

दक्षिण पूर्व मध्य रेलवे
SOUTH EAST CENTRAL RAILWAY

कार्यालय
वरिष्ठ उपमहाप्रबंधक, बिलासपुर



Office of the
Sr. Dy. General Manager, Bilaspur.
Tel.No. 64006(Rly), 07752-414229

पत्र सं. No. WS/Engg/NGP/ 1400

दिनांक Dated: 27.06.2019

The Divisional Railway Manager,
S.E.C. Railway,
Nagpur.

Sub: Work study on "Review of existing cadre strength vis-a-vis workload of SSE (P-Way) Unit/Itwari of Engineering Department in Nagpur Division."

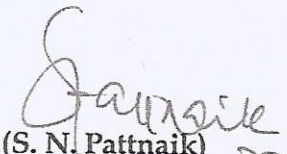
Ref.: (i) This office letter no. WS/Engg./NGP/18-19/124 dated 22.01.2019.
(ii) This office letter no. WS/ Engg./NGP/382, 579 dated 12.03.2019, 25.04.2019.

The work study of SSE(P-Way) Unit/Itwari of Engineering Department in Nagpur Division has been conducted to review the existing cadre strength in view of present work load, outsourcing of some works of P-way, track maintenance through Track Machines, higher Benchmarking, need base requirement and optimum utilization of manpower. Draft study report vide letter under reference was sent to DRM/NGP followed by two reminders addressed to Sr. DEN(Co)/NGP to furnish the remarks on the draft report. But no reply has been received so far. Hence, the draft study report is finalised.

The work study report contains recommendation for surrender of 12 surplus vacant posts of Track Maintainer/Helper out of total sanctioned of 270 of SSE (P-Way) Unit/Itwari of Nagpur Division. Besides this, some suggestions are also made to improve the efficiency.

Therefore in view of above, it is requested that suitable instructions may be given to concerned officers for implementation of the work Study report and copy of surrender memorandum may be sent to this office so that progress of implementation of work study can be advised to Railway Board accordingly.

This has the approval of SDGM.


(S. N. Pattnaik)
Asst. Work Study Officer
For Sr. Deputy General Manager

Encl: 1 work study report.

Copy along with one copy of work study report is forwarded to:-

- 1) The Executive Director, E&R (ME), Railway Board for kind information.
- 2) Secretary/SECR for kind information of GM.
- 3) PCE/SECR/BSP for kind information and necessary action please.
- 4) Sr. DEN(Co)/NGP, Sr. DPO/NGP for kind information and necessary action.



SOUTH EAST CENTRAL RAILWAY

WORK STUDY CELL

Work study report on

**“Review of Existing Cadre Strength Vis-a-vis
Workload of SSE(P. Way) Unit/Itwari of
Engineering Department in Nagpur Division”**

OVER S.E.C. RAILWAY



**WORK STUDY CELL
S. E C. RAILWAY
BILASPUR**

**STUDY NO.
SEC/03/2019-20**

SOUTH EAST CENTRAL RAILWAY

Work study report on

“Review of Existing Cadre Strength Vis-a-vis Workload of SSE(P. Way) Unit/Itwari of Engineering Department in Nagpur Division”

OVER S.E.C. RAILWAY

GUIDED BY

SRI AMIT KUMAR SINGH

SR.DY. GENERAL MANAGER

LED BY

SRI S. N. PATTNAIK

ASST. WORK STUDY OFFICER

CONDUCTED BY

**SRI V. K. SINHA
CH. WORK STUDY INSPECTOR**

**SRI SUNIL KUMAR MISHRA
WORK STUDY INSPECTOR**

**WORK STUDY CELL
S. E. C. RAILWAY BILASPUR**

**STUDY No.
SEC/03/2019-20**

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SUMMARY OF RECOMMENDATIONS & SUGGESTIONS

Rec. No.	Description	Para Reference
<u>RECOMMENDATIONS:</u>		
1.	Considering the existing work load, it is recommended that as per details given in Para 3.2, the requirement of staff for SSE/P. Way/Itwari unit comes to 258 against sanction of 270 staff. <i>Thus 12 vacant posts of Track Maintainer /Helper are found surplus and should be surrendered from Engineering Department of Nagpur Division.</i>	3.6.1
2.	The money value resulting after surrendering of vacant posts of Track Maintainer can be utilised for creation of posts required for Track Machine maintenance work as per need.	3.6.2
3.	The balance vacant post of Track Maintainer category should be filled up for better monitoring of contractual and departmental civil engineering works.	3.6.3
4.	Some activities of P- Way like deweeding of track & cleaning of drain, painting of Boards/Rails, overhauling of LC Gate and tree cutting for visibility may be outsourced upto 80% and rest 20% through departmental.	3.6.4
<u>Suggestions:</u>		
1.	Mobile Maintenance Gang may be set up to cater the emergency work as per need.	3.6.5
2.	To Minimize the absenteeism, all efforts such as motivation, interaction with the staff may be made.	3.6.6

CHAPTER – I

INTRODUCTION

1.0 Background:

The study of SSE (P-Way) Unit/Itwari of Engineering Department in Nagpur Division has been undertaken to review the existing workload vis-à-vis cadre strength in view of outsourcing of some works of P-way, track maintenance through Track Machines, higher Benchmarking, need base requirement and optimum utilization of manpower.

SSE (P. Way)/Itwari is a field unit of Civil Engineering Department of Nagpur Division to look after the maintenance of track and other allied works in the jurisdiction of Motibagh – Nagbhir section.

Due to innovation and introduction of new technology, track maintenance by Track Machines, Gauge conversion, outsourcing activities and redundant activities, rightsizing of manpower is necessary.

1.1 Role of Permanent Way/Engg. Deptt.:

Permanent way is the rail-road on which trains run. It basically consists of two parallel rails having a specified distance in between and fastened to sleepers, which are embedded in a layer or ballast of specific thickness spread over the formation.

Permanent Way is the major activity of the Engineering branch, which is entrusted with the periodical maintenance of track, bridges, level crossing gates and other related assets. A well maintained track is very essential for speedy, safety and efficient operation of trains. Continuous monitoring and inspection on daily basis is warranted in ensuring a reliable permanent way. The modern technologies have taken the track maintenance techniques from the era of axe and shovel to the era of modern mechanized track maintenance. The interconnection with S&T branch and TRD branch is a new development to be considered during the track maintenance. The equipments for testing the track have become sophisticated so as to not only trace the failures but also detect the failures that are likely to occur. The use of ultrasonic flow detector (USFD) equipment detects the minute hair line crack and blow holes in the rail which might develop into a rail crack and end up in train derailments. Many of the maintenance activities as of now are outsourced and there are wide scope for outsourcing the other activities which have no bearing on safety. So it has become imperative to have a hard look at the man power requirement considering the recent development that had taken place.

1.2 Administrative structure of P. Way Organisation at Division level:

The P. Way organization is a part of Civil Engineering department at divisional level, functions under the administrative control of Sr. DEN (Co). Officers having entrusted with a particular section comprising of sectional CPWIs/PWIs(SSE) are in-charge of P. Way Units/depots and responsible for up-keeping of track. The track is maintained with the help of Trackman, Mate, Keyman & Artisan staff. The maintenance of track is a vital activity in the working of train in relation to safety & punctuality and it is duty of engineering department to keep up the standard of track using engineering parameters for the safe running of trains. In this way Engineering Department is the backbone of Railway system.

Permanent way maintenance is largely done by gangs consisting of Gangman/Trackman under the supervision of a Gang-mate. The gang goes down its assigned section (gang beat), inspecting track and performing normal routine maintenance. A patrolman may be separately deputed to perform visual inspections along the length of a section of track by walking alongside it.

The schedule and track sections to be monitored by Gangman and Patrolmen are specified in a Patrol Charts prepared by the Divisional Engineer. These charts also indicates when and where the drivers of trains running to schedule may expect to meet Gangman/Patrolmen and gangs carry Patrol Books in which they record the status of the track and any maintenance they perform on it.

The gang is equipped to deal with minor problems such as fixing small deviations in gauge or elevation of the rails, rearranging ballast, etc. If problems are discovered with the permanent way that cannot readily be fixed by the gang, the details are reported to the station master of one of the adjacent block stations, and temporary engineering speed restrictions are put in place for the track. Trains going through that section are then subject to caution orders issued by the stations at either end.

The Permanent Way Inspector (PWI) of a section has ultimate responsibility for the maintenance of the permanent way under his jurisdiction. The PWI and his staff undertake separate regular inspection tours of the various lines, often in a trolley. In the past manually pushed trolleys were used quite often, but their use is declining now.

1.3 Present Scenario:

Track maintenance in Indian railway has undergone a rapid change during the past 20 years due to continuous developments in various track components viz sleepers, Rails and fastenings. The use of the machines both for mechanized track maintenance as well as track laying has increased substantially in recent past with the introduction of heavy track structures to meet the challenges of growing traffic and changed socio-economic conditions. Simultaneously, with the help of mechanisation higher quality standard can be achieved.

1.4 Benchmarking:

As per Railway Board's instructions, the manpower is to be brought down at the level of IRABM. As per latest Benchmarking of Manpower Productivity Ratios Report of September'2018 issued by the Director (E&R)/ Railway Board, the IR Average Benchmark of P. Way Department is 1.30 Men per ETKM whereas Benchmark of P. Way Department of Nagpur Division is 1.49 which is higher than IR Average Benchmark. The current IR Average Benchmark of Engineering Gatemen as per Benchmarking report, Sep'2018 issued by Railway Board is 2.30 Men per Gate whereas Benchmarking of Gateman of Nagpur Division is 2.72 Men per Gate which is above than IRABM.

1.5 Terms of Reference:

The following terms of reference were adopted for conducting the study:-

- I. Review of staff strength vis-à-vis existing workload.
- II. Outsourcing activities.
- III. Identifying redundant/unproductive activities to eliminate wastages.
- IV. Suggesting ways and means to improve the working system economically in view of modernization and system improvement.
- V. Benchmarking.

1.6 Details of SSE/P. Way Unit/Itwari in Nagpur Division:

The Engineering (P. Way) Department /NGP Division is divided into seventeen SSE (P. way) units and these Units are further sub-divided in to various no. of Gang sections to execute the related works.

