



GOVERNMENT OF ODISHA
ODISHA WORKS DEPARTMENT



**WORKING PAPER ON SHORT-TO-MEDIUM TERM
OWD RESTRUCTURING AND REORGANISATION**

MARCH 2014



**Intercontinental Consultants
and Technocrats Pvt. Ltd.**



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Government of Odisha
Chief Engineer, World Bank Projects, OWD
Odisha State Roads Project

Consultancy Services for
Road Sector Institutional Development



Loan # 7577-IN

Working Paper on Short-to-Medium Term OWD
Restructuring and Reorganisation

March 2014

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Abbreviations

AE	Assistant Engineer
AEE	Assistant Executive Engineer
BBSR	Bhubaneswar
CE	Chief Engineer
CPWD	Central Public Works Department
EE	Executive Engineer
EIC	Engineer-in-Chief
FYP	Five Years Plan
GIS	Geographical Information System
GOI	Government of India
GOO	Government of Odisha
HQ	Head Quarter
HRD	Human Resource Development
HRM	Human Resource Management
IDS	Institutional Development Strategy
IT	Information Technology
JE	Junior Engineer
LA	Land Acquisition
LWE	Left Wing Extremist
MDR	Major District Road
MIS	Management Information System
MoRTH	Ministry of Road Transport and Highways
NABARD	National Bank for Agriculture and Rural Development
NH	National Highway
NHAI	National Highways Authority of India
OBCC	Odisha Bridge and Construction Corporation Ltd.
ODR	Other District Road
OWD	Odisha Works Department
PMGSY	<i>Pradhan Mantri Gram Sadak Yojana</i>
PPP	Public Private Partnership
PRD	<i>Panchayat Raj</i> Department
R&B	Roads and Bridges
RDC	Road Development Corporation
RD	Rural Development
RDD	Rural Development Department
RMMS	Road Maintenance Management System



Road Sector Institutional Development, Odisha

R&R	Resettlement and Rehabilitation
RSID	Road Sector Institutional Development
SE	Superintending Engineer
SH	State Highway
SWOT	Strengths, Weaknesses, Opportunities and Threats
TOR	Terms of Reference
UPPWD	Uttar Pradesh Public Works Department



**WORKING PAPER ON SHORT-TO-MEDIUM TERM
OWD RESTRUCTURING AND REORGANISATION**



1 Working Paper on Organisational Restructuring and Strengthening of OWD

1.1 Introduction

1.2 Scope of Work and Deliverables

As per TOR of the consultancy, the scope of work under reorganisation and strengthening of OWD is as follows:

- Review and confirmation of the short-to-medium term OWD organisation and its main determinants
- Development of a medium-to-longer term organisational vision/model for the OWD and its key functional and operational features
- ‘Mapping’ the scope and distribution of administrative, financial and technical powers and authorisations for the OWD’s main functions with the revised OWD code/Manual
- Facilitation of OWD and GOO action on measures required to complete the transition within OWD, into changed arrangements and structures
- Ensure the new Staff Training program and HRD strategy are compatible with the organisational changes
- Medium to longer term strengthening of the Institutional framework and structures of Odisha’s roads sector

The TOR envisages following deliverables:

- Working paper on Short to Medium Term OWD Restructuring and Re-organisation
- Draft Report on Medium to Longer Term Strengthening of The Institutional Framework/ Structures of Odisha’s road sector
- Final Report on Strengthening of The Institutional Framework/Structures

The completion of these deliverables has to be done in a phased manner.

1.3 Understanding and Inter-linkages with Other Components of RSID Consulting

Considering the limitations in adopting a new organisational structure and undertaking organisational changes under a change management strategy, the horizon of organisational restructuring has been considered as 10-15 years. Since it is not easy to evolve new institutional frameworks/organisation structures, the short/medium term of 5-10 years has been assumed to form a part of a long term restructuring strategy. The broad sense is that consultants shall develop a long term (say 15 years) institutional framework and organisational structure and then develop a change management strategy, which would bring required changes in phases (short to medium term) so as to achieve the goals/targets set for the period.



The restructuring exercise has strong linkages to various “internal” activities of the consultancy, which includes:

- Road policy: assistance in identifying functions needing strengthening/redundancy etc., new roles for OWD etc.
- Master plan: how much is the quantum of work load against time;
- Funding options and PPP: Role of private sector, how much funding is expected from them; ways to support achievement of master plan targets etc.
- Institutional Options: Possibility of formulation of Odisha Road Development Corporation/Authority, Role of OBCC, revised role delineation to OWD etc.

1.4 Approach as per TOR

The major output of this component is to have a reorganised OWD to meet the upcoming challenges and perform new roles and responsibilities in an efficient, effective and economic manner and to develop a transition plan for change. In view of these, it has been conceived to develop the revised organisation structure in stages, with each stage concentrating on the functions to be carried out at the following stages within the OWD:

- Stage 1: Undertake Situational Analysis of OWD and identify internal and external drivers for change (Restructuring, institutions improvements, included)
- Stage 2: Review and analysis of restructuring of road sector agencies in other states - to identify emerging developments, redundancies, role change etc. (Stage 2 shall also be undertaken in parallel with Stage 1- so as to identify change drivers)
- Stage 3A: Analysis of Department’s plans and the proposed shelf of projects and use them as building blocks for identifying gaps, determining inter-sectoral linkages, identifying policy bottlenecks, understanding the infrastructure investment drivers and themes, so as to support development of a Vision etc.
- Stage 3B: Identification of key sector issues on the way forward and then developing Vision and Mission of OWD (Part of road sector vision – mainly emanating from Transport sector vision) thru a workshop. However, till workshop is conducted, use interactions by select OWD officials and develop “Draft” VISION/MISSION or using VISION document for next 20 years (take help from Master Planning Expert). An important part of the process shall be the validation by OWD about the projects and their prioritisation against time.
- Stage 4: Undertake an institutional options study {including exploring options of having a Road Development Corporation (RDC) etc.} - Inputs from Financial and Business Planning and Master Planning Experts shall be required.
- Stage 5: Review the functions to be managed by OWD and arrange the same in a logical order (add, subtract, modify, move from HQ to Field and Vice Versa) from **a long term perspective** of restructuring
- Stage 5a: At OWD Headquarters
- Stage 5b: At Circle level
- Stage 5c: At Divisional level downwards



- Stage 6: Review the entire re-organisation structure to ensure that there were no anomalies ensuring that all functions were coordinated and integrated
- Stage 7: To assess staff requirements and consider staff re-alignment
- Stage 8: To undertake Training Needs Assessment (organisational needs/HR competencies) to meet realigned functions (and structure)
- Stage 9: To develop Change Management Strategy for a “Short-term organisational restructuring” (as a transitional part of long term organisational restructuring)

1.5 Structure of the Working Paper

The working paper (excluding the section on introduction) has been structured into the following sections.

- Section 2 presents existing Functions and Organisational Structure of OWD
- Section 3 discusses the preliminary SWOT analysis of OWD and Inadequacies of Present Structure of OWD with reference to the Policy Development and Institutional Development Study (IDS), perceived future needs including need to enhance efficiency and effectiveness
- Section 4 reviews the restructuring efforts made elsewhere in the Country of similar large engineering organisations like the CPWD and of works department of other states. It also highlights the need for development of Vision and Mission (based on Key Drivers for structural improvements) of OWD and Principles of Organisational Restructuring
- Section 5 presents the justification for restructuring, which includes both internal and external drivers which were developed based on interactions at BBSR (headquarter) and other circle, division and sub divisional offices.
- Section 6 presents the impacts of other ongoing activities under this consultancy on proposing Organisational Structure for Headquarters, Circle and Division along with their respective functions and responsibilities
- Section 7 described the major principles of restructuring
- Section 8 comments on the way forward which should be done in a phased manner but with strong internal communication.



2 Present Status of Road Network, Functions and Organisation Structure of OWD

The OWD structure has evolved over time based on the premise of aggregating, coordinating and integrating functions and decisions at different levels, while optimally utilising the overall resources and ensuring effective geographical coverage. It has grown and developed as deemed necessary to meet the current challenges. During 2011, an attempt has been made with focus on rationalisation of various positions rather than on functions/structure of OWD. {Resolution No. 12723/23.12.2011/FE-II(p)97/2011}

2.1 Present Status of Road Development in Odisha

2.1.1 Roads under OWD

Table 2-1: Category wise details of roads under Works Department, Odisha

(Length in km till March 2012)

Sl. No.	Category of Road	Single Lane	Intermediate Lane	Double Lane	Multi Lane	Total
National Highways (NHs)						
1	Under State NH Department	556.98	359.564	1,605.112	2.21	2,523.863
	Under NHAI			623.299	447.00	1,070.299
	Total of NHs	556.98	359.564	2,228.411	449.21	3,594.162
State Roads						
2	State Highways (SHs)	2,010.880	1,094.651	586.969	2.975	3,695.475
	Major District Roads (MDRs)	2,422.442	1,387.618	348.743	39.463	4,198.266
	Other District Roads (ODRs)	5,802.276	986.393	209.160	26.940	7,024.769
	Total of State Roads	10,235.598	3,468.662	1,144.872	69.378	14,918.510
Grand Total of National and State Roads, km						18,512.672



2.1.2 Review of Progress by OWD

2.1.2.1 Physical and Financial Progress under 10th Five Year Plan

Tenth FYP commenced from the year 2002-03 and continued till 2006-07. As per FYP, OWD formulated its targets for improvement of 1300 km of road stretches and construction of 106 bridges with a financial outlay of 1207.53 crores. Against these targets, OWD improved 2363 km of road stretches and completed 87 nos. of bridges.

2.1.2.2 Progress under 11th Five Year Plan

During 11th plan improvement of roads connecting ports, mining areas and rural areas as well as providing all weather connectivity by constructing bridges at missing links have been given priority. The targets for 11th Five Year Plan, when conceived, were for improvement of 4,500 km of roads and stretches and construction of 52 Bridges with a total financial outlay of Rs. 1,945.84 Crores. Zero based budgeting procedure was adopted to take up projects under different schemes on priority basis which were aimed to yield quick result to the satisfaction of users as well as to complete more number of major ongoing bridge and road projects. The projected expenditure during 11th Five Year Plan was Rs. 3,305.56 Crores. During this plan period construction of 64 Bridges and 3 ROBs and improvement of 3,354 km length of roads in different stretches has been completed.

During 2011-12, an amount of Rs 436 crores was allocated for building works, whereas the expenditure was only 177.62 crores. The data indicate that the plinth area of capital building assets (both residential and non-residential) as on March 31, 2011 was 7.94 million sq.m, which was likely to increase to 8.29 million sq.m by 2011-12 and to 8.67 million sq.m by the end of 2012-13 (Source: Activity Report 2011-12, OWD, GOO) .

During 2011-12, the Architect Wing of OWD prepared architectural drawings and designs of 68 nos. of projects of an estimated cost of Rs 280.5 crores (Source: Activity Report 2011-12, OWD, GOO).

2.1.2.3 Development Targets under 12th Five Year Plan

The GOO has formulated the draft 12th FYP. The proposed physical achievements and financial outlay are presented in Table 2.3 and Table 2.4 respectively (Source: 12th FYP document, GOO). A closer look at financial provisioning under future plans indicate a conventional approach of development based on business as usual approach, which mainly uses financing from government sources for road development. In spite of well documented experiences on use of PPP for funding of road development in other states, the GOO has not considered it as a serious option for road network expansion etc.

2.2 Present Mandate and Functions of OWD

The OWD has been entrusted with the responsibility of creating and maintaining infrastructure vital to the State. As the primary physical infrastructure agency it is also expected to guide other agencies and help in the development of technical know-how and its larger adaptation.

Emphasis of the department on the different functions has changed over time to reflect the State's requirements emerging from socio-economic-political development. In the initial years, building,



roads and bridge works were the major activity. Most of the State buildings have been constructed by OWD. The formulation of specialised agencies like Odisha State Bridge Construction Corporation (OBCC) has reduced OWD's focus and commitment of resources towards shared responsibilities.

2.2.1 Mandate of OWD

- Construction, repair and maintenance of buildings, roads, bridges and other related structures financed from the State and capital budget allocations to Odisha State.
- Execution of original, renewal and repair works of the National Highways network (including bridges) financed through Government of India.
- Construction of buildings, roads and bridges (R&B) as relief works in the event of floods, cyclones or other natural disasters.
- 'Regulatory Authority' ensuring that no encroachment or structure, whether temporary or permanent is erected on the land and property of OWD and removal of such encroachments.
- Maintaining a register of land, buildings and properties belonging to the GOO under the administration of OWD
- Authorised by the State to carry out Analysis of Rates, and produce Schedule of Rates for all types of public works.

2.2.2 Present Functions of OWD

The existing functions of OWD are as follows:

- OWD is responsible for the construction, repair and maintenance of major roads (SH, MDR and ODR) and state owned buildings. It is also responsible for other related structures financed from the State and Central budget allocations in Odisha
- OWD also carries out construction and repair work for other government departments, autonomous bodies, local bodies, boards, corporations, trusts, institutions, or corporations as deposit works after levying agency charges as per Government rules.
- OWD is also responsible for the execution of development, renewal and repair works of NHs within the State. This work is financed by NHAI (National Highways Authority of India) under the Ministry of Road Transport and Highways (MoRTH), GOI, after levying agency charges at the rates agreed between the State and Central Government.
- OWD also takes up construction works of buildings, roads and bridges (R&B) as relief works during famines, floods etc. Such works are executed as per Odisha Famine Code and rules thereof framed from time to time by the Government.
- As a construction wing of GOO, OWD also undertakes the following additional functions:
 - Technical guidance to various institutions, local bodies and other government undertakings, including execution and guidance to Local Bodies and Police Department about safety for VIP visits and traffic management related activities during special events;
 - Issue of condemnation report of unserviceable Government buildings



- Research activities pertaining to construction technology, materials etc. for buildings, R&B;
- Operating and maintaining ferry services;
- Works of rostrum and barricading at the time of VIP visit as desired by District Administration;
- Operation, maintenance and upkeep of Governor's house, assembly, secretariat, bungalows of Ministers, MLAs, MLCs and other office bearers nominated by Govt, circuit houses, rest houses, and inspection bungalows;
- Realisation of rent of Government buildings under OWD;
- Assessment of rent and valuation of private buildings acquired by the government on hire or purchase.
- Maintenance and upkeep of Government housing offered to GOO officials from the state housing pool:
 - Maintaining a register of assets (land, roads, buildings and properties) belonging to the Government under the charge of OWD. The land does not include revenue and forest lands.
 - Responsible to ensure that no encroachment or structure, whether temporary or permanent, shall be erected on the land and property in the charge of OWD. It shall also be responsible for removal of all such encroachments as per the rules.



Table 2-2: Physical Achievement from the Year 2007-08 to 2011-12 relating to Road and Bridge Projects during 11th Five Year Plan

Name of the Department: Works (R&B) Wing, Government of Odisha

Target –Completion of Bridge: 52 Nos.

