



GOVERNMENT OF KARNATAKA

**EVALUATION OF KARNATAKA RURAL
INFRASTRUCTURE DEVELOPMENT LIMITED
(KRIDL) FROM 2014-15 TO 2019-20**



ಕರ್ನಾಟಕ ಮೌಲ್ಯಮಾಪನ ಪ್ರಾಧಿಕಾರ
Karnataka Evaluation Authority

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DEPARTMENT OF PLANNING, PROGRAMME MONITORING AND STATISTICS
GOVERNMENT OF KARNATAKA
FEBRUARY 2022**

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INFRASTRUCTURE DEVELOPMENT LIMITED
(KRIDL) FROM 2014-15 TO 2019-20**

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LIMITED

DEPARTMENT NAME: KARNATAKA RURAL INFRASTRUCTURE
DEVELOPMENT LIMITED (KRIDL)



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FOREWORD

Employment generation has always been a concern of planning and policy makers in the choice of growth strategies. The rural infrastructure works are labour intensive as well as provide basic facilities like good health, education, electricity, water, sanitation, and improved connectivity to the market and thus ensure quality life and better livelihood. For successful and timely implementation of such rural infrastructure projects in rural areas and to avoid the presence of middlemen, Government of Karnataka established Karnataka Rural Infrastructure Development Ltd (KRIDL). The evaluation of KRIDL from 2014-15 to 2019-20 was initiated by department of Public Enterprises to assess its performance in fulfilling the objectives of employment generation, infrastructure needs, operational efficiency and sustainability. The evaluation was done by CRISIL Infrastructure Advisory under the guidance and support from Karnataka Evaluation Authority

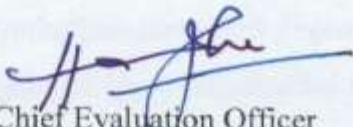
This evaluation study is heavily evidence driven and has relied on both primary and secondary data. Physical checks and opinion survey of users, for a sample of 496 works supported by the qualitative data collected through discussion with the officers and the focused group Discussions.

The findings indicate that the objectives of the organization are fulfilled to a large extent. 40% of the project cost constitutes labour component. It is estimated that on an annual basis, an average of 205 lakh man-days of unskilled and 33 lakh man-days of skilled employment was generated. Larger material procurements are done directly from vendors using a transparent and competitive bidding process, Some of the salient socio-economic outcomes and impacts noted by users/ beneficiaries are as follows: improved water taste (drinking water/ RO water units), better access to schools and improvement in social status (hostels for backward category population), improved experience of daily commute and travel safety (roads), time savings (pathways), improved sanitation/ cleanliness standards of the area (drainage works), improved office infrastructure and training facilities (government buildings) As per the CAG findings, 18% of the reviewed works were found to be facing delays – most of the delay cases ranged between 1 to 6 months, slow progress of work, increase in cost of materials, delay in handing over of site by EAs, land related issues, change in scope of work, delay in release of funds and impact of COVID-19 induced disruptions are the causes for delay. 10% of the works have quality issues.

Financial efficiency can be improved by executing larger and more complex projects, which shall yield better profit margins. This will need a strengthening of the design wing within KRIDL through hiring of technical manpower and acquisition of design tools. Engineering consultancy is a possible option for upstream expansion. KRIDL can explore services such as design consultancy, lender's engineer, independent engineer, technical feasibility studies, preparation of detailed project reports, etc. KRIDL should obtain a Class 1 PWD contractor's license and also get accredited for international certifications. KRIDL needs to better utilize its significant cash reserves and fixed assets. Existing equipment/ machinery/ infrastructure should be upgraded and put to use. a performance management system defining key performance indicators. Capacity building of the staff, implementing Enterprise Resource Planning (ERP) solution across key modules such as Engineering, Material management, Contract management, Financial accounts, Tender management, and MIS, Procure software based project management solutions to automate the tasks of planning, design, price and quantity estimation etc.

I expect that the findings and recommendations of the study will be useful to the Government & Department of Public enterprises as well as KRIDL to bring in the necessary changes in its functioning to improve the service efficiency and to emerge as a commercial entity to attain sustainability over time.

The study received support and guidance of the Additional Chief Secretary Planning, Programme Monitoring and Statistics Department, Government of Karnataka. The report was approved in 53rd Technical Committee meeting. The review of the draft report by KEA, the members of the Technical Committee and an Independent Assessor, has provided useful insights and suggestions to enhance the quality of the report. I acknowledge the assistance rendered by all in successful completion of the study.


Chief Evaluation Officer
Karnataka Evaluation Authority

ACKNOWLEDGEMENTS

We express our sincere gratitude to the Additional Chief Secretary, Planning, Programme Monitoring & Statistics Department, Government of Karnataka for her guidance and support. We thank the Karnataka Evaluation Authority (KEA); Planning, Programme Monitoring & Statistics Department; Government of Karnataka for providing us the opportunity to conduct this study. Specifically, we would like to thank the Chief Evaluation Officer, KEA and Additional Chief Evaluation Officer, KEA for their timely suggestions, inputs and guidance that helped shape this study.

We would also like to extend our thanks to the Managing Director, Karnataka Rural Infrastructure Limited (KRIDL), Government of Karnataka, for the enthusiastic support, inputs and timely information. Despite the fact that many Government departments/organizations were significantly impacted by the COVID-19 pandemic during the study, it was heartening to receive timely support and information from all the Chief Engineers and nodal officers across all 6 zones of the department.