The jurisdictions along with the no. of DTM/Gangs existing under SSE/P. Way/ITR Unit are given as under:

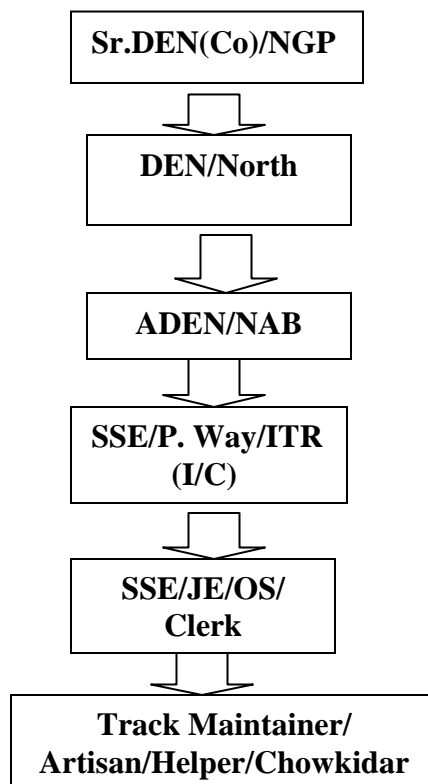
S#	Item	Particulars
1.	Section	Single Line (NG section)
2.	Jurisdiction	MIB –NAB (Motibagh – Nagbhir section) 1134/6 -1242 /6 KM, ITR Yard & MIBYard.
3.	Length (KM)	108.762
4.	Total No. of Gang under the P-Way Unit	Gang-19 Store Gang-01
5.	Jurisdiction of one Gang	6-8 Km
6.	No. of Engineering LC Gates	08

1.7 **DTM/Gang:**

Sometimes two Gangs are clubbed in one DTM gang and work jointly for better output at working site

One Gang No. 18 existing in Motibagh yard has been taken up for sample study from this unit.

1.8 **Organizational structure:**



1.9 **Methodology:**

The following methodology has been adopted for conducting the study:

- (i) Unit visit
- (ii) Collection of relevant field data,
- (iii) Examination of records,
- (iv) Direct observations regarding working of staff,
- (v) Interaction with Supervisors and staff,
- (vi) Critical Analysis.
- (vii) Assessment of Need based requirement of staff.

CHAPTER-II

2.0 OBSERVATIONS :

2.1 Staff strength:

The cadre strength of SSE (P. Way) Unit/Itwari of Nagpur Division as furnished vide Sr. DPO Office/NGP P/NGP/CDR/2018/08 dated 19.11.2018 and as per data collected is given below:

S#	Category/ Design.	GP/Level	Sanc.	Actual	Vacancy
1	SSE (P. Way)	4600/L-7	04	04	00
2	JE (P. Way)	4200/L-6	00	00	00
3	Ch. OS	4600/L-7	00	00	00
4	OS	4200/L-6	02	01	01
5	Sr. Clerk	2800/L-5	00	00	00
6	Jr. Clerk	1900/L-2	00	01	-01
Sub Total			06	06	00
1	Technician MCM (EBS)	4200/L-6	01	00	01
2	Technician MCM	4200/L-6	01	01	00
3	Technician MCM	4200/L-6	00	00	00
4	Technician MCM	4200/L-6	00	00	00
5	Technician Gr.-I (EBS)	2800/L-5	00	00	00
6	Technician Gr.-I (H/Man)	2800/L-5	00	01	-01
7	Technician Gr.-I (Painter)	2800/L-5	00	00	00
8	Technician Gr.-I (E.C.R)	2800/L-5	00	01	-01
9	Technician Gr.-I (Welder)	2800/L-5	00	00	00
10	Technician Gr.-II (EBS)	2400/L-4	00	00	00
11	Technician Gr.-II (H/Man)	2400/L-4	00	00	00
12	Technician Gr.-II (Painter)	2400/L-4	00	00	00
13	Technician Gr.-II (Welder)	2400/L-4	01	00	01
14	Technician Gr.-III (EBS)	1900/L-3	00	01	-01
15	Technician Gr.-III (H/Man)	1900/L-4	00	00	00
16	Technician Gr.-III (ECR)	1900/L-2	00	00	00
17	Technician Gr.-III (Painter)	1900/L-2	00	00	00
18	Technician Gr.-III (Welder)	1900/L-2	00	00	00
19	Track Maintainer-I	1800/L-1	16	13	03
20	Track Maintainer-II	1800/L-1	32	15	17
21	Track Maintainer-III	1800/L-1	59	41	18
22	Track Maintainer-IV	1800/L-1	147	136	11
23	Helper	1800/L-1	05	02	03
24	Chowkidar	1800/L-1	02	04	-02
25	Safaiwala	1800/L-1	00	00	00
Sub Total			264	215	49
Grand Total			270	221	49

Note:-

20 Track Maintainer have been redeployed in this Unit from closed NG-Section/ P. Way Units.

Actual Staff Strength= 221+20=241

2.2 Comparative Staff strength of SSE (P- Way)/ITR unit:

The comparative staff strength of SSE(P. Way)/ITR unit of last 03 years as per data collected is given below:

S#	Year	Sanction	Actual	Vacancy
1	01.04.2016	281	256	25
2	01.05.2017	271	258	13
3	01.12.2018	270	241	29

2.3 Duties of P. Way staff:

The duties of P. Way staff category-wise are as under:

(i) SSE/JE (P. Way):-

SSE/JE(P. Way) perform their duties in office as well as in field units which are broadly mentioned as follows:

Inspections and maintenance of track in his jurisdiction in a safe condition for traffic. Inspections and maintenance of Engg. L/C Gate in his jurisdiction. Accountal, procurement and periodical verification of stores & tools required for regular maintenance. Execution of new/sanctioned works including zonal works. Measurements and bills pertaining to p. way works including correspondence, if any. Periodical inspection of new works and inspections as specified in Engineering Manual.

(ii) PWS(upgraded to JE post)-

They supervise the works carried out by Gang Mate.

(iii) Mate:-

He is assigned for the work that the prescribed system of track maintenance is adhered to and the task allotted to him either verbally or through gang chart/diary are carried out efficiently, ensure the tools & equipment as prescribed available at site of work, ensure his length of line is kept safe for the passage of trains and any unsafe condition is reported immediately, inspect the whole gang length once a week for on the spot supervision regarding track condition.

(iv) Keyman:-

The keyman inspects by foot his entire beat once a day, both the tracks and bridges for lookout of defects like loose spikes, keys, chairs, fish bolts, fittings on grinder bridges/culverts, broken/burnt sleepers, broken plates/tie bars etc. and attend them as necessary and report it to Mate/PWS/JE.

(v) Trackman:-

They are assigned the work of track maintenance like packing, casual renewal of rail/sleeper, lubrication of rail joints, attention to point & crossing, drain cleaning, vegetation cleaning, loading/unloading of materials, patrolling, protecting line in emergency, Gatekeeper, painting of board etc.

(vi) Trolley man:-

These staff are engaged for operation of Trolley available with SSE/JE and assist Supervisor.

(vii) Black Smith:-

These staff are engaged for smithy related activities.

(viii) ECR:-

These staff are engaged for carpentry related activities as and when required. However, at present the work of Carpenter has been reduced in view of no wooden sleeper.

(ix) Welder:-

Welder are utilized for welding work

(x) Luter:-

Luter are utilized for luting during welding work.

(xi) Chowkidar:-

Chowkidar staff are utilized in EI roster as care taker in the offices, stores etc.

2.4 Working Hours of Trackman:

March-June: 6.30-11.30 & 15.00-18.00

July-October : 07.30-12.30 & 14.00-17.00

November-February : 07.00-12.00 & 14.00-17.00

2.5 **Classification of Track Maintenance Activities as per MCNTM report:**

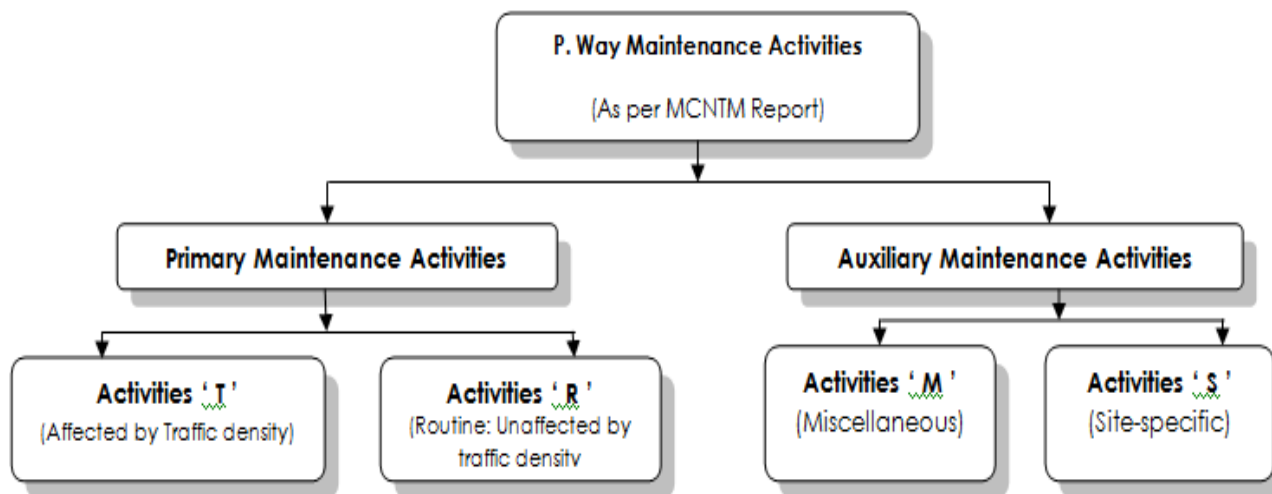
The Rational Formulae (MCNTM):

These formulae were developed because the Special Committee Formula was felt inadequate to account for differing manpower availability (skill sets, age distribution) in different regions or zones, increasing use of casual labour and private contractors for certain track maintenance activities etc. In 1996, another committee was constituted by the Railway Board to look into this matter and to recommend changes to the Special Committee Formula.

