CHAPTER IV
WORKS EXPENDITURE

AUDIT PARAGRAPHS

PUBLIC WORKS DEPARTMENT

4.1 Avoidable expenditure on provision of higher specifications in a road work

Due to wrong computation of traffic intensity, the Thethampakkam road was improved and widened with higher specifications than those prescribed, resulting in an avoidable expenditure of Rs 24.92 lakh.

Indian Roads Congress specifications stipulate that the thickness and composition of road are to be based on the traffic intensity in Million Standard Axles (MSA), computed with reference to the traffic of commercial vehicles with a laden weight of 3 tonnes or more.

The Executive Engineer, Buildings and Roads Division (North), Pondicherry, while designing for improving and widening the Thethampakkam road for a length of 2300 metres, wrongly computed the traffic intensity as 16 MSA by considering all power driven and slow moving vehicles enumerated in the traffic census. Consequently, the total road thickness came to 550 millimetre (mm). Since the number of commercial vehicles with a laden weight of 3 tonnes or more was only 281 per day, the correct traffic intensity was only 1.9 MSA and therefore, the road was to be designed for a thickness of 375 mm only. The work, taken up in February 2000, was completed in July 2001 and Rs 46.02 lakh was spent. During execution also there was deviation from the estimate and the road was laid with a total thickness of 695 mm. The provision of higher thickness resulted in an avoidable expenditure of Rs 24.92 lakh. The details are as under:

Description of item of work	Work executed		Work to be executed		Agreement rate (in rupees)	Expenditure Excess (+)/ Less (-) (in rupees)
	Thickness (in mm)	Quantity (in Cu.m)	Thickness (in mm)	Quantity		
Sand Gravel (SG) Mix	150	1191	150	1191 Cu.m[a]	Nil	Nil
Water Bound Macadam Grade I	200	1136	100	520 Cu.m	550 per Cu.m	(+) 3,38,800
Water Bound Macadam Grade II	225	1443	225	1561 Cu.m[b]	600 per Cu.m	(-) 70,800
Bituminous Macadam	95	1136	Nil	Nil	1800 per Cu.m	(+) 20,44,800
Semi-dense bituminous concrete	25	316	Nil	Nil	1800 per Cu.m	(+) 5,68,800
Premix Carpet	Nil	Nil	20	13,085 Sq.m[c]	29.75 per Sq.m [d]	(-) 3,89,280
Total excess expenditure						**24,92,320**

Cu.m : Cubic metre; Sq.m : Square metre

[a] Quantity of SG Mix actually executed was allowed as it included filling of low lying areas

[b] Includes quantity required for levelling course

[c] Quantity of Tack coat in Sq.m adopted

[d] Rate of Rs 28.70 per Sq.m plus tender excess 3.6 *per cent* adopted

When the unnecessary provision of higher thickness and avoidable expenditure of Rs 24.92 lakh were pointed out, the Government accepted (November 2001 and October 2002) the error but justified the thickness stating that actual traffic intensity would be 3.22 MSA, if 174 tractors enumerated in the census were considered. This revised computation was also incorrect as the 174 agricultural tractors had a laden weight of only 2.5 tonnes each and therefore traffic intensity was only 1.9 MSA. Thus, the expenditure of Rs 24.92 lakh by providing higher thickness to the road was avoidable.

4.2 Extra expenditure due to execution of unnecessary road improvement work

Extra expenditure of Rs 42.32 lakh was incurred on improvement of a rural road without following specifications and without traffic demand/potential.

The Madras Medical Mission, a private institution which laid foundation stone for establishing a Medical College and a hospital on Kalathumettupathai road, a rural road branching from East Coast Road (ECR), requested (September 2000) the Government to widen the road from 30 feet to 60 feet to cater to increased traffic after completion of its project. Government sanctioned (February 2001) the widening of the carriageway from 3.8 metre to 7 metre (m) from ECR to the proposed institution and strengthening this reach with additional thickness. The work was taken up in March 2001 and completed in December 2001 at a cost of Rs 55.72 lakh.