Improvement of Road: 4,500.000 km

Sl. No.	Scheme	NABARD		General State Plan		CRF		KBK		ISC and E&I	ACA		ROB	EAP	Total	
		No. of Bridge	Road in km	No. of Bridge	Road in km	No. of Bridge	Road in km	No. of Bridge	Road in km	Road in km	No. of Bridge	Road in km	No.	Road in km	No. of Bridge	Road in km
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	2007-08	10	351.225	2	0.000	1	118.110	3	28.400	58.690	0	48.960	0	0	16	605.385
2	2008-09	12	265.134	0	0.000	0	102.060	2	55.600	39.700	0	72.200	1	0	15	534.694
3	2009-10	5	295.905	4	45.000	2	113.614	0	5.000	50.000	0	60.000	2	0	13	569.519
4	2010-11	5	637.882	4	81.136	1	87.279	1	17.580	35.850	0	94.914	0	31.360	11	986.001
5	2011-12	2	364.851	8	98.778	0	42.550	1	20.755	18.530	1	81.906	0	31.640	12	659.010
	Total	34	1,914.997	18	224.914	4	463.613	7	127.335	202.770	1	357.980	3	63.000	67	3,354.609



Table 2-3: Scheme wise financial achievement in respect of R&B from the year 2007-08 to 2011-12 during 11th Five year Plan

Financial target for 11 th FYP Period: Rs. 1,94,584 Lakhs							Rs. in Lakhs
Sl. No.	Scheme	2007-08	2008-09	2009-10	2010-11	2011-12	Total
1	2	3	4	5	6	7	8
	PLAN						
1	Rural Infrastructure Development Fund (RIDF)	16,603.21	19,483.05	28,132.03	35,551.61	32,871.77	1,32,641.67
2	General State Plan	1,357.52	25,618.33	12,735.86	24,241.56	21,220.16	85,173.43
3	Central Road Fund (CRF)	6,656.48	15,184.79	7,391.11	5,218.04	4,856.56	39,306.98
4	One Time Additional Central Assistance (ACA)	3,424.34	4,852.95	4,819.21	6,796.61	6,181.39	26,074.50
5	State Support (S/S) of CSP (E&I)	669.84	1,357.46	3,330.55	5,246.22	5,330.31	15,934.38
6	EAP	1,405.57	5,001.09	3,369.69	9,402.97	7,495.63	26,674.95
		30,116.96	71,497.67	59,778.45	86,457.01	77,955.82	3,25,805.91
7	KBK	840.10	1,444.20	142.38	1,003.00	1,320.56	4,750.24
	Total	30,957.06	72,941.87	59,920.83	87,460.01	79,276.38	3,30,556.15
8	Central Support (C/S) for CSP (E&I)	3,160.41	1,957.49	2,199.96	2,660.58	3,302.04	13,280.48
9	Central Plan (ISC)	1,696.08	1,451.92	700.98	671.97	274.18	4,795.13
	Total	4,856.49	3,409.41	2,900.94	3,332.55	3,576.22	18,075.61
	Total of PLAN	35,813.55	76,351.28	62,821.77	90,792.56	82,852.60	3,48,631.76



Table 2-4: 12th Five Year Plan (2012-17) Proposal

Name of the Department: Works		(FIN – Rs. In Crore)								(PHY – Length in km)				TOTAL			
		CRF		ACA		EAP		RIDF		S.P.		S/S FOR CSP				KBK	
Programme		FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY
1. Widening and Improvement of SH to 2 Lane		603.26	300.00	250.00	100.00	500.00	209.00	0.00	0.00	500.00	250.00	0.00	0.00	0.00	0.00	1,853.26	859.00
2. Widening and Improvement of CRN roads (MDR + ODR) to 2 Lane								150.00	75.00	354.00	225.00					504.00	300.00
3. Widening and Improvement of Mining and Tourist roads				150.00	100.00							75.00	37.00			225.00	137.00
4. Improvement of MDR and ODR in rural areas under ACA, S/S for CSP, NABARD, State Plan and KBK		0.00	0.00	200.00	150.00	0.00	0.00	1,850.00	1,675.00	600.00	600.00	75.00	37.00	40.00	75.00	2,765.00	2,537.00
5. Construction of new bridges/ renovation/rehabilitation of old bridges on SH, MDR and ODR								1,000.00	40	250.00	25			44.05	5	1,294.05	70
6. Construction of ROB/Flyover										350.00	10					350.00	10
7. Capacity building, e-Governance and Training of HR										25.00						25.00	0.00
8. Planning, Design, Research and Development										25.00						25.00	0.00
9. L.A. including PPP Projects										216.00						216.00	0.00
10. Decretal dues										5.00						5.00	0.00
11. Infrastructure of Works Department										75.00						75.00	0.00
Total	Widening and Improvement of Roads	603.26	300.00	600.00	350.00	500.00	209.00	3,000.00	1,750.00	2,400.00	1,075.00	150.00	74.00	84.05	75.00	7,337.31	3,833.00 km
	Bridges								40		25				5		70 Nos.
	ROB/Flyover										10						10 Nos.

**Table 2-5: Tentative Year wise Outlay for the 12th Five Year Plan (2012–17) under Various Schemes****Department: Works****PLAN Head: Transport - Roads and Bridges**

(All data are Rupees in Crores)

Year	EAP	RIDF	CRF	SS of OSP	One Time ACA	Plan other	Sub Total	Special programme for KBK Districts	Total
2012–13	105.00	405.10	98.81	40.00	120.00	278.14	1,047.05	16.81	1,063.86
2013–14	100.00	500.00	100.00	30.00	120.00	400.00	1,250.00	16.81	1,266.81
2014–15	100.00	600.00	120.00	30.00	120.00	500.00	1,470.00	16.81	1,486.81
2015-16	100.00	700.00	134.00	30.00	120.00	600.00	1,684.00	16.81	1,700.81
2016-17	95.00	794.90	150.45	20.00	120.00	621.86	1,802.21	16.81	1,819.02
Total	500.00	3,000.00	603.26	150.00	600.00	2,400.00	7,253.26	84.05	7,337.31



2.2.3 Authority Distribution within OWD

In the absence of detailed ‘OWD Job Description’ documents, efforts were made to identify/evolve/assign authorities at various levels. This was undertaken by using RACI matrix [Responsible, Accountable, Consult, Inform] approach for functional authority analysis. The RACI matrix formally reflects the responsibility of each “level of employee” involved in the hierarchy of OWD. The four elements constituting this matrix, which form the columns (presented on ‘X’ axis) are defined as follows:

- Responsible:** The position (or person) ultimately responsible for ‘**getting the work done**’. This may refer to the individual, **who finally performs the specific task**.
- Accountable:** The position (or person), accountable to ‘**oversee that the work gets done**’. This usually means the **immediate line manager** overseeing the work.
- Consulted:** The position (or person), who is the ‘**subject matter expert**’ and will do the thinking and suggest any modifications (normally from the Standard Operating Procedures).
- Informed:** The position (or person), having overall management of the execution of a specific task (related task or which has above task as a sub-task of a larger task undertaken by the position/person). This could be the **manager controlling** the execution of the task.

For developing such a matrix, the ‘Key functions, tasks and subtasks’ to be undertaken at various positions/officials are presented on the ‘Y’ axis. These have been developed based on available job descriptions as well as through a series of discussions with OWD officials, both at head office and field level. The comprehensive list, which includes fourteen groupings of the key functional areas, with tasks and sub tasks, has been used and is presented in **Table 2-6**. For validation of RACI matrix, various respondents were asked to identify the position under R, A, C, I against each task/sub task. The positions included E-I-C, CE, SE, ACE (Assistant to CE), EE, AE, or JE wherever each is appropriately ‘expected’ to deliver. The results of this exercise are tabulated in the RACI matrix (**Table 2-6**).

Table 2-6: Existing R A C I Matrix of Authority in OWD

	Key Functional Areas and Tasks	Responsible	Accountable	Consulted	Informed
1	Policy and Planning				
	Prepare Strategic Plans (Master Plan: Roads, Master Plan: Buildings)	ACE	CE		E-I-C
	<ul style="list-style-type: none"> • Identify funding mechanism 				
	Promote and Implement Public/Private Sector Participation	CE	E-I-C	GoO	GoO
	Budgeting Process (Preparation, Control and Outcome)	CE		GoO	GoO
	<ul style="list-style-type: none"> • Prepare annual budget • Carry out prioritisation of investments • Carry out phasing of investments 	CE		GoO	GoO
	Define Policy and implement systems				
	<ul style="list-style-type: none"> • Prepare ‘Quality of Work’ policy 				



Key Functional Areas and Tasks		Responsible	Accountable	Consulted	Informed
	<ul style="list-style-type: none"> Prepare HRM and HRD strategy 				
	<ul style="list-style-type: none"> Prepare asset maintenance plan and strategy (Roads, Buildings) 				
	<ul style="list-style-type: none"> Prepare Right of Way – encroachment and land acquisition strategy 				
	<ul style="list-style-type: none"> Periodically update Standard Bidding document 	ACE	E-i-C	GoO	GoO
2	Project Preparation				
	Undertake Field surveys				
	<ul style="list-style-type: none"> Conduct traffic survey 	AE	EE		SE/CE
	<ul style="list-style-type: none"> Prepare road/bridge inventory & condition report 	AE	EE		SE/CE
	<ul style="list-style-type: none"> Carry out soil investigation (Task OUTSOURCED) 	AE	EE		SE/CE
	<ul style="list-style-type: none"> Conduct hydrology study, (Task OUTSOURCED) 	AE	EE		SE/CE
	<ul style="list-style-type: none"> Carry out topography survey (Task OUTSOURCED) 	AE	EE		SE/CE
	<ul style="list-style-type: none"> Conduct deflection test for pavement evaluation (in case of existing roads) (Task OUTSOURCED) 	AE	EE		SE/CE
	<ul style="list-style-type: none"> Conduct social and environmental impact screening 				
	Prepare Geometric design (Task OUTSOURCED for Major works)	AE	EE		CE
	Mark out the right of way	JE/AE	EE		CE
	Initiate Land Acquisition				
	<ul style="list-style-type: none"> Acquire revenue plan (with Revenue Officer) from <i>Tehsildar</i> Revenue Department 	JE	AE		EE
	<ul style="list-style-type: none"> prepare land schedule 	JE	AE		EE
	<ul style="list-style-type: none"> Calculate value of buildings 	JE	AE		EE
	<ul style="list-style-type: none"> Filing of requisition and follow up 	EE			CE
	Prepare utility shifting plan (for Small, Medium works)	JE	AE		EE
	(for Large works)	EE	SE		CE
	Notify all, concerned with utility shifting	EE	SE		CE
	Prepare Pavement design				
2	Project Preparation (Contd.)				
	Prepare design and final drawings of structures				
	<ul style="list-style-type: none"> Bridge design 	AE/EE	SE/CE		
	<ul style="list-style-type: none"> Culvert design 	AE	EE		SE
	<ul style="list-style-type: none"> Drainage design 	JE	AE		EE
	<ul style="list-style-type: none"> Retaining structures in case of high embankments 	AE	EE		
	Conduct road safety audit				
	Prepare Traffic management plan (in case of existing roads)	JE/AE	EE		
	Prepare architectural drawings				
	<ul style="list-style-type: none"> Assessment of standard drawings with respect to available land area 				
	<ul style="list-style-type: none"> Conduct contour survey and rainwater drainage criteria 	AE	EE		SE
	<ul style="list-style-type: none"> For buildings costing more than 10 lacks 	Dy ARCH	Ch. ARCH		
	Carry out survey for buildings				
	<ul style="list-style-type: none"> Prepare preliminary, alternative site selection report 	JE	AE		
	<ul style="list-style-type: none"> Participate in site selection committee 	AE	EE		CE
	<ul style="list-style-type: none"> Assess availability of services – water, electricity and sewerage 	JE	AE		EE
	<ul style="list-style-type: none"> Connectivity and parking facility at proposed site 	JE	AE		EE



Key Functional Areas and Tasks		Responsible	Accountable	Consulted	Informed
	<ul style="list-style-type: none"> Habitation coverage by proposed structure (school, hospital etc.) 				
	<ul style="list-style-type: none"> Surrounding structures and their impact (ill-effects) report 				
	<ul style="list-style-type: none"> Conduct bearing capacity soil test (Task OUTSOURCED) 	AE	EE	CE	SE
	Prepare Building design – Multi-storeyed (seismic zone consideration)	AE/EE	CE		
	– Simple buildings	AE	EE		
	Prepare BoQ				
	<ul style="list-style-type: none"> Define Activities 	JE	AE		EE
	<ul style="list-style-type: none"> Match/Prepare Specifications 	JE	AE		EE
	<ul style="list-style-type: none"> Prepare Estimates 	JE	AE		EE
	Prepare bid documents to include conditions, specifications, drawings, BoQ, contract	AE	EE		CE
3	Environmental and Social Management				
	Conduct impact assessments studies				
	<ul style="list-style-type: none"> social impact assessment (Task OUTSOURCED) 				
	<ul style="list-style-type: none"> environmental impact assessment (Task OUTSOURCED) 				
	Prepare rehab resettlement plan (R/R) (Task OUTSOURCED)				
	Prepare environment management plan (EMP)				
	Resolve R & R Issues (Policy R & R issues)				
	Implement Land acquisition				
	Manage & Implement Utility shifting				
4	Procurement Management				
	Implement BOT/PPP Contracts				
	Implement NCB/State Government tendering procedure (Based on OWD Code)	AE	EE		CE
	Implement e-procurement procedure	AE	EE		CE
5	Project Management				
	Prepare Work Program (CPM/PERT using Primavera/MS Project)				
	Allocate Staff & Define responsibilities				
	Implement traffic management plan				
	Define Construction Procedure and Methodology				
	Monitor Physical Progress of Work	AE	EE		
	Monitor Financial Requirement for Work	EE	CE		
6	Construction supervision				
	Preconstruction Design review				
	Data Collection				
	Review contractor's construction Management Plan				
	Review contractor's traffic management plan	JE	AE		EE
	Undertake Inspection of equipment	JE	AE		EE
	Quality monitoring of Works	JE	AE		EE
	Conduct Material Tests				
	<ul style="list-style-type: none"> Field test - for Road: GSB gradation; GSB Compaction (Sand replacement); aggregate crushing value, impact value; Binder quality; 	JE	AE		EE



Key Functional Areas and Tasks		Responsible	Accountable	Consulted	Informed
	bitumen content				
	Field test - for Buildings: Slump test; concrete mix density;	JE	AE		EE
	water cement ratio				
	• Lab test – for Road: Sand content in soil; liquid limit; plastic limit;	AE	EE		CE
	CBR Index				
	Lab test – for Buildings: aggregate crushing value, impact value;	AE	EE		CE
	water quality; Steel Tensile test; Concrete cube test (7 & 28 days)				
	Review, Prepare Report of Physical Progress	AE	EE		CE
	Review, Prepare Report of Financial Progress	AE	EE		CE
7	Contract Management				
	Monitor Work Program and Time	AE	EE		CE
	Monitor & Exercise Cost Control	AE	EE		CE
	Assess & Justify Variations (extra/substitute items), award extension of time	EE	CE		
	Manage Dispute Resolution and Arbitration	EE	CE		
8	Quality Management				
	Quality Assurance		EE		
	Monitor & Exercise Quality Control	AE	EE		CE
	Carry out Quality Audit				
9	Safety Management				
	Prepare safety plan and implement during Construction		EE		
	Implement safety plan during Operations		EE		
	Implement safety plan during Maintenance		EE		
10	Financial Management & System implementation				
	Manage financial instruments and Tax aspects	DAO/EE	CE		
	Implement Financial MIS – iOTMS and WAMIS	DAO/EE	CE		
	Uti/implement financial powers (as per govt./OWD Code)	EE	SE/CE		
	Apply OWD code within powers of JE	JE	AE		
	- Do - within powers of AE	AE	EE		
	- Do - within powers of EE	EE	CE		
	- Do - within powers of SE	SE	CE		
	- Do - within powers of CE	CE	E-i-C		
	Prepare Accounts	DAO/EE	CE		
	Prepare Accounts Audit replies	DAO/EE	CE		
11	Maintenance				
	Identify and assess pavement distress	AE	EE		CE
	Carry out condition survey of Bldgs. and prepare Bldg maintenance plan	AE	EE		CE
	Prepare Periodic/Routine/special Maintenance plan	AE	EE		CE
	Prepare (fund) proposal for Maintenance Requirement	AE	EE		CE
12	Other Tasks				
	Undertake Performance appraisal (Reporting - Annual Confidential Report)	AE	EE		E-I-C
	- Do -	EE	SE		E-I-C
	- Do -	SE	CE		E-I-C