Further, we greatly appreciate the support provided to the field team for works identification and inputs provided by officials across the hierarchy – in the form of their responses to the survey questionnaire or their participation in the In-depth interviews (IDIs) and Focused Group Discussions (FGDs).

— Study team, led by Dr. Bokepalli Kanaka Durga Raja, Principal Investigator

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ABBREVIATIONS

Abbreviation	Description
AE	Assistant Engineer
AEE	Assistant Executive Engineer
BBMP	Bruhat Bengaluru Mahanagara Palike
CAO	Chief Administrative Officer
CE	Chief Engineer
CFO	Chief Financial Officer
CSR	Corporate Social Responsibility
DQM	District Quality Monitoring
EBIT	Earnings before Interest and Taxes
EBITDA	Earnings before Interest, Taxes, Depreciation, and Amortization
EE	Executive Engineer
FDA	First Divisional Assistant
FGD	Focused Group Discussion
GAIL	Gas Authority of India Limited
GL	Group Leaders
GoI	Government of India
GoK	Government of Karnataka
GSDP	Gross State Domestic Product
HII	Health Infrastructure Index
IAS	Indian Administrative Service
IDI	In-Depth Interview
ILO	International Labour Organization
IMR	Infant Mortality Rate
KREIS	Karnataka Residential Educational Institutions Society
KRIDL	Karnataka Rural Infrastructure Development Limited
KTPP	Karnataka Transparency in Public Procurement

Abbreviation	Description
LE	Life Expectancy
LEB	Life expectancy at Birth
MD	Managing Director
NACCB	National Accreditation Board for Certification Bodies
NK	Nirmithi Kendra
NSDP	Net State Domestic Product
PMGSY	Pradhan Mantri Gram Sadak Yojana
PSU	Public Sector Undertaking
PWD	Public Works Department
RD&PR	Rural Development and Panchayati Raj
SCP	Scheduled Caste Sub-Plan
SR	Standard Schedule of Rates
TSP	Tribal Sub-Plan

1. Executive summary

Background

Karnataka Rural Infrastructure Development Ltd (KRIDL) is a Public Sector Undertaking (PSU) fully owned by the state government of Karnataka. It has been in existence for 50 years and is presently incorporated as a company under the Companies Act, 1956. KRIDL reports to the Rural Development and Panchayat Raj Department of the state government. The company executes construction works in the infrastructure sector for a number of departments of the state government of Karnataka (Entrusting Agencies or EAs), under various developmental schemes. KRIDL has demonstrated robust financial performance over the last few years with growing revenue and profitability. However, at the same time the company is also facing several challenges, both in its internal and external environment. The most important contextual issues for KRIDL are as described below.

KRIDL was established with two key objectives: 1) undertake developmental works in rural areas which promote socio-economic development, and 2) create employment opportunities for unemployed and under-employed youth in rural areas by focusing on labor-intensive infrastructure works. However, almost 25-30% of KRIDL's works are executed for the Bruhat Bengaluru Mahanagara Palike (BBMP) in urban areas. There is also a perception that KRIDL subcontracts a significant portion of the works received from EAs – there could be a possibility of “middlemen” extracting some of the value which ideally should have been passed through as remunerative employment to the unemployed and under-employed rural youth.

The **second issue** is that of works not getting closed for long time (lingering). Works lingering could lead to socio-economic impacts not getting delivered to beneficiaries, dissatisfaction of the EAs and financial losses for KRIDL.

The **final issue** pertains to KRIDL's survival and long term sustainability. KRIDL has been granted exempted from competitive bidding and thus receives projects from EAs on a nomination basis; further the projects are awarded to KRIDL at prices which cover all execution related costs and also provide for a predetermined and assured profit markup. This puts into question the Company's ability to compete in the open market and its long term sustainability in the absence of such an exemption.

Thus, evaluation of KRIDL is necessary to examine the above mentioned issues and suggest recommendations. CRISIL Risk and Infrastructure Solutions Limited (CRIS) has undertaken this evaluation study for the Karnataka Evaluation Authority (KEA) by examining KRIDL's performance, its internal business processes and organizational capacity, evaluating the socio-economic impact of KRIDL's works, estimating the employment generated, assessing quality of works delivered, financial efficiency, adoption of modern technology and best practices, competitiveness of KRIDL's pricing structure and the company's long term sustainability. The period of evaluation is FY 2014-15 to FY 2019-20.

Methodology

This evaluation study is heavily evidence driven and has relied on both primary and secondary data. Data pertaining to KRIDL has been collected across its various offices, hierarchies of officials and types of works executed. Secondary data included the following:

- Basic details of all works executed by KRIDL during the 6-year evaluation period (66,657 works),
- Estimated employment generated (skilled and unskilled) for the evaluation period,
- Quality assessments of 3,608 works undertaken by the District Quality Monitoring (DQM) unit covering all 6 zones/ 31 districts,
- Available manpower (permanent and contractual), sanctioned manpower, grade-wise split, year-wise trends,
- Annual reports and financial statements of KRIDL,
- Audit report of the Comptroller and Auditor General of India (CAG) pertaining to companies and statutory corporations of the Government of Karnataka, for the period 2010-11,
- Benchmarking data for peer companies from public and private sectors, and
- Literature pertaining to success factors in construction sector and socio-economic impacts of social infrastructure creation.

