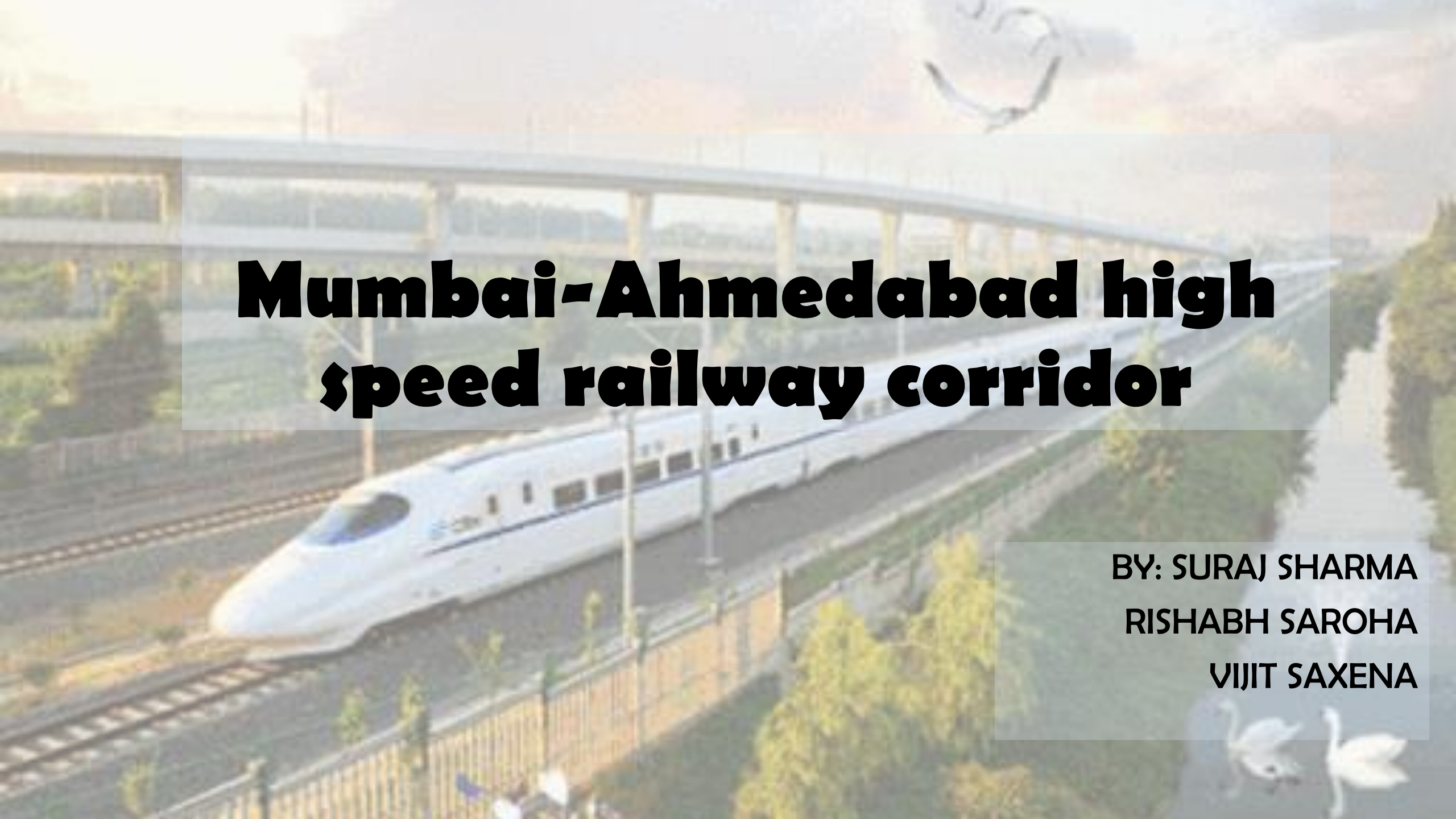