Key Functional Areas and Tasks		Responsible	Accountable	Consulted	Informed
	Plan and Manage Training				
	Manage Asset Records	JE	AE		EE
	Monitor and Report Encroachments	JE	AE		EE
	Prepare Analysis of Rates and periodically revise Schedule of Rates	CE	E-I-C		
	Prepare to be ready against variety of disasters				
	Prepare 'Legal' replies	EE	SE/CE		
	Issue N.O.C. (OFC cables, fuel pumps etc.)	AE	EE		CE
	Calculate and Certify 'Fair Rent rate' for hiring/renting out of Govt. Assets	AE	EE		
	Facilitate Inter-Departmental Coordination (utility shifting)	AE	EE		CE
	Carry out Public relation	JE	AE&EE		CE
	Resolve Public Grievances	JE	AE&EE		CE
	Prepare and Manage Documentation (MPR, APR, Utilisation Certificate, etc.)				
	Manage Library				
	Manage Public functions/OWD Events	JE	AE&EE		CE
13	Information Technology				
	Apply Computer applications – M S Office, Web etc. ,	EE	SE/CE	E-I-C	GoO
	Apply Computer applications – MX Roads, STAAD PRO, Auto CAD	AE(D)	EE(D)	CE(D)	SE(D)
	Apply GIS application for planning				
	Apply Project Management Software – MS Project, Primavera,				
	Implement e-Governance (email, web-site, e-nirman, e-procurement)	EE	SE&CE		
	Implement Management Information System (HRMIS)				
14	Personnel Management				
	Apply Service conditions	EE	SE&CE		E-I-C
	Respond to Right to Information (RTI) act	AE	EE&SE		
	Apply Motivational tools				
15	Desirable but undefined (or not well defined) Tasks/Responsibilities				
	Human Resource Management				
	Environmental and Social Management				
	Training and HRD				
	IT Applications, GIS, Project Management Software Applications etc.				
	Documentation				
	Asset Management				
	Safety Plan - during construction				

A close analysis of RACI matrix of authority/responsibility distribution with OWD indicates as follows:

- There are overlaps in responsibilities i.e. the roles are not clearly defined and communicated; among many such examples, 'Marking out the right of way' or 'Preparation of traffic management plan' both the JEs and AEs are responsible, which could result in either duplication or loss in work efficiency.



- Unassigned functions/tasks, which have grey shading (no position assigned) in the cells in front of them, indicates the need for further deliberation amongst OWD management and inclusion in the 'Job Description' at various levels (or positions). These decisions are then to be communicated to the concerned staff.
- From the authority distribution, it emerges that SE's are responsible/accountable for a limited number of functions. Therefore, there is a strong need to redefine the Job Description of SE's (possibly delegating some responsibilities) and to reassess their numbers based on work load, so as to improve efficiency of the system in terms of decision making.
- Similarly, it emerges that JE's are "practically" overloaded with a huge number of both assigned and delegated functions. Some of which can be easily delegated to staff/people with lesser qualifications than that of JEs. It emphasizes the need to reassess the workload of JE's as well as an assessment of requisite support staff to JEs to improve system efficiency.
- Based on interactions with Field Units and HO Officials, it is apparent that there is a general lack of awareness amongst staff on their delegated responsibilities. This requires an effective Intra-cum-Inter level communication strategy.
- Functional area such as Project Management, Quality, Safety, IT, Environment & Social, Human Resource Management etc. are a few functional areas needing urgent management interventions.

2.3 Present Organisational Structure

The present organisational structure is presented in **Fig 2.1**.

2.4 Recent efforts on Restructuring/Staffing and Present Staff Strength

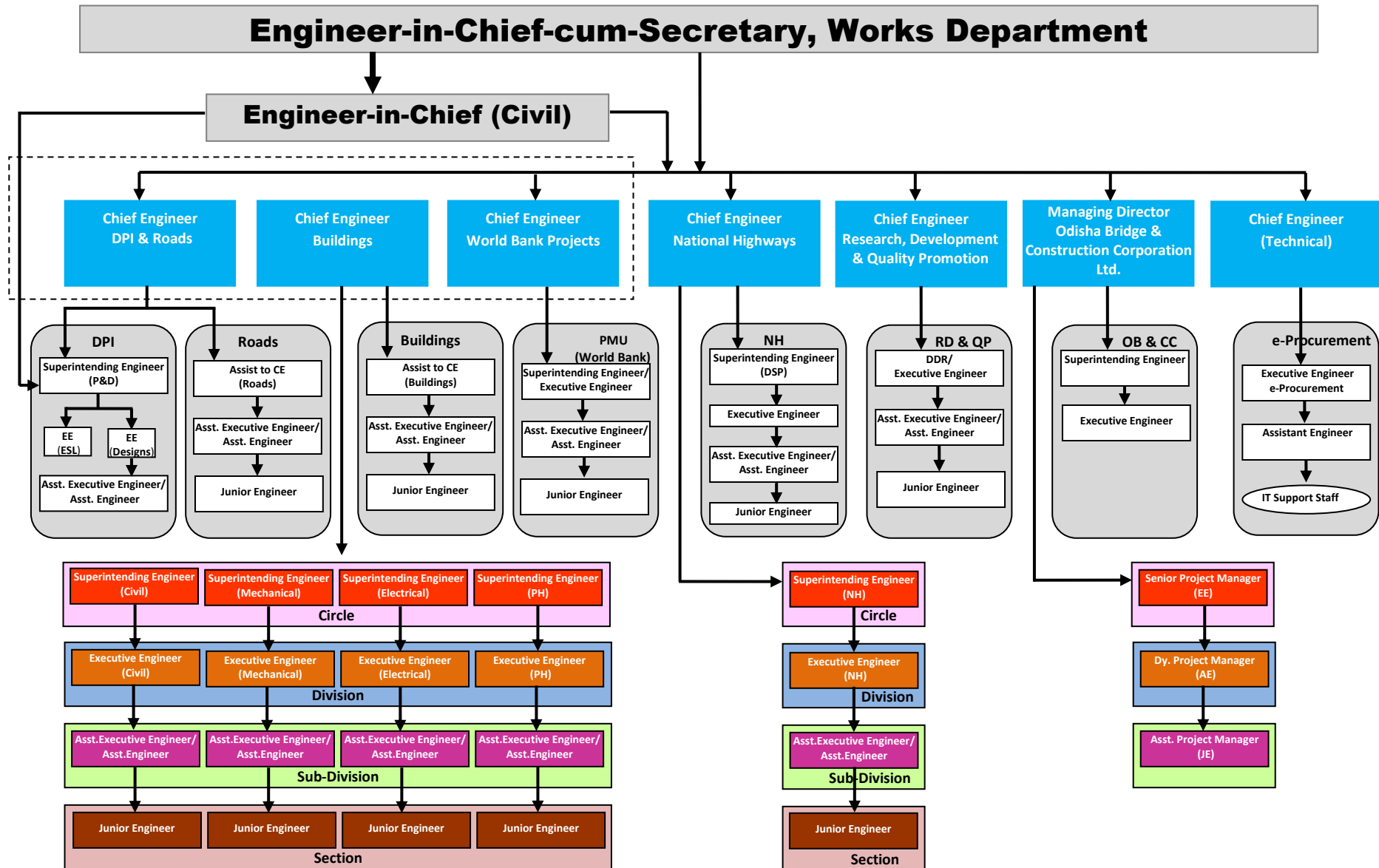
Keeping in view the increasing work in various engineering departments and to attract meritorious candidates the GOO has been contemplating changes in Odisha Engineering Services and restructuring of some of the engineering departments. As a follow up, GOO approved a restructuring/re-staffing plan for OWD vide resolution no. 12723/FE II (p) 97/2011 dated 23 Dec 2011, with the positions as presented in **Table 2-7**.

Table 2-7: Details of Restructuring/Re-staffing Undertaken during Dec 2011

Sl. No.	Post	Existing			Additional Posts Created			Total after Creation of Additional Posts		
		Works	RD	Total	Works	RD	Total	Works	RD	Total
1	E-in-C	2	1	3	0	1	1	2	2	4
2	CE	9	2	11	2	1	3	11	3	14
3	SE – I	5	4	9	10	5	15	15	9	24
4	SE –II	9	11	20	7	1	8	16	12	28
5	EE	105	67	172	24	10	34	129	77	206



Figure 2.1: Organisational Structure of OWD





This structural/staff changes were undertaken by **quoting** (as mentioned in the resolution no. 12723/FE II (p) 97/2011 dated 23 Dec 2011) the **following justification**.

Although, Consultants don't endorse the "quoted justification" and strongly feel that the justification should have been based on work load, emerging needs for new functional areas, improved geographical coverage, need for specialization, improved decision making etc., yet the justification mentioned in resolution has been indicated.

2.4.1 Engineer in Chief (EIC)

EIC, Odisha Engineering Services are in the scale of pay of Rs. 37,400- 67, 000 with a grade Pay Rs. 9000/-.

2.4.1.1 New Positions of EIC in Works Department

Prior to restructuring, there were two (two) EIC level positions in the Works Department. These were

- EIC cum Secretary
- EIC (Civil)

No new position of EIC has been suggested under Works Department, GOO.

2.4.1.2 Justification for New Positions of EIC in RD

Prior to restructuring, there was no EIC level position in RD. The restructuring created 1 new (stated as up-gradation) post, which was:

- Special Secretary, R. D. Dept. (This was pursued as a up-gradation from the position of CE rather than a new position but practically is a new position as all three CEs were maintained)

Overall, additional 1 position of EIC was approved, thus making total number of EICs as 3.

2.4.2 Chief Engineers (CEs)

CEs, Odisha Engineering Services are in the scale of pay of Rs. 37,400- 67, 000 with a grade Pay Rs. 8800/-.

2.4.2.1 Justification for New Positions of CE in Works Department

Prior to restructuring, there were 9 (nine) CE level positions (including deputation) in the Works Department. The restructuring created 2 new posts, which were:

- Chief Engineer - Directorate of Designs
- Additional Secretary I Works Department

2.4.2.2 Justification for New Positions of CE in RD

Prior to restructuring, there were 3 (Three) CE level positions in the RD. The restructuring created 1 new post, which was:

- Chief Engineer, Bridges



Besides, one post has been upgraded to the rank of EIC. Therefore the Table 2-7 presently indicates one position of EIC.

Overall, additional 3 positions of CE were approved, thus making total strength as 14.

2.4.3 Superintending Engineers (SEs)

The SEs, Odisha Engineering Services are in the scale of pay of Rs. 15,600 -39, 100 with a grade pay of Rs. 6,600/- in SE level II and grade pay of Rs 7,600/for SE Level -I.

2.4.3.1 Justification for New Positions of SEs in Works Department

Prior to restructuring, there were 9 (nine) SE Level-II positions and 05 (five) SE Level-I positions in the Works Department. The restructuring created 17 new posts (in the grade of Level-II and Level-I), which were:

- SE, (Planning and Investigation),
- SE, Roads
- SE, (R&B) Buildings
- SE, (Projects)
- SE, LWE, Gajapati
- SE, RD&QP
- SE, Design (Bridges) under Directorate of Design
- SE, Design (Roads) under Directorate of Design
- SE, Design (Buildings) under Directorate of Design
- SE, E- Procurement
- SE, NABARD (RIDF) and Externally Aided Projects
- SE, Assets Management (ISAP), this was created earlier but adjusted under Dec 2011 restructuring
- SE, Vigilance and
- Four SEs for new Circles - to be identified and notified by EIC cum Secretary

2.4.3.2 Justification for New Positions of SEs in RD Department

Prior to restructuring, there were 11 (Eleven) SE Level-II positions and 04 (Four) SE Level-I positions existing in RD. The restructuring created 6 new posts (1 in the grade of Level-II and 5 under Level-I), which were:

- SE, Quality Control in CE's Office
- SE, (Building)
- SE, (Bridges)
- SE, R. W. Circle, Kendrapara
- SE, R. W. Circle, Mayurbhanj
- SE, R. W. Circle, Rourkela



Overall, additional **23** positions of SE were approved, thus making total strength as **52**.

2.4.4 Executive Engineers (EEs)

The EEs, Odisha Engineering Services are in the scale of pay of Rs. 15,600 -39, 100 with a grade pay of Rs. 6,600/- .

2.4.4.1 Justification for New Positions in Works Department

Prior to restructuring, there were 105 EE Level positions existing in Works Department. The restructuring created 24 new posts, which were:

- 14 Nos. of Field Divisions including Malkangiri as well as R&B Division No. II: 14
- 3 Nos. of Quality Control Division: 03
- 7 Nos. of EEs in the office of EIC (Civil)/CE: 07

2.4.4.2 Justification for New Positions (beyond 67 Existing) in RD Department

Prior to restructuring, there were 67 EE Level positions existing in RD. The restructuring created 10 new posts, which were:

- 3 Nos. of Field Divisions: 03
- 4 Nos. of Quality Control Divisions: 04
- 3 Nos. of EEs in the office of EIC/CE: 03

Overall, additional **34** positions of EE were approved, thus making their total strength as **206**.

2.4.5 Assistant Engineers (AEs) or Assistant Executive Engineers {AEEs (under Restructuring)}:

Prior to restructuring in Dec 2011, there were 72 AEEs (52 with Works Department and 20 with RD). The restructuring proposal was to have 119 Deputy EEs – re-designation of AEE (68 with Works Department and 51 with RD). This would have created 47 Deputy EEs (16 with works and 31 with RD).

Prior to restructuring proposal, there were 651 AEs (392 with Works Department and 260 with RD). The proposal was to re-designate AEs as AEEs and then enhance their nos. to 672 (421 with Works Department and 251 with RD). This would have required 21 additional AEE (or earlier AEs), 29 more in Works Department and taking off 9 from RD.

2.4.6 Junior Engineers (JEs) – also called as Assistant Engineers/Junior Engineer under restructuring

Prior to restructuring in Dec 2011, there were 1515 Junior Engineers (757 with Works Department and 758 with RD). The proposal was to promote about 50% Junior Engineers as AEs (The proposal was to create the post of AE – as an promotional post from Junior Engineer as the earlier (existing) AEs were to be re-designated as AEE or Deputy EEs as indicated under Section 2.4.5.



The restructuring proposal was to have 870 AEs (new proposal as promotion post of JEs) and an equal number of 870 JEs i.e. a total of 1740 assistant/JEs. Their proposed distribution was as follows: Works – 982 (AE 529, JE 453) and RD – 758 (AE 341, JE 417). No additional posts were suggested for RD.

This would have required 225 additional JEs, as post of AEs was considered a promotional post with no direct entry.

However, suggestions of re-designating AEs and JEs and modifying their numbers, as presented under section 2.4.5 and 2.4.6 were not approved and thus not implemented.



3 Situational Analysis of OWD

The present OWD has been analysed for its **Strength** and **Weaknesses** (internal to organisation) and **Opportunities** and **Threats** (external to organisation).

3.1 OWD Organizational Analysis

Organisational analysis began with a close examination of the short and medium term goals of OWD and an analysis of existing situation supporting the possible achievement of OWD goals. Therefore using an conventional approach, the broad analysis of OWD focused on policy, structure, processes and systems, human resources (both quality and numbers), other resources, work environment and organizational culture. This analysis was undertaken using a combination of approaches; one-to-one interactions with the top and middle level management, group discussions with middle and lower level officials and focused group discussions with a combined group of officials both at head quarter level as well as field level. Although not indicated explicitly, yet such discussions were articulated using principles of “problem tree analysis”. The purpose of such discussions was to identify “visible” problems and try to identify “root causes” of the problems, so that corrective measures can be identified and analysed.

Such identified issues, indicating the current situation in OWD, which limits its efficiency, effectiveness and economy of operations have been grouped into various categories and are presented below:

3.1.1 Policy & Strategies Issues

- Need for improvement in use of conventional policies on personnel management (recruitment, confidential reporting, leave records...)
- Policy to redefine roles and responsibilities missing
- Transfer policy not linked with workload and functional diversification
- Lack of effective HRM & HRD policy (Need to streamline promotional procedures)
- Lack of competency development policy
- Lack of clarity on mandate (e.g. Design wing.)
- Lack of Quality management policy leading to deficiencies in quality and consequential economic benefits
- Poor dissemination strategy on enforcement and monitoring of policies and regulations
- Multiple authorities (District Administration asking work from OWD officials) and multiple responsibilities (especially MP and MLA fund - works etc.) of the field staff has led to reduced productivity
- Poor Cadre management; Recruitment planning missing; high level of disparity in recruitment verses retirement
- Accountability towards stakeholders presently (near) absent
- No preventive maintenance policy and procedures available for O&M of buildings



- Lack of rotational policy: increasing gap in “design” knowledge and field situation.

3.1.2 Structural Issues

- Policy, planning, monitoring, regulatory functions are missing
- Functional units like Planning & Cost control, Emerging Technologies, HRM, HRD, PPP, Legal etc. are missing
- Lack of functional specialization: Roads, Buildings, Bridges
- No specialized structure (project management units in OWD) in spite increasing surge in deposit works from health and education sector
- Need for Financial Analysis, Contract Management and Legal functions in OWD; No legal functionaries
- Need for strengthening of Design and Research wings
- Absence of “monitoring” and policy “enforcement” responsibilities.

3.1.3 Processes and System Issues

- Procedures, manuals are outdated, inefficient and are increasingly becoming less relevant
- Lack of delegation/decentralization of authority – delayed decision making
- Present system of ‘expenditure incurred’ as ‘success indicator’ in place of quality of work is flawed
- Poor access to data and Information
- Poor documentation
- Missing system of QUALITY ASSURANCE coupled with “ineffective” quality monitoring - Asset Management System missing
- Inadequate use of computerization, GIS, Remote sensing and Information Technology based systems
- No system to consider of human resource development (both imparted and received) initiatives in Annual Confidential Reports of employees
- Staff allocations are undertaken at Secretariat, without considerations of actual field requirements (work load, special needs etc.)
- Lack of clarity in definition of roles and responsibilities of various officials (duplication of efforts)
- No formal mechanism to integrate best management practices and innovation
- Lack of a formal coordination mechanism with stakeholders for assessment of their needs (road comfort etc.), solution provisioning, feedback etc.

3.1.4 Resource Issues

- Lack of adequate financial resources limiting work planning
- Large establishment costs



- Poor revenue due to poor enforcement of available legal instruments
- Lack of supervision of works and their quality due to non-availability of sources for transportation
- Inadequately staffed and ill-equipped Central and Zonal Material Testing Labs are unable to provide results within specified time.

3.1.5 HRM Issues

- Field units not equipped with staff as per work load: Since no work load analysis has been carried out, the “rightsizing” of units is not there
- “Adequate” and “appropriate” human resources missing; WORKLOAD DISTRIBUTION - rethink needed; geographical spread too large, manpower resource too less
- Need for introduction of multi-tasking to optimize human resources
- Human Resource Management principles missing (motivation, performance management, manpower planning, career path development, need based training, implementable incentive mechanisms etc.)
- Lack of Performance management (The indicators, benchmarks and system of measurement are missing)
- Lack of knowledge of emerging construction technologies, project management skills etc.
- Lack of competencies to integrate emerging work dimensions relevant to new technologies and practices (e.g. GIS, Green Technologies, Non Destructive Testing, etc.)
- Lack of competencies to integrate emerging issues like social (including community mobilization, IEC, gender, R&R), environmental management, IT, PPP issues
- No incentive to attract quality staff in the Specialized units *ex. Design
- Lack of formal induction training
- Lack of avenues for competency improvements; Training, higher education, exposure visits etc.
- Lack of Competency matching: Staff with good knowledge and experience in roads works are assigned building works and vice versa
- Lack of long term training framework commensurate with HRM policies: No system of introductory coaching for the transferee/appointee in the domain knowledge required for new postings/promotional post.

3.1.6 Work Environment Issues

- Lack of IT connectivity and software use by most of field staff
- Lack of modern office infrastructure to support productivity

3.1.7 Cultural issues

- Non-proactive (reactive) organizational culture



- Lack of learning culture (no objective oriented trainings)
- Lack of information or communication gap within hierarchy.
- Lack of promotion to in-house research

A review of various issues indicates that the above performance-related issues have varied solutions. As per the groupings, most of the solutions shall involve policy improvements, structural changes, resource provisioning and managerial besides training, whereas the cultural issues shall have a “Change Management” perspective. Some problems may require a package or a combination of solutions. The selection of a specific “solution” has to be based on gravity of the problem and should be on a case to case basis.

3.2 SWOT analysis of OWD

3.2.1 Strengths

- Well established organisational structure and processes
- Presence of adequate, experienced, qualified and dedicated staff
- Established and well documented manuals, work procedures, policies etc.
- Widespread presence in all districts of the state supporting planning, implementation and monitoring of projects/schemes
- Presence of experienced Technical expertise
- Strong Government support due to its welfare functions
- Have already initiated adoption of modern tools and technologies

3.2.2 Weaknesses/Limitations

- Continue to rely on a number of policies, norms and procedures
- Continued application of conventional tools and techniques
- Reactive organisational culture
- Lack of accountability
- Declining number of motivated staff due to lack of promotions as a result of pending litigations
- Lack of HRD Policy and HRM structure
- Unsatisfactory work environment and inadequate infrastructure coupled with their poor maintenance
- Excessive job security to its employees
- Ageing manpower especially in higher cadres
- Multiple responsibilities as well as authority
- Staff stagnation and issues in cadre management
- Lack of scientific HRM tools and their linkages with HRM, like Performance management



- Employee data collection and its management
- Many redundant posts leading to high establishment costs
- Outdated delegation of powers
- Limited Project Management skills and no use of project management tools
- Limited competency improvement opportunities (no time bound training/HRD for substantial number of employees).

3.2.3 Opportunities

- Adequate need/demand for roads for increasing access in the state providing ample work opportunities
- Active Government Departments engaged in improving access
- No competitor in the market (monopoly)
- Easily accessible modern technologies, software etc.
- Increasing demand for quality roads as well as higher ability to pay tolls (user fees)
- Availability of best management practices/models from similar organisations
- PPP opportunities to outsource some of the specialised services
- Improved communication supporting decision making
- Forward looking state demonstrated by its policies, acts etc.

3.2.4 Threats/Challenges

- Delays in project implementation due to lengthy process of land acquisition (LA), R&R, environmental clearances, litigation etc.
- Increasing expectations of its stakeholders
- Emerging market opportunities for qualified manpower of OWD
- Political and Bureaucratic interference in implementation of specific policies, projects etc.
- Growth in population, increased economic activities and improved standards of living leading to exponential increase in use of vehicles and demand for access resulting in road congestions and increased maintenance requirements causing “Growth led Demand – OWD Capacity mismatch”.

Overall, the analysis indicates limitation/deficiencies at organisational/individual levels, which needs to be overcome by policy interventions, system and process improvements, structural changes, human resource development (HRD), realignment of staff positions, provision of required financial resources and by addressing organisational environment and culture and enhancing use of organisational tools so as to finally improve efficiency, effectiveness and economy of operations in the organisation.



4 Review and Analysis of Restructuring Efforts Elsewhere

4.1 Review

The section describes and analyses the restructuring of similar departments undertaken elsewhere inside/outside India and highlights their advantages.

- A separate Policy and Planning Unit has been created in Gujarat as part of Gujarat Infrastructure Development Board. The GIDB develops policies for transport (including roads) and undertakes overall planning of infrastructure (roads, bridges, buildings, power plants etc.) in the state
- The **Gujarat R&B Department** works under one Principal Secretary and manages its activities by 11 CEs heading following sections
 - Capital Project and Arbitration
 - Quality Control
 - R&B *Panchayat*
 - R&B State
 - Policy and Planning and in-charge of Special Projects
 - NHs
 - World Bank Projects
 - Director-Staff Training College and CE (GSDMA)

The positive aspects of Gujarat structure is that Chief Engineers of various (6 highlighted) wings of R&B are also departmental heads, who reports directly to the Government i.e. Secretary. All Chief Engineers of the R&B regular wings are thus ex-officio Additional Secretary to Govt of Gujarat. Besides, R&B department has been deputing CEs to other departments namely,

- CE (Vigilance Commission)
- CE (EC)
- CE (GIDC)

In addition, there are CE level positions at:

- Managing Director-GSRDC (Gujarat State Road Development Corporation)
- CE (Gujarat Housing Commissioner)

The R&B department also extends its role as **Road Wing, GERI (Gujarat Engineering Research Institute, Vadodara)**, which is under the administrative control of Irrigation Department.

- At GOI level, there is a separation of policy, planning and strategy functions with MoRTH and implementation functions with NHAI.
- **The Queensland, Australia** model (where roads and transport forms one Department, **Fig. 4.1**) has a total of five Divisions. Out of these following three are of direct relevance:
 - Policy, Planning and Investment Division (headed by senior person – like EIC)
 - Infrastructure and Delivery Management Division (with three Units each one headed by CE level professional), which focuses on construction, maintenance etc.



- HR Division having 3 units
 - ❖ Finance
 - ❖ HR and Governance (headed by HR professional of CE level)
 - ❖ Information Division (Including IT)

In addition, the fourth Division of “Safety and Regulation Division” caters to both “road safety” and “transport safety”.

- The **Madhya Pradesh Public Works Department** works under one Principal Secretary and manages its activities by having one E-in C and 15 CEs. Out of these 7 CEs manage 7 field zones (Bhopal, Indore, Gwalior, Jabalpur, Rewa, Sagar and Ujjain) , whereas another 6 CEs functions at Headquarters and heads the following wings:
 - Roads
 - Buildings
 - Bridges
 - Capital Projects
 - RDD (Research, Design and Development)
 - Planning and Budget etc.

The state of MP has a separate “Road Development Corporation” to take care of projects on PPP basis.

4.2 Analysis

There are Circles (within a department) or Strategic Business Units (SBUs), whose staff strength is more or less independent of length of roads managed (Ex. CE Vigilance, CE Planning and Policy, CE Externally Aided Projects etc.).

The level and number of staff of some SBUs/Circles are dependent on length of roads and functional focus/needs (construction, maintenance).

With an view to develop a comparative scenario of different states - an exercise was undertaken to “relate” length of roads managed by road sector organization (PWDs or eq.) and number of higher level positions (EICs, CEs, SEs etc.), but large variations were observed in:

- Type and Length of Road Network Managed (BSSL, Single...; Surfaced, Unsurfaced)
- Nature of Organization (separate combinations of roads, buildings, bridges, minor ports, inland water etc.)
- Focus (maintenance, development)
- Existence/absence of other Road Sector Organizations (esp. RDCs)
- Role of Specialized SBUs (as defined above)
- Role of organization as “project manager” or “facilitator”

In view of these variations, no specific/correlating conclusions could be drawn

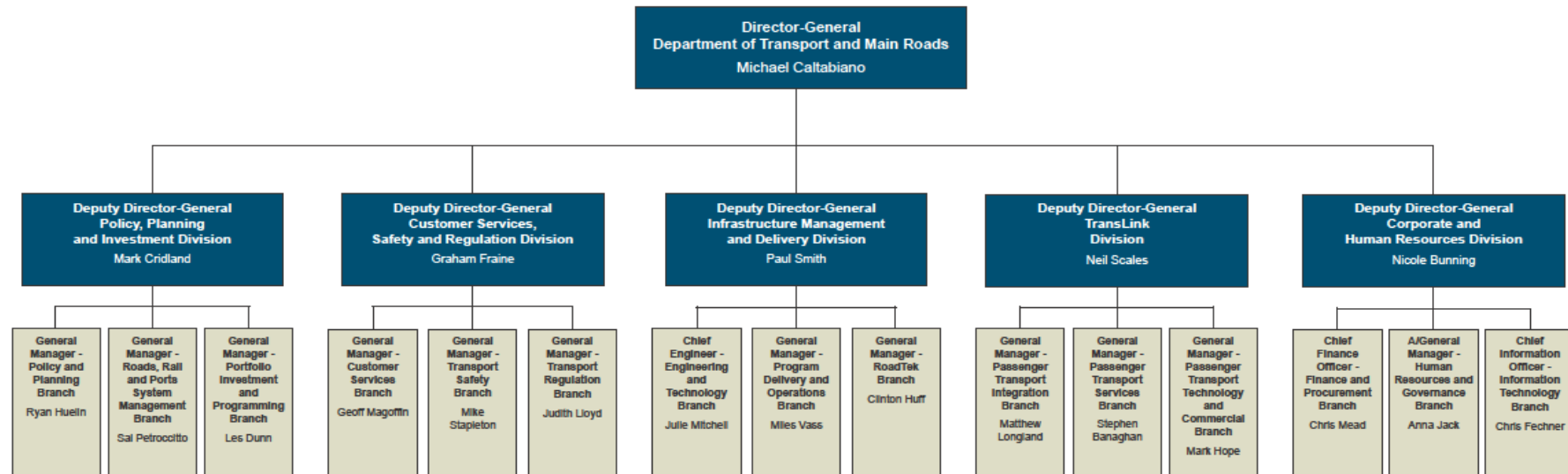


- The number of E-in-Cs across most of Indian states vary from 1 to 4, whereas number of CEs vary from 3 (Mizoram) to 19 (Uttar Pradesh)
- States like Uttar Pradesh (12), Madhya Pradesh (7), Himachal Pradesh (4), Chhattisgarh (3) etc. have regional CEs catering to an average of 4-7 districts
- Some states (MP, AP, Gujarat etc.) have separate organizations like RDCs besides PWDs
- Project Implementation Units (PIUs) have been successfully used to support “intensive, time bound construction needs” by CPWD
- There is only one single department of Transport, Roads and Buildings in Andhra Pradesh. Most of other states have R&B as one single department. Queensland, Australia has Transport and Roads as one Department. Tamil Nadu has separate Department for Highways (roads and minor ports) and PWD, whereas Inland water transport is one of the functions in Karnataka
- Quality Management function is managed by CEs in Punjab, Gujarat, Odisha etc.
- Separate wing for Administration and Establishment exists in Punjab, UP etc.
- Average (5 years, but data spans over 9 years) workload of a R&B division varies from 5 crores to 150 crores in most parts of India (Odisha being no exception) with each division having 3-5 sub divisions.