These new Rational Formulae are much more involved, and account for a wide variety of factors in terms of the nature of the maintenance work, the type of track and traffic carried on it, the distribution of casual and contracted labour for permanent way operations, etc. The Rational Formulae are actually many different formulae, for each kind of maintenance operation, and they also specify the equivalence of different kinds of work for the purposes of computing wages and so on. The latest set of Rational Formulae was adopted in 2006 on the basis of recommendation of “The Committee on **Manpower and Cost Norms for Track Maintenance**” (**MCNTM** Committee).

In order to cover certain gang activities left out which affect track maintenance effort and to take into account the effect of machine packing and track modernization, the Committee on Manpower and Cost Norms for Track Maintenance (MCNTM) found it more logical and rational to adopt zero based approach. The Committee recommended that the Railway may sanction Casual/Seasonal labour for all these works as and when required on the basis of volume of work.

As per MCNTM report the track maintenance activities are categorized as Primary maintenance and Auxiliary maintenance given as under:



PRIMARY MAINTENANCE ACTIVITIES:

These activities are directly related to P. Way maintenance, needing manpower based on continuous length of track, further classified as follows:

Activities T (Affected by Traffic density):

These are aimed at achieving safety and acceptable running quality, commensurate with the loads and speeds carried.

Activities R (Routine: Unaffected by traffic density):

These are for maintaining track, formation and other integrated assets, which are of routine nature, but quite important for train operation and for achieving reliability and long life of assets.

AUXILIARY MAINTENANCE ACTIVITIES :

These are related to upkeep of P. Way section as a whole, needing manpower based on localized problems, special features and geographical nature of P. Way section, further classified as follows:

Activities M (Miscellaneous):

For these activities, the quantum of work arising in the P. Way section can be assessed on a universally adoptable basis and the yardstick relating mandays requirement to output is rationally stipulated for each sub-activity.

Activities S (Site-specific):

For these activities, the quantum of work arising varies from location to location depending on site-specific features of the P.Way section and the yardstick is stipulated generally based on past experience.

2.6 The details of activities and sub-activities mentioned in MCNTM report under T, R M, & S categories are given as under:

List of activities & sub-activities under T,R,M &S as per MCNTM Report			
PRIMARY MAINTENANCE ACTIVITIES		AUXILIARY ACTIVITIES	MAINTENANCE
Activities 'T' (Affected by Traffic density):	Activities 'R' (Routine: Unaffected by traffic density)	Activities 'M' (Miscellaneous)	Activities 'S' (Site specific)
Machine packed track (non-suburban): T1. Slack attention to a. Bad spots b. Low joints, (FP or welded), Glued joints c. SEJ (1 No. per km.) d. Minor curve realignment T2. For tie tamper working a. Pre-tamping operations b. Along with tamper c. Post tamping operations T3. Casual Renewal of a. Rails b. Sleepers c. Fasteners (along with re-gauging) T4. Repair Welding ii. Manually packed track (non-suburban): T1. Through packing T2. Slack attention to a. Bad spots b. Low joints, insulated joints c. Minor curve realignment T3. Casual renewal of a. Rails b. Sleepers c. Fasteners (includes attention) T4. Creep pulling iii. Machine packed track (high density suburban): T1. Slack attention to a. Bad spots b. Low Joints c. SEJs d. Minor Curve attention	Machine packed track (non-suburban): R1. Lubrication of ERCs R2. Shallow Screening (1/5 length) R3. Loading, leading, unloading R4. Overhauling of level crossing R5. Watching caution spots & Miscellaneous R6. Tree cutting for visibility R7. Lubrication of rails in curves R8. Accident relief and carcass removal in run-over cases R9. Bridge sleeper attention & renewal R10. Pre monsoon attention, such as clearing of drains and waterways, cess repairs, de-weeding of track and attention to cuttings and trolley refuges. R11. Creep pulling (approaches of bridge, turnout) R12. Rectifying damage to L/C posts and gates ii. Manually packed track (non-suburban): R1. Lubrication of rail joints R2. Shallow screening (1/5 length) R3. Loading, leading, unloading R4. Overhauling of level crossings R5. Watching caution spots & miscellaneous R6. Tree cutting for visibility R7. Lubrication of rails in curves R8. Accident relief and carcass removal in run-over cases R9. Bridge sleeper attention & renewal R10. Pre-monsoon attention such as clearing of drains and waterways, cess repairs, de-weeding of track and attention to cuttings and trolley refuges R11. Rectifying damage to LC posts and gates iii. Machine packed track (high density suburban): R1. Through packing R2. Shallow screening(1/5 length) R3. Loading, leading & unloading	Sub-activities: M1. Monsoon patrolling M2. Hot weather patrolling for LWR track M3. Cold weather patrolling for LWR track M4. Watching of vulnerable locations M5. Gate keeping at Engineering level crossings M6. Rest giving for keymen M7. Waterman duty (to serve the gang) M8. Store watchman duty (at isolated locations of P. Way material store)	Sub-activities: S1. Tunnel maintenance S2. Bridge substructure maintenance S3. Long girder bridge maintenance S4. Extra workload due to very sharp curves, deep cuttings and steep gradients. S5. Maintenance of track on extremely bad formation. S6. Look-out man duty (for the safety of gang) S7. Fog signal man duty (to assist Traffic Department) S8. Filth removal from track (within city limits)

T2. For Tie tamper working a. Pre-tamping attention b. Along with tamper c. Post tamping attention T3. Casual renewal of a. Rails b. Sleepers c. Fastenings T4. Repair welding	R4. Lubrication of ERCs(Jts.) R5. Overhauling of level crossings R6. Watching caution spots and look out men R7. Tree cutting R8. Lubrication of rails in curves R9. Bridge sleeper attention & renewal R10. Accident relief and carcass removal R11. Pre-monsoon attention R12. Creep pulling R13. Rectifying damage to LCs R14. Painting of weld colla R15. Emergency attention R16. Extra assistance to Keymen &B/Smith R17. Extra work in night blocks R18. Extra assistance for S&T items		S9. Security patrolling S10. Watching of water level in suburban section (mostly in Mumbai area) during monsoon and stopping of trains as soon as found necessary.
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2.7 As per MCNTM report, the following track maintenance works can be earmarked for execution **through contracts**:

Table –A: List of activities that can be executed through contract system

S#	Activities
1	Formation treatment works
2	Collection of ballast, training out of ballast by material train, leading ballast stack to track, insertion of ballast in track and profiling.
3	Deep- screening of ballast in track, carrying out manually or by deploying BCM in which case manpower support is provided by contractor.
4	Introduction of sub ballast and ballast layer.
5	Heavy repairs to track including lifting.
6	Complete realignment of curved track.
7	Through renewal of rails, sleepers and fasteners.
8	Complete renewals of points & crossing, SEJs, traps, etc.
9	Resurfacing of machines and switch rails.
10	Loading and unloading of P. Way materials in bulk.
11	Lorrying of P. Way materials for other than casual renewal.
12	Security of materials in a depot which is closed and locked.
13	Painting of rails and weld collars.
14	Painting of bridge girders.
15	Heavy repairs (measurable) to formation, cutting, side drains and catch water drains.
16	Heavy repairs (measurable) to bridges, bridge protection works, river training works and tunnels.
17	Providing/repairing road surface at level crossings, including speed breakers.
18	Removal of major sand breaches.
19	Works arising due to restoration, following breach or accident.
20	Clearing of rank vegetation in platforms and in the vicinity of tracks in coaching and goods yards, repairs depots and workshops of Engineering, Mechanical, Electrical and S&T departments.

Table –B: List of activities for machine packed track to be maintained **departmentally**

Activities under ‘T’ (Affected by traffic density):	
T.1	Slack attention to; a) Bad spot b) Low joints (FP or welded) & Glued joints c) SEJ d) Minor curve alignment.
T.2	For tie tamper working; a) Pre-tamping operations b) Along with tamper c) Post tamping operations.
T.3	Casual renewal of; a) Rails b) Sleepers c) Fasteners along with re-gauging.
T.4	Repair welding.
Activities under ‘R’ (Unaffected by traffic density):	
R. 1	Lubrication of ERCs.
R.2	Shallow Screening (1/5 length)
R.3	Loading, leading, unloading

R.4	Overhauling of level crossing
R.5	Watching caution spots & Miscellaneous
R.6	Tree cutting for visibility
R.7	Lubrication of rails in curves
R.8	Accident relief and carcass removal in run over cases
R.9	Bridge sleeper attention & renewal.
R.10	Pre monsoon attention, such as clearing of drains and water ways, cess repairs, de-weeding of track and attention to cuttings and trolley refuges.
R.11	Creep pulling (Bridge approaches/Turn-out)
R.12	Rectifying damage to L/C posts and gates.
Activities under 'M':	
M.1	Monsoon patrolling.
M.2	Hot weather patrolling of LWR track
M.3	Cold weather patrolling of LWR track
M.4	Watching vulnerable locations.
M.5	Gate keeping at level crossings
M.6	Rest giving for Key man
M.7	Waterman duty
M.8	Store-watchman duty at isolated location of P.way material store.
Activities under 'S' (Site specific):	
S.1	Tunnel maintenance (Subject to works/bridge staff not being available for this work)
S.2	Bridge sub-structure maintenance (Subject to works/bridge staff not being available)
S.3	Long girder bridge maintenance (No. of bridges each having more than 150m lineal waterway)
S.4	Extra workload due to very sharp curve, deep cuttings and steep gradients.
S.5	Maintenance of track on extremely bad formation. (No. of locations where track needs more than 12 attentions in a year)
S.6	Look-out man duty (for the safety of gang)
S.7	Fog signal man duty to assist Traffic Deptt (Man days utilized in past 3 years for this)
S.8	Filth removal from track (within city limits)
S.9	Security patrolling (Man days utilized in past 3 years for this duty)
S.10	Watching of water level in suburban section (mostly in Mumbai area)

2.8 Average %-Break-Up of present Track Maintenance work executed by Departmentally & Through Contract : This is based on the data provided by SSEs.

