No. RW/NH-33044/15/2021-S&R(P&B)
GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT & HIGHWAYS
(S&R(P&B) Section)
Transport Bhawan, 01, Parliament Street, New Delhi-110 001

Dated: 16th April, 2021

To,

1. The Chief Secretaries of all the State Governments/ UTs
2. The Principal Secretaries/ Secretaries of all States/ UTs Public Works Department dealing with National Highways, other centrally sponsored schemes.
3. All Engineers-in-Chief and Chief Engineers of Public Works Department of States/ UTs dealing with National Highways, other centrally sponsored schemes.
4. The Director General (Border Roads), Seema Sadak Bhawan, Ring Road, New Delhi - 110010.
5. The Managing Director, NHIDCL, PTI Building, New Delhi-110001
6. All CE-ROs, ROs and ELOs of the Ministry

Subject: - Highway Rating Criteria and Methodology with detailed SOP for un-divided carriageway upto 2-lane with paved shoulders on National Highway.

Madam/Sir,

NHAI has prepared Standard Operating Procedure (SOP) for rating of divided carriageway on National Highways (NHs) which has been issued vide its letter no. NHAI/HO/Highway Rating/2020 dt. 07.07.2020. The SOP prepared by NHAI is applicable for all executing agencies of the Ministry. On similar lines the SOP for rating of two lane NHs with undivided carriageway has now been finalized and is enclosed for your reference. The procedure and methodology have been prepared with an overview of the user's perspective/requirement on efficiency, safety and user facilities on un-divided Highways.

2. The basic unit of assessment of completed corridor shall be the Influence Length as defined in SOP. The rating of an entire corridor/project section shall be obtained by adding the weighed individual ratings of each Influence Length of the project/corridor. The ratings with its sub element so obtained can be used to prioritize the allocation of funds for improving different section of projects/corridor/stretch on different element of efficiency, safety and users services. This rating shall also help in performance appraisal of deployed concessionaire/contractor/maintenance agency. Based on Rating (Marks), following classification of the National Highway sections shall be done:

Rating (Marks)	80-100	60-80	40-60	< 40
Classification	Excellent	Very Good	Good	Poor

3. The data required for highway rating shall be partly collected using NSV and partly by Safety Consultant. Empanelment of Consultant for Safety Audit and NSV survey has been done. Rating and NSV survey task can therefore be taken up to achieve target set for Rating and safety Audit of National Highways.

Encl.: As above

Yours faithfully,

(Jagat Narayan)
Superintending Engineer - S&R (Roads)
For Director General (Road Development) & SS

Copy to:

1. The Secretary General, Indian Roads Congress
2. All CEs in the Ministry of Road Transport & Highways
3. Ministry of Defence, D (BR-I), B wing, 4th Floor, Sena Bhawan, New Delhi-110001.
4. Technical circular file of S&R (R) Section
5. NIC-for uploading on Ministry's website under "What's new"

Copy for kind information to:

1. Sr. PPS to Secretary (RT&H)
2. Sr. PPS to DG (RD) & SS
3. PPS to AS&FA
4. PS to all ADGs
5. PS to all JSs

Standard Operating Procedure (SOP) for Assessing and Ratingfor undivided carriageway upto 2-lane with paved shoulder on National Highways) based on:

A. Highway Efficiency (45 Marks)
B. Highway Safety (35 Marks)
C. User Services (20 Marks)

Standard Operating Procedure (SOP) for Highway Rating

This SOP shall be applicable to NHs upto 2-lane with paved shoulder carriageway on tolled as well as untolled NHs. The rating of the Influence Length* under each toll plaza shall be done twice in a year preferably in the month of October and April. The procedure for assessing each of the parameter for the Influence Length of the toll plaza is detailed in this SOP.

A. Highway Efficiency: Weightage 45 Marks

A. 1. Operating Speed (50% cars+50% Trucks) on main carriage way:

Weightage - 15Marks		
Full marks	Intermediate	Zero marks
>60kmph	0.5 marks deducted for every 1 kmph reduction in speed	<30kmph

Procedure for assessing the parameter-

(i) The data shall be collected in first and third week of October/November and the second week of April/May. The data shall be complied for all seven days of the week i.e. Monday to Sunday.

(ii) For each day, the data for at least 500 cars (or total no. of cars plying per day, whichever is lower) and 250 trucks and buses (or total no. of trucks and buses plying per day, whichever is lower) must be collected.