Primary data included the following:

- In-depth interviews (IDIs) and focused group discussions (FGDs) with KRIDL officials across head office and field offices, spread throughout Karnataka, and
- Physical checks and opinion survey of users, administrators for a sample of 496 works (approximately 1% of total works executed during the evaluation period).

Once the data was collected, cleaned and processed, analysis and evaluation was carried out against each of the evaluation objectives of this study. The methodology employed against each objective is described below:

Impact on employment generated and livelihood creation

In the absence of specific data, the man-days of skilled and unskilled employment generated was quantified using project cost of works executed, share of labor cost, ratio of unskilled to skilled labor component and man-day rates for unskilled and skilled labor. Livelihood creation was qualitatively assessed through a description of the different business opportunities generated especially in rural areas for the local/ regional population.

Impact on eliminating middlemen

The methods and practices employed by KRIDL for procuring material, equipment, labor and sub-contractor services were studied and the extent of direct procurement from “end” suppliers/ sub-contractors was assessed. In the absence of work-wise specific data on payments made to vendors, reliance was placed on the CAG’s findings regarding procurements undertaken by KRIDL.

Socio-economic impacts created

This was assessed through opinion survey of users/ beneficiaries of the assets created through the 496 sampled works. Structured data was gathered on parameters related to quality of output delivered (e.g. drinking water), time savings, cost savings, asset usage experience, health & well-being, sanitation standards, children's education, etc. A separate analysis of the CSR works undertaken was also included. The data was aggregated across various categories of works surveyed in order to provide an overall assessment of socio-economic impacts created.

Lingering works

In the absence of specific data on work-wise execution timelines, reliance was placed on a review of the findings from CAG's audit in terms of work delays and closure/ completion of works. Factors responsible for delay were analyzed.

Quality of infrastructure created

Quality was assessed through on-site physical observations and checks of the 496 sampled works. Multiple quality parameters were checked for each work related to structural integrity, visual signs of damages, broken parts, etc. Quality perception of users/ beneficiaries was also gathered. The data was aggregated across various categories of works surveyed in order to provide an overall assessment of the quality of infrastructure created. The primary data so gathered was also correlated with secondary data in terms of quality findings of the DQM unit.

Project management, execution practices and technical capability

Project management and execution practices were evaluated through a descriptive assessment of the methods, processes, tools and techniques used to carry out works. Technical capability was evaluated through an assessment of the technical manpower and the extent of usage of modern technology.

Human resource effectiveness

This was evaluated through a trend analysis of the vacancy levels and attrition rates across the different cadre groups and proportion of contractual staff. The reasons for attrition and recruitment strategies were further assessed. Factors important for high performance culture like performance appraisal, motivational factors like training and development, employee welfare were also assessed.

Financial efficiency

For financial efficiency, a trend analysis of key financial parameters such as operating profit, net profit and inventory indicators was plotted and the driving factors were analyzed. These were further assessed in terms of ability of KRIDL to sustain the performance on a long term basis. A comparative analysis with financial performance of private and public sector peer entities was also carried out and the factors for difference in performance were analyzed.

Sustainability in absence of 4(g) exemption

The assessment included: analysis of the cost plus profit markup structure in KRIDL's prices, review of policies adopted in other states towards participation of public sector entities in competitive bids, literature comparing costs realized in public versus private sector procurements.

Future strategies

Vision of KRIDL for future growth and expansion, comparison of public sector peer corporations in other states in terms of diversification and expansion strategies.

Findings

Findings are presented against each of the evaluation objectives discussed above:

Impact on employment generated and livelihood creation

KRIDL's works are labor intensive given that 40% of the project cost constitutes labor component. During the evaluation period, it is estimated that on an annual basis, an average of 205 lakh man-days of unskilled and 33 lakh man-days of skilled employment was generated on account of KRIDL's works. Labor is extensively sourced at a local level and paid in accordance with the SR rates. Even labor working on urban projects have their origins from faraway rural areas ensuring economic transfer to rural areas.

Impact on eliminating middlemen

Larger material procurements are done directly from vendors using a transparent and competitive bidding process, through e-procurement channels. Labor is sourced by local offices through Group Leaders (GLs). As per the CAG audit for FY 2010-11, there were instances of GLs being paid in lumpsum and invoices not containing details of individual workers and the work performed, which was inconsistent with the stated norms – CRIS was unable to receive current data in this regard in order to corroborate the present day situation.

Socio-economic impacts created

Some of the salient socio-economic outcomes and impacts noted by users/ beneficiaries are as follows: improved water taste (drinking water/ RO water units), better access to schools and improvement in social status (hostels for backward category population), improved experience of daily commute and travel safety (roads), time savings (pathways), improved sanitation/ cleanliness standards of the area (drainage works), improved office infrastructure and training facilities (government buildings). Under its CSR initiative, KRIDL has been deploying 2% of gross profits for CSR activities which include setting up of RO based drinking water plants, construction of convention halls, tree guards, and COVID-19 related support (oxygen plants).

Lingering works

Delays are experienced due to multiple reasons – slow progress of work, delay in handing over of site by EAs, delay in release of funds by EAs and impact of COVID-19 induced disruptions. As per the CAG findings, 18% of the reviewed works were found to be facing delays – most of the delay cases ranged between 1 to 6 months, while slow progress of works was the major causative factor.

