

H-24032/04/2024-P&P (Computer No. 237831)
Government of India
Ministry of Road Transport & Highways
Transport Bhawan, 1, Parliament Street, New Delhi-110001

Date: 5th June, 2025

CIRCULAR

To

1. The Chief Secretaries of all the State Governments/ UTs.
2. The Principal Secretaries/ Secretaries of all States/ UTs Public Works Department/ Road Construction Department/ Highways Department (dealing with National Highways and other centrally sponsored schemes).
3. The Chairman, National Highways Authority of India, G-5 & 6, Sector-10, Dwarka, New Delhi-110 075.
4. The Managing Director, NHIDCL, World Trade Centre, New Delhi-110029.
5. The Director General (Border Roads), Seema Sadak Bhawan, Ring Road, New Delhi- 110 010.
6. All Engineers-in-Chief and Chief Engineers of Public Works Department of States/ UTs/ Road Construction Department/ Highways Departments (dealing with National Highways and other centrally sponsored schemes).
7. The Secretary General, Indian Roads Congress
8. The Director, IAHE, Noida, UP
9. All CE-ROs, ROs and ELOs of the Ministry.

Subject: Mechanism for Monitoring Outcome Parameters of all capacity-augmentation projects, including under Bharatmala Pariyojana-I ~reg.

Madam/Sir,

As per the CCEA approval for Bharatmala Pariyojana, the outcome parameters for the corridors/projects being implemented under Bharatmala Pariyojana i.e., reduction in time of travel, fuel efficiency, expenditure reduction, comfort in riding, user satisfaction etc. have to be finalized. This is in keeping with the objective of ensuring that public investments yield measurable socio-economic benefits.

2. Accordingly, the mechanism for monitoring outcome parameters of all capacity-augmentation projects, including the projects sanctioned under Bharatmala Pariyojana I, to be measured periodically at different intervals has been finalized to measure the impact area as highlighted below:

Sr. No.	Impact Area	Measurement
1	Economic Impact	Measurement of both direct and indirect impact of projects/ program on macro-economic indicators

2	Logistics Impact	Measurement of improvement in operational efficiencies and connectivity through program, including reduction in distance/time of travel
3	Social Impact	Measurement of both direct and indirect impact of projects/ program on social metrics
4	Environmental Impact	Measurement of direct impact of projects/ program on environment, including improvement in fuel efficiency
5	Road Safety & User Experience	Measurement of improvement in road quality and riding experience, including reduction in accidents and improvement in riding quality and user satisfaction

3. The outcome parameters to measure the impact areas at Project/Programme level are as under:

Sr. No.	Impact Area	Parameter	Definition	Metric level
1	Economic Impact	Economic Nodes Connectivity	Number of economic nodes connected within 25 kms of the project	Project / Programme level
2		Access to large market/ Mandis	Reduction in time to reach large market/ Mandis by population within 10 km of the highways within the program	Programme level
3		Increase in GDP	Increase in District GDP	Programme level
4		Increase in consumer spending	Increase in sales of vehicles (2W/4W) and increase in sales of white goods	Programme level
5	Logistics Impact	Distance Reduction	Reduction in travel distance between start and end points after construction of highway	Project / Programme level
6		Time Reduction	Reduction in travel time between start and end points after construction of highway	Project / Programme level
7		Logistics Cost Reduction %	Reduction in logistics cost, as a share of India's GDP	Programme level
8		Access to Airport/Major Railway Station	Reduction in time to reach Airport/Railway Station by population within 10 km of the highways within the program	Programme level
9	Social Impact	Social Nodes Connectivity	Number of social nodes (Tribal, Aspirational and LWE affected districts) connected within 25 kms of the project	Project / Programme level
10		Access to Higher Education/Health Service	Reduction in time to reach college / hospital by population within 10 km of the highways within the program	Programme level
11		Household Income	Increase in district household income	Programme level

12		Access to Employment	Reduction in time to reach workplace from house by population within 10 km of the highways within the program	Programme level
13	Environmental Impact	Fuel Efficiency	Reduction in fuel consumption due to distance reduction and improved road quality	Project / Programme level
14		Reduction in CO2 emissions	Reduction in CO2 emissions due to the reduction in fuel consumption after construction of highway	Project / Programme level
15	Road Safety & User Experience	No. of Accidents	Increase/decrease in number of accidents post construction of highway	Project / Programme level
16		Riding Quality	"Good" if Roughness Index within limit and "Needs Maintenance" if out of limit bounds	Project / Programme level
17		User Comfort	User experience due to improved riding quality and facilities	Programme level

4. The details for computation of the parameters stated above are enclosed in Annexure-A.

5. Chairman, NHAI, MD, NHIDCL and all ROs in the Ministry (for the respective stretch entrusted to them) shall be responsible for computation and compilation of the above data and it shall be submitted to Ministry (Monitoring Zone) at regular interval for evaluation of the outcome parameters at the end of the financial year.