(iii) Data shall be collected during the peak period and lean period of each day and only through the dedicated FASTag lanes.

(iv) Data shall be collected everyday 4 times in 2 hours duration with 2 slots of peak hours and 2 slots of normal hours. The peak hours shall be determined from the available traffic survey of last year of the corresponding month.

(v) The RFID/FASTag transaction time of vehicles passing from the concerned toll plaza and the transaction time of the same RFID/FASTag passing from the immediately preceding/succeeding toll plaza shall be noted. Equal no. of samples/data points are to be taken in all the four time slots (select the other toll plaza based on the principle of maximum coverage of the Influence Length of the concerned toll plaza)

(vi) The difference in the times noted in point (v) above shall be taken as journey time for each vehicle.

(vii) The average delay at both the toll plaza (as calculated for A. 2.) shall be deducted from the journey time and taken as running time for each vehicle.

(viii) The average speed of each vehicle shall be calculated as distance between the concerned toll plaza and the other toll plaza taken for reference, divided by the running time. If time taken by a vehicle is 20% more than average speed for the corresponding category, it will be ignored.

(ix) The average operating speeds of all the observed trucks and cars shall be calculated separately.

(x) Final Avg Operating speed= 0.5*Avg Speed of trucks +0.5*Avg Speed of cars.

NOTE: On tolled NHs only RFID/FASTag vehicles are to be taken for sampling. However, on untolled sections of NHs, one day survey in any working day in October/November and April/May shall be conducted for continuous period of 24 hrs. Timing of each of the car/truck/bus will be noted at the beginning and end of the Influence Length to determine journey time of each vehicle.

* Influence Length for untolled NHs for rating purpose shall be taken as a stretch of NHs at 60km or smaller length depending upon position. Starting point of first Influence Length on a particular NH shall be taken as state border and end point shall be 60km from starting point in the direction of increasing chainage of that NH and successive Influence Length in similar manner.

A. 2. Delay at toll plaza:

Weightage - 2 Marks		
Full marks	Intermediate	Zero marks
<1 minute	0.2 marks deducted for every 12 second delay	>3 minutes

Note: Full marks shall be taken for untolled roads.

Procedure for assessing the parameter-

(i) The data should be collected in the first and third week of October and the second and fourth week of April. The data shall be complied for all seven days of the week i.e. Monday to Sunday.
(ii) For each day of data collection at least 500cars (or total no. of cars plying per day, whichever is lower) and 250trucks and buses (or total no. of trucks and buses plying per day, whichever is lower) must be covered.
(iii) Data shall be collected only during the peak period of each day and only through the dedicated FASTag lanes.
(iv) The peak period shall be taken as time between 1900 hrs to 2100 hrs and 2300 hrs to 0100 Hrs.
(v) In and Out survey at the toll plazas shall be done and the average delay be calculated.

A. 3. Access Control:

Weightage - 2 Marks		
Full marks	Intermediate	Zero marks
100%	on prorata basis	0%

Procedure for assessing the parameter-

(i) Total number of access in the Influence Length shall be counted including access to Private Properties and Commercial Properties along NHs.
(ii) The number of authorized access which is constructed as per the MoRTH norms shall be expressed as percentage of total no. of access.

A. 4(a). Availability of service road in Habitation Area:

Weightage - 1Marks		
Full marks	Intermediate	Zero marks
100%	0.01 marks deducted for every 1% decrease in service road availability	0%

Procedure for assessing the parameter-

(i) The length of actual section of habitation area as on date shall be recorded along the corridor as ideal value.
(ii) The length of service road actually provided in the habitation area section shall be measured and taken as actual value.
(iii) The actual value shall be expressed as a percentage of ideal value.
(iv) Habitation area may be taken as definition of built up area as per clause 1.19.2 of IRC:SP:73 or the built-up area as specified in Schedule-B of the contract/concession agreement of the project highway.

A. 4(b). Availability of divided 4-lane in Habitation Area:

Weightage - 1 Marks		
Full marks	Intermediate	Zero marks
100%	0.01 marks deducted for every 1% decrease in divided 4-lane availability	0%

Procedure for assessing the parameter-

(i) The length of actual section of habitation area as on date shall be recorded along the corridor as ideal value.
(ii) The length of divided 4-lane actually provided in the habitation area section shall be measured and taken as actual value.
(iii) The actual value shall be expressed as a percentage of ideal value.
(iv) Habitation area may be taken as definition of built up area as per clause 1.19.2 of IRC: SP: 73 or the built-up area as specified in Schedule-B of the contract/concession agreement of the project highway.

