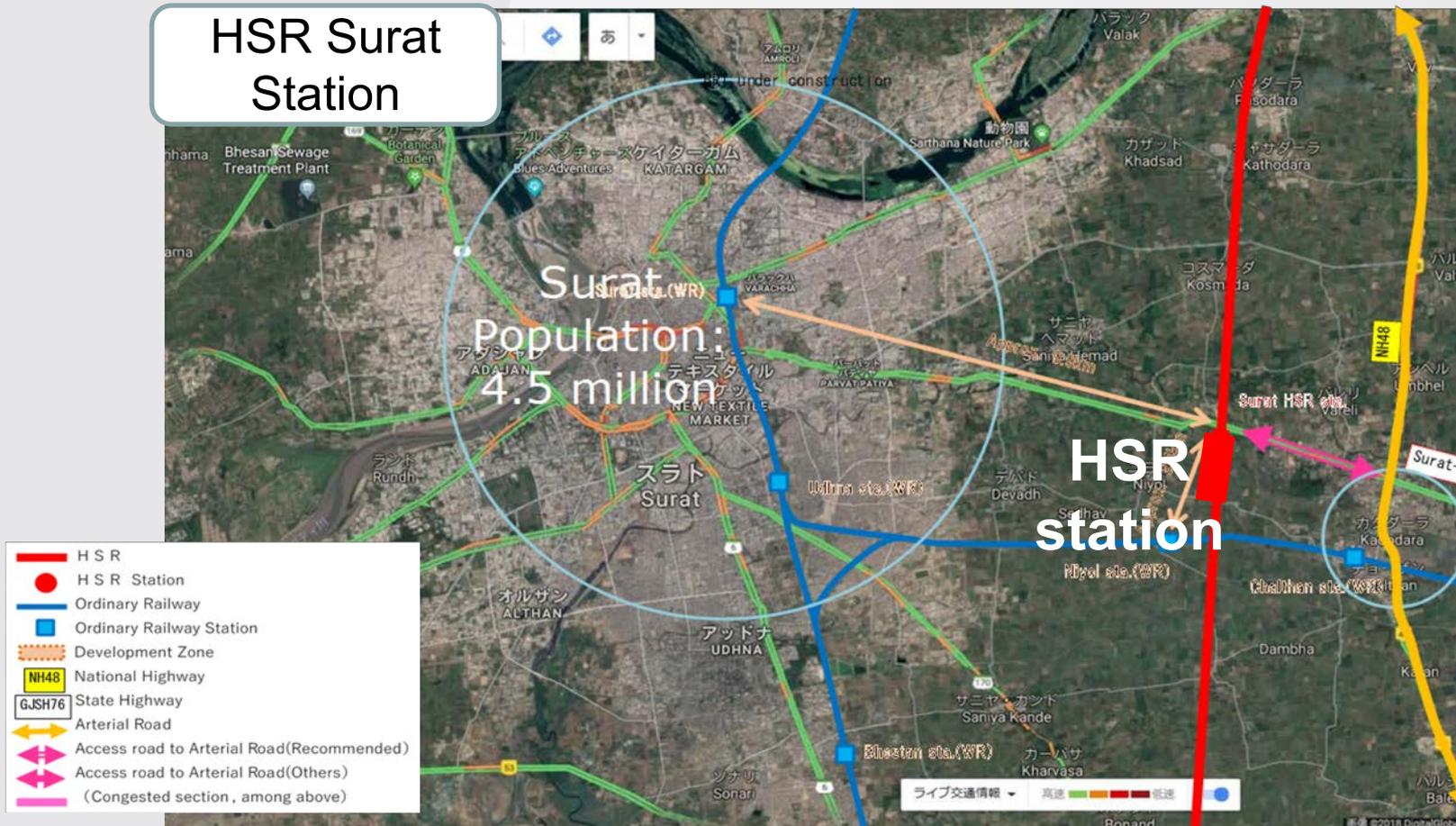
# Opportunities and Issues on HSR SAD



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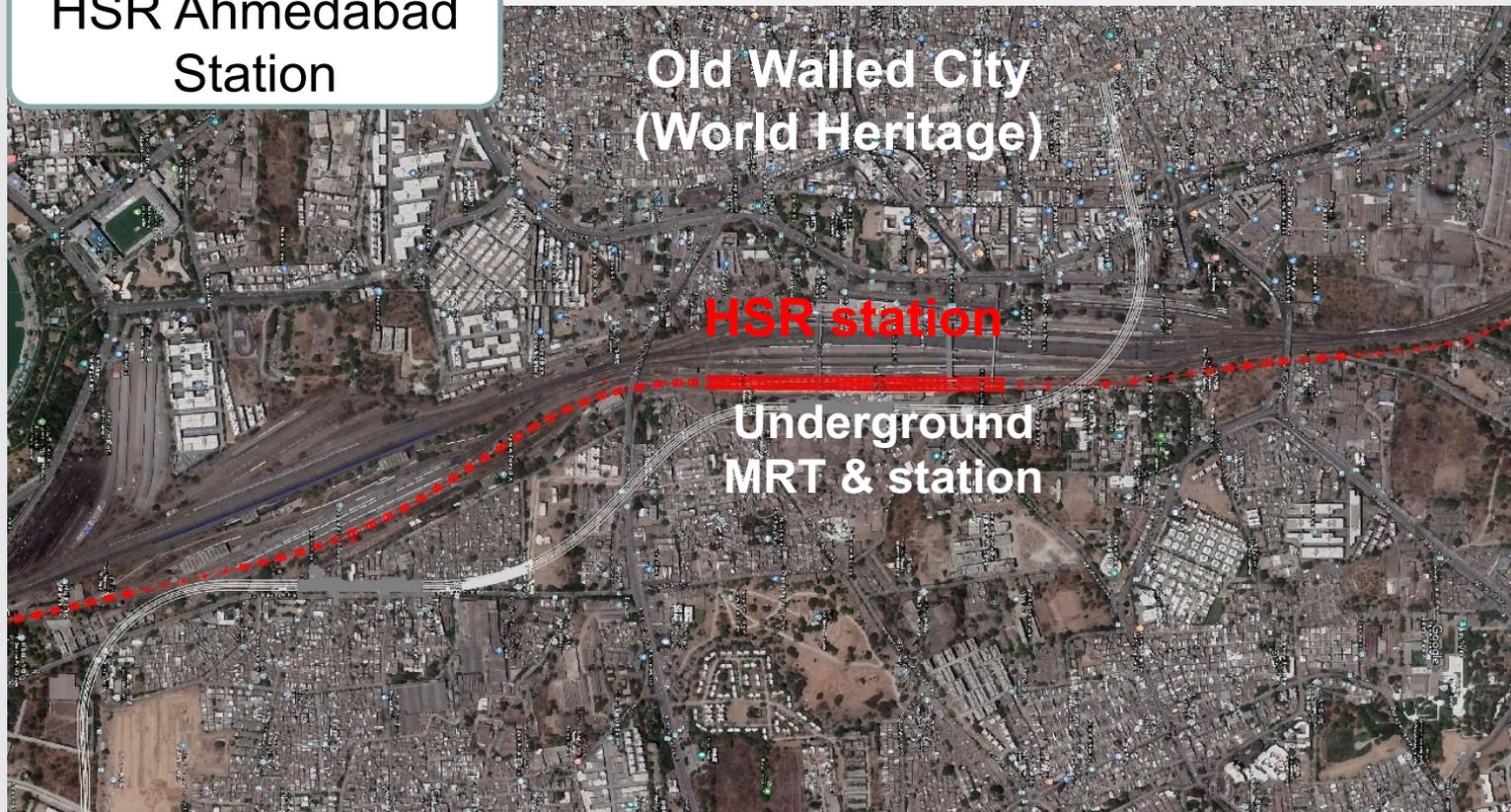
- HSR Surat Station is to be located in suburban area of the city.
- Better public transport access to the CBD should be considered.
- Smart and livable city surrounding the station is expected to be developed.