Quality of infrastructure created

The table below provides a snapshot of the recurring quality issues observed across the sampled works:

Table 1: Quality issues across the sampled works

Work type	% of data points with quality issues	Recurring quality issues observed
1. Road	19%	Potholes, cracks, sinking roads
2. Pathway	17%	Cracked and missing tiles, uneven surface, sinking path
3. Others	17%	Fitting issues, water seepage, non-functional equipment, broken tiles
4. Drinking water unit	14%	Damaged filter, broken pipes and taps
5. Sewerage	13%	Broken slab, cement chipping off
6. Office building	12%	Cracks, water seepage, vegetation growth
7. General building	7%	Peeling paint, water seepage, vegetation growth
8. Exterior work	7%	No major issues observed
9. Interior work	6%	No major issues observed
10. Residential building	3%	No major issues observed

Project management, execution practices and technical capability

An established process exists for planning and scheduling of projects given that KRIDL has a significant number of years of experience in executing works. Given the small size and significant number of works use of a robust project management tool is necessary, the presence of which was not observed. In case of delays, the company adopts practical measures to mitigate the impact. The company also regularly engages with and maintains good relations with EAs. KRIDL has a strong cadre of engineering staff available with adequate experience and expertise, thus its technical capacity is adequate. Quality checks are done through periodic site visits by KRIDL officials, EAs and through external entities.

Human resource effectiveness

There is dearth of adequate permanent manpower and 60% of KRIDL's total staff is outsourced. Most of the old manpower has been retiring but fresh recruitments are not happening – instead there is a drive towards hiring contractual staff. Roles and responsibilities, job descriptions are not written and formalized. A formal goal setting and performance appraisal process was not observed, which is essential to promote a high performance culture. In terms of HR welfare, KRIDL has taken a group medical insurance coverage for its employees and compensation settlement is done in any case of death of laborer. In terms of training, there is a scope for enhancement since currently only 10% of the staff undergoes training each year.

Financial efficiency

KRIDL's operating profit margin is 8% while that of peer organizations in public and private sector is in the range of 4% to 20%. KRIDL's net profit margin is 5% while that of peers is in the range of 1% to 12%. Thus, in terms of profit, KRIDL lies in the median range and hence there is a scope for increasing the profit. KRIDL's inventory turnover days (number of days required for inventory to be

converted into revenues) is very high at 971 days which indicates that KRIDL has significant extent of work in progress (funds locked) which is not getting converted into revenues - the same parameter for peer companies ranges between 2 days to 72 days.

Sustainability in absence of 4(g) exemption

There is evidence that awarding projects on nomination basis leads to cost escalations – one comparative assessment has shown that awarding projects on competitive basis leads to cost savings to the tune of 7% to 9%. There is example of Kerala state which has allowed competition amongst PSUs and prescribed for accreditation of PSUs in order to be eligible for government projects. In order to remain sustainable in the face of competition, KRIDL will need to improve its efficiency, expertise and internal controls.

Comparison with public sector peer organizations

Some of the state government owned in the construction sector (contractor in nature) are executing larger and more complex projects – Odisha Construction Corporation Ltd. (dams), Kerala Land Development Corporation Ltd. (irrigation and canal projects) and Bihar Rajya Pul Nirman Nigam Ltd. (bridges and flyovers). Some organizations have also diversified into consultancy services – Kerala State Construction Corporation Ltd., Kerala Land Development Corporation Ltd. and Odisha Construction Corporation Ltd.

Recommendations

Improving efficiency

- Financial efficiency can be improved by executing larger and more complex projects, which shall yield better profit margins. This will need a strengthening of the design wing within KRIDL through hiring of technical manpower and acquisition of design tools.
- Engineering consultancy is a possible option for upstream expansion. KRIDL can explore services such as design consultancy, lender's engineer, independent engineer, technical feasibility studies, preparation of detailed project reports, etc.
- KRIDL should obtain a Class 1 PWD contractor's license and also get accredited for international certifications & standards which will enable it to participate in bidding for larger projects.
- KRIDL needs to better utilize its significant cash reserves and fixed assets. Existing equipment/ machinery/ infrastructure should be upgraded and put to use. Old workshops should be revived so that material can be procured and their repairs can be done in house. Leasing/ renting arrangements for existing fixed assets such as land, buildings can be explored for earning regular income. Surplus cash can be invested in higher return earning instruments like reliable mutual funds, long term pension funds, etc.

Enhancing expertise

- To address the issue of lack of permanent manpower, a proper manpower study should be undertaken which will determine the human resources gaps at various levels and offices,

identify talent sources and define a time bound plan and activity roadmap for recruitment. Cadre at higher levels can be recruited through Karnataka Public Services Commission while those at lower levels can be recruited through Karnataka Examinations Authority.

- In order to promote a high performance culture, a performance management system should be put in place which should include defining key performance indicators (KPIs), goal setting at start of performance monitoring period, linking of compensation with achievement of targets on KPIs, undertaking quarterly and annual performance appraisal discussions and evaluations. Further, a rewards and recognition program should be instituted.
- A greater focus needs to be placed on learning and development of the staff. An annual training calendar should be prepared with designation wise training plans. KRIDL can tie-up with online learning platforms or government training institutes for this. Completion of certain hours of training can be included in the performance target of employees, in order to provide the desired push.