The following observations are made:

(i) Indian Roads Congress (IRC) stipulated that the two lane carriageway (7m) was to be provided only when the passenger car units exceeded 15,000 per day and carriageway with Bituminous Macadam (BM) and Semi-Dense Bituminous Concrete (SDBC) were to be provided only if the traffic exceeded two Million Standard Axles (MSA). The medical institution had only requested for widening this road to facilitate easy movement of vehicles and not strengthening. While widening the carriageway to 7m could be justified on the ground of anticipated increase in passenger car units, there was no need to strengthen the carriageway with BM and SDBC at a cost of Rs 42.32 lakh as detailed below in the absence of any increase in heavy vehicle traffic.

Serial number	Description of item of work	Work actually executed		Work required to be executed		Agreement rate (in rupees)	Expenditure Excess (+)/ Less (-) (in rupees)
		Thick-ness (in cm)	Quantity (in cu.m)	Thick-ness (in cm)	Quantity		
1.	Sand Gravel Mix	15	1154.66	15	1154.66 Cu.m	80 per Cu.m	Nil
2.	Water Bound Macadam (WBM) Grade I	10	769.76	Nil	Nil	425.25 per Cu.m	(+) 3,27,340
3.	WBM Grade II	15	1146.51	7.5	1178.88* Cu.m	520 per Cu.m	(-) 16,830
4.	BM	10	2380.55*	Nil	Nil	1500 per Cu.m	(+) 35,70,825
5.	SDBC	2.5	398.04	Nil	Nil	1675 per Cu.m	(+) 6,66,715
6.	Premix carpet	Nil	Nil	2	13,345 Sq.m	23.70** per Sq.m	(-) 3,16,275
Net excess expenditure							**42,31,775**

Cu.m : Cubic metre; Sq.m : Square metre; Cm : Centimetre

*** Inclusive of 601.55 Cu.m for profile correction**
**** Rate for PC Rs 28.30 per Sq.m less tender percentage of 16.24**

(ii) IRC stipulated a minimum road width of 12 m for two lane carriageway whereas the road width in the instant case was only 9 m of which the carriageway was laid for 7m.

(iii) IRC specifications provide for laying BM on WBM having a minimum thickness of 25 cm. However, BM was laid on the existing WBM layer of 7.5 cm thickness. Thus, the design was sub-standard.

(iv) The approved estimate provided for laying 7.5 cm thick BM on the existing carriageway which was 22.5 cm thick. The widened portion was to be of 47.5 cm thick. This resulted in uneven strength in the existing and widened portions. To solve this problem, one more layer of BM was laid on the entire carriageway, old and new.

When this was pointed out, Government did not give any reasons for deviating from IRC specifications but stated (October 2002) that the design was correct; the difference in thickness between the widened portion and existing carriageway was only 2.5 cm which was corrected by profile correction over the existing carriageway. Government further stated that the road was improved with superior specifications consisting of BM and SDBC, considering its importance, better riding quality and level of service.

Government contentions were not tenable as

(i) it did not consider the layer of sand gravel mix of 15 cm provided in the widened portion and to correct this uneven thickness, the Superintending Engineer ordered to lay another layer of BM over the existing carriageway.

While this was done as a profile correction, the Department laid additional layer on widened portion also to get even surface. With proper planning before execution, this additional layer could have been avoided.

(ii) IRC criterion for strengthening road with BM and SDBC is that the traffic of commercial vehicles with laden weight of over 3 tonnes should exceed 2 MSA. In the absence of any increase in heavy vehicle traffic projection, the expenditure of Rs 42.32 lakh on strengthening the road was avoidable.

Thus, the Department strengthened the road, which was not warranted according to IRC specifications and incurred an avoidable expenditure of Rs 42.32 lakh.