

2026

SILVER LINE- A REGIONAL MASS RAPID TRANSIT



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**“NOTHING IS MORE
POWERFUL THAN THE
IDEA WHOSE TIME
HAS COME”**

-VICTOR HUGO



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CORE CONCEPT

Objective is to provide a **sustainable, environment friendly, land use efficient, mass rapid public transport system** to wean away the people from predominantly Road mode of transport and empower the weaker section of the society.



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LEGAL AND INSTITUTIONAL FRAMEWORK

Rail based transport is a Centre subject allocated to Ministry Of Railways, under Railway Act.

However, rail based urban transport system is allocated Ministry of Urban Development with technical control of Ministry Of Railways, METRO RAIL ACT.

Apart from Metropolitan cities, the development of urban corridors i.e intercity connectivity or connectivity to the string of cities can also be termed as urban corridor and can be allowed under Metro Act

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LEGAL AND INSTITUTIONAL FRAMEWORK CONT.

Projects sanctioned under the Railway Act are generally on Broad Gauge, interoperable with Indian railway network and designed for mixed traffic.

The projects sanctioned under Metro Act are to be or purely commuter traffic (not competing with the railway freight traffic), can be stand alone, point to point with friendly transfer of commuters at interchanges.

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FINANCIAL VIABILITY

The Rail based systems are capital intensive and therefore are not financially viable on the fare box and non fare box earnings alone. Analysis has to account for environmental costs, benefits accruing to the society and non user beneficiaries, replacement cost of the infrastructure at the end of concession period etc are accounted for.

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ROAD VS RAIL

Road is not an alternative to Rail based systems. Road is mainly patronised by the personal or interpersonal transport.

While Rail based systems are truly public transport system providing safety, speed and affordability.

It is empowerment to aged and young people, working class, females and economically weaker sections of society



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WHAT SPEED IS HIGH SPEED?

In India people generally relate high speed with 350 kmph i.e Bullet train speed and 180 to 200 kmph as semi high speed. Selection of speed is highly techno-economic decision.

If objective is to wean away the people from road mode than 200 kmph is good. If it is to offer alternative to flight than 350 kmph

Difference in operating cost is also of that order



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ALIGNMENT ISSUES- VIADUCT OR AT GRADE

It is possible to design system upto 300 kmph at grade. Viaduct is preferred on several other considerations.

If alignment is on the centre of road, it has to be viaduct.

In poor soil or drainage conditions, viaduct is must.

If train operations is very intensive with limited maintenance window, high initial capital expenditure in viaduct is justified.

Russia operates 250 kmph high speed trains (SAPSAN) completely at-grade. But only in morning and evening Corridors.



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GREENFIELD VS SHARED WITH ROAD

Greenfield alignments give design freedom but are time consuming due to land acquisition and access road issues.

Alignments on the centre of road can be built quickly but impose severe limitations on station design, curvature and gradients
Also involve interface issues and critical obligatory spans.

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ECONOMIC VIABILITY ISSUES

If system is able gather average ridership of about 50,000 per day within 5 years of operation than system should considered viable.

Because than it should be able to pay for operating and maintenance costs **NOT** providing for depreciation.

Within 8 to 10 years ridership will increase to pay for depreciation also. Capital cost including debt servicing should be treated as sunk cost because economic returns are much more

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**THANK
YOU**