Strengthening monitoring and controls

- Implementing Enterprise Resource Planning (ERP) solution across key modules such as Engineering, Material management, Contract management, Financial accounts, Tender management, and MIS. This will help to provide a single, seamless and integrated data view across the company and improve accuracy and timeliness of business processes.
- Procure software-based project management solutions which can automate the tasks of planning, design, price and quantity estimation, resource management, demand scheduling, project management and governance.
- A software solution for work progress monitoring, work completion and closure, billing and payments, etc. It should help track job costs through work-in-progress reporting, labor analysis, projected costs, unit production, real time revenue, cost and profit margin, checking of budgeted v/s actual costs. This will ensure that allocated funds will be used in time for executing of the projects, with real time monitoring of funds and billings, inputs to financial monitoring system for follow-up on invoices, generation of completion certificate on work closure for final billing, etc.
- A field level monitoring and inspection solution for inspection and site-specific reporting. It will help in generating reports for monitoring of work progress, field activities compliance, etc. thus proactively ensure quality and reduce risks. Each of the data points can be linked with GPS enabled systems, for maintaining authenticity and real time monitoring.

2. Background for the evaluation study

Karnataka Rural Infrastructure Development Ltd (KRIDL) commenced its activities as Directorate of Land Army in the year 1971 under the administrative control of Rural Development Ministry. It was incorporated as a company on 9th August 1974 as Karnataka Land Army Corporation under the full ownership of Government of Karnataka. Later on, it was renamed as Karnataka Rural Infrastructure Development Ltd (KRIDL) on 6th August 2008.

It is classified as State Public Sector Undertaking in the infrastructure category. The organization was started with an authorized share capital of INR 1 crore and subscribed capital of INR 25 lakh. Currently, its authorized share capital is INR 50 crore and paid-up share capital is INR 10 crore as reported in the latest annual report.

The key objectives with which KRIDL was established are:

- a) Create labor-intensive infrastructure works in rural areas vital for social and economic development, and create employment opportunities for unemployed, under-employed youth thereby improving their livelihood.
- b) Undertake all rural development works directly by eliminating middlemen (eg. contractors), in the process avoiding exploitation of rural poor and passing on full worth of investment to the community.

2.1 Organizational Review

2.1.1 Operational review

KRIDL is an infrastructure development company with a wide array of project and client experience.

KRIDL undertakes end-to-end stages of construction consisting of planning, design, procurement, works execution, project management, quality control and commissioning/ handover. It has experience in constructing a wide variety of works ranging from residential building, commercial building, educational building, government building, water purification plants, pathway, pavement, road, etc. Besides new construction, KRIDL also undertakes repair works, improvement works and interior development of existing buildings. During the 5-year period FY 2015-16 to FY 2019-20, KRIDL executed a total of 40,715 works for 35 departments of the Government of Karnataka.

KRIDL's customer base is government and works are executed under various developmental schemes.

Of the 40,715 works executed during the 5-year period FY 2015-16 to FY 2019-20, three user departments namely Bruhat Bengaluru Mahanagara Palike (BBMP) (35%), Karnataka Water Supply and Sewerage Board (26%) and Rural Development and Panchayati Raj (RD & PR) (14%) together constituted 75% of the works executed. Other departments included Social Welfare, Revenue, Irrigation, Education and Animal Husbandry, amongst others.

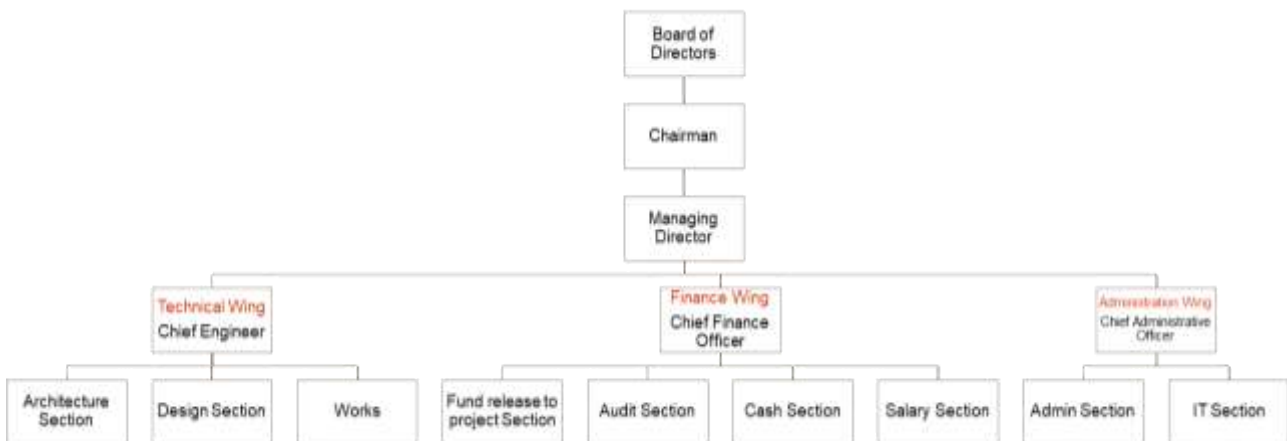
Although KRIDL works on wide range of developmental schemes, most of the works have been executed under the following schemes:

- a) Suvarna Gram Yojana
- b) Gram Sadak Yojana
- c) Social Welfare development works
- d) Veterinary department
- e) RDPR Scheme
- f) Water purification plants
- g) Education department
- h) BBMP works