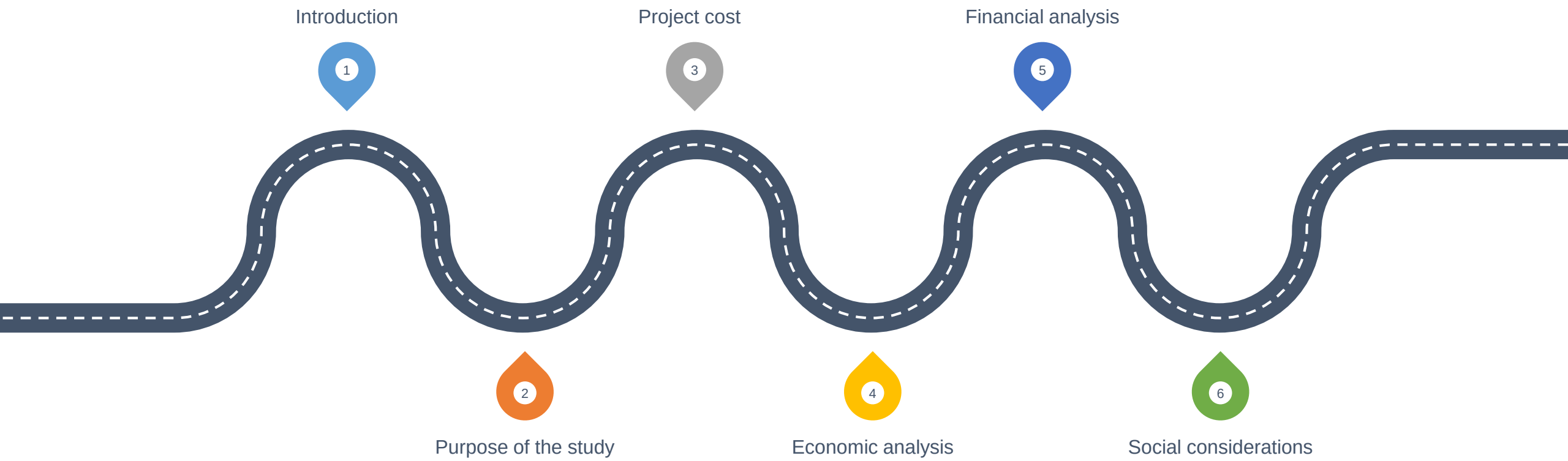