Overall, different structures (hierarchical, matrix, combined etc.) are available based on functions, level of decentralized decision making, existence of other Road Sector Organizations etc.



Figure 4.1: Transport Organisational Structure and Main Roads



Transport and Main Roads structure as at 12 November 2012.



5 Justification for Restructuring and Key Drivers

5.1 Justification

The review of various road administering organisations indicates that the most important reasons, external to the organisation, for periodic restructuring of a road administration included improvements in technology; information use; associated gains in efficiency; desire of public for participation in decisions determining the quality, level of service delivery, and prices of services received. The interrelationships are complex but road administration bodies everywhere are pursuing decentralisation of some/most of its functions and to provide a greater autonomy to its management. Cost cutting is the most apparent direct benefit of restructuring a road administration. A number of studies support the case for restructuring on efficiency grounds with following inferences:

- Decentralisation in programming the outputs can increase efficiency by 10 to 15 percent;
- Optimal timing and scheduling of works reduce the total road transportation costs (user plus administration) by 5 to 30 percent;
- Efficient, decentralised data collection costs 2 to 3 percent of the maintenance budget;
- Contracting out can reduce costs by 5 to 15 percent; and
- Reworking the planning processes can shorten the planning and design cycle.

The benefit of restructuring a road administration is not simply or even primarily for obtaining cost reductions. Perhaps more important are the qualitative benefits coming from road users and worker satisfaction from responsive government and from meaningful work.

Mature road administration should be synonymous to efficient private organisations in a democratic society. In fact, the evolution of road administration is akin to the evolution of a human being from infancy to maturity, where lines between various phases of evolution are like lines drawn to water.

5.2 Key Drivers for Restructuring

The key drivers can be grouped into external or internal drivers for change in the structure of the organisation.

5.2.1 External Drivers

- Overall economic development and plans
- Technology (GIS, IT, MIS, Design Software, Construction Technology)
- Increased stakeholder expectations
- Emerging Options - PPP, Outsourcing,
- Issues in LA and environment, some of them leading to litigations
- Emerging changes in perception of roads as a public good providing a social service paid for through general taxation irrespective of use (This was because there has been no clear price for use of roads and road agencies were not subjected to “rigorous” market discipline like drinking water agencies, where they charge based on consumption/use). This indirectly has been impacting “road financing”



- Population. economic growth, vehicles, demand for quality roads
- Requirements emerging from institutional options study, funding options and road policy (ex. – creation of RDC, increased tolling, policy may require authority of managing/regulating vehicle axle load to OWD etc.).

5.2.2 Internal Drivers

- Vision and Mission requirements (exact requirements shall emerge – when developed with OWD thru a workshop)
- Strong bureaucratic model of decision making
- Pyramid structure with heavy base
- Static management structure (out of place, outdated). This has several layers of government bureaucracy, which in general are not responsive (longer time) to user needs and not commensurate (location specific) with the value of the assets being managed. It does not offer scope of changing the structure and manpower with changing workload scenario
- Weak management information systems (MIS) leading to deficiencies in planning, costing and financial management/control
- Need for Adoption of improved quality standards, technology to improve efficiency
- Progressive increase in budgetary allocations and works to the Department - supposedly high work load under plan and high non-plan/establishment costs – need for rationalisation of budget and other financial resources
- Improved command, control and communication requirements (further areas to be identified and people authorised – planning, asset management, quality management, design, IT, PPP etc.)
- Need for strong HRM (motivation, training, HR Plan, Cadre management, HRMIS)
- Role change from “provider/executor” to “facilitator” and to be more customer driven
- Increasing need for innovation, research and quality management mainly to meet stakeholder expectations as well as life time costs
- Increasing issues in contract management – many of them leading to litigations
- Increasing redundancies of few positions/services (value loss, market availability, role transfer to private sector etc.)
- Resource limitations (HR) in specific areas of expertise - which may need deputation/parallel entry on specific positions or outsourcing of certain works/services
- Improved authorities, processes etc.
- Need for attracting (right structure, promotional avenues) to young and talented engineers to join the organisation
- Integration of improved technology and other external imposed needs
- Preliminary assessment - employees also consider it as a requirement.

5.2.3 Conclusions

Overall the organisation structure of the OWD needs should address most of the internal and external drivers explained as above. This would make OWD more efficient, effective and an economic organisation and would support sustainable development of road sector in Odisha.



6 Impacts of Other on-going Developments

6.1 Policy Developments – Proposed GOO Road Policy

The ISAP consultancy included a task for RSID Consultants to review the Draft of Orissa Road Policy and develop an updated Road Policy so as to meet the aspirations/expectations of various road sector stakeholders to deliver quality and efficient road network for the transport needs of the people of Odisha. Accordingly, the RSID consultants have (Report on Roads Policy is being submitted separately) recommended required modifications/updates for inclusion in the new Road Policy.

The following functions/deliverables have been emphasized in the proposed Road Policy:

- Long Term Road Network Planning (Master Planning)
 - strategic road network planning
 - supporting balanced development of the total network
 - integration of transport and land-use
 - widening and up-gradation of roads
 - rural connectivity and inter-modal connectivity with airports, railways, tourist/religious destinations, industrial hubs and dry/wet ports.
- Road Development, Maintenance and Management Functions
- Road safety measures and wayside amenities
- Business Planning and Funding:
 - Asset Management for deriving optimum value from investment made in the road network
 - Tolling and dedicated funding for road maintenance
 - Encouragement to PPP in road development and service delivery.
- Mitigating Environmental and Social Impacts: Safeguarding environment and communities (both flora and fauna) from road development/use related impacts
- Capacity Building Measures: Organisation and Management including Training, awareness and education; The capacity building activity includes capacity building of government officials but also of contractors as well as artisans
- Implementation, monitoring and guidelines for revision of road policies etc.

This shall necessitate prioritisation of certain tasks within OWD so as to implement the updated state road policy. This is likely to include:

- Planning for Integrated multi-modal transportation
- Establish a GIS/RMMS System and IT applications
- Capacity Development of OWD
- Environmental and Social Development
- Road Safety
- Asset Management
- Private Sector Participation



- Dedicated Road Funding Options
- Stakeholder Participation

6.2 Impacts of Policy on Functional and HR Needs of OWD

The emerging Odisha Road Policy requires that OWD play the role of the **Principal Road Agency** in the State (**should be valid till appropriate institutional options are evolved**). The proposed update of the Road Policy requires that the OWD performs these roles and responsibilities by embracing the state of the art Road planning, construction, maintenance and management methods coupled with the need to be responsive and proactive in meeting the needs of road users in a rapidly expanding economic development phase the State will be going through. The need for structural changes of OWD organisation and work processes has been well established and shall be addressed through structural adjustments. These, in turn, would necessitate a staffing strategy that is much different from the present. The restructuring exercise (as it progresses) shall analyse the salient changes to be undertaken in the organisational structure of the OWD and then suggest preliminary changes in HR needs arising out of the restructured OWD.

6.3 Impact of Other On-going Developments on Restructuring

Besides policy, other on-going developments were analyzed to assess their impacts on OWD restructuring with a view to incorporate them. This included:

- **Reclassification:** Due to reclassification of roads (both from road policy and master plan exercise), about +20000 km roads are likely to transferred to OWD from Department of Rural Development (Rural works), thus substantially increasing its workload (maintenance) in medium term. This activity may happen in next 2-3 years.
- **Master Plan Development:** Its implementation will require a **strengthened Policy and Planning Unit** and **increase in work load of OWD** due to “construction” of planned roads and later their “maintenance”
- **GOO Plan Developments:** Existing policies indicate projects on social infrastructure (educational and health related buildings etc.). This could require OWD to have a strengthened building construction and maintenance unit
- **Revision of OPWD Code:** Updated roles and responsibilities of OWD officials, revision in processes and systems
- Development of **Institutional Options and Funding Options**; in **long run**, PPP and a “typical group of roads” could be managed by other upcoming organizations (ex. RDC). **THIS IMPACT IS PROPOSED TO BE CONSIDERED LATER, ONCE SUCH OPTIONS EMERGES.**
- **HRD Policy, TNA studies and Training Plan Development:** Development of competencies and need for implementation/management of HRD policy shall require a dedicated HRD/HRM unit
- **Development of Road Safety Action Plan:** OWD shall have a pivotal role in it and would require internal reorganization (including functional addition).



- **Outputs of other Consultancies:** As per recommendations of IT-ICT consultancy as well as internal developments, a strong IT Unit is needed in OWD. Similarly, a unit needs to be established to manage “Asset Management Systems” for roads and buildings.

To validate the above implications on OWD structure as well as the existing needs of OWD, a set of brainstorming sessions (8 Nos.) were conducted both at head office and field offices. The feedback from OWD officials on organizational development/structural changes can be summarized as follows:

- **Inclusion of Specialized Functions:** OWD emphasized on inclusion of separate dedicated units/sections to support IT, PPP, Social and Environmental issues, GIS, Human resource Management including HRD, Research and Research Collaboration, Road Comfort (road condition surveys, road user surveys) etc.
- **Increased emphasis:** OWD officers emphasized that a number of areas (units/sections) needs strengthening and should be upgraded. These include: Policy and Planning, Asset Management (also Building maintenance management system), Quality Management, Training, Design, Contract Management, Road Safety, Monitoring and Coordination etc.
- **Diminishing Emphasis:** OWD officers desired that following areas (units/sections) are not that much required for core functioning of OWD and thus lower emphasis may be laid on them with time. The focus areas include: Research, Lower level Functions like tracing, drafting, labor gang management etc.
- **Other needs:** The other organizational development/structural needs identified by OWD officials included - Cadre management/promotional avenues, employee satisfaction, Training academy etc.

6.4 Institutional Development - Proposed Institutional Options

With increasing economic pressure for road agencies to become more accountable and transparent in their operations is increasing resistance from road user organisations to bearing the burden of increasing costs of road construction and maintenance. Organisations like OWD are coming under increasing pressure to provide good quality roads and to demonstrate high levels of efficiency as to how value for money is achieved in the provision of road services.

The skills and organisational capacity required to manage and maintain a SH and MDR network are becoming increasingly specialized and slowly getting beyond the existing capacity of the OWD. Such specialization includes technological advances in road and bridge design, construction methods and management tools such as computerized pavement management systems and traffic management tools. The competencies and capacities are qualitatively different from those competencies and organisational capacities required to maintain government buildings and minor roads in rural communities. Increasingly, these latter functions are falling to community based organisations to direct the construction and maintenance. This has tended to be reflected in the relative priority and funding levels to organisations which provide these services such as the RDD (Rural Development Department) and the PRD (*Panchayati Raj* Department).



Such a delineation of functions will provide for appropriate management of each of the major functions currently handled by OWD and will facilitate medium to long term decisions concerning the creation of a separate **state highway authority (RDC, Board, Authority)**.

The institutional options study (being undertaken separately by RSID Consultants) has observed following major areas of concern in the current structure and functioning of the OWD. These are:

- The absence of a clearly mandated Chief Executive Officer with authority and responsibility for the day-to-day management of the organisation. All the CEs report to the EIC-cum-Secretary. This position carries the same level of administrative delegation, as the CEs who must refer all matters above Rs 10 lakh to the Administrative Department (and hence the Minister) for approval.
- In the short term OWD may undertake separation of its functions (initially at field level – with separate AEs for these activities) into two distinct areas of operation, namely:
 - ❖ SH, NH activities; and other roads with a state or inter-regional focus; and
 - ❖ Building activities.
- Reduced levels of management to provide more responsive communications and decision making by the organisations service providers together with higher levels of responsibility and accountability. It is anticipated that with improvements in the ability of the organisation to manage data and reporting requirements, the existing circle offices can be reduced/dispensed with completely
- Greatly enhanced specialist capabilities comprising centres of expertise in the various disciplines including design, planning, financial management, HR management, IT, contract and legal services.

HOWEVER, THESE DEVELOPMENTS ARE PLANNED TO BE CONSIDERED IN LONG TERM RESTRUCTURING NEEDS

6.5 Vision and Mission of OWD and its Impacts

It is perceived that OWD shall continue to be the custodian of roads and public buildings in the state and would continue to undertake its mandated functions. However, its operational requirements are going to be governed by some of the following factors:

- Extent of construction of roads and buildings (future plans) – Inputs from Master Planning
- Maintenance management of road and buildings (available and upcoming assets) – Asset management
- Extent of undertaking deposit works (esp. buildings) of other sectors (health, education) – State Plans
- Extent of outsourcing (PPP, EPC etc.) in both construction and maintenance etc.
- Institutional Mechanism (State Road Development Corporation)
- Funding Mechanism: State Road Fund, Five year Plans, Toll Policy, Funds (Premium) from PPP projects etc.



As indicated under section 5.3 (internal drivers for change), the vision and mission of OWD shall have its implications on restructuring. To achieve this vision, strategic reorientation shall be necessary for sourcing and utilising the resources. Such reorientation is proposed to be enabled by appropriate changes in the design of the organisation. The redesign of the organisation will entail changes in the structure, systems and processes, in an integrated manner. The proposed restructuring exercise (long term) shall aim to address various concerns/weaknesses identified under SWOT Analysis (Section 3) of the OWD and its working, which may include:

- multiple functions of the OWD, including being both a client and provider as well as managing roads at different administrative levels (i.e. state and local);
- lack of OWD autonomy, particularly for financial planning (unpredictable and unreliable resources) and staff management (high transfer rate);
- geographic rather than functional separation of responsibilities;
- inadequate coordination amongst the various agencies having a role in the road transport sector;
- ambiguity in ownership of road assets leading to poor maintenance and accountability for road operations and safety;
- lack of multi-year or strategic planning leading to ineffective resource allocation and investment inefficiency;
- lack of customer focus and absence of role for road users in monitoring the sector performance;
- lack of modern human resource management (HRM) techniques;
- poorly developed MIS; and
- outdated core processes in areas such as financial management, procurement, maintenance planning which are generally over centralized.