## HSR Surat Station



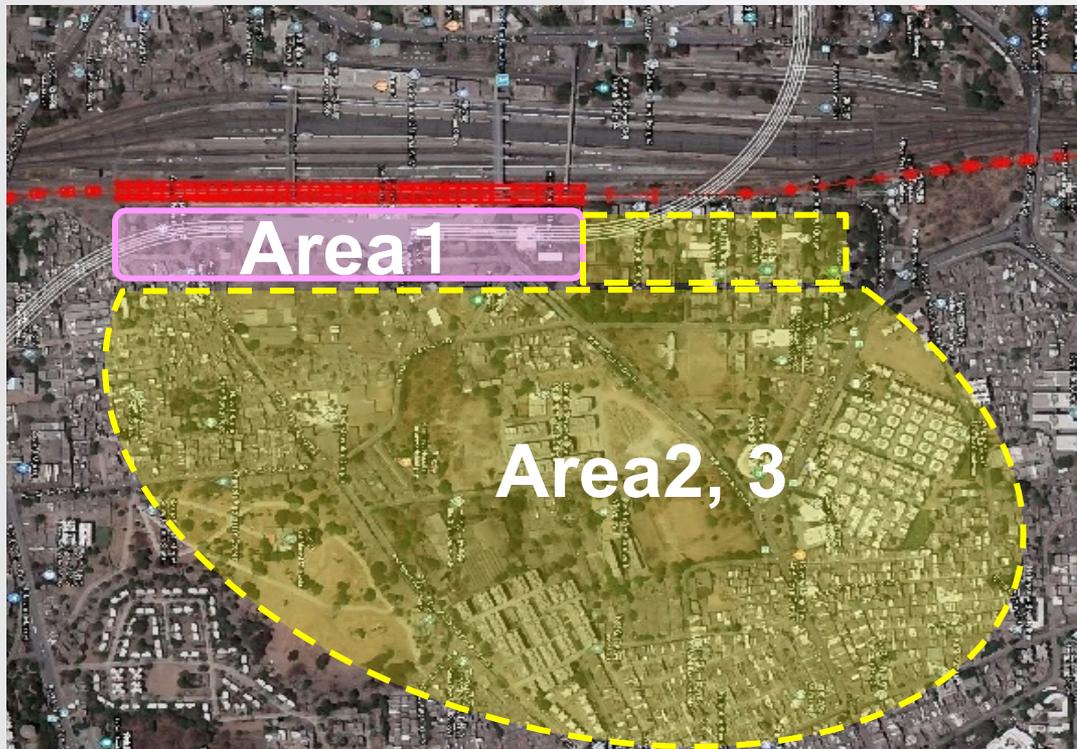
- HSR Ahmedabad Station is to be constructed in the former industrial area to be renewed, however, urban renewal in built up area is not easy in India.
- Open area for infrastructure and urban development is not enough.
- Access roads to the area is narrow and should be improved in the long run.

## HSR Ahmedabad Station



# Discussion for HSR SAD in India

- Experts Committee on HSR Station Area Development composed of Indian and Japanese authorities has been held for knowledge exchange.
- Phased development is sought for station area of HSR considering tight schedule for HSR opening.
- JICA consultants have provided technical advices to HSR Co. Ltd.



**[Area 1 ] to be developed before opening HSR in 2023**

- Access road, walkway and station plaza suitable to demand in 2023 to be developed by HSR Co. Ltd.

*(Plan has been almost finalized)*

**[Area 2] developed within 10 years after HSR opening & [Area 3] developed in the long run**

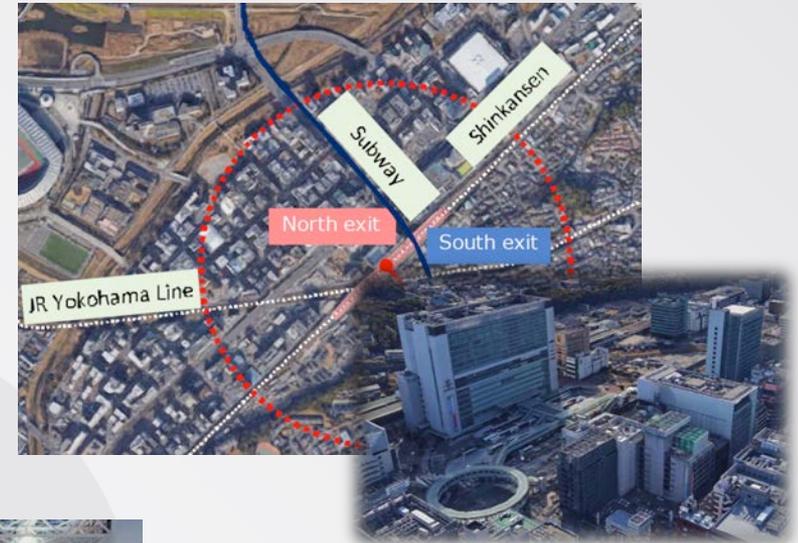
- Expansion of station plaza ,bus terminal and streets
- Transit infrastructure development
- Commercial and/or housing development by private sector