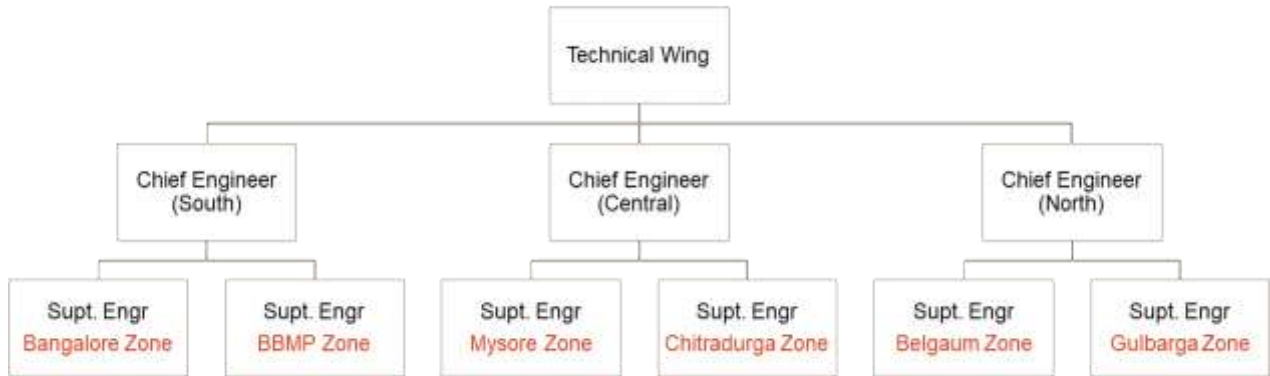
Being a construction company with operations spread across a wide geographical area, KRIDL's organization structure consists of functional and geographical divisions.

The Company being fully owned by the Government of Karnataka, its Board consists of high-ranking officials from Public Works, Public Enterprises, Water Resources, Rural Development and Panchayath Raj, Social Welfare, Panchayath Raj Engineering and Finance departments. Its day-to-day operations are managed by the Managing Director who is an Indian Administrative Service (IAS) officer. Functionally, the company is divided into Technical, Finance and Administrative Wings.

Figure 1: High level organization structure of KRIDL



Considering the vast spread of its operations, KRIDL is geographically organized into six zones. Each zone consists of divisional offices which are further consist of sub-divisional offices. The zonal office is headed by a Superintending Engineer (SE), divisional office by an Executive Engineer (EE) and sub-divisional office by an Assistant Executive Engineer (AEE).

Figure 2: High level organization structure of KRIDL showing geographical divisions

The high share of works executed for BBMP is reflected in the fact that one of the six zones is exclusively dedicated to this user department.

Table 2: Zonal, divisional, and sub-divisional offices of KRIDL

Zonal office	Divisional office	Sub-divisional office
1. Bangalore	1. Bangalore	1. Bangalore Urban
		2. Bangalore Rural
	2. Ramanagar	3. Ramanagar
	3. BMRCL	4. BMRCL-1
		5. BMRCL-2
	4. Tumkur	6. Tumakur
		7. Sira
		8. Madhugiri
	5. Kolar	9. Kolar
	6. Chikkaballapur	10. Chikkaballapur
2. BBMP	7. Division 1	11. Bommanahalli
		12. East Zone Sub Division-2
	8. Division 2	13. West Zone Sub Division-1
		14. BDA Works
	9. Division 3	15. South Zone Sub Division
		16. Yelahanka & Yeshvanthpura Zone Sub Division
	10. Division 4	17. Dasarahalli Zone Sub Division

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Zonal office	Divisional office	Sub-divisional office
	11. Division 5	18. R.R.Nagar & Byatarayanapura Zone Sub Division
		19. Mahadevapura Sub Division
		20. East Zone Sub Division-1
3. Mysore	12. Mysore	21. Mysore
		22. Mysore (C)
	13. Hunsur	23. Hunsur
		24. Madikeri
	14. Mangalore	25. Mangalore
	15. Udupi	26. Udupi
	16. Hassan	27. Hassan
		28. Arasikere
	17. C. Mangalore	29. C. Mangalore
		30. Kadur
	18. Mandya	31. Mandya
		32. Pandavapura
	19. Chamarajanagar	33. Chamarajanagar
		34. Kollegal
		35. Gundlupet
4. Chitradurga	20. Chitradurga	36. Chitradurga
		37. Hosadurga
	21. Challakere	38. Challakere-1
		39. Challakere-2
	22. Davanagere-1	40. Davanagere
		41. Jagalur
	23. Davanagere-2	42. Harihar
		43. Harpanahalli
	24. Davanagere-3	44. Channageri

Zonal office	Divisional office	Sub-divisional office	
		45. Honnali	
		46. Mayakonda	
	25. Shimoga	47. Shimoga	
		48. Shikaripura	
	26. Bellary	49. Bellary	
		50. Hospet	
		51. Sandur	
	27. H. Hadagalli	52. H. Hadagalli	
		53. Kudligi	
		54. H. Bommanahalli	
	5. Belgaum	28. Belgaum	55. Belgaum
			56. Kittur
57. Savadatti			
58. Renuka Yallamm Gudda Savadatti			
29. Chikkodi		59. Chikkodi	
		60. Athani	
		61. Gokak	
30. Dharwad		62. Dharwad-1	
		63. Dharwad-2	
		64. Dharwad-3	
31. Gadag		65. Gadag	
		66. Naraguda	
32. Haveri		67. Haveri	
		68. Ranebennur	
33. Karwar		69. Karwar	
		70. Sirisi	
34. Bagalkot		71. Bagalkot-1	