To identify **specific** and **precise** areas of concern for restructuring, a number of brain-storming sessions were undertaken within OWD, which resulted in bringing forth not only ‘specific’ areas but also a broad spectrum of focus areas, which can be considered as future vision of OWD. Various attributes and OWD perceptions, as revealed from brainstorming sessions, on their nature in next 10-15 years (medium to long term) are described in **Table 6-1** as follows:

Table 6-1: Visualization on OWD (Short to Medium Term)

Attribute	Present Status	Medium Term (next 5 years)	Next 10-15 Years
Role of OWD	Provider/Manager	Manager	Facilitator
Total Staff strength	Adequate to High	Medium	Moderate
Engineering Staff per Crore of budget	High	Medium	Medium to low



Attribute	Present Status	Medium Term (next 5 years)	Next 10-15 Years
(at constant prices)			
Staff – functional flexibility	Rigid	Rigid to Flexible	Flexible (multi-skilled, can undertake different tasks at different times)
HR Skill sets	As per present roles	Differently skilled (IT, project mgt., contract mgt, HRM, Planning etc.)	Differently skilled (Ex. Contract mgt., negotiation, Quality, Financial management, Monitoring etc.), as well as Multi skilled
Learning	Highly limited learning	Open to learning	Learning organization
Outsourcing	Limited (Construction, limited design, supervision etc.), Limited outsourcing of non-core functions	Medium to High Outsourcing of all non-core functions	High to very high outsourcing of highly “specialized” functions required during short-medium time spans (Design, Construction, maintenance) Outsourcing of all non-core, non-critical functions
Internal Technology Use and office automation	Limited	IT, Software use at medium level	High (IT savvy)
Use of Improved Technology (outside org)	Medium	Medium to High	High
Establishment costs as % of total budget (Staff strength)	High	Medium	Low
Functional Specialization	Low to medium	Medium	High
Major Departmental Functions (internal)	Most of Functions	Policy and Planning, Design, Construction supervision,	Policy and Planning, Contract and Quality Management,



Attribute	Present Status	Medium Term (next 5 years)	Next 10-15 Years
		Monitoring	Monitoring and Regulation
Reliance on Government for funding	Very High	High	Medium
Communication and Documentation	Paper copy	Mostly Electronic, Some paper copies	Electronic
Information sharing – public	Low	Medium	High

6.6 Conclusions

Overall, policy development of transport sector and road sector and analysis of institutional options would have impact on functional and HR needs of OWD. Besides, inclusion of identified attributes in medium to long term (vision/mission to be followed by strategies and actions) is going to shape the future of road administration in Odisha and thus the structure of the OWD.



7 Restructuring

Restructuring road organisations is a complex task. It is affected by many factors, including the history of the state/country, its administrative culture, role of the state and the influential persons mapping out the road administration’s vision and ways for the future. Besides these, as detailed under section 6, both policy changes and institutional options study shall also guide in defining, delineating and quantifying the extent of functions to be performed by OWD.

7.1 Approach and Methodology

The restructuring exercise had been undertaken in a **participatory** and **consultative** mode and has relied heavily on analysis of cause-effect relationships of present weaknesses. This has used the following methodology:

Desk Research	Collection, review and analysis of secondary data/documents Review of ongoing sectoral developments
Policy Review	Review of policy documents governing functioning of OWD/GOO
Consultations with OWD Officials	Consultations/Feedback exercise with OWD officials – individual discussions, group discussions, workshops etc., besides questionnaire for primary data collection - interaction with + 100 officials in various cadres Vision on future trends in design, procurement, outsourcing etc. besides estimation of norms
Assessment of work culture, work load and physical facilities	Assessment of work load (financial aspects, type of works, process of implementation of works) of various officials using questionnaire, besides assessing work place environment, organisational culture, staffing, institutional capacity and institutional needs.
Stakeholder Consultation	Interactive meeting/structured workshop/FGDs with stakeholders to identify issues and gaps in meeting their expectations: Vision-Mission Workshop, Group discussions on restructuring, Individual consultations
Data/Information collection	Data/information collection related to internal status of HR, training, IT infrastructure etc. through questionnaire etc.
Observations	To understand organisational culture etc.

7.2 Principles of Restructuring

- Support to vision and mission and anticipated attributes
- Improved decision making supporting decentralisation



- Increased horizontalisation
- Supporting functional specialisation to the extent possible
- Efficient processing
- Minimum staff redundancies
- In line with HRM principles and with little HRD should encourage multi-tasking and support wide spread application of IT
- Cost cutting
- Encourage Outsourcing – functions which are not “key” functions and can be outsourced leading to economy of operations.

Fig 7.1 depicts the schematic presentation of the process/steps of restructuring and **Fig 8.1** (Five sheets attached at the end of Section 8) presents the action plan. The total process has been observational, feedback based, consultative and participatory.

7.3 Expected Key Functions from OWD

Good road sector management involves a clear demarcation of key functions and the agencies/units that should be assigned to carry them out. This is necessary to achieve accountability and clarity of roles of each Unit. Ideally, key functions of Policy making, Planning, Implementation and Regulation should be handled by different agencies/units. Organisational design should be aimed at achieving separation of key roles in the long term. The key functions that have to be carried out by the OWD are planned to be segregated into the following:

- *Policy making*, dealing with broad level issues which would impact the sector and hence impact the economy of the state as a whole.
- *Planning*, which includes a gamut of issues ranging from the long and short term strategic planning for the sector to project level planning for individual projects
- *Implementation*, which can be further broken down into Technical support services including Procurement (procurement of goods, services and works or consultants, contractors and other service providers); Management and monitoring (both physical and financial progress of the projects as also quality monitoring of the work on new projects or maintenance)
- *Regulation*, needed to ensure the service delivery meets the standards and quality guidelines set for the sector in addition to safeguarding the stakeholder’s interests

Analysis and stakeholder consultation has been used for working on possible functional separation.

7.4 Basis of Short to Medium Term Restructuring

- There is an exclusive need for separate departments (strategic business units -SBU’s) for Policy and Planning, HRM and HRD, LA and Environmental, PPP, IT etc.
- Geographical decentralization shall lead to efficiency improvements as well as better command and control. Indirectly, it shall also support “contractor capacity development” – a desired offshoot.

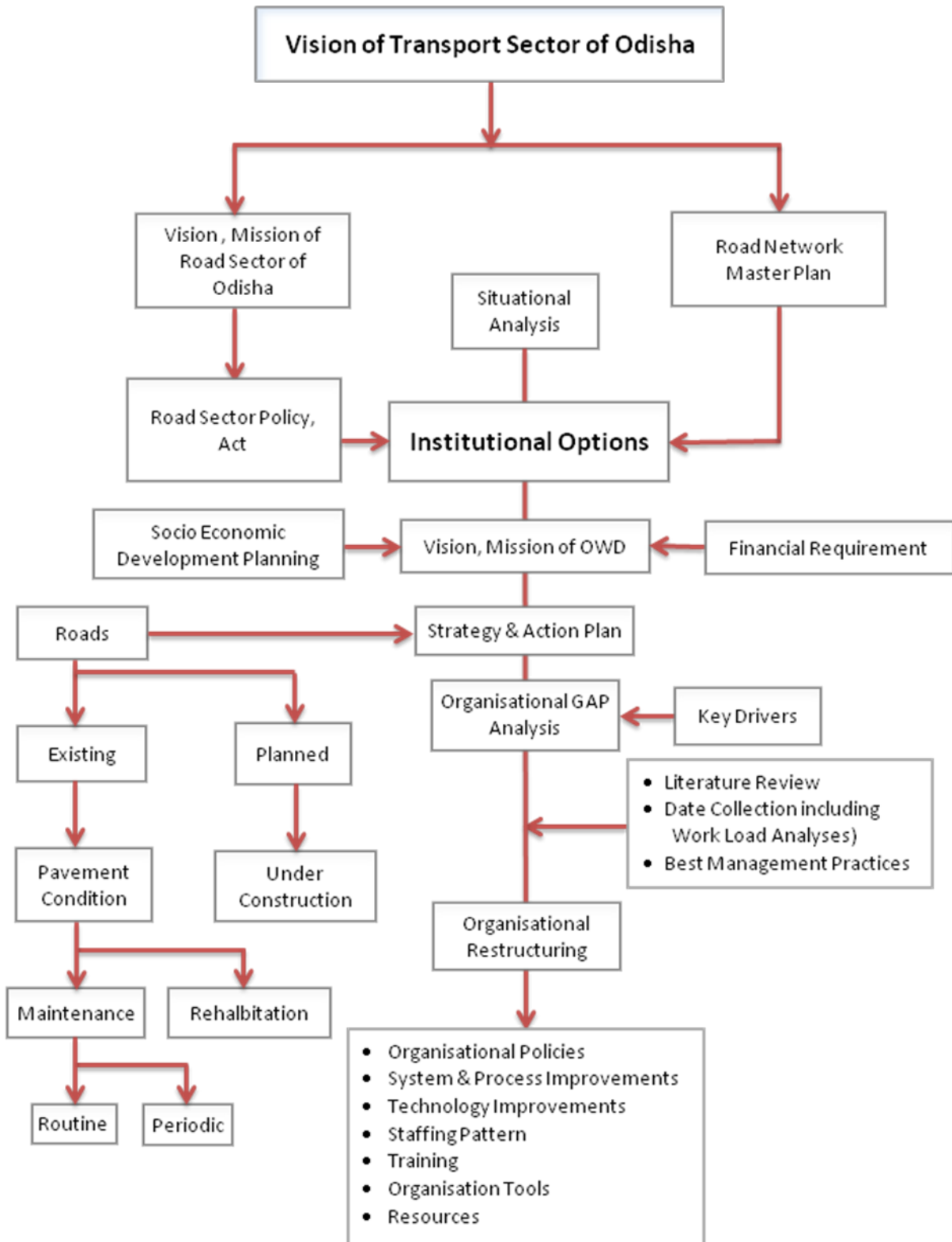


Figure 7.1: Schematic of Process of Organisational Restructuring



- Project Implementation Units (equipped with specialized project management skills) shall provide operational flexibility in managing specialized tasks Ex. Specialized connectivity/corridor (mining, industrial, tourism) development spanning more than one division
- Readjustment of work-load norms with changing roles (ex. PPP projects could have OWD more as a facilitator), thus making them competent to undertake higher financial workloads – **long term implication is that it could require a “leaner” OWD.**
- To ensure authority, certain functions will have to be entrusted to higher level officials only (Ex. Vigilance, Quality Management etc.)
- Non-critical/non-core functions like operation of vehicles, housekeeping, gardening, etc. shall be increasingly outsourced. (No additions esp. of Group “C” and “D” employees). – **Manage from within**
- To make use of unskilled staff/staff on redundant positions – multi-skilling shall be increasingly used as a tool. – **Manage from within**
- **Role change (manager to facilitator)** should require a **leaner structure in long run.**

7.5 Restructuring at HQ level

Various options of restructuring of OWD exists, each with its pros and cons. It needs to be understood that these options are being developed with the objective of improvements in efficiency, effectiveness, economy of operations etc. and by considering change drivers mentioned above. The evaluation of each one of them, commensurate with OWD Vision and mission, would assist in choosing a much more appropriate (or most suitable) structure.

7.5.1 Option 1

No Structural change has been proposed. However to meet emerging needs, these additional responsibilities have been proposed to be undertaken by existing SEs. Suggestions are:

- **HRM** - proposed either with SE (NABARD) or SE (ISAP)
- **PPP** - proposed with SE (ISAP)
- **IT** - proposed with SE (e-procurement)
- **LA and Env.** - proposed with SE (NABARD)
- **Road Safety** - proposed with SE (Roads under Design)
- **GIS and Research Collaboration** - proposed with SE (Quality)

However to undertake these functional areas, one post each of EE has been proposed. Therefore six additional executive engineers have been proposed under option 1 to be positioned with above mentioned SEs.

7.5.2 Option 2

Under this, 2 functional groupings, headed by respective EIC has been considered:



A. One group is '**Administration & Technical Services**', which includes

- HRM (including HRD and Training)
- Legal, Complaints, Vigilance
- Licensing
- Public Relations, Right to Information, Complains, Assembly Questions
- Monitoring Wing – Road Policy, Road Safety, Road user Satisfaction
- IT/MIS WING
- Coordination with funding agencies (NABARD, GOI, etc.)
- Asset Management (Computerised) and Estate Management
- Documentation and Library Management (maintaining various IS standards, project reports, DPRs etc.).

Designs Unit

- Structures (design and design standards, technical circulars)
- Road Design and Consultancy
- Building Design and Consultancy
- Bridge Design and Consultancy
- Road Safety and Road Amenities
- Rates, Specifications and Contracts (including e-procurement)
- Quality Management
- GIS CELL
- Technology Innovation and Research
- PPP Cell
- Project Management and Support Unit:
 - Project Development (Surveys and investigations, Environmental and Social aspects)
 - Central Procurement including e-procurement and PPP
 - Contracts Management
 - Monitoring and Evaluation
- Architecture and Landscaping

B. Second group is '**Projects**', which is **headed by EIC (Projects)** and includes strong field functions. This shall have work load of both departmental as well as deposit works. This shall consist of **Policy and Planning Unit besides project implementation.**

The project implementation has been further sub grouped in:

Roads and Buildings: All SH, MDR and ODRs (De-centralization has been promoted by suggesting **three zonal CEs looking after roads, bridges and buildings in three zones**) – with major functions like preparation of DPRs, Construction/supervision, O&M, R&R, protecting right of way, encroachments



Roads: CE (NH) has been maintained

CE Road projects and Building projects has been suggested at HQ. These shall also have their project Implementation Units to take care of implementation of major projects- with major functions like preparation of DPRs, Construction/ supervision, O&M, management of circuit house, inspection bungalows;

Functions of Finance: Budgeting, Fund Allocation, Accounts, Audit, Toll Collection.

This has been depicted in **Fig. No. 7.2.**

Short to Medium Term: Option 2

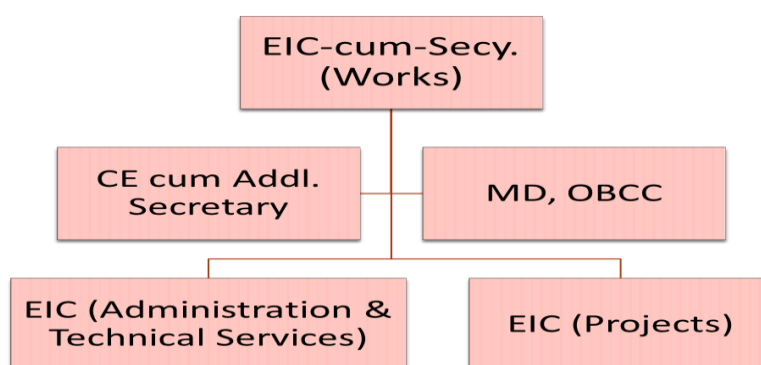


Figure 7.2A: Overall Structure of OWD

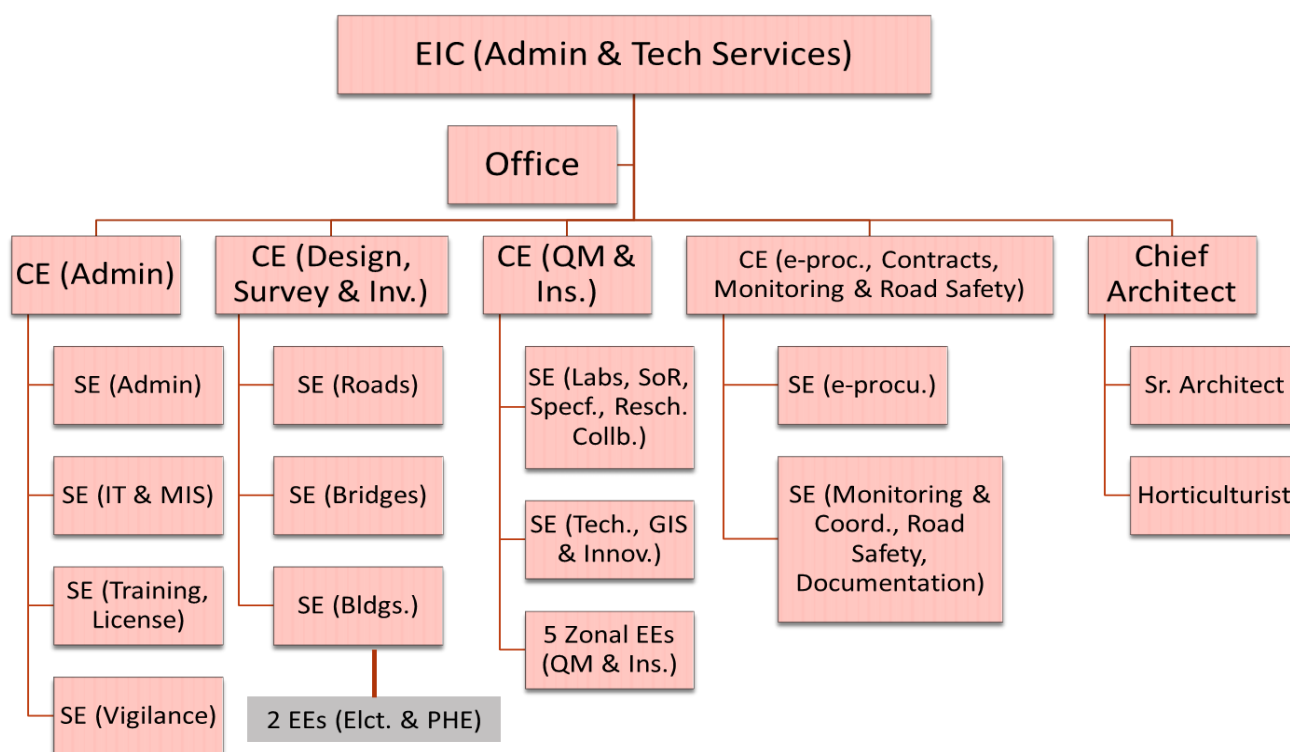


Figure 7.2B: Organisational Structure of EIC (Admin & Tech Services)