*(To be discussed by railway and urban authorities)*

**Fig. Image of phased development**

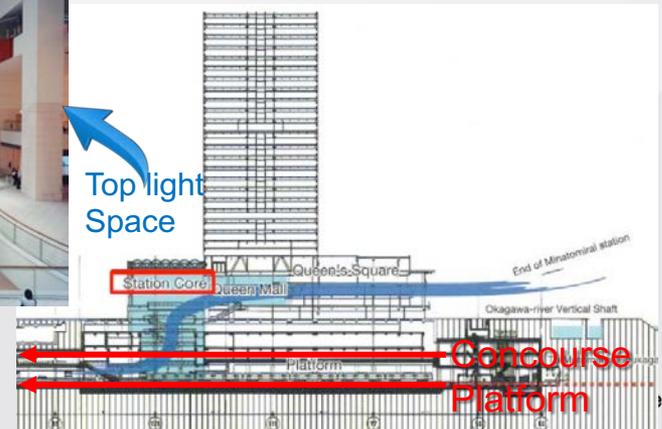
## 【Example of development of green field area around newly constructed HSR station】

- Surrounding area of Shin-Yokohama HSR Station was strategically developed as a “Sub Center” in accordance with the urban development master plan of Yokohama City.
- Land readjustment scheme realized land consolidation and secured R.O.W. for the station plaza and streets.



## 【Example of a concept applicable to designing Mumbai HSR Station】

- Minato Mirai Station is an example, where buildings and subway stations were designed integrally at the same time.
- Open ceiling space connecting the station and the building functions gateway to the town and provides symbolic space.



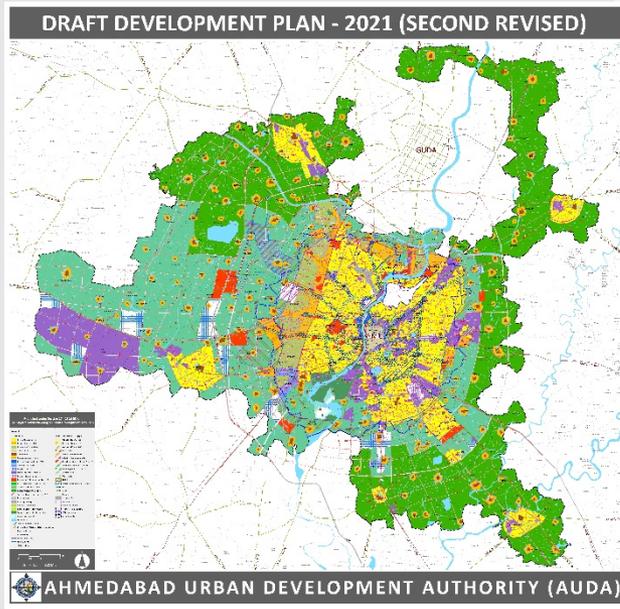
- The two States relevant to HSR have well organized urban planning scheme such as Macro Development Plan, Town Planning and Land Pooling.
  - State and local officials understand the necessity of SAD project plans and incorporating into higher planning layers to secure comprehensive approaches.
  - Higher authorities should provide them with methodology and instruction.
- 【Planning Layer】**