Zonal office	Divisional office	Sub-divisional office
		72. Bagalkot-2
		73. Jamakhandi
	35. Bijapur	74. Bijapur
		75. B. Bagewadi
		76. Indi
	6. Gulbarga	36. Kalburagi-1
78. Jevargi		
37. Kalburagi-2		79. Kalaburagi-2
		80. Sedam
38. Raichur		81. Raichur
		82. Lingasagur
		83. Devadurga
		84. Sindhanur
39. Bannikoppa Water Koppal		85. Nelogi Pura
		86. Koppal
40. Yadagir		87. Yadagir
		88. Shahpur
41. Bidar		89. Bidar
		90. Humnabad

2.1.2 Financial review

KRIDL is a profitable entity and the revenues during the period FY 2011-12 to FY 2016-17 have also been steadily increasing at compounded annual growth rate (CAGR) of 23%. Key financial data for KRIDL is presented in the tables below.

Table 3: Summary of profit and loss statement for KRIDL

Parameter	Units	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Total revenue	Rs. crore	831.7	1141.9	1389.7	1929.5	2009.8	2381.4
Revenue from operations	Rs. crore	789.0	1087.5	1319.7	1825.0	1892.6	2240.1

Parameter	Units	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Other income	Rs. crore	42.7	54.4	70.0	104.5	117.1	141.3
Total expense	Rs. crore	797.6	1064.4	1286.6	1760.9	1838.3	2192.3
Cost of materials	Rs. crore	747.6	995.9	1217.7	1674.3	1752.6	2100.5
Salaries & benefits	Rs. crore	35.0	46.2	49.4	52.1	53.4	52.7
Depreciation & amortization	Rs. crore	0.6	1.0	1.0	2.1	1.8	2.1
Other expenses	Rs. crore	14.4	21.4	18.6	32.5	30.5	37.0
Interest expense	Rs. crore	0.0	0.0	0.0	0.0	0.0	0.0
Profit before Tax	Rs. crore	34.0	77.5	103.1	168.6	171.5	189.1
Taxes	Rs. crore	2.6	26.2	34.0	55.1	61.6	65.2
Net profit after tax	Rs. crore	31.5	51.3	69.1	113.7	109.9	124.0

Source: Annual reports of KRIDL from FY 2011-12 to FY 2016-17

Table 4: Summary of balance sheet statement for KRIDL¹

Parameter	Units (mentioned upto 2DP only)	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Total liabilities	Rs. crore	2460.59	2975.40	4185.76	4926.65	6238.12	8337.65
Equity	Rs. crore	110.23	155.84	222.07	330.88	434.74	551.4
Non-current liabilities	Rs. crore	68.07	58.25	48.32	47.1	0.87	1.05
Current liabilities	Rs. crore	2282.28	2761.31	3915.37	4548.67	5802.51	7785.2
Total assets	Rs. crore	2460.59	2975.40	4185.76	4926.65	6238.12	8337.65
Non-current assets	Rs. crore	166.15	165.05	168.32	233.67	234.57	287.64
Current assets	Rs. crore	2294.44	2810.34	4017.43	4692.99	6003.55	8050.01

¹ Annual reports of KRIDL from FY 2011-12 to FY 2016-17 (Analysis is for the period based on the available audited financial statements)

2.2 Need for and scope of evaluation

While KRIDL has demonstrated strong order book and financial performance over last five years, there remain multiple concerns:

- Although its mandate is rural infrastructure development, a major portion of its turnover is accounted by urban infrastructure projects.
- KRIDL receives projects on nomination basis through exemptions awarded under the 4(g) clause of KTPP Act. This aspect needs to be examined closely in light of promotion of fair competition and improving KRIDL's competitiveness.
- Lingering works: Many of KRIDL's works are lingering due to multiple issues. This may also be resulting in poor quality of works.

In context of above issues, evaluation of KRIDL is necessary to:

- 1) examine performance of the company vis-à-vis its stated objectives
- 2) assess the quality, cost effectiveness and timeliness of the projects undertaken
- 3) assess ground level impact of KRIDL's presence and activities
- 4) provide evidence and accountability for the relevance of the Company in the infrastructure development sector.

The inputs and insights developed out of this evaluation exercise will help to identify strategic focus areas (like improving efficiency, identifying alternate revenue sources, improving competitiveness) and develop a strategic roadmap for KRIDL.

The scope of the assignment covers corporate offices, divisional offices, and sub-divisional offices including field works, CSR activities, and lingering works during the period FY 2014-15 to FY 2019-20. The objectives of the evaluation study are as follows:

- Managerial, operational, and financial performance to be evaluated based on organizational capacity, motivation, and external environment
- Evaluate performance of KRIDL under the stated objectives using the relevance, effectiveness, efficiency, sustainability and impact criteria (REESI criteria)
- Evaluate impact of KRIDL's interventions on socio-economic development of rural communities
- SWOT analysis of KRIDL
- Comparative analysis of KRIDL vis-à-vis private construction companies and similar models in other states
- Supply-demand analysis of works
- Suggest policy interventions and measures for sustainable growth and performance of KRIDL
- Recommend strategies for long term financial viability of the company
- Study quality of infrastructure works and recommend interventions for providing quality and timely service at minimal cost