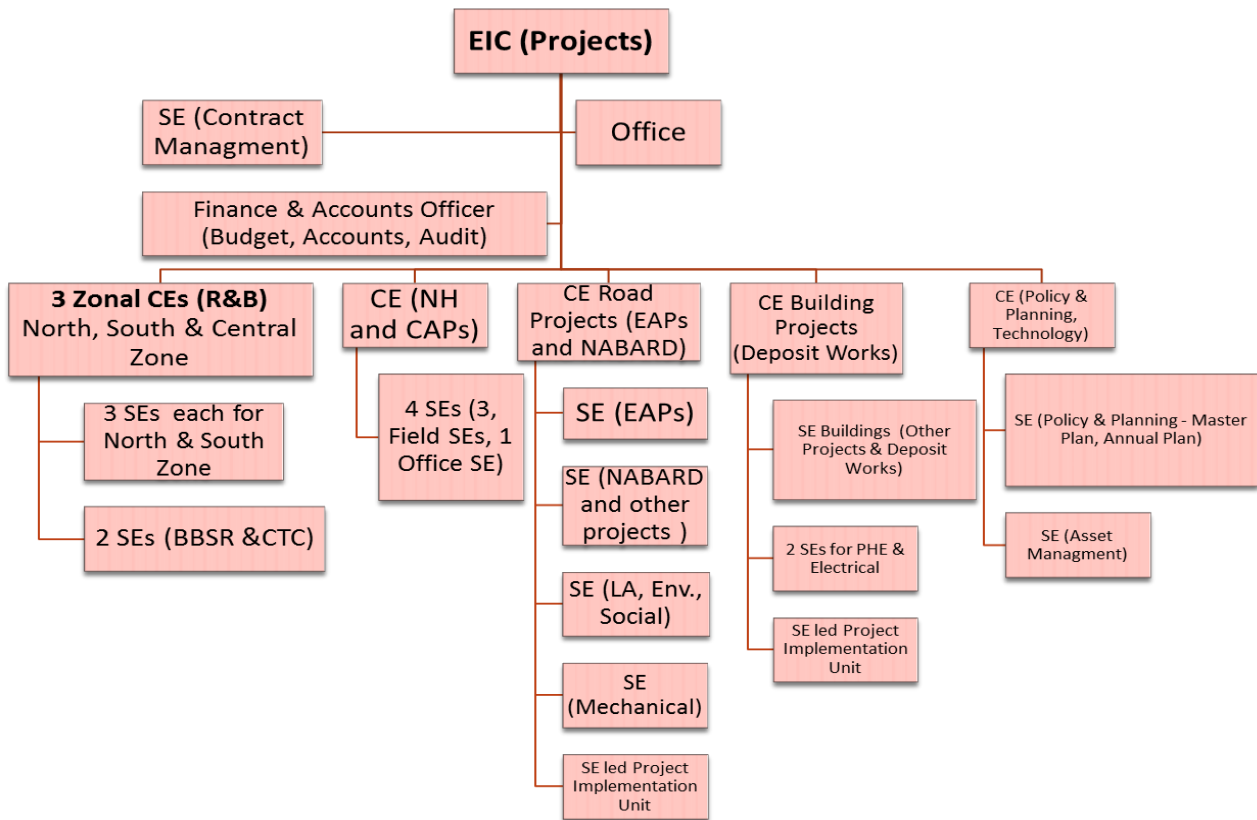


Figure 7.2C: Organisational Structure of EIC (Projects)

This option shall require 1 additional EICs, 4 additional CEs and 8 additional SEs, whereas it shall require 2 less EEs than the existing approved strength of OWD. There shall be anticipated time requirement in the approval of these additional positions from Department of Finance, GOO and thus it is suggested that till these positions are created, work can be undertaken by assigning additional charge to existing incumbents.

7.5.3 Option 3

Under this, 3 functional groupings, headed by respective EIC has been considered:

A. One group is 'Administration', which includes:

- HRM (including HRD and Training)
- Legal, Complaints, Vigilance
- Licensing
- Public Relations, Right to Information, Complains, Assembly Questions
- Monitoring Wing – Road Policy, Road Safety, Road user Satisfaction
- IT/MIS WING
- Coordination with funding agencies (NABARD, GOI, etc.)
- Asset Management (Computerised) and Estate Management



- Documentation and Library Management (maintaining various IS standards, project reports, DPRs etc.).

B. The second group has been termed as “Technical Services” and includes:

- **Designs Unit**

- Structures (design and design standards, technical circulars)
 - Road Design and Consultancy
 - Building Design and Consultancy
 - Bridge Design and Consultancy
- Road Safety and Road Amenities
 - Rates, Specifications and Contracts (including e-procurement)
 - Quality Management
 - GIS CELL
 - Technology Innovation and Research
 - PPP Cell
 - Project Management and Support Unit:
 - Project Development (Surveys and investigations, Environmental and Social aspects)
 - Central Procurement including e-procurement and PPP
 - Contracts Management
 - Monitoring and Evaluation
 - Architecture and Landscaping

C. **Third group has been stated as PROJECTS- headed by EIC (Projects)** with strong field functions. This shall have work load of both departmental as well as deposit works. This shall consist of **Policy and Planning Unit besides project implementation.**

The project implementation has been further sub grouped in:

- Roads and Buildings: All SH, MDR and ODRs (De-centralization has been promoted by suggesting **three zonal CEs looking after roads, bridges and buildings in three zones**) – with major functions like preparation of DPRs, Construction/supervision, O&M, R&R, protecting right of way, encroachments
- Roads: CE (NH) has been maintained
- CE Road projects and Building projects has been suggested at HQ. These shall also have their project Implementation Units to take care of implementation of major projects- with major functions like preparation of DPRs, Construction/ supervision, O&M, management of circuit house, inspection bungalows;
- Functions of Finance: Budgeting, Fund Allocation, Accounts, Audit, Toll Collection.

This has been depicted in **Fig. No. 7.3.**



Short to Medium Term: Option 3

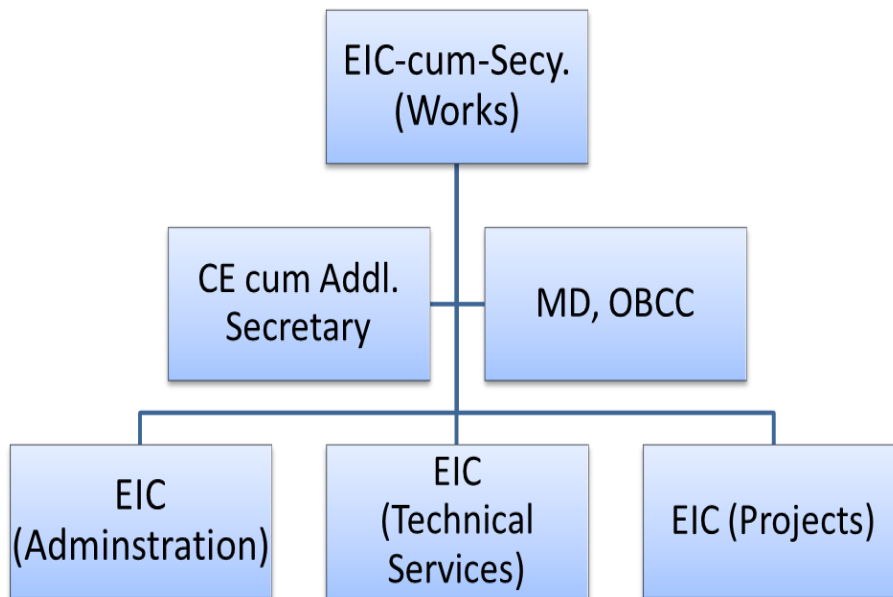


Figure 7.3A: Overall Structure of OWD

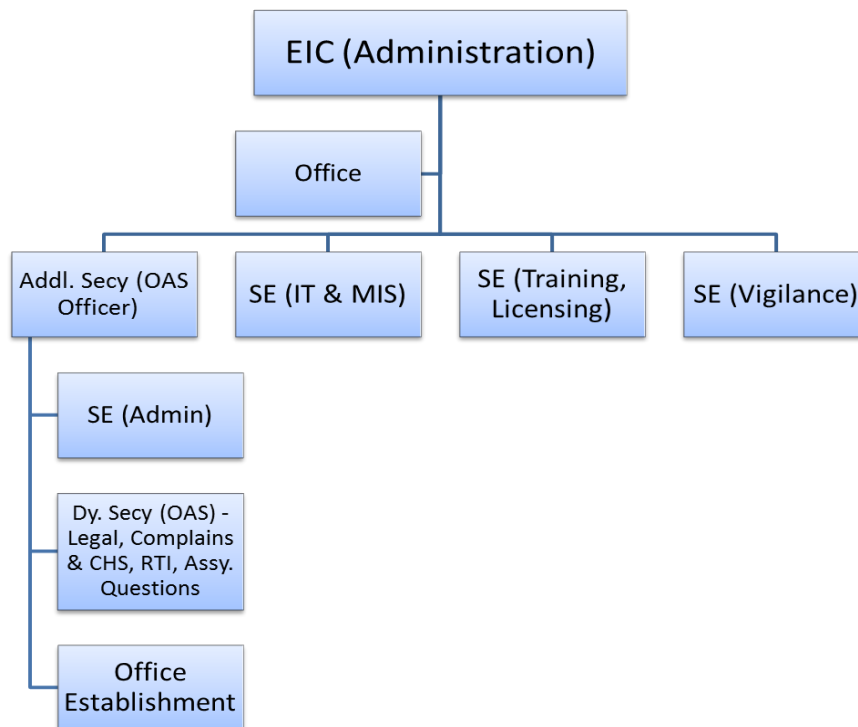


Fig 7.3B: Organizational Structure of EIC (Administration)

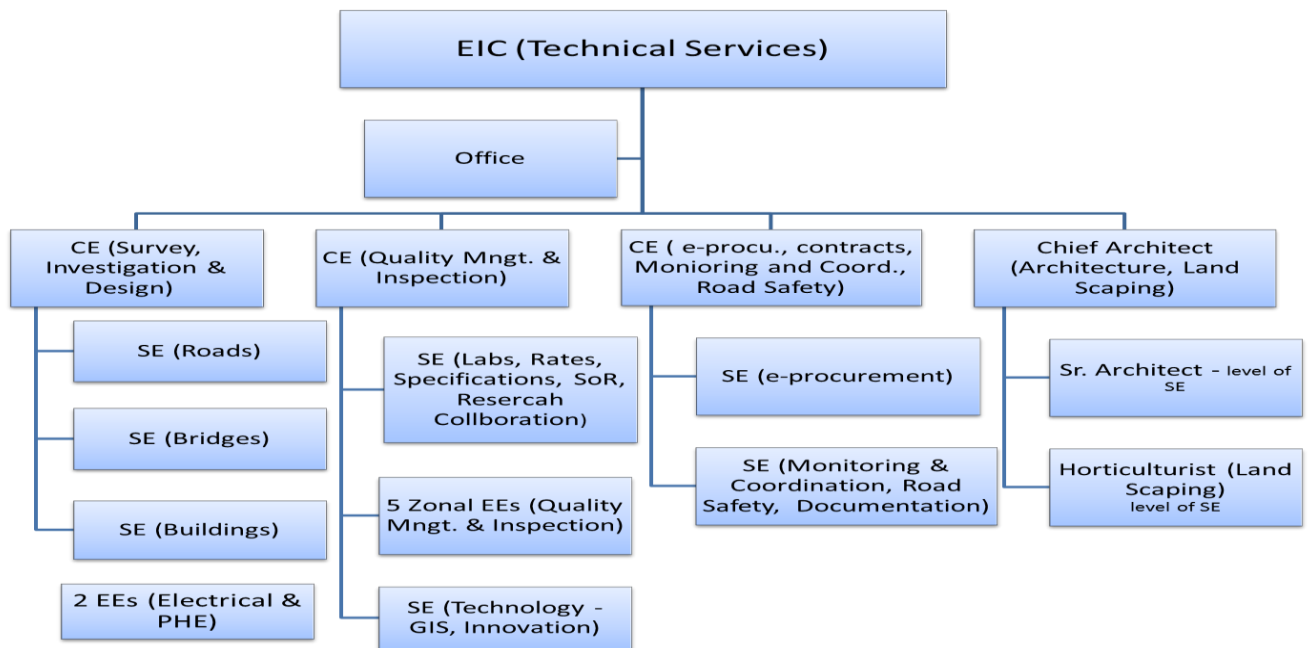
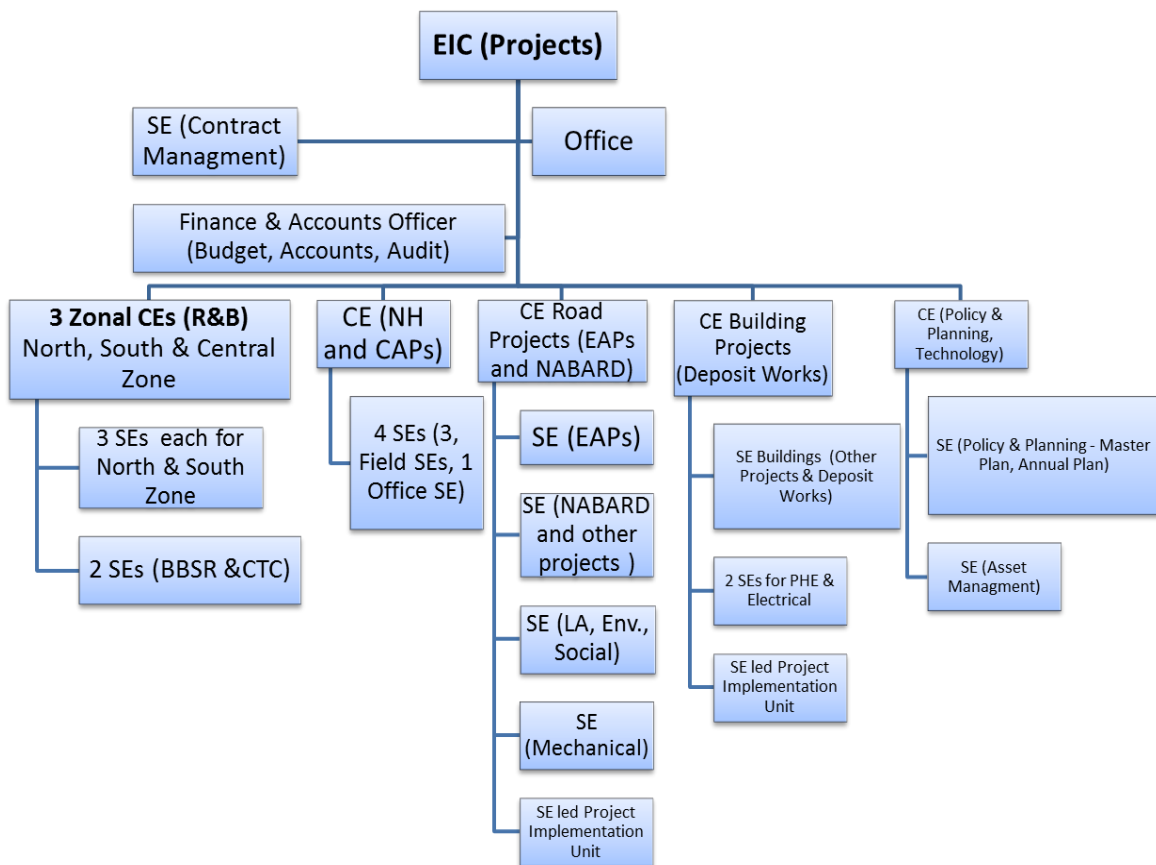


Fig 7.3C: Organizational Structure of EIC (Technical Services)



Three Zonal CEs are proposed during short term. However in 10-15 years' time and based on work load data, OWD shall have 5 Zonal CEs – each one having a minimum of 2 SEs.