6. It is requested that the contents of the circular may be brought into the notice of all concerned for immediate needful compliance.

7. This issues with the approval of Competent Authority.

Yours sincerely,

**Digitally signed by
MAYANK TYAGI**

**Date: 05-06-2025
15:41:15**

(Mayank Tyagi)

Deputy Secretary to Government of India

Copy to:

1. All CEs in the Ministry of Road Transport & Highways
2. All ROs of the Ministry of Road Transport & Highways
3. The Secretary General, Indian Roads Congress
4. Technical circular file of S&R (P&B) Section
5. NIC-for uploading on Ministry's website under "What's new"

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ADG(SC)/ADG(BKS)/ADG(RS)/ADG(OPS)
6. Sr. PPS/ PPS to JS(Highways)/JS(EAP)/JS(Logistics).

Annexure-A

S.No.	Impact Area	Parameter	Definition	Calculation Formula	Data Source(s)	Metric level	Measurement Frequency	Entity responsible for measurement
1	Economic Impact	Economic Nodes Connectivity	Number of economic nodes connected within 25 kms of the project/corridor	<p>Economic nodes connectivity = $A - B$, where,</p> <p>A = Total number of nodes connected through project/corridor</p> <p>B = Number of nodes out of (A) with NH connectivity before construction of project/corridor</p>	DPR, PM Gati Shakti National Master Plan (NMP) Portal	Project / Program level (sample corridors to be selected by Authority)	One time, post finalization of alignment	DPR consultant
2		Access to large market/ Mandis	Reduction in time to reach large market/ Mandis by population within 10 km of the projects within the program	<p>Reduction = $1 - A/B$, where:</p> <p>A = Time taken to travel to mandi (hrs) after completion of program</p> <p>B = Time taken to travel to mandi (hrs) before start of program</p>	Interviews with farmers by independent agency	Program level (sample corridors to be selected by Authority)	One time, post completion of the program	Third-party independent agency
3		Increase in GDP	Increase in District GDP	<p>Increase in GDP = $A/B - 1$, where,</p> <p>A = GDP in districts after completion of program (Rs. Cr.)</p> <p>A = GDP in districts before start of program (Rs. Cr.)</p>	District-level GDP from verified database (e.g., Centre for Monitoring Indian Economy - CMIE)	Program level (sample corridors to be selected by Authority)	One time, post 3 years of the completion of the program	Third-party independent agency

S.No.	Impact Area	Parameter	Definition	Calculation Formula	Data Source(s)	Metric level	Measurement Frequency	Entity responsible for measurement
4		Increase in consumer spending	Increase in sales of vehicles (2W/4W) / white goods	<p>Increase in sales = $A/B - 1$, where,</p> <p>A = Total No. of 2W/4W/white goods purchased by families after completion of program</p> <p>B = Total No. of 2W/4W/white goods purchased by families before start of program</p>	Vehicle registration data from RTOs, along with interviews with district residents by independent agency	Program level (sample corridors to be selected by Authority)	One time, post 3 years of the completion of the program	Third-party independent agency
5	Logistics Impact	Distance Reduction	Reduction in travel distance between start and end points after construction of project/corridor	<p>Reduction = $1 - A/B$, where,</p> <p>A = Distance after construction of project/corridor (kms)</p> <p>B = Distance before construction of project/corridor (kms)</p>	DPR	Project / Program level (sample corridors to be selected by Authority)	One time, post completion of the project / program	DPR consultant
6		Time Reduction	Reduction in travel time between start and end points after construction of project/corridor	<p>Reduction = $1 - A/B$, where:</p> <p>A = Time taken to travel after construction of project/corridor (hrs)</p> <p>B = Time taken to travel before construction of project/corridor (hrs)</p>	DPR and interviews with commuters by independent agency	Project / Program level (sample corridors to be selected by Authority)	To be measured 1 year after start of operations, and annually thereafter	DPR consultant
7		Logistics Cost Reduction %	Reduction in logistics cost after construction of project/corridor for logistics service	<p>Reduction = $1 - A/B$, where:</p> <p>A = Logistics cost incurred by logistics service providers after</p>	Interviews with logistics service providers by	Program level (sample corridors to be	To be measured 1 year after start of operations,	Third-party independent agency

S.No.	Impact Area	Parameter	Definition	Calculation Formula	Data Source(s)	Metric level	Measurement Frequency	Entity responsible for measurement
			providers using the project/corridor	construction of project/corridor (Rs.) B = Logistics cost incurred by logistics service providers before construction of project/corridor (Rs.)	independent agency	selected by Authority)	and annually thereafter	
8		Access to Airport/ Major Railway Station	Reduction in time to reach Airport/Railway Station by population within 10 km of the project/corridors within the program	Reduction = 1 - A/B, where: A = Time taken to travel to airport/railway station after completion of program B = Time taken to travel to airport/railway station before start of program	Interviews with district residents by independent agency	Program level (sample corridors to be selected by Authority)	One time, post completion of the project / program	Third-party independent agency
9	Social Impact	Social Nodes Connectivity	Number of social nodes (Tribal, Aspirational and LWE affected districts) connected within 25 kms of the project/corridor	Social nodes connectivity = A – B, where, A = Total number of nodes connected through project/corridor B = Number of nodes out of (A) with NH connectivity before construction of project/corridor	DPR, PM Gati Shakti National Master Plan (NMP) Portal	Project / Program level (sample corridors to be selected by Authority)	One time, post finalization of alignment	DPR consultant