A. 5. Traffic volume/Capacity Ratio:

Weightage – 1 Marks		
Full marks	Intermediate	Zero marks
<=0.5	Prorata basis	>1.0

Procedure for assessing the parameter-

(i) The Annual Average Daily Traffic (AADT) for the current financial year collected from ATCC/IHMCL of the concerned toll plaza shall be taken as Volume of the Highway. Wherever there is no toll plaza or IHMCL data not available, data available from any other source shall be considered and in case of non-availability, manual collection of data shall be done.
(ii) The designed capacity of the Highway shall be taken as below:

Nature of Terrain	Design Service Volume in PCUs per day		
	2-lane with paved shoulder	2-lane	Upto intermediate lane
Plain	12,500	10,000	8,000
Rolling	10,000	8,500	5,000
Mountainous & Steep	8,000	6,000	3,000

(iii) The Ratio of Actual Traffic Volume/Design Service Volume given above in the table shall be calculated and accordingly marks shall be given.

A. 6. Pavement quality Rating Value:

Weightage – 10 Marks		
Full marks	Intermediate	Zero marks
2.1-3.0	1.1-2.0 (5marks)	1.0

Procedure for assessing the parameter-

(i) Various defects as per table given below are to be detected using Network Survey vehicle.
(ii) The Pavement rating value shall be arrived at by multiplying the corresponding scores of each defect with their respective weights. (Guidance shall be taken from IRC: 82)

(iii) The nature of defects and their corresponding marks and weights shall be taken as per the following table:

Defects	Range of Distress			Weight over a scale of 5.75
	I	II	III	
Cracking (in %)	>10	5 to 10	<5	1
Ravelling (in %)	>10	1 to 10	<1	0.75
Potholes (in %)	>1	0.1 to 1	<0.1	0.5
Shoving (in %)	>1	0.1 to 1	<0.1	1
Patching (in %)	>10	1 to 10	<1	0.75
Settlement & Depression (in %)	>5	1 to 5	<1	0.75
Rut Depth (in mm) using 3 m straight edge	>10	5 to 10	<5	1
Marks	1.0	1.1-2.0	2.1-3.0	
For intermediate value of distress, the marks shall be given as per linear distribution. For e.g. For patching having value of 7.5%, then weighted marks for patching shall be = {2- (2-1.1)/(10-1)*(7.5-1)}*(0.75/5.75) =0.176(higher the distress lower the marks)				

A. 7. Uniformity of carriageway width (road with structure):

Weightage – 3 Marks		
Full marks	Intermediate	Zero mark
width of carriageway in all structures > width of corresponding approach road	Prorata basis	width of carriageway of 10 or more structures < width of corresponding approach road

Procedure for assessing the parameter-

(i) All the sections where the main carriageway transforms into a structure (Bridges, Grade Separators and Culverts) shall be observed.

(ii) If any section where the width of the carriageway of 10 or more bridges or structures is less than width of carriageway of approach road then zero mark shall be given and for intermediate cases marks will be awarded on prorata basis.

A. 8. Illumination in Habitation Area:

Weightage – 1 Marks		
Full marks	Intermediate	Zero marks
100%	0.01marks deducted for every 1% decrease in illumination availability	0%

Procedure for assessing the parameter-

(i) Habitation area may be taken as definition of built up area as per clause 1.19.2 of IRC:SP:73or the built-up area as specified in Schedule-B of the contract/concession agreement of the project highway.

(ii) All the locations such as built-up section areas, toll plaza areas, truck lay byes, rest areas, bus bay& bus shelter locations, grade separated structures, interchanges, flyovers, underpasses (vehicular & pedestrian), overpasses and any other locations specified in the contract/ concession agreements read in conjugation with IRC: SP:73 shall be identified as locations ideally to be illuminated as per desired lux level and taken as Ideal Value.

(iii) The actual number of locations with desired illumination shall be observed and taken as actual value.

(iv) Desired illumination shall mean luminous intensity and coverage as per the clause 12.4 of IRC SP:73.

A. 9. Percentage of substandard signage:

Weightage – 3 Marks		
Full marks	Intermediate	Zero marks
0%	0.03 marks deducted for every 1% increase in improper signage	100%

Procedure for assessing the parameter-

(i) All locations where road signages are supposed to be installed identified as per IRC: 67 and total number of such locations be taken as ideal value.
(ii) The number of proper road signages be identified and taken as actual value.
(iii) The actual value shall be expressed as a percentage of the ideal value.
(iv) The percentage of improper road signages shall be equal to 100% minus actual value percentage.
(v) Proper road signage implies complying of all parameters such as retro-reflectivity, colour, dimensions, letter size, supporting structure, illumination, damage and location as per implied purpose of that particular signage. Any non-compliance shall render the particular signage as improper/sub-standard.

A. 10. Percentage of substandard markings:

Weightage – 2 Marks		
Full marks	Intermediate	Zero marks
0%	0.02marks deducted for every 1% increase in improper marking	100%

Procedure for assessing the parameter-

(i) The lengths where road marking are supposed to be installed are be identified as per IRC: 35 and total length of such locations be taken as ideal value.
(ii) The length of proper road marking be identified and taken as actual value.
(iii) The actual value shall be expressed as a percentage of the ideal value.
(iv) The percentage of improper road markings shall be equal to 100% minus actual value percentage.
(v) Road markings include carriageway way marking and object marking and proper road marking implies, colour, retro-reflectivity, wear and damage with location as per implied purpose of that particular marking.

A. 11. Functionality of drains and drainage on main carriageway:

Weightage – 2Marks		
Full marks	Intermediate	Zero marks
100%	0.02 marks deducted for every 1% decrease in functionality	0%

Procedure for assessing the parameter-

(i) Visual inspection shall be carried out to understand the physical condition and cleanliness of the drains in the built-up areas and other important site specific locations

(ii) Observations shall be made at minimum 5 locations spread at maximum 200m spacing within each section of drain for each built-up area/important location and seen for any breakage in the liningand blockage of the drain.
(iii) Total number of observation made along the Influence Length shall be taken as ideal value and total number of observations where the drains are actually functional be recorded as actual value.
(iv) The actual value shall be expressed as percentage of the ideal value.

A. 12. Functionality and appearance of Slope Projection:

Weightage – 0.5 Marks		
Full marks	Intermediate	Zero marks
100%	0.005 marks deducted for every 1% decrease in normal slope	0%

Procedure for assessing the parameter-

(i) Embankments shall be examined for randomly chosen 1m in every 100m length of the embankment. Video recording shall be carried out along with the visual observation of the panel/ with network survey vehicle (NSV).
(ii) Inspection with NSV shall be conducted to determine the condition of the embankments and must be conducted on a sampling basis.
(iii) Side Slope within 7.5% of the prescribed limit, good embankment protection measures at all slopes and no rain cuts shall be taken as normal slope.
(iv) Total number of observation made shall be taken as ideal value and the number of observations recorded as Normal slope shall be taken as actual value.
(v) The actual value shall be expressed as percentage of the ideal value.

A. 13. Functionality and adequacy of structures: Major/Minor bridges, guide bunds, river training structures etc. (1%):

Weightage – 1 Marks		
Full marks	Intermediate	Zero marks
100%	0.01 marks deducted for every 1% decrease in functionality	0%

Procedure for assessing the parameter-

The following components of the structures but not limited to, shall be assessed:

(i) Expansion joints on a structure: riding quality over the joints should be smooth and the joint sealant should be in good condition with no water leakage.
(ii) Approach road, deck slab, and culverts: there should be no visible damage, no spalling and cracks on the concrete surface, no overtopping and sufficient freeboard for the cross drainage structures.
(iii) Aprons, guide banks, pitching works: There should not be more than 25% visible damage on the apron, guide banks and pitching works.
(iv) Safety/crash barriers along structure: the road side barriers and median barriers shall be placed along the grade separated structures with parapets, railings, boulder nets etc. wherever required.
(v) The total length of structures (bridge/culverts/river training/ works) shall be added and taken as ideal functional length.
(vi) The sections of structures conforming to all the above (i)-(iv) points shall be taken as good length.
(vii) The total of all the good lengths must be added and taken as actual functional length.
(viii) The actual functional length shall be expressed as percentage of ideal functional length.