Mumbai-Ahmedabad high speed railway corridor

BY: SURAJ SHARMA
RISHABH SAROHA
VIJIT SAXENA

Roadmap


Introduction
1
Project cost
3
Financial analysis
5
2
Purpose of the study
4
Economic analysis
6
Social considerations

INTRODUCTION

- **The proposed 534 km Mumbai- Ahmedabad is a high speed link.**
- **Will be India's maiden high speed project.**
- **Decision to carry out its feasibility study was taken in September 2013.**
- **2013: Japan and India decided to co finance a detailed joint feasibility study for the Mumbai- Ahmedabad HSR.**
- **The Japan Internal Cooperation Agency(JICA) was given the go ahead**

for the feasibility study in September 2013.

Purpose of the study

- This study is a feasibility study concerning the plan to develop the HSR between Mumbai and Ahmedabad based on the above-mentioned MOU. Main items covered in the study are as follows:
- estimated project cost.
- Economic Analysis
- Environmental analysis
- financial analysis.
- Study of related legal systems/standards and human resources development.

Project Cost

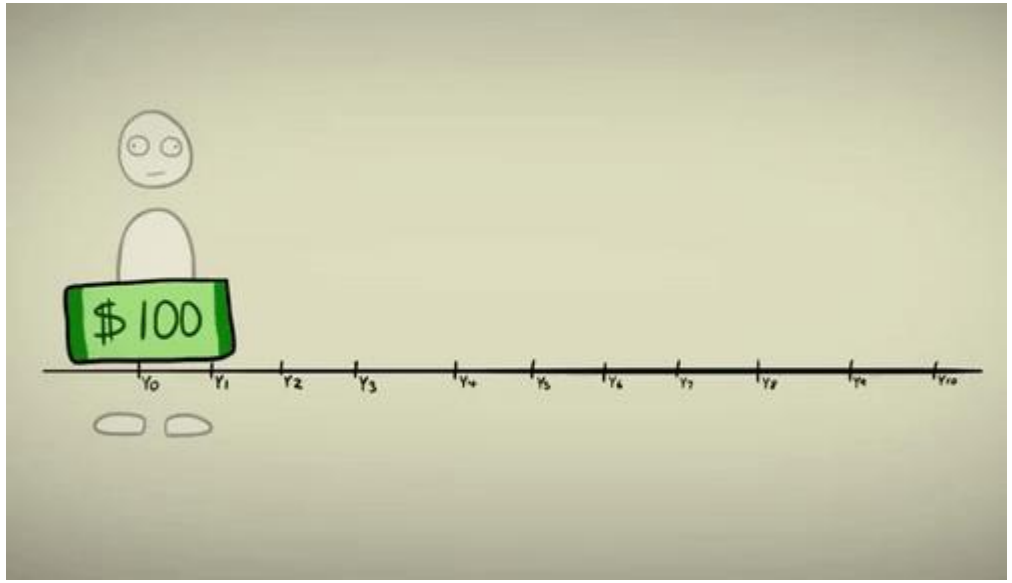
- The project cost under this plan is Rs.754.5 billion (at the time of service commencement).
- The per-kilometer cost of the project is estimated to be Rs.754.5 billion / 498.52 km = Rs.1.513 billion per kilometers.
- In the case of the vastly cheaper proposal, the project cost Rs.542.9 billion (at the time of service commencement).

Economic analysis

Summary of Economic Cost and Benefit Cash Flow

	EIRR	NPV	CBR
Route 1	18.7%	Rs. 360,250 million	1.98

Because the EIRR of the surveyed route will exceed the 12% opportunity cost of capital in India, this project was confirmed to be beneficial to the economy and society.



Financial Analysis

- **Separation of Superstructures and Substructures (Public Project)**
- The Project FIRR became 1.6%, which exceeded the interest rate shown in the Japanese ODA loan conditions table for low-income countries.
- In addition to yen loan, this approach can also use STEP.
- This will make the financing cost the lowest among the two cases, making it easy to implement the project.
- It is the ideal case but the concerned parties must share the risks.
- **Separation of Superstructures and Substructures (Superstructures: PPP, Substructures: Public Project)**
- For the superstructures, the Project FIRR (8.0%) is lower than the WACC (8.7%), making the approach not viable as a PPP project.
- To obtain project finance, the concerned parties to share the risks appropriately.
- The availability payment method shall be considered but the SPV must not bear any demand risk.
- The use of project finance will make the financing cost the highest among the two cases mentioned above.

Social considerations

- **Water use:**

Impacts to the wells/irrigations/rivers/reservoirs are assumed those locate along the HSR alignment.

impact due to new mountain tunnel is assumed.

Among above impacts, the impact due to new tunnel may remain.

- **Involuntary settlement:**

Before construction stage: Structures including residences, shops, factories, warehouses etc. must be displaced due to the HSR project.

- **Local economies:**

project affected persons (PAPs) will forced to change/lose their jobs.

the construction activity will create job opportunities to the local people.

to enhance the local economy significantly as well as to create job opportunities by inducing overseas railway related companies to establish new offices/factories along the HSR line.

- **Land use and utilization of local resources :**

Present land use, such as agriculture, grazing, manufacturing, commerce etc. will be affected due to the HSR project.

The HSR will require the minimum space compared with other ways of transportation (highway/airport) and effective urban/local development will be enhanced.

Problems in large city, such as urban transportation/drinking water/waste those arisen especially in Mumbai will be mitigated by relocating some of its function near the HSR station.

- **Social institutions:**

Many aboveground/underground utilities or schools/clinics etc. must be removed prior to start the construction activity.

infrastructures and facilities will be properly relocated prior to start the construction activities, therefore the impact will be small.

Furthermore, the HSR will shorten the trip hour greatly and enhance the movement of people easier.

THANK YOU