S.No.	Impact Area	Parameter	Definition	Calculation Formula	Data Source(s)	Metric level	Measurement Frequency	Entity responsible for measurement
10		Access to Higher Education/Health Service	Reduction in time to reach college / hospital by population within 10 km of the project/corridors within the program	Reduction = $1 - A/B$, where, A = Time taken to travel to college/hospital (hrs) after completion of program B = Time taken to travel to college/hospital (hrs) before start of program	Interviews with district residents by independent agency	Program level (sample corridors to be selected by Authority)	One time, post completion of the program	Third-party independent agency
11		Household Income	Increase in district household income	Increase in income = $A/B - 1$, where, A = Average household income after completion of program (Rs.) B = Average household income before start of program (Rs.)	Interviews with district residents by independent agency	Program level (sample corridors to be selected by Authority)	One time, post 3 years of the completion of the program	Third-party independent agency
12		Access to Employment	Reduction in time to reach workplace from house by population within 10 km of the project/corridors within the program	Reduction = $1 - A/B$, where: A = Time taken to travel to workplace after completion of program B = Time taken to travel to workplace (hrs) before start of program	Interviews with district residents by independent agency	Program level (sample corridors to be selected by Authority)	One time, post completion of the program	Third-party independent agency
13	Environmental Impact	Fuel Efficiency	Reduction in fuel consumption due to distance reduction and improved road quality	Fuel efficiency = $1 - A/B$, where: A = Fuel consumption per km after construction of project/corridor (ml)	Interviews with highway commuters by independent agency	Project / Program level (sample corridors to be selected)	To be measured 1 year after start of operations, and	Third-party independent agency

S.No.	Impact Area	Parameter	Definition	Calculation Formula	Data Source(s)	Metric level	Measurement Frequency	Entity responsible for measurement
				B = Fuel consumption per km before construction of project/corridor (ml)		by Authority), by vehicle type	annually thereafter	
14		Reduction in CO2 emissions	Reduction in CO2 emissions due to the reduction in fuel consumption after construction of project/corridor	<p>CO2 Emissions reduction = (A) * (B) , where:</p> <p>A = Reduction (Savings) in Fuel Consumption before and after completion of project/corridor in energy terms (TJ)</p> <p>B = Emission Factor (kg/ TJ) – for converting fuel energy into CO2 emissions</p>	<p>A= To be measured by independent agency</p> <p>B = Emission factor by MoEFCC</p>	Project / Program level (sample corridors to be selected by Authority), by vehicle type	To be measured 1 year after start of operations, and annually thereafter	Third-party independent agency
15	Road Safety & User Experience	No. of Accidents	Increase/decrease in number of accidents post construction of project/corridors	<p>Increase/Decrease = A/B - 1, where,</p> <p>A = No. of accidents after construction of project/corridor (#)</p> <p>B = No. of accidents before construction of project/corridor (#)</p>	PD through Transport wing, MoRTH with inputs from Police administration	Project / Program level (sample corridors to be selected by Authority)	To be measured 1 year after start of operations, and annually thereafter	Transport Wing, MoRTH with inputs from Police administration as per existing mechanism
16		Riding Quality	"Good" if Roughness Index within limit and "Needs Maintenance" if out of limit bounds	<p>Riding Quality in Roughness Index =</p> <p>Good, if Index <2.2 m/km</p> <p>Acceptable, if Index <3 m/km</p> <p>Needs Maintenance if Index >3 m/km</p>	Roughness Index reported by AE/IE, captured in the NSV survey Monitoring & Reduction	Project / Program level (sample corridors to be selected by Authority)	6 monthly	IE/AE

S.No.	Impact Area	Parameter	Definition	Calculation Formula	Data Source(s)	Metric level	Measurement Frequency	Entity responsible for measurement
				Or As per existing Concession agreement	report within Data Lake Limit of Roughness Index as per MoRTH circular vide 10.04.2023			
17		User Comfort	User experience due to improved riding quality and facilities	Aggregate score of user survey capturing user satisfaction with: <ul style="list-style-type: none"> • riding experience • road congestion • quality of WSAs • road safety Scale of 1 to 3 to be used for measuring each component within the survey. Average of score to be measured across all components	Survey proposed to be conducted by independent agency for users of the project and its wayside amenities	Program level (sample corridors to be selected by Authority)	To be measured 1 year after start of operations, and annually thereafter	Third-party independent agency