## Urban Authorities

## Railway Authorities

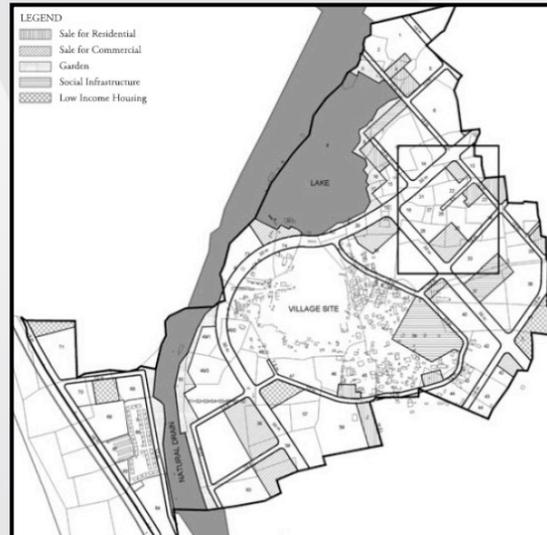
### 1. Macro Plan

Ex) Development Plan,  
Comprehensive Mobility Plan



### 2. Micro Plan

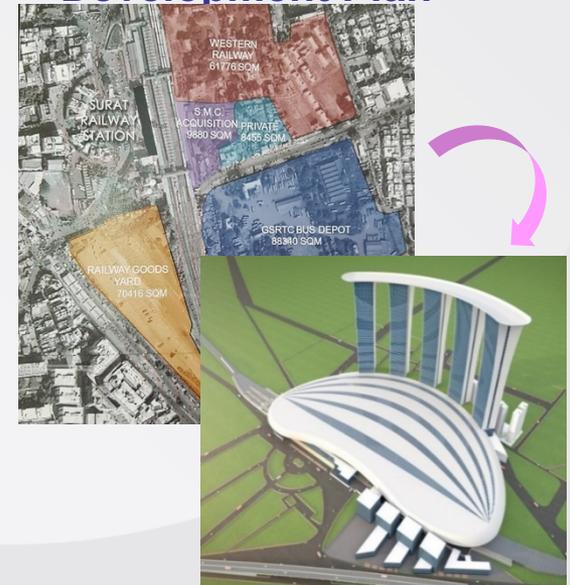
Ex) Town Planning



A Town Planning Area in Ahmedabad

### 3. Project Plan

Ex) Transport Hub  
Development Plan



Planned Multi Modal Transportation Hub  
(Surat Existing Station)

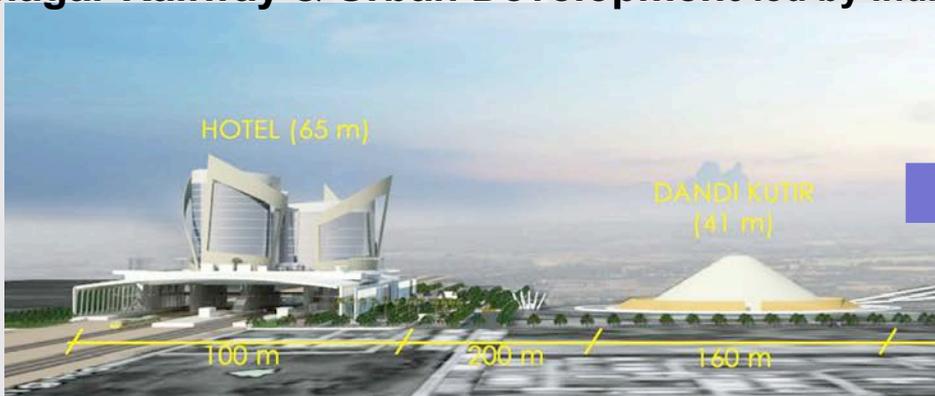
# Good foundation for TOD in India

- JICA observed Several Station Area Development (SAD) projects implemented under PPP scheme, which indicate good capacity of Indian authorities on SAD and coordination mechanism between railway authorities and urban ones.
- To ease demand risks of PPP proponents, flexible task and risk sharing among stakeholders should be sought.

## 【Seawoods Station Area Development led by the state urban development authority】



## 【Gandhinagar Railway & Urban Development led by India Rail Station Development Corporation】



- JICA would like to provide relevant authorities in India with knowledge of Japanese TOD to support Indian TOD based on Indian needs and context.
- JICA also thinks of importance of involving state and local governments, and respects differences of methodology of SAD.

## 【Example of differences】

- Indian side thinks sole implementing body of SAD should be responsible for design, build, operation & finance.
- Japanese side thinks fine coordination of multiple agents, such as railway and bus operators, developers, local and central governments, is important to share works, costs and risks.



“Development of Multi Modal Transport Hub at Surat Railway Station on (PPP) Mode” aiming to convert existing station, bus terminal and state gov. lands into transport hub and commercial complex.



April 2002



February 2015

(Source: Tokyo National highway Office, MLIT)

“Shinjuku Station South Exit Development”, which has developed bus terminal and commercial building on railway properties and expanded national highway.