A. 14. Existing utilities laid as per MORTH norms:

Weightage – 0.5 Marks		
Full marks	Intermediate	Zero marks
100%	0.005marks deducted for every 1% decrease in utilities laid as per MoRTH guidelines	0%

Procedure for assessing the parameter-

(i) Utilities laid along /across the corridor shall be identified in length and taken as ideal value.
(ii) Length of these utilities laid as per MoRTH guidelines/NHAI extant circulars for laying of utilities shall be taken as actual value.
(iii) The MoRTH circular No. RW/NH-33044/29/2015-S&R(R) dated 22.11.2016 to be followed in this regard.
(iv) The utilities along the highway must be laid at the edge of ROW& 0.6 m below the ground level, not interfering with maintenance and Safety of highway.
(v) The Crossings utilities shall not be too near the existing structures on the National Highway, the minimum distance being 15 metre & lines shall cross the National Highway preferably on a linenormal to it or as nearly as practicable having sufficient vertical clearance of more than equal to 5.5 m.
(vi) The actual value with deviation from standards shall be expressed as percentage of ideal value.

B. Highway Safety: Weightage 35 Marks

B. 1. Accidents per km per annum:

Weightage – 4 Marks		
Full marks	Intermediate	Zero marks
0	Prorata basis	>=0.5

Procedure for assessing the parameter-

(i) The data for the latest calendar year available with Road Safety zone or Transport Research Wing (TRW) or data collected by contractor/concessionaire shall be used to note the per km accident on the Influence Length of the toll plaza.

B. 2. Accident Severity Index (Fatalities per 100 crash):

Weightage – 4 Marks		
Full marks	Intermediate/half marks	Zero marks
<18.53	18.53-37.07	>37.07

(The ranges for allotting marks for this parameter have been defined through iterative process and data collection by the consultants appointed for corridor assessment by NHAI)

Procedure for assessing the parameter-

(i) The data for the latest financial year available with Road Safety zone or TRW or data collected by contractor/concessionaire shall be used to note the fatalities per crash on the Influence Length of the toll plaza.

(ii) In case the number of crashes in the Influence Length are less than 100 for a particular year, the available, value may be linearly extrapolated for atleast 100 crashes from the latest available data.
(iii) The value so obtained from the data shall be compared with the ranges tabulated above.

B. 3. Ambulance Response Time:

Weightage – 3Marks		
Full marks	Intermediate/half marks	Zero marks
<15 min	15-30 min (1.5marks)	>30 min

Procedure for assessing the parameter-

(i) Ambulance response time shall be taken from the time of incident detection vide toll plaza helpline number/directly through road users or through any other means upto the time the ambulance reaches the incident location.
(ii) Data shall be taken from incident management logs maintained at the toll plaza shall be observed.
(iii) Avg. of last 6 month history of incident reports are to be seen.
(iv) If no incident occurred then timings of mock drills conducted shall be used for assessment.

B. 4. Incident response time:

Weightage – 2 Marks		
Full marks	Intermediate/half marks	Zero marks
<15 min	15-30 min (1marks)	>30 min

Procedure for assessing the parameter-

(i) The Highway Surveillance Vehicles (HSV)/Patrol Vehicles are generally the first responder on the scene of any incident and therefore its response time shall be taken as the incident response time.
(ii) HSV/Patrol Vehicles response shall start from the time of incident detection and end at the time the HSV/patrol vehicles reaches the incident location.
(iii) Data shall be taken from incident management logs maintained at the toll plaza shall be observed.
(iv) Avg. of last 6 month history of incident reports are to be seen.
(v) If no incident occurred then timings of mock drills conducted shall be used for assessment.

B. 5. Roadway clearance time after accident:

Weightage – 2 Marks		
Full marks	Intermediate/half marks	Zero marks
<45 min	45-90 min (1 marks)	>90 min

Procedure for assessing the parameter-

(i) The roadway clearance time shall start from the moment the accident victims have been extricated from their vehicles or the time of incident detection via HSV/Road User or through any other means, whichever is earlier and end when the debris or the damaged vehicle is steered clear of the main carriageway and the normal flow of traffic resumes on the highway.
(ii) In case, the incident is only regarding falling of debris/tree/poles etc. on the highway without any accident with the road users, the roadway clearance time shall start or the time of incident detection via HSV/Road User or through any other means and end when the debris/tree/pole is steered clear of the main carriageway and the normal flow of traffic resumes on the highway.
(iii) Data shall be taken from incident management logs maintained at the toll plaza shall be observed.
(iv) Avg. of last 6 month history of incident reports are to be seen.

(v) If no incident occurred then timings of response time of cranes in mock drills conducted shall be used for assessment.

B. 6. Adequacy of Structures: Provision of grade separators at NH/SH/MDR Marks:

Weightage – 2Marks		
Full marks	Intermediate	Zero marks
100%	0.02marks deducted for every 1% decrease in grade separators	0%

Procedure for assessing the parameter-

(i) Total No. of NH/SH/MDR junctions be identified and taken as ideal value.
(ii) All the junctions with grade separators be recorded and taken as actual value.
(iii) The actual value shall be expressed as percentage of ideal value.

B. 7. Number of at grade junction:

Weightage – 1Marks		
Full marks	Intermediate	Zero marks
100%	on prorata basis	0%

Procedure for assessing the parameter-

(i) Total No. of at grade junctions with NH/SH/MDR/VR/ODR should be recorded.
(ii) The no. of at grade junction constructed as per MoRTH/IRC norms shall be expressed as percentage of total no. of at grade junction.

B. 8. Footpath and railing in habitation area:

Weightage – 1 Marks		
Full marks	Intermediate	Zero marks
100%	0.01 marks deducted for every 1% decrease in footpath and railings	0%

Procedure for assessing the parameter-

(i) Habitation area may be taken as definition of built up area as per clause 1.19.2 of IRC:SP:73 or the built-up area as specified in Schedule-B of the contract/concession agreement of the project highway.
(ii) The length of footpath constructed along the built-up area is to be taken as actual value.
(iii) The total length of section in built-up area shall be calculated and taken as ideal value.
(iv) The footpath length without railing/crash barrier is not to be considered.
(v) The actual value shall be expressed as percentage of the ideal value.

B. 9. Functionality of structures for cross movement in habitation area:

Weightage – 2 Marks		
Full marks	Intermediate	Zero marks
100%	0.02 marks decreased for every 1% decrease in adequate cross movement structures	0%

Procedure for assessing the parameter-

(i) Presence of at least one adequate cross-movement structure with proper connectivity with service road/ footpath etc. (FOB/VUP/PUP/LVUP/VOP/CUP) in built-up area shall be judged.
(ii) No. of adequate cross-movement structure shall be calculated and taken as actual value.

(iii) The total no. (not length) of built-up sections along the stretches be taken as ideal value.

(iv) The adequacy of the location of the structure shall be seen as per local site conditions such as connectivity of service road with the cross movement structure, type of the structure as per local utility, location as per clause 2.13.2 of IRC: SP:73 and lateral and vertical clearance as per clause 2.11 of IRC: SP:73.

B. 10. Percentage of missing/damaged crash barriers:

Weightage – 3 Marks		
Full marks	Intermediate	Zero marks
0%	0.03 marks deducted for every 1% increase in missing/damaged crash barriers	100%

Procedure for assessing the parameter-

(i) Placement of barrier and specifications shall be in accordance with IRC: 119and Clause 811 of Manual of Specifications and Standards.

(ii) Tentative locations where generally Road side barriers are to be provided are Embankments with high fills and steep slopes, Near road side obstacles, Bridge rail ends, At specific locations for ensuring safety of bystanders, pedestrians and cyclists, Dangerous Ditches, Steep Grades, Accident Black Spots, Hill Roads, Grade Separated Structures.

(iii) No. of locations where crash barriers are required shall be identified as per IRC: SP:83 and IRC: 119 and shall be taken as ideal value.

(iv) The number of locations with missing/damaged/ improperly placed crash barriers shall be identified and taken as actual value.

(v) The actual value shall be expressed as percentage of ideal value.

B. 11. Condition of earthen shoulders:

Weightage – 1.5 Marks		
Full marks	Intermediate	Zero marks
0%	0.015 marks deducted for every 1% increase in unacceptable earthen shoulder	100%

Procedure for assessing the parameter-

(i) Inspection with NSV shall be conducted to determine the condition of the shoulders and must be conducted on a sampling basis.

(ii) Shoulder condition shall be observed at a randomly chosen 1m in every 100m length of the earthen Shoulder. Video recording shall be carried out along with the observation of the panel.

(iii) Shoulders with defects such as edge drop (not more than 20 mm), unevenness & vegetation growth shall be considered as unacceptable.

(iv) The length of unacceptable observed earthen shoulders shall be calculated and taken as actual value.

(v) The total length observed be taken as ideal value.

(vi) The actual length shall be expressed as percentage of ideal value.

B. 12. Facilities disturbing traffic: illegal Bus stops/illegal parking:

Weightage – 2 Marks		
Full marks	Intermediate/half marks	Zero marks
0	1 to 2 (1 marks)	more than 2

Procedure for assessing the parameter-

No. of obstructions disturbing traffic such as illegal bus stops/taxi stands/auto stands etc. to be identified on the Influence Length (LHS/RHS).

B. 13. Extra Widening at horizontal curves

Weightage – 2 Marks		
Full marks	Intermediate	Zero marks
100%	Prorata basis	0%

Procedure for assessing the parameter-

(i) Extra Width of Pavement at Horizontal Curve as per Table 8.4 of IRC:86-2018/Clause 6 of IRC:38-1988:

S.No.	Carriageway Width	Radius of Curve (m)					
		Upto 20	21 to 40	41 to 60	61 to 100	101 to 300	Above 300
		Extra Width (m)					
1.	Two lane	1.5	1.5	1.2	0.9	0.6	Nil
2.	Single lane	0.9	0.6	0.6	Nil	Nil	Nil

(i) Actual extra widening provided shall be expressed as percentage of the design value of Extra width as per table above for each horizontal curve in Influence Length.

(ii) The arithmetical average of the percentage calculated as above for all horizontal curves in the stretch of Highway under consideration will be used for weightage.

B.14. Sight Distance at horizontal & vertical curves

Weightage – 2.5 Marks		
Full marks	Intermediate	Zero marks
>ISD in all horizontal and vertical curves	Prorata basis	<SSD in any horizontal or vertical curves

Procedure for assessing the parameter-

(i) Actual sight distance provided shall be expressed as percentage of the design value of ISD for each horizontal curve in Influence Length.

(ii) The arithmetical average of the percentage calculated as above for all horizontal curves in the stretch of Highway under consideration will be used for weightage.

B.15. Deficient horizontal curves

Weightage – 2 Marks		
Full marks	Intermediate	Zero marks
Radius of all curves as per desirable minimum radius as per IRC: SP: 73	Prorata basis (w.r.t. Absolute Minimum Radius and desirable minimum radius)	Below Absolute Minimum Radius in at least 50% of the horizontal curves

Procedure for assessing the parameter-

(i) Actual radius provided shall be expressed as percentage of the desirable minimum radius as per IRC: SP: 73 for each horizontal curve in Influence Length.
(ii) The arithmetical average of the percentage calculated as above for all horizontal curves in the stretch of Highway under consideration will be used for weightage.

B.16. Raised Pavement Marker/delineator/chevron sign at horizontal curves:

Weightage - 1 Marks		
Full marks	Intermediate	Zero marks
100%	On prorata basis	0%

Procedure for assessing the parameter-

(i) Total length of horizontal curve should be recorded.
(ii) The length of horizontal curve where Raised Pavement Marker/delineator/chevron sign are provided shall be expressed as percentage of total length of horizontal curve.

C. User Services: Weightage 20 Marks

C. 1. Percentage Length of avenue plantation:

Weightage – 3 Marks		
Full marks	Intermediate	Zero marks
100%	0.03 marks deducted for every 1% decrease in plantation numbers	0%

Procedure for assessing the parameter-

(i) The total no. of 499 trees in avenue plantation per km in two rows shall be taken as ideal value for avenue plantation for two lane highways. (333 trees in first row, 166 trees in second row).
(ii) Avenue plantation is to be considered only in those areas where ROW is enough to accommodate the same.
(iii) The total no. of trees planted as the avenue plantation divided by the length (in km) available for avenue plantation along the highway shall be taken as actual value. Only healthy/unwilted/maintained trees/plants condition to be considered.
(iv) The actual value shall be expressed as percentage of the ideal value.

C. 2. Cleanliness along Highways:

Weightage – 2Marks		
Full marks	Intermediate/half marks	Zero marks
Good	Fair (1 mark)	Poor

Procedure for assessing the parameter-

ROW and project facilities to be observed for cleanliness with regard to dumping of garbage, condition of paint on the structures, open sewage drains near the highway that influence the sense of smell of road users. Actual length with bad cleanliness shall be rated with respect to total length.