(Percentage Break-UP)

S#	Activities	carried out by (in %-age)	
		Departmental	Contractual
1	Attention to bad spots	70	30
2	Attention to low joints	100	00
3	Attention to SEJ	-	-
4	Attention to minor curve realignment	50	50
5	Pretamping operations	-	-
6	Along with tamper	-	-
7	Post tamping operations	-	-
8	Casual renewal of rails	70	30
9	Casual renewal of sleepers	30	70
10	Renewal of fasteners (along with regauging)	60	40
11	Repair Welding	-	-
12	Lubrication of ERC	-	-
13	Shallow screening	40	60
14	Loading, leading, unloading	40	60
15	Overhauling of level crossing	40	60
16	Watching caution spots and misc.	100	00
17	Tree cutting for visibility	100	00
18	Lubrication of rails in curves	100	00
19	Accident relief and carcass removal in run over case	100	00
20	Bridge sleeper attention and renewal	50	50
21	Premonsoon attention such as cleaning of drains and water ways, cess repair, deweeding of track and attention to cuttings and trolley refuges	50	50
22	Creep pulling (approaches of bridge and turnout)	80	20
23	Rectifying damage to LC posts and gates	50	50
24	Monsoon patrolling	100	00
25	Hot weather Patrolling	100	00
26	Cold weather Patrolling	100	00
27	Vulnerable location	100	00
28	Waterman duty	100	00
29	Site store chowkidar	100	00
30	Gate Keeping at Level crossing	100	00
31	Tunnel maintenance	00	00
32	Bridge structure maintenance	100	00
33	Long girder maintenance	100	00
34	Extra for very sharp curve	50	50
35	Extra for very bad formation	50	50
36	Look outman duty	100	00
37	Fog signalman duty	100	00
38	Filth removal	100	00
39	Security Patrolling	100	00
40	Painting & Writing work	70	30

2.9 Field Observation of 01 Gang of SSE (P. Pay) Unit/ITR of Nagpur Division:

During field observation and discussion held with Supervisor/staff, it is found that one Gangs are clubbed in one DTM gang and working jointly for better output.

2.9.1 Sectional data of sample gang:

Sectional data of 01 sample gang of SSE(P. Way) unit as provided by SSE are summarized as under:

Item	Gang No.-17 (SSE/P. Way/ITR)	
Division	Nagpur	
Track Maintenance	Manual	
Jurisdiction	1237/410-1242/500	
Gang length	5 Km	
TKM (M/L)	SL	
RYL	1.00 Km	
GMT	0.2	
Poor visibility	700 Mt.	
LWR length	-	
No. of curves	06	
Degree of curve	30°	
Length of curve	380 mt.	
Girder bridge	-	
Length of G/Bridges	-	
Station yard	ITR yard (NG)	
L/C Gate	03 Engg.	
Distressing Temp.	-	
Rail Temperature	(12° - 58°)	
Stationary Patrolling	-	

2.9.2 Cadre Position & Jurisdiction of Gangs under SSE(P. Way)/ITWARI (As on Nov.-2018):

Gang No.	Section/Jurisdiction	Sanction			Actual			Vacancy		
		Mate	Key man	Track man	Mate	Key man	Track man	Mate	Key man	Track man
1	1134/10-1141/2	01	01	08	01	01	07	00	00	01
2	1141/2-1147/8	01	01	08	01	01	07	00	00	01
3	1147/8-1153/14	01	01	08	01	01	06	00	00	02
4	1153/14-1160/13	01	01	08	01	01	05	00	00	03
5	1160/13-1166/11	01	01	09	01	00	07	00	01	02
6	1166/11-1173/03	01	01	08	01	00	07	00	01	01
7	1173/3-1179/8	01	01	08	01	01	08	00	00	00
8	1179/8-1185/15	01	01	08	01	01	05	00	00	03
9	1185/15-1192/4	01	01	09	01	01	06	00	00	03
10	1192/4-1198/12	01	01	09	01	01	07	00	00	02
11	1198/12-1205/3	01	01	09	01	01	08	00	00	01
12	1205/3-1211/8	01	01	09	01	01	07	00	00	02
13	1211/8-1218/1	01	01	08	01	01	07	00	00	01
14	1218/1-1224/8	01	01	09	01	01	09	00	00	00
15	1224/8-1230/15	01	01	09	01	01	09	00	00	00
16	1230/15-1237/7	01	01	11	01	01	10	00	00	01
17	1237/7-1243/7	01	01	11	01	01	11	00	00	00
18	ITR Yd. (1401/7-14)	01	01	11	01	01	12	00	00	-01
19	MIB Yd.	01	01	13	01	01	12	00	00	01
20	MP Trackmen/Store	00	00	11	00	00	09	00	00	02
GateKeeper	-	00	00	15	00	00	15	00	00	00
Trolleyman	-	00	00	14	00	00	14	00	00	00
Total		19	19	216	19	17	188	00	02	28
		254			224			30		

2.9.4 Site observation of 01 sample Gang under SSE(P. Way)/ITWARI:

The position of 01 sample gang of SSE(P. Way)/ITR unit during field observation on 12.12.2018 is summarized as under:

Gang No. -18/SSE/P. Way/ITR:

- I. As per cadre position available with Mate, it is found that actual 14 staff including Mate/Keyman were available against sanctioned cadre of 26 (13+13) of Gang No.-17+18. Out of 14 Track maintainers, 05 were working with Gang for track maintenance activities(through packing), 01 working as Mate, 02 working as Keyman, 02 staff engaged in welding work at other site, 02 staff with Truck, 01 under sick & 01 on leave.
- II. Avg. 08-09 Track maintainer are present out of on roll as per Attendance Register available with Gang Mate. Average Trackman on Rest/leave/sick/absent per day is 02.
- III. Average Trackman being utilized as Mate/Key man per Gang per day is 02.
- IV. Average No. of Trackman found engaged with track maintenance activities per day is 06-07.
- V. Lubrication of rail joints/ curves is a regular activity, and 01 Trackman per day is being utilized for this activity.

2.10 Daily Work Progress of 01 Sample Gang beat under SSE (P. Pay) Unit/ITR of last one year (01.4.2017 – 31.03.2018):

The daily work progress of 01 sample Gang of SSE(P. Way) unit/Itwari of last one year (April'17- March'18)as provided by SSE are given below:

Daily Work Progress of Gang No. 18/ITR of last one year (April'2017 to March'2018:

APRIL-2017				
Date	Activities/Work done	Average Mandays utilised for Track Maintenance		
		Mate	Key man	Track Man
01.04.2017	Renewal of Sleepers between KM no. 1241/0-1 to 1240/09-10	01	01	Avg. 06 TM utilised per day Therefore, 25 Working days X 06 TM = 150 Mandays
02.04.2017	Weekly Rest	01	01	
03.04.2017	Slack Packing & Deweeding Work between 1239/11-13	01	01	
04.04.2017	Slack Packing & Deweeding Work between 1239/13-15	01	01	
05.04.2017	Slack Packing & Deweeding Work between 1239/15 to 1240/02	01	01	
06.04.2017	Slack Packing & Deweeding Work between 1240/02-04	01	01	
07.04.2017	Slack Packing & Deweeding Work between 1240/04-06	01	01	
08.04.2017	Slack Packing & Deweeding Work between 1240/06-08	01	01	
09.04.2017	Weekly Rest	01	01	
10.04.2017	Slack Packing between KM no. 1238/4-5	01	01	
11.04.2017	Road renewal work at Gate No. 74	01	01	
12.04.2017	Road renewal work at Gate No. 75	01	01	
13.04.2017	Rail pulling near Line No.-1 between KM no.1230/10/2-9	01	01	
14.04.2017	Slack Packing between 1228/5/2-7	01	01	
15.04.2017	Slack Packing 1231/7-9	01	01	
16.04.2017	Weekly rest	01	01	
17.04.2017	Slack Packing & Deweeding between 1240/3-5	01	01	
18.04.2017	Slack Packing & Deweeding between 1240/5-6	01	01	
19.04.2017	Slack Packing & Deweeding between 1240/6-7	01	01	
20.04.2017	Slack Packing & Deweeding between 1240/7-8	01	01	
21.04.2017	Slack Packing & Dressing between 1240/8-9	01	01	
22.04.2017	Slack Packing & Dressing between 1240/9-10	01	01	
23.04.2017	Weekly rest	01	01	
24.04.2017	Slack Packing between & Dressing 1240/10-11	01	01	
25.04.2017	Slack Packing between & Dressing 1240/11-12	01	01	
26.04.2017	Slack Packing between & Dressing 1240/12-13	01	01	
27.04.2017	Through Packing at Pt. No. Y/3	01	01	
28.04.2017	Through Packing at Pt. No. Y/1	01	01	
29.04.2017	Through Packing at Pt. No. Y/14	01	01	
30.04.2017	Weekly rest	01	01	
Total Mandays				150

MAY-2017

Date	Activities/Work done	Average Mandays utilised for Track Maintenance		
		Mate	Key man	Track Man
01.05.2017	Slack Packing between & Dressing 1237/6-7	01	01	<p>Avg. 06 TM utilized per day</p> <p>Therefore, 27 Working days X 06 TM = 162 Mondays</p>
02.05.2017	Slack Packing between & Dressing 1237/7-8	01	01	
03.05.2017	Slack Packing between & Dressing 1237/8-9	01	01	
04.05.2017	Slack Packing between & Dressing 1237/9-10	01	01	
05.05.2017	Slack Packing between & Dressing 1238/0-1	01	01	
06.05.2017	Slack Packing between & Dressing 1237/1-2	01	01	
07.05.2017	Weekly Rest	01	01	
08.05.2017	Slack Packing between & Dressing 1238/2-3	01	01	
09.05.2017	Slack Packing between & Dressing 1238/3-4	01	01	
10.05.2017	Slack Packing between & Dressing 1240/13-14	01	01	
11.05.2017	Slack Packing between & Dressing 1240/14-15	01	01	
12.05.2017	Slack Packing between & Dressing 1240/0-1	01	01	
13.05.2017	Slack Packing between & Dressing 1240/1-2	01	01	
14.05.2017	Weekly Rest	01	01	
15.05.2017	Slack Packing between & Dressing 1240/2-3	01	01	
16.05.2017	Through Packing 1241/3-4	01	01	
17.05.2017	Through Packing 1241/4-5	01	01	
18.05.2017	Through Packing 1241/5-6	01	01	
19.05.2017	Through Packing 1241/6-7	01	01	
20.05.2017	Through Packing 1241/7-8	01	01	
21.05.2017	Weekly Rest	01	01	
22.05.2017	Through Packing 1241/8-9	01	01	
23.05.2017	Through Packing 1241/9-10	01	01	
24.05.2017	Through Packing 1241/10-11	01	01	
25.05.2017	Through Packing 1241/11-12	01	01	
26.05.2017	Pulling work near Condom Siding Line no. -02	01	01	
27.05.2017	Pulling work near Condom Siding Line no. -02	01	01	
28.05.2017	Weekly rest	01	01	
29.05.2017	Pulling work near Condom Siding Line no. -01	01	01	
30.05.2017	Drainage Cleaning at 1240/0-2	01	01	
31.05.2017	Drainage Cleaning at 1240/4-51/2	01	01	
Total				162

JUNE-2017

Date	Activities/Work done	Average Mondays utilized for Track Maintenance		
		Mate	Key man	Track Man
01.06.2017	Drainage cleaning between KM 1240/3-4	01	01	Avg. 06 TM utilised per day
02.06.2017	Drainage cleaning between KM 1240/4-5/12	01	01	
03.06.2017	Slack packing between KM no. 1238/6-7	01	01	
04.06.2017	Weekly Rest	01	01	Therefore, 26 Working days X 06 TM = 156 Mandays
05.06.2017	Through Packing between KM no. 1238/3-1/2-4 1/2	01	01	
06.06.2017	Through Packing between KM no. 1238/4-1/2-5 1/2	01	01	
07.06.2017	Through Packing between KM no. 1237/4-5	01	01	
08.06.2017	Through Packing between KM no. 1237/5-6	01	01	
09.06.2017	Through Packing between KM no. 1239/11-12	01	01	
10.06.2017	Through Packing between KM no. 1239/11-12	01	01	
11.06.2017	Weekly Rest	01	01	
12.06.2017	Through Packing between KM no. 1239/12-13	01	01	
13.06.2017	Through Packing between KM no. 1239/13-14	01	01	
14.06.2017	Through Packing between KM no. 1239/14-15	01	01	
15.06.2017	Through Packing between KM no. 1237/6-7	01	01	
16.06.2017	Through Packing between KM no. 1237/7-8	01	01	
17.06.2017	Through Packing between KM no. 1237/8-9	01	01	
18.06.2017	Weekly Rest	01	01	
19.06.2017	Through Packing between KM no. 1237/9-10	01	01	
20.06.2017	Through Packing between KM no. 1238/0-1	01	01	
21.06.2017	Attached with Gang no.-19 at Motibag	01	01	
22.06.2017	Through Packing between KM no. 1239/5-1240/2	01	01	
23.06.2017	Through Packing between KM no. 1240/2-4	01	01	
24.06.2017	Through Packing between KM no. 1240/8-10	01	01	
25.06.2017	Weekly Rest	01	01	
26.06.2017	Through Packing between KM no. 1240/4-6	01	01	
27.06.2017	Through Packing between KM no. 1240/6-8	01	01	
28.06.2017	Through Packing between KM no. 1241/10-12	01	01	
29.06.2017	Through Packing between KM no. 1241/1-3	01	01	
30.06.2017	Through Packing between KM no. 1241/3-5	01	01	
Total				156

JULY-2017				
Date	Activities/Work done	Average Mandays utilised for Track Maintenance		
		Mate	Key man	Track Man
01.07.2017	Through Packing between KM no. 1241/5-7	01	01	Avg. 06 TM utilised per day Therefore, 26 Working days X 06 TM = 156 Mandays
02.07.2017	Weekly Rest	01	01	
03.07.2017	Through Packing between KM no. 1237/7-9	01	01	
04.07.2017	Through Packing between KM no. 1237/9-1238/1	01	01	
05.07.2017	Through Packing between KM no. 1238/1-3	01	01	
06.07.2017	Through Packing between KM no. 1249/7-9	01	01	
07.07.2017	Through Packing between KM no. 1240/880-950	01	01	
08.07.2017	Through Packing between KM no. 1240/950-1241/50	01	01	
09.07.2017	Weekly Rest	01	01	
10.07.2017	Through Packing between KM no. 1241/50-150	01	01	
11.07.2017	Through Packing at Point No. 7/3	01	01	
12.07.2017	Through Packing at Point No 7/4.	01	01	
13.0.2017	Through Packing at Point No 7/4A	01	01	
14.07.2017	Through Packing at Point No 7/5	01	01	
15.07.2017	Through Packing at Point No 7/5A.	01	01	
16.07.2017	Weekly Rest	01	01	
17.07.2017	Through Packing at Point No 7/2	01	01	
18.07.2017	Through Packing between KM no. 1237/4-5/2	01	01	
19.07.2017	Through Packing between KM no. 1237/5 ½-7	01	01	
20.07.2017	Through Packing between KM no. 1237/7-8/2	01	01	
21.07.2017	Deweeding between KM no. 1240/10-8	01	01	
22.07.2017	Deweeding between KM no. 1240/11-13	01	01	
23.07.2017	Weekly Rest	01	01	
24.07.2017	Deweeding between KM no.. 1230/11-13	01	01	
25.07.2017	Deweeding between KM no.. 1240/12-14	01	01	
26.07.2017	Through Packing ahead of Pt. No. 7/2	01	01	
27.07.2017	Through Packing at Point No 7/2	01	01	
28.07.2017	Through Packing at Point No 7/5 & 7/5A	01	01	
29.07.2017	Through Packing between KM no. 1239/13-15	01	01	
30.07.2017	Weekly rest	01	01	
31.07.2017	Deweeding between KM no. 1230/15			
Total				156

AUGUST-2017

Date	Activities/Work done	Average Mandays utilised for Track Maintenance		
		Mate	Key man	Track Man
01.08.2017	Deweeding work between KM no 1241/10-101/2	01	01	Avg. 06 TM utilised per day
02.08.2017	Deweeding work between KM no 1241/10 ½ -11	01	01	
03.08.2017	Deweeding work between KM no 1241/11-12	01	01	
04.08.2017	Removal of Fencing from Itwari Yard & collected plants/Trees from Mount Road	01	01	
05.08.2017	Replacement of Crossings (Y/3, Y/43) in MIB-Yard	01	01	Therefore, 27 Working days X 06 TM = 162 Mandays
06.08.2017	Rest	01	01	
07.08.2017	T.P. work between KM no 1238/9-9 ½	01	01	
08.08.2017	Deweeding work in Itwari Yard	01	01	
09.08.2017	Deweeding work in Itwari Yard	01	01	
10.08.2017	T.P. work between KM no 1239/70-75 near Line No. 1	01	01	
11.08.2017	Deweeding work on both side of LC-Gate No. 71	01	01	
12.08.2017	Plantation work on both side of LC-Gate No. 72	01	01	
13.08.2017	Rest	01	01	
14.08.2017	Deweeding & dressing in ITR yard near Line no.-1	01	01	
15.08.2017	Rest(Holiday)	01	01	
16.08.2017	Deweeding & dressing in ITR yard between KM no 1239/1-2 near Line no.-1	01	01	
17.08.2017	Deweeding & dressing in ITR yard between KM no 1239/2-4 near Line no.-1	01	01	
18.08.2017	Deweeding & dressing in ITR yard near Line no.-2	01	01	
19.08.2017	Deweeding & dressing in ITR yard near Line no.-1	01	01	
20.08.2017	Deweeding & dressing in ITR yard near Line no.-1	01	01	
21.08.2017	Deweeding & dressing in ITR yard ahead of Y/1	01	01	
22.08.2017	CR (Rest)	01	01	
23.08.2017	Deweeding work behind ITR/Store & Rail replacement work done	01	01	
24.08.2017	Deweeding work done between KM no 1239/11-13	01	01	
25.08.2017	Deweeding work done between KM no 1240/12 ½ to 1241/1	01	01	
26.08.2017	T.P. done between KM no 1239/9 -10	01	01	
27.08.2017	Through Packing at Pt. Y/2	01	01	
28.08.2017	Deweeding work done between KM no 1239/13-1240/1	01	01	
29.08.2017	Deweeding work between KM no 1240/1-5 ½	01	01	
30.08.2017	Rest	01	01	
31.08.2017	Deweeding work between KM no 1241/10-10/ ½			
Total				162

SEPTEMBER-2017

Date	Activities/Work done	Average Mandays utilised for Track Maintenance		
		Mate	Key man	Track Man
01.09.2017	Deweeding between KM no. 1238/2-6	01	01	Avg. 06 TM utilised per day
02.09.2017	Deweeding between KM no. 1238/6-7 ½	01	01	
03.09.2017	Dressing & Deweeding between KM no. 1237/4-6	01	01	
04.09.2017	Rest (CR)	01	01	Therefore, 26 Woking days X 06 TM = 156 Mandays
05.09.2017	Deweeding work in ITR Yard & packing work between KM no. 1241/1-2	01	01	
06.09.2017	T.P. work & Rail replacement work at P/No. -1	01	01	
07.09.2017	Deweeding work & S. P. between KM no. 1241/2-3 ½	01	01	
08.09.2017	Dressing work in ITR Yard between KM no. 1239/5 ½ -3	01	01	
09.09.2017	Deweeding Work in Yard	01	01	
10.09.2017	Rest	01	01	
11.09.2017	Painted Plates at P/Y/5, Y/4A & Deweeding work	01	01	
12.09.2017	Slack Packing & Overhauling work at P/1, 3, 4, 5A	01	01	
13.09.2017	Painted Plates between KM no. 1239/2 ½ -1 ½	01	01	
14.09.2017	Painted 50 Plates between KM no. 1239/2 ½ -1 ½	01	01	
15.09.2017	Painted 52 Plates between KM no. 1239/2 ½ -6	01	01	
16.09.2017	T. P. work at P/No.-Y/5, Y/4A	01	01	
17.09.2017	Rest	01	01	
18.09.2017	T. P. work between KM no. 1240/8-10 ½	01	01	
19.09.2017	Deweeding work between KM no. 1240/12-14	01	01	
20.09.2017	Deweeding work between KM no. 1240/14 to 1244/1, 1239/14-1240/0	01	01	
21.09.2017	Deweeding work between KM no. 1240/ 0-3	01	01	
22.09.2017	T.P. work between KM no. 1240/2 ½ -5	01	01	
23.09.2017	Jungle Cleaning behind Store Office	01	01	
24.09.2017	Rest	01	01	
25.09.2017	Deweeding work in ITR Yard near L. No.- 1,2	01	01	
26.09.2017	T. P. Work between KM no 1240 7-8 ½	01	01	
27.09.2017	S. P. between KM no. 1239/6 ½ -8 ½	01	01	
28.09.2017	Painted plates between KM no. 1239/0- 1238	01	01	
29.09.2017	Painted Plates between KM no. 1238/8-6	01	01	
30.09.2017	Holiday	01	01	
Total				156

OCTOBER-2017

Date	Activities/Work done	Average Mandays utilised for Track Maintenance		
		Mate	Key man	Track Man
01.10.2017	Rest	01	01	Avg. 06 TM utilised per days Therefore, 26 Working days X 06 TM = 156 Mandays
02.10.2017	Plate painting work between KM no. 1238/6-3	01	01	
03.10.2017	Plate painting work between KM no. 1238/3 -1237/ 8 ½	01	01	
04.10.2017	Plate painting work between KM no. 1239/11-1240/7	01	01	
05.10.2017	Plate painting work between KM no. 1237/8 ½ - 4	01	01	
06.10.2017	Plate painting work between KM no. 1240/7-1241/7	01	01	
07.10.2017	Plate painting work between KM no. 1241/7-1242/2	01	01	
08.10.2017	Rest	01	01	
09.10.2017	T. P. work between KM no. 1242/2-0	01	01	
10.10.2017	T. P. work between KM no. 1242/0-1241/13	01	01	
11.10.2017	T.P. work between KM no. 1241/13-10 ½	01	01	
12.10.2017	T.P. work between KM no. 1241/10 ½ -8	01	01	
13.10.2017	T.P. work between KM no. 1241/8-6 ½	01	01	
14.10.2017	T.P. work between KM no. 1241/6 ½ -4 ½	01	01	
15.10.2017	Rest	01	01	
16.10.2017	Deweeding work between KM no. 1240/0-3	01	01	
17.10.2017	Deweeding work between KM no. 1240/3-6	01	01	
18.10.2017	Ballast Cleaning between KM no. 1237/4 to 4 ½	01	01	
19.10.2017	Ballast Cleaning between KM no. 1237/4 ½-5	01	01	
20.10.2017	Deweeding between KM no. 1237/9-1238/9	01	01	
21.10.2017	T. P. work between KM no. 1237/4-5	01	01	
22.10.2017	Rest	01	01	
23.10.2017	T.P. between KM no. 1241/4 ½ to 3 ½	01	01	
24.10.2017	Ballast Cleaning between KM no. 1237/4 ½ -5	01	01	
25.10.2017	Ballast Cleaning ahead of 1237/5	01	01	
26.10.2017	Ballast Cleaning between KM no.1237/525-540	01	01	
27.10.2017	Earth work in ITR Yard	01	01	
28.10.2017	Ballast Cleaning between KM no.1237/5 ½- 06	01	01	
29.10.2017	Rest	01	01	
30.10.2017	Ballast Cleaning between KM no.1237/6-6 ½	01	01	
31.10.2017	Jungle cleaning in the premises of MIB Rail museum			
Total				156

NOVEMBER-2017

Date	Activities/Work done	Average Mandays utilised for Track Maintenance		
		Mate	Key man	Track Man
01.11.2017	Ballast Cleaning between KM no. 1237/4-5 ½	01	01	Avg. 06 TM utilised per day Therefore, 26 Working days X 06 TM = 156 Mandays
02.11.2017	Ballast Cleaning between KM no. 1237/6 ½ -7	01	01	
03.11.2017	Ballast Cleaning ahead of KM No. 1237/7	01	01	
04.11.2017	Ballast Cleaning between KM no. 1237/5 ½-7	01	01	
05.11.2017	Rest	01	01	
06.11.2017	Ballast Cleaning ahead of KM No. 1237/7 (720-775)	01	01	
07.11.2017	Ballast Cleaning ahead of KM No. 1237/7 ½	01	01	
08.11.2017	T.P. work between 1239 /1-5	01	01	
09.11.2017	Slack Packing between 1239/ 5-6 ½	01	01	
10.11.2017	Ballast Cleaning ahead of KM No. 1237/8	01	01	
11.11.2017	Ballast Cleaning between KM No. 8 ½ -9	01	01	
12.11.2017	Rest	01	01	
13.11.2017	Ballast Cleaning ahead of KM No. 1237/9 (900-930)	01	01	
14.11.2017	Ballast Cleaning ahead of KM No. 1237/8 (930-980)	01	01	
15.11.2017	T. P. work between 1237/ 7-8	01	01	
16.11.2017	Dressing work in BG Line	01	01	
17.11.2017	Ballast Cleaning from 800-880m	01	01	
18.11.2017	Ballast Cleaning from 880m-970m	01	01	
19.11.2017	Rest	01	01	
20.11.2017	Ballast cleaning between km No.980 to 40	01	01	
21.11.2017	Ballast cleaning between km No. 1238/0-1	01	01	
22.11.2017	T.P. between km No. 1238/0-1	01	01	
23.11.2017	T.P. between km No. 1241/11 ½ -14	01	01	
24.11.2017	T.P. between km No. 1241/ 14 to 1242/0	01	01	
25.11.2017	Ballast cleaning between km No. 1238/ 1-2 (110-170)	01	01	
26.11.2017	Rest	01	01	
27.11.2017	Ballast cleaning between km No 1238/1-2 (170m-220m)	01	01	
28.11.2017	Ballast cleaning between km No 1238/2 9220-240)	01	01	
29.11.2017	Ballast cleaning between km No 1238/2-3	01	01	
30.11.2017	Ballast cleaning between km No 1238/2-3	01	01	
Total				156

DECEMBER-2017

Date	Activities/Work done	Average Mandays utilised for Track Maintenance		
		Mate	Key man	Track Man
01.12.2017	Ballast cleaning ahead of KM no. 1238/3			
02.12.2017	Ballast cleaning between KM no. 1238/ 3-4	01	01	Avg. 06 TM utilized per day Therefore, 26 Working days X 06 TM = 156 Mondays
03.12.2017	Rest	01	01	
04.12.2017	Ballast cleaning between KM no 1238 /3-4 (370	01	01	
05.12.2017	T.P. between km No. 1238/1-2 (110-220)	01	01	
06.12.2017	T.P. between km No. 1238/1-2 (2-3)	01	01	
07.12.2017	Rail carrying work in ITR Yard	01	01	
08.12.2017	T.P. between km No. 1238/1-2	01	01	
09.12.2017	T.P. between km No. Y/1 to Y/3	01	01	
10.12.2017	Rest	01	01	
11.12.2017	Ballast cleaning between KM no 1238/4-5 (430-490)	01	01	
12.12.2017	Ballast cleaning between KM no 1238/4-5 (430-490)	01	01	
13.12.2017	Ballast cleaning between KM no 1238/4-5	01	01	
14.12.2017	Ballast cleaning between KM no 1238/9 ½ -1231 (950-130)	01	01	
15.12.2017	T.P. between km No. 1231/1-3	01	01	
16.12.2017	Fitting of Channel Sleepers in between KM NO. 1241/ 1-2 at Bridge No. 72	01	01	
17.12.2017	Rest	01	01	
18.12.2017	T.P. between km No. 1241/1-3	01	01	
19.12.2017	Ballast cleaning between KM no 1238/5-6	01	01	
20.12.2017	Ballast cleaning between KM no 1238 (575-590)	01	01	
21.12.2017	T.P. between km No. 590-625	01	01	
22.12.2017	T.P. between km No. 1231/3-5	01	01	
23.12.2017	Fitting of Channel Sleepers at Bridge No. 78	01	01	
24.12.2017	Rest	01	01	
25.12.2017	Deweeding work between KM No. 1239/11-13	01	01	
26.12.2017	Deweeding work between KM No. 1239/13-15	01	01	
27.12.2017	Deweeding work between KM No. 1239/15-1240/1 ½	01	01	
28.12.2017	T.P. between km No. 1238/ 3 ½ - 5	01	01	
29.12.2017	T.P. between km No. 1231/5-7 ½ -	01	01	
30.12.2017	T.P. between km No. 1231/ 7 ½ -10	01	01	
Total				156

JANUARY-2018

Date	Activities/Work done	Average Mandays utilised for Track Maintenance		
		Mate	Key Man	Track Man
01.01.2018	Rest	01	01	Avg. 06 TM utilised per day Therefore, 25 Working days X 06 TM = 150 Mandays
02.01.2018	Deweeding work between KM No.1239/3	01	01	
03.01.2018	Replaced Wooden Sleeper near Km No. 1239/5	01	01	
04.01.2018	Replaced Wooden Sleeper near Store	01	01	
05.01.2018	Packing work between KM No. 1237/4-6 near Platform	01	01	
06.01.2018	Dressing & Packing work done near Platform between KM No. 1238/6, 7/2	01	01	
07.01.2018	Dressing & Packing work done near Platform between KM No. Y/2,3	01	01	
08.01.2018	Ballast cleaning between Km No. 1231/ 6 ½ (670-710m)	01	01	
09.01.2018	Ballast cleaning between Km No. 1231/ 6 ½ (670-710m)	01	01	
10.01.2018	Rest	01	01	
11.01.2018	Replacement work of Wooden Sleeper	01	01	
12.01.2018	Replacement work of Wooden Sleeper	01	01	
13.01.2018	Track Packing Work in MIB Y/1	01	01	
14.01.2018	Rest	01	01	
15.01.2018	Holiday - Rest	01	01	
16.01.2018	T.P. Work ahead of 1238/7 (710 to 760 m)	01	01	
17.01.2018	Ballast cleaning ahead of Km No 1234/ 7 ½ (760-800)	01	01	
18.01.2018	Ballast cleaning near Curve between KM No 1224/0-2	01	01	
19.01.2018	Ballast cleaning near Curve between KM No 1224/2-4	01	01	
20.01.2018	Ballast cleaning & Curving between KM No 1225/1-1 ½	01	01	
21.01.2018	Ballast cleaning & Curving between KM No 1225/1 ½-2	01	01	
22.01.2018	Rest	01	01	
23.01.2018	T.P. work between KM No 1238/ 5 ½ -7	01	01	
24.01.2018	T.P. work between KM No 1238/ 7 ½-8	01	01	
25.01.2018	T.P. work between KM No 1239/ 2-2 ½	01	01	
26.01.2018	Shifting of Sleepers from Store to Other Sites	01	01	
27.01.2018	T.P. work between KM No 1239/ 2 ½ -4	01	01	
28.01.2018	Rest	01	01	
29.01.2018	T.P. work between KM No 1241 / 4-3	01	01	
30.01.2018	T.P. work between KM No 1241 /5-6 ½	01	01	
31.01.2018	T.P. work between KM No 1240/0-3	01	01	
Total				150

FEBRUARY -2018

Date	Activities/Work done	Average Mandays utilised for Track Maintenance		
		Mate	Key man	Track Man
01.02.2018	T.P. work between KM No 1239/4-2 ½	01	01	
02.02.2018	T.P. work between KM No 1238/ 2 ½-1	01	01	
03.02.2018	T.P. work between KM No 1241/1 ½ -3	01	01	
04.02.2018	T.P. work between KM No 1239/11-12	01	01	
05.02.2018	Rest	01	01	
06.02.2018	Through Packing work between 1241/3- 4 ½	01	01	
07.02.2018	T.P. work between KM No 1241/4 ½-7	01	01	
08.02.2018	T.P. work between KM No 1241/7-8	01	01	
09.02.2018	T.P. work between KM No 1241/8-10	01	01	
10.02.2018	T.P. work between KM No 1239/ 6-6 ½	01	01	
11.02.2018	Rest	01	01	
12.02.2018	Ballast cleaning & Curving between KM No 1239/6 ½-7	01	01	
13.02.2018	Earth work between K.M. No. 1236/2-10 (0-10m)	01	01	
14.02.2018	T.P. work between KM No 1237/5-6 (490-590)	01	01	
15.02.2018	T.P. work between KM No 1237/4-5	01	01	
16.02.2018	T.P. work between KM No 1237/ 6 ½ -08	01	01	
17.02.2018	T.P. work between KM No 1237/ 8-9	01	01	
18.02.2018	T.P. work between KM No 1237/9-10	01	01	
19.02.2018	Rest	01	01	
20.02.2018	Rail Stocking work in Store	01	01	
21.02.2018	T.P. work between KM No 1238/0-1 ½	01	01	
22.02.2018	T.P. work between KM No 1224/8-1 to 1225/20	01	01	
23.02.2018	T.P. work between KM No 1225/0-2(20-240)	01	01	
24.02.2018	Earthwork at L. C. gate no.71-72	01	01	
25.02.2018	Rest	01	01	
26.02.2018	T.P. work between KM No 1225/430-530	01	01	
27.02.2018	T.P. work between KM No 1225/530-650	01	01	
28.01.2018	T.P. work between KM No 1225/6-8 ½	01	01	
Total				144

Avg. 06 TM
utilised per
day

Therefore,
24 Woking
days X 06
TM = 144
Mandays

MARCH-2018

Date	Activities/Work done	Average Mandays utilised for Track Maintenance		
		Mate	Key man	Track Man
01.03.2018	T.P. work between KM No 1238/ 8-10	01	01	Avg. 06 TM utilised per day Therefore, 26 Working days X 06 TM = 156 Mandays
02.03.2018	Holiday (Rest)	01	01	
03.03.2018	T.P. work between KM No 1239/6-7	01	01	
04.03.2018	T.P. work between KM No 1239/6-4 ½	01	01	
05.03.2018	Rest	01	01	
06.03.2018	T.P. work between KM No 11239/0-10	01	01	
07.03.2018	T.P. work between KM No 1240/3-5 ½	01	01	
08.03.2018	T.P. work between KM No 1240/5 ½-8	01	01	
09.03.2018	T.P. work between KM No 1240/8-10	01	01	
10.03.2018	T.P. work between KM No 1240/10-12	01	01	
11.03.2018	Rest	01	01	
12.03.2018	T.P. work between KM No 1240/12-13 ½	01	01	
13.03.2018	Repairing work of approach road at L-C Gate no. -75	01	01	
14.03.2018	Ballast cleaning on both sides at L-C Gate No. 75	01	01	
15.03.2018	T.P. work between KM No 1240/12-13 ½	01	01	
16.03.2018	T.P. work between KM No 1238 / 1 ½ - 03	01	01	
17.03.2018	T.P. work between KM No 1238/7 ½ -9 ½	01	01	
18.03.2018	Ballast cleaning ahead of 1241/1	01	01	
19.03.2018	Rest	01	01	
20.03.2018	Ballast cleaning between KM No 1238/5-4	01	01	
21.03.2018	T.P. work between KM No 1238/4-5	01	01	
22.03.2018	T.P. work between KM No 1238/5-9	01	01	
23.03.2018	T.P. work between KM No 1238/6-7 ½	01	01	
24.03.2018	T.P. work between KM No 1239/12-13 ½	01	01	
25.03.2018	Rest	01	01	
26.03.2018	Sleeper Fittings work at Tikkar Bridge	01	01	
27.03.2018	T.P. work between KM No 1239/13 ½ -1240/1	01	01	
28.03.2018	Drainage cleaning work between KM No. 1240/4-4 ½	01	01	
29.03.2018	Drainage cleaning work near KM No. 1240 (250-180)	01	01	
30.03.2018	T.P. work between KM No 1236/9 ½ -1237/ 1 ½	01	01	
31.03.2018	T.P. work between KM No 1237/ 1 ½ -3	01	01	
Total				156

2.11 Position of LC Gate under SSE/P. Way/ITWARI unit/NGP Div.:

S#	L C Gate No.	KM	Classification	No. of Shift (12 Hours)
1	LC NI-19	1159/4-5	Class-C	01 Shift (Split shift as per train movement)
2	LC NI-23	1164/5-6	Class-D	01 Shift
3	LC NI-29	1176/3-4	Class-A	01 Shift
4	LC NI-33	1186/10-11	Class-C	01 Shift
5	LC NI-51	1209/10-11	Class-C	01 Shift
6	LC NI-71	1236/3-4	Special	02 Shift
7	LC NI-72	1236/10-11	Special	02 Shift
8	LC NI-73	1237/10-11	Special	02 Shift

2.12 Position of Trolley under SSE/P. Way/ITWARI unit/NGP Div.:

Nominated	No. of Trolley	Status	No. of T/man deployed	Avg. frequency of trolley movement in a month
In-charge	01+01	Working	06	15
Sectional SSE	02	Working	08	20

CHAPTER-III

3.0 CRITICAL ANALYSIS & RECOMMENDATIONS :-

- 3.1** Railway Board has suggested to conduct work study of P. Way staff after introduction of small and other track machines. The actual staff strength of SSE (P. Way) unit/Itwari in Nagpur Division is **241 (221+20 drafted)** against the sanctioned strength of **270** with vacancies of **29** as on 01.12.2018. The requirement of staff has been assessed based on the present workload (Daily work progress of last one year of one sample gang), in view of mechanization of track, utilization of Track Machines for track maintenance, provision of outsourcing of some activities of P. Way, direct observations and discussion held with SSE/JE/Mate(P. Way). As major works of P. Way are being carried out through contract and repair works like slack attention to bad spots, lubrication of rails, casual renewal of Rail/Sleeper, rail/weld failure, other duty/with Artisan/Site protection/USFD work/Track Machine, patrolling duty, LC Gate Duty, deweeding of track, attending accident relief/run over cases etc. are attended by P. Way staff. Thus, the workload of SSE(P. Way) units has reduced and as such the present review of workload has been undertaken. **It is observed that for the last three years the average actual staff strength of this P-Way unit is 250 and work is being managed.**

As per existing practice, Track maintenance activities in the field are maintained through either departmental resources or through contracts or a combination thereof, depending upon the situation. Activities which are intensive in nature and require more man days like; sleeper renewal, shallow screening, welding, loading/unloading, pre tamping, post tamping, LC overhauling, etc. are mostly executed through contracts/outsourcing. Activities like; slack packing, casual renewal, ballast dressing, jungle cleaning, drain cleaning, rail lubrication, bridge attention, patrolling, store watchman etc. are being maintained by Trackman. **A huge amount is expended every year for outsourcing activities of P-Way works, hence the number of staff should be reduced from the sanctioned strength accordingly.**

Moreover, while going through the daily work progress of sample Gang/DTMs, it is observed that, average 20 % of available man days are being utilized for De-weeding of Track, side drain cleaning, Filth removal, painting of board/rail, tree cutting for visibility which can be outsourced up to 80% to achieve better progress and economy.

In view of above facts, the assessment of need based requirement of staff for SSE(P. Way) unit/Itwari has been assessed.

3.2 Benchmarking norms:

As per Railway Board's instructions, the manpower is to be bring down at the level of IRABM. The current IR Average Benchmark of Engineering (P-Way) Department as per Benchmarking report, Sep'2018 issued by Railway Board is 1.30 Men per ETKM (Divisions more than 2250 ETKM) whereas Benchmarking of P. Way of Nagpur Division is 1.49 Men per ETKM. The current IR Average Benchmark of Gatemen as per Benchmarking report, Sep'2018 issued by Railway Board is 2.30 Men per Gate whereas Benchmarking of Gateman of Nagpur Division is 2.72 Men per Gate. Thus, Benchmarking of P-Way of Nagpur Division is above the current IR Average.

In order to achieve the MPR of P-Way Branch of Nagpur Division at par with the IR Average Benchmarking, the work study team has assessed the requirement of P. Way staff based on direct observations, present workload, outsourcing activities and utilization of Track Machines.

3.3 Assessment of requirement of Track Maintainer & other staff for SSE(P. Way) Unit/Itwari as per existing work load (Based on Daily Work Progress) :-

The daily work progress of **01 sample Gang (Gang No. 18/ITR)** of SSE(P. Way) unit/ITR of last one year (April'17- March'18) as provided by SSE is critically analyzed for assessment of requirement of Trackman and are summarized as under:

Table: A- Summary of Daily work progress of Gang No. 18 for last one year (01.04.17 to 31.03.18)

Gang No.	Year' 2017 (Avg. Man days)									Year' 2018 (Avg. Man days)			Total Man days
	April	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
18	150	162	156	156	162	156	156	156	156	150	144	156	1860

Critical Analysis:-

During field observation it is revealed that-

- Out of 13 on roll Track Maintainer of 1 sample Gang, average 06-07 TM are available for track maintenance work per gang per day, 02 staff are not involved in gang activities and working outside the gang. It indicates that, after mechanization of track and provision of P. Way zonal contract, the role of Trackman has been reduced to certain extent
- Average Trackman on leave/sick/absent per day per Gang is 2.

Sectional Gang :

As per existing work load of above 01 sample Gang, Avg. No. of Trackman utilized for track maintenance per year per Gang = 1860 man days

Number of working days /annum for P. Way Gang is 294 has been taken vide Rly. Board L. No. 95/CE-I/GNS/2 Vol.II-Pt.II, dated 06.03.2006.

Avg. No. of Trackman required per Gang per day for Track maintenance = $1860 \text{ mandays} \div 294 \text{ wkg. days} = 6.32$, Say **06** (excluding Mate/Keyman).

Avg. No. of Track Maintainer utilised for Mate/Keyman duty per Gang = $01+01 = \mathbf{02}$.

Beside the above Track maintenance activities, an average of **02** Trackman per day from per Gang are being utilized for patrolling duty, assisting Artisan staff/welding team etc. It is found that patrolling duty is carried out in 15 Gangs in Monsoon season only under this P-Way unit for which 120 mandays ($15 \text{ Gang} \times 2 \text{ TM} = 30 \times 4 \text{ month} = 120 \text{ mandays}$) are required.

Hence, Total Trackman utilised per day per Gang is $06 + 02 + 02 = \mathbf{10}$.

Net requirement of Track Maintainer per Gang (excluding Store gang) comes to $10 + \text{LR @ } 12.5\% = 10 + 01 = \mathbf{11}$.

The above calculation has been done as per actual work volume of Gang.

The total no. of Gangs (excluding Store Gang) under SSE/P-Way/Itwari unit = 19.

After applying the same principle as a whole, the total requirement of Trackman for 19 Gangs will be $11 \times 19 = \mathbf{209}$.

Store/MP Gang:

At present 06 TM are deployed. Out of 06, 02 TM are utilised in unit store for material stacking/handling, 02 TM in site store and 02 TM utilised in the office work & assist SSE/OS. The requirement of Trackman for Store/MP Gang (as per discussion held with SSEs) for dealing store/office related activities will be $06 + 01 \text{ LR} = \mathbf{07}$.

Engineering LC Gate (Gatekeeper):

Presently Trackman required for Engg. LC Gate Duty are utilised from DTM gang of SSE (P.

Way) units.

The requirement of Gatekeeper (Trackman) for each L/C Gate in continuous roster (03 shift) is $03 + 01RG/LR = 04$.

The requirement of Trackman for each L/C Gate in E.I. roster (02 shift) is $02 + 01RG/LR = 03$.

The total no. of Engg. Manned LC Gates under SSE/P-Way/ITR unit is 08. Out of 08 Gates, No. of LC Gate having two shift = 03, No. of LC Gate having one shift (Split shift as per train movement) = 05.

The net requirement of Trackman (Gatekeeper) for LC Gate will be $(3 \times 2 + 2 \text{ RG/LR}) + (5 \times 1 + 2 \text{ RG/LR}) = 08 + 07 = 15$.

Trolleyman:

Requirement of Trackman for Trolleyman duty for this P-Way unit will be $03 \times 04 = 12 + 02 \text{ LR} = 14$. (Normally, each P. Way Unit has 03 Trolleys and per trolley 04 Trolleyman required)

Thus, present deployment of 14 Trackman for Trolleyman duty is justified.

However, it is observed that average movement of a trolley in a month is 15-20 days. If the movement is planned nicely by duly coordinating with each other supervisor, it may be effectively carried out by two trolley gang. The remaining working days of Trolleyman may be utilized for other activities.

Total Requirement of Track Maintainer:

On being summarized of above calculation, the total requirement of Track Maintainer for Gang, Store Gang, LC Gate, Trolleyman duty for SSE (P. Way)/Itwari Unit will be $209 + 07 + 15 + 14 = 245$.

The sanctioned cadre of Track Maintainer category in SSE (P. Way)/ITR unit is 254.

Hence, the total reduction in sanctioned cadre of Trackman will be $254 - 245 = 09$.

Hence, it is recommended that 09 identified surplus vacant posts of Track Maintainer should be surrendered from Engineering Department of Nagpur Division.

Supervisor Category: At present 04 Supervisors (04 SSE) are deployed. Considering the existing work load of Supervisors, work study team proposed 01 SSE required for overall in-charge of office, periodical inspection, preparation of proposals/estimates, 02 SSE as sectional PWI for supervision of track maintenance work, periodical inspection of track, Gate & contractual works in their respective jurisdiction and 01 SSE as PWI (Spl.) for LR/ special works, supervision of casual work respectively. Justified.

Ministerial staff: At present 02 Ministerial staff (01 OS, 01 Jr. Clerk) are utilised for dealing establishment matters of staff like preparation of Muster Roll/TA bill, issue of pass/PTO, D&A cases, RTI cases, correspondence work and all works related with Stores like maintenance of DMTR/Ledger, preparation of requisition, collection/supply of material, disposal of scrap material which is found justified.

Artisan staff (Carpenter/EBS/Painter/Hammerman/Welder): At present 03 Artisan staff are utilised for smithy work, welding work, maintenance work as per requirement. The present utilisation of TM for painting work may be continued. A lot of track maintenance work are done on contractual basis. Work study team suggests multiskilling for Artisan staff by imparting necessary training so that they can be utilised as Multi-tasking staff for various activities as per requirement.

Helper: San-05, On Roll-02

At present 02 Helpers are utilised for loading/unloading of material in truck. It is found that 03 post of Helper are lying vacant since long time. Hence, 03 vacant post of Helper is found surplus and should be surrendered.

Chowkidar: At present 04 Chowkidar are utilised for chowkidar work. The requirement of Chowkidar for SSE(P-Way) office/Store will be 02 (01 in 12 hrs. shift x2) +01 RG/LR=03. The RG/LR Chowkidar may be arranged from Store/MP Gang since there is only 02 sanctioned post of Chowkidar for this P-Way unit. Thus, present deployment of 04 Chowkidar is not justified.

Thus, the requirement of staff (Supervisor/Ministerial staff/Track Maintainer/ Artisan staff/Helper/Chowkidar) for SSE (P-Way)/ITR unit comes to 258 against sanctioned of 270. Hence, 12 vacant posts of Track Maintainer/Helper] are found surplus and should be surrendered.

3.4 Summary of calculation of requirement of staff for SSE/P. Way/ITWARI Unit under Nagpur Division (As per Para No. 3.2) :

Sanctioned strength = 270

On Roll strength = 221 + 20 TM redeployed from P-Way units of closed NG section.

Vacancy = 29

Staff requirement = 258

Thus, Identified Surplus Post = 270 – 258 = 12.

The average actual staff strength for the last three years in this unit is 250. The entire workload of P.Way are being managed with this staff strength. However, the work study has provided a scope for enhancing the trackman strength by another 17 posts making the total strength of staff to 258 (241 + 17) and thereby provided a huge buffer to cater the existing work load and any emergency situation.

3.5 Summary of Sanction, Present & Proposed staff strength of SSE/P-Way/Itwari unit in Nagpur Division :

S#	Category	Sanction strength	Existing on Roll strength	Proposed Strength	No. of Surplus post to be surrendered
1.	SSE	04	04	04	00
2.	JE	00	00	00	00
3.	OS	02	01	02	00
4.	Jr. Clerk	00	01	00	00
5.	EBS	02	01	02	00
6.	H/man	01	02	01	00
7.	ECR	00	01	00	00
8.	Track Maintainer-I	16	13	16	00
9.	Track Maintainer-II	32	15	32	00
10.	Track Maintainer-III	59	41	59	00
11.	Track Maintainer-IV	147	136	138	09
12.	Helper	05	02	02	03
13.	Chowkidar	02	04	02	00
Total		270	221	258	12

Note: 20 Track Maintainer redeployed from other P-Way units due to closed NG section is not included in On roll strength. (Actual strength: 221+20=241)

3.6 RECOMMENDATIONS & SUGGESTIONS:

On the basis of above observations and critical analysis, the following recommendations and suggestions are made:

- 3.6.1** Considering the existing work load, it is recommended that as per details given in Para 3.2, the requirement of staff for SSE/P. Way/Itwari unit comes to 258 against sanction of 270 staff.

Thus 12 vacant posts of Track Maintainer /Helper are found surplus and should be surrendered from Engineering Department of Nagpur Division.

- 3.6.2** The money value resulting after surrendering of vacant posts of Track Maintainer can be utilised for creation of posts required for Track Machine maintenance work as per need.

- 3.6.3** The balance vacant post of Track Maintainer category should be filled up for better monitoring of contractual and departmental civil engineering works.

- 3.6.4** Some activities of P- Way like deweeding of track & cleaning of drain, painting of Boards/Rails, overhauling of LC Gate and tree cutting for visibility can be outsourced upto 80% and rest 20% through departmental.

SUGGESTIONS:

- 3.6.5** Mobile Maintenance Gang may be set up to cater the emergency work as per need.

- 3.6.6** To Minimize the absenteeism cases, all efforts such as motivation, interaction with the staff may be made.

CHAPTER-IV

4.0 FINANCIAL EVALUATION & RESULTS:-

Savings due to surrender of 12 identified surplus posts of Track Maintainer :-

Design.	Level (7th CPC)	G.P. (6th CPC)	Pay Structure (7th CPC)	No. of Post to be surrendered	Mean pay of the level	Approx. Cost per Month per staff (Mean Basic pay+ D.A. @ 9%)	Total cost per month (in Rs.)	Total cost per year (in Rs.)
Track Maintainer-IV/Helper	Level-1	1800	18000-56900	12	37450	40820	489840	5878080
TOTAL				12				

Thus, total recurring savings to the tune of Rs. 5878080 say **Rs.59 Lakhs** can be achieved due to surrender of **12** posts of Track Maintainer/Helper from Engineering Department of Nagpur Division and surrender Memorandum may be issued by Sr. DPO/NGP/SECR.

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