Fig 7.3D: Organizational Structure of EIC (Projects)



This option shall require 2 additional EICs, 3 additional CEs and 8 additional SEs, whereas it shall require 2 less EEs than the existing approved strength of OWD. There shall be anticipated time requirement in the approval of these additional positions from Department of Finance, GOO and thus it is suggested that till these positions are created, work can be undertaken by assigning additional charge to existing incumbents.

7.5.4 Option 4

This could be based on road types: major roads (NH, SH) with one EIC and others (ODRs, Buildings) with second EIC. Each EIC may have one/two CEs. In addition some centralised functions like Policy and Planning, Design, HRM etc. could be at HQs.

- Policy and Planning Unit
- Administration: HRM, HRD, Vigilance, Employee grievance redressal
- Design (Roads, Buildings, Bridges)
- Techno-Legal cell – Legal/arbitration, contractual grievances

7.5.5 Option 5

This can have Policy, Planning HRM, IT etc. functions at HQ. Where as Projects (Roads, bridges, buildings separate) - can be managed on zonal basis. For which works (roads, buildings etc.) can be distributed on zonal basis (East, West, North, South and BBSR+Cuttack) or zones defined in a combination of few districts. Beside this, effort should continue to convert OWD into a flexible, lean organisation with adequate scope of outsourcing (at least) non-core services as the role of OWD changes from 'manager' to 'facilitator'.

7.5.6 Option 6

The issue of functional bifurcation into Roads & Buildings was discussed at length at various forums with OWD officials. Such a delineation of functions will provide for appropriate management of each of the major functions currently handled by OWD and will facilitate medium to long term decisions concerning the creation of a separate state highway authority.

However due to cadre management issues (limited promotional avenues) and based on the role of 'relationship with district administration i.e. Collector etc.' this functional bifurcation could not be agreed.

7.6 Issues in Restructuring at Field Level

Under the present set up, the EE of the district is responsible for all kinds of activities related to planning, construction, maintenance and public relations for works connected with government buildings and roads under his jurisdiction. Besides this, the EE is to discharge administrative responsibilities. Because of multifarious activities under the charge of EE, the road/building maintenance activities mostly remain neglected. The EE can hardly spare time for planning and programming of maintenance works under his jurisdiction. With a strategic aim to contribute sustainable development by maintaining, operating and improving the core road network (besides



buildings) in support of Government policies, restructuring of organisational set up of OWD would have to be suggested. Under the restructured organisational set up, road and building activities at district level may be entrusted to separate units, which should be responsible exclusively for the operation and maintenance of existing core network (and buildings) including supervision of maintenance activities of all kinds. This unit should liaise with road/building users and development councils.

In public works department across the country, work load norms of a field division are indicated as average annual budget allocation to the division. An analysis of workload of various divisions of OWD in Odisha was undertaken. The average of workload, based on past three years of data, works out to be Rs. 43 Crores, ranging from 5 Crores to 123 Crores. According to current norms the minimum work load of a normal works division should have been around Rs. 35 crores (revised estimate of consultants based on inflationary adjustments of defined norms). While doing this analysis, it is strongly felt that fixing of norms based on budget allocation has some major drawbacks. It does not take into consideration the type of activities (new, old, road, building etc.), geographical location of such works from office, and efforts needed to accomplish the job assigned. It will be more appropriate if the norm of a core road division is based on physical assets i.e. length of roads to be maintained by it as well as mode of getting the work done (departmentally, contracted out etc.), use of modern techniques. Similarly, there is a need to change the work load norms for building divisions.

The works at field mainly involves construction, maintenance, encroachments etc. Major factor for staffing should then be average (as well as specific) workload at each division/sub division during last 3 years, which needs to include following factors:

1. Total budget allocation for works (This can be for new works and maintenance – It should not include establishment costs and office contingencies for non-recurring like equipment, vehicles etc. and consumables like stationery, POL etc.)
2. Type of works (new, repair works, operations and maintenance, roads or buildings – categorised into civil, mechanical, electrical and even PHE works, if possible)
3. What % is undertaken departmentally and what % are contracted out for each type of work (as defined under pt 2)
4. Geographical spread (number and length of roads, type of roads, geographical spread of buildings, number and total area of buildings)

However realising the current trends of increasing facilitation (award of contracts, PPP, EPC etc.), the annual financial workload can easily be revised to INR 60 Crores per division or Rs. 15 Crores per sub-division. The OPWD Code has suggested certain norms for performance monitoring role of OWD staff responsible at all levels. These norms could in turn decide the actual staff requirements at various divisions & sub-divisions. Policy wise it would have been much appreciated if OWD could adopt a flexible policy of transfer of sub-divisions (en-block) based on projected workload requirements of other divisions.



7.7 OWD Feedback on Structural Options

The purpose of this working paper was to review the present scenario, review the past efforts on restructuring, identify the emerging requirements of OWD, consider changes in the role of OWD and to suggest few structural options to improve efficiency and effectiveness of the organisation.

To receive the OWD feedback on proposed structures, a large number of meetings were held with OWD officials over a period of 5-6 months. The feedback from OWD focused on:

- Decentralized decision making (geographical autonomy)
- Functional Specialization (Administration, Technical Support Services, Projects - Roads, Bridges, Buildings)
- Project Implementation Units to undertake specialized tasks ex specialized connectivity/corridor development
- Clearer relationship to structure (better command and control)
- Outsource-able Functions: Vehicle operations, Housekeeping, data entry, gardening etc.
- Readjustment of work-load norms with changing roles
- Roles and responsibilities of officials (OPWD code)

During these meetings, the geographical empowerment or decentralise decision making (creation of two regional CEs) found strong favour due to improvements in: faster decision making on projects, resolving conflicts and developing capacity of the local contractors, improved administration and supervision leading to better project execution and quality management etc. The separation of projects (works) from administration & technical support services also was favoured on the basis of functional specialisation.

The participants in these meetings included officials from various levels. A good number of CEs also participated in the discussions on the logic and structural options. There was a general preference on Option 3 amongst the above proposals.

For the follow up report on restructuring (**after acceptance of this working paper**), a final decision will be taken with OWD to freeze the revised structure of the OWD and effort will be made to device ways/evaluate the benefits (tangible and nontangible) in long run, as a result of restructuring.



8 The Way Forward

Restructuring Actions (to be undertaken)

- Finalization of Vision, Mission of OWD in line with activities outlined in Fig 8.1
- Freezing of preferred restructuring options for OWD
- Mapping the responsibilities of OWD officials under restructured scenario – this will elaborate roles, responsibilities, powers and their limits
- Redefinition of work load and planning for revised HR and HRM (training, motivational, incentivise etc.) – In general, this will mainly be drawn from the OPWD Code recommendations with desired modifications if any
- Assessment of Structural and HR (type, number, competency) gaps within OWD to meet mandated responsibilities
- Exploring possible options to meet the HR competency requirement, which are generally not available within OWD (ex. IT & Computer related, HRM related, Social & Environmental related etc.), as they don't relate to engineering functions
- Assessment of additional cost vs additional benefits (both narrative as well as in numbers as far as possible) due to restructuring
- An implementation plan depicting the phasing of restructuring (as all the suggested modification can't be undertaken in one stroke)
- Strategies and guidelines for Change management
- Implementation and monitoring guidelines of structural changes and their impacts.



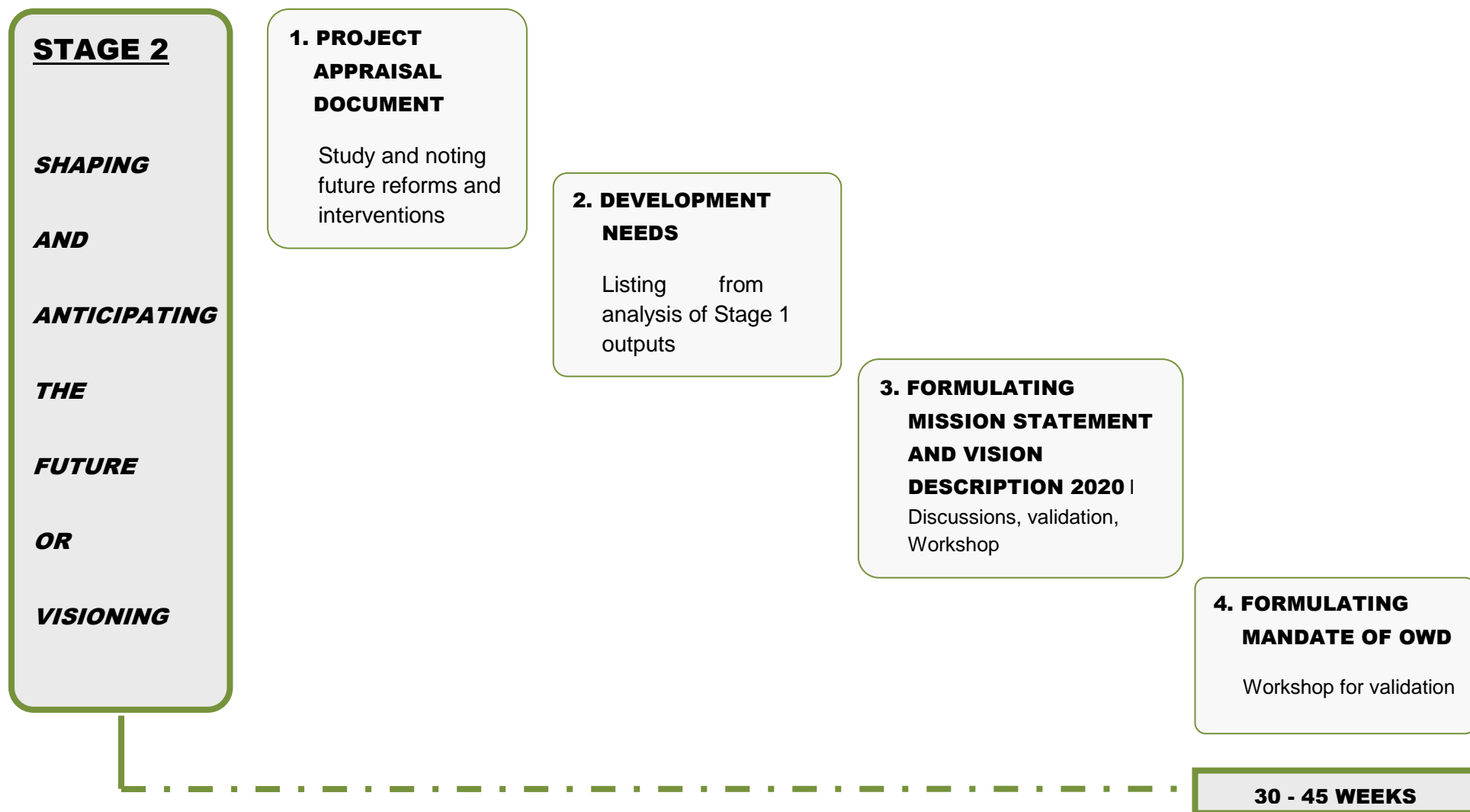
Figure 8.1: Organisation Restructuring Action Plan

STAGE 1: ANALYSIS OF THE CURRENT ORGANISATIONAL SITUATION





STAGE 2: SHAPING AND ANTICIPATING THE FUTURE OR VISIONING





STAGE 3: IDENTIFYING FUTURE SERVICES TO OFFER OR OBJECTIVES TO ACHIEVE AND THE "CORE COMPETENCIES" REQUIRED





STAGE 4: IMPROVING PROCESSES





STAGE 5: REENGINEERING (STRUCTURALLY CHANGING) PROCESSES

STAGE 5

RE-ENGINEERING

(STRUCTURALLY CHANGING)

PROCESSES

1. IDENTIFYING GAPS IN THE ROAD SECTOR POLICY, ACTS (With Policy Expert)

Internal discussions and validation

2. ADDITIONS TO THE STATE ROAD SECTOR POLICY

Internal discussions and validation

3. IDENTIFYING GAPS IN THE RELEVANT ACTS AND SUGGEST NEW PROVISIONS TO FILL THE GAP

Internal discussions and validation

4. ADDITIONS TO THE PROPOSED TOLL POLICY

Internal discussions and validation

5. PROPOSED REFORMS IN HUMAN RESOURCE POLICIES, AND PROCEDURES

Internal discussions and validation

6. GENERATING ALTERNATIVE FOR REDEPLOYMENT OF REDUNDANT POSITIONS AND FORMULATING IMPLEMENTATION PLANS

Internal discussions and validation workshop

7. REFORMING RIGHT SIZING & VOLUNTARY RETIREMENT SCHEMES AND FORMULATING IMPLEMENTATION PLANS

Internal discussions and validation workshop

8. REENGINEERING SELECTED BUSINESS PROCESSES

Process analysis, internal discussions and validation

9. COLLATING AND DOCUMENTING LEARNING FROM PILOT AND OTHER EXPERIENCES

Internal discussions, validation, documentation

10. SUGGESTING CHANGES IF ANY IN OWD MIS AND DECISION SUPPORT SYSTEM FRAMEWORK

Internal discussions and validation w/shop

11. PROPOSED CHANGE MANAGEMENT STRATEGIES

Internal discussions and validation w/shops

12. COMMUNICATING INTERVENTIONS ACROSS OWD

Field, training and handholding

90 - 110 WEEKS