C. 3. Functionality of Wayside amenities:

Weightage – 1Marks	
Full marks	Zero marks
Yes	No

Procedure for assessing the parameter-

(i) At least one operational and standardised wayside amenities (WSA) along the corridor either privately owned or Govt. owned should be present on the Influence Length. Dhaba with proper access road, having facility of clean and hygienic environment and toilet (separate for men and women) shall also be considered as Way Side Amenities. Similarly, Retail Outlets with separate toilets for men, women & Divyang maintained in hygienic condition, provision of convenience store and with acceleration and deceleration lane shall be considered as WSA for rating purpose.

(ii) The facilities present at each WSA be inventoried and classified as Truckers/Passengers/Comprehensive.

(iii) Standard WSA include at least the following facilities: Clean Toilets, drinking water, ample paved parking, Eating facility, proper illumination, access permission and security personnel to guard the premises.

C. 4. Functioning of Toilet & availability of drinking water at Toll Plaza:

Weightage – 1Marks		
Full marks	Intermediate/half marks	Zero marks
All the toilets are Clean and drinking water available	Either only toilets are Clean or only clean drinking water available	Neither toilets are Clean nor clean drinking water available

Procedure for assessing the parameter-

(i) All toilets and water ATM near the concerned toll plaza should be inspected for cleanliness and water availability.

(ii) The toilets should be assessed for smell, clean W/C and urinals, availability of toiletries and water.

(iii) The water ATM should be assessed for availability of potable water.

(iv) Even if a single toilet block is unclean or locked, the same shall be treated as unavailability of clean toilets.

Note: Full marks shall be taken for untolled roads.

C. 5. Hindrance free from speed breaker:

Weightage – 2Marks		
Full marks	Intermediate	Zero marks
0	Prorata basis (from 0 to 6)	>6

Procedure for assessing the parameter-

The total no. of speed breakers be identified along the Influence Length.

C. 6. Hindrance free from traffic barrier:

Weightage – 1 Marks		
Full marks	Intermediate/half marks	Zero marks
0	1 (0.5 marks)	>1

Procedure for assessing the parameter-

The no. of traffic barriers either police check posts or forest check posts etc, shall be recorded within the Influence Length of the toll plaza.

C. 7. Availability of motor repair workshop:

Weightage – 1 Marks		
Full marks	Intermediate/half marks	Zero marks
Yes	-	No

Procedure for assessing the parameter-

(i) Availability of a motor repair shop within legal access permission shall be observed within the Influence Length of the toll plaza.
(ii) The motor repair, even if part of a rest area complex or a comprehensive wayside amenity shall be considered if within the Influence Length of the toll plaza.

C. 8. Encroachment and illegal hoardings:

Weightage – 4Marks		
Full marks	Intermediate	Zero marks
0	0 - 0.035% (on prorata basis)	>0.035%

Procedure for assessing the parameter-

(i) Area under encroachment and area of illegal hoarding be calculated and taken as actual value in SQM.
(ii) The total area of ROW in SQM be identified and taken as ideal value.

C. 9. Noise Quality Index:

Weightage – 1 Marks		
Full marks	Intermediate/half marks	Zero marks
<65dB	65-75 dB (0.50 mark)	>75dB

Procedure for assessing the parameter-

(i) Monitoring stations near built up areas to be set up for measurement and CPCB guidelines be used for any assistance.
(ii) Average sound intensity across the corridor be calculated and taken as actual value.

C. 10. Satisfaction Index:

Weightage – 4 Marks		
Full marks	Intermediate	Zero marks
100%	0.04 marks be deducted for every 1% decrease in average percentage marks from all the surveys	0%

Procedure for assessing the parameter-

(i) 50 surveys per day from Wayside amenities/toilets/Nest (Mini), on any one weekday and any one weekend to be conducted in the month of October/April.

(ii) The format of survey is as under:

What kind of vehicle are you travelling with (a) Car/Jeep/Van/LCV (b) Bus/Truck/>3 axle vehicle:					
How satisfied are you with the road corridor based on the following parameters:					
	Very satisfied (5 marks)	Satisfied (4 marks)	Neutral (3 marks)	Dissatisfied (2 marks)	Very dissatisfied (1 marks)
Quality of roads					
Signs and Road markings					
Toll Plaza experience					
Rest Areas/ WSA					
Light and visibility					
Congestion					
Accidents					
Total					
Percentage marks					

(iii) The percentage of marks scored shall be averaged for all the respondents for all the surveys conducted either in October or April.