- Estimate impact of COVID-19 on implementation of works

The following issues are expected to be factored into the study:

- Employment generated for unemployed and under-employed youth as against the number of works executed and turnover made, Employment generation through KRIDL works vis-a-vis employment generated through community projects of Gram Panchayats, Socio-economic impact of the employment created
- Quality control standards laid down to check technical and managerial inadequacies and operational skills. Quality of supervision, material management responsibility & control, procurement, material handling, constructability, change management
- Proper use of scheduling techniques, site-layout planning, procurement scheduling, work assignment and organization, and proper approaches to crisis management, feedback, and control mechanisms.
- Performance assessment of officers and staff employee turnover rate, employee review, work allocation, co-ordination among cadres, accountability of staff at different levels, Labor distribution, Equipment distribution, Material report
- Efficiency of KRIDL in using fixed assets to generate sales (Turn-over of Property, Plant and Equipment), KRIDL's ability to meet short-term and long-term financial liabilities (Calculation of Cash ratio, Quick ratio and Current ratio based on current assets, Cash, inventory and marketable securities), SCP/TSP works implemented to the total works
- Cost control technique followed while procuring machines, goods and services
- Policies adopted for human resource (labour) management: Motivation, Safety, healthy and proper working conditions, communication, training, social security, compliance with labour laws, Measures taken to improve leadership, team building, competency, skill, etc.
- Planned versus actual utilisation of tools and equipment, functionality of the works completed and achievement of 'fitness for purpose', degree of conformance to technical and financial aspects.
- Financial Efficiency of KRIDL vis-d-vis Industry Standards, profitability of works undertaken by KRIDL (the increment by which revenues exceed costs), Value created by KRIDL per unit of investment (Profitability Index), Present and the future earning capacity and solvency status of the organization
- Measures taken to monitor and control project costs, setting labour burden markups, tracking general overhead budgets, Setting the minimum profit margin for use in bidding and analysing the profitability of different parts of the company and making the necessary changes to improve profitability
- Capacity of the organization to adopt to modern technology, best and sustainable practices at all levels from planning to execution of work
- Competitiveness of overhead costs and bidding price, brand equity developed by KRIDL, sustainability of KRIDL in the absence of exemption from KTPP Act.

3. Literature review

3.1 Impact of infrastructure development on socio-economic outcomes

In a study commissioned by the International Labour Organization (ILO) to assess impact of improved rural road maintenance system under PMGSY², the direct impact of road maintenance was measured across the following areas - Agriculture, Employment generation, Income and poverty alleviation, Health and Education. The summary of findings highlighted the following key impacts across the identified areas:

Table 5: Impact of rural connectivity on rural livelihood

Areas of livelihood	Impact
Agriculture	<ul style="list-style-type: none"> • Shift in cropping patterns • Increases in usage of fertilizers and Improved seeds • Improved accessibility to agriculture markets • Improved realized prices for agricultural produce
Employment generation	<ul style="list-style-type: none"> • Increase in number of days employed • Traveling outside village for employment • Increase in employment opportunities
Income and poverty alleviation	<ul style="list-style-type: none"> • Increase in income of households • Improved Quality of life
Health	<ul style="list-style-type: none"> • Improved access to health facilities • Improved health facilities • Increased number of institutional deliveries • Improved child immunization • Improved emergency medical care
Education	<ul style="list-style-type: none"> • Improved status of education facilities • Improved connectivity to education facilities • Reduction in travel time of students to reach secondary schools from habitation • Increase in enrollment of children

² https://pmgsy.nic.in/sites/default/files/pdf/Impact_Asmt_RRM.pdf, Impact Assessment Study of Improved Rural Road Maintenance system under PMGSY

In a study which assessed the impact of school infrastructure on student outcomes and behavior³, a number of structural factors and cosmetic factors were identified which influenced learning – structural factors included building age, windows, flooring, temperature, roof leaks, lighting, noise, etc.; cosmetic factors included interior and exterior painting, cleanliness of the floors, furniture, school grounds, landscaping, etc. It was observed that student academic achievement improves with improved building condition. Individual factors, such as lighting levels, air quality, temperature, color schemes, acoustics and quality of furniture have an effect on student behavior and outcomes.

A study by the World Bank Group⁴ has also examined the impact of school infrastructure on learning outcomes for children. The study found positive correlation between factors such as location of school, design of school infrastructure, size of classrooms, spatial characteristics and academic outcomes. Physical characteristics of learning spaces have a significant impact on educational outcomes - such characteristics include lighting, air quality, temperature control, acoustics, age-appropriate learning spaces, etc. Further, according to the study, schools that are soundly built, provide proper basic amenities, opportunities for outside play positively contribute to attendance in schools and overall health of children.

An empirical study⁵ examined the relationship between health infrastructure, health outcome, and economic growth for major states within India. The relationship between health infrastructure index (HII) and gross state domestic product (GSDP), HII and Infant Mortality rate (IMR), HII and Life Expectancy (LE) were examined. Results from the study have demonstrated that there is a positive significant relationship between HII and LE, HII and GSDP and a negative significant relationship between HII and IMR. The empirical analysis suggests the importance of infrastructure development in the health sector for health outcomes and economic growth.

The study titled “Health Infrastructure and Economic Development in India”⁶ has examined the uneven distribution of health infrastructure across Indian States and its effect on economic development. The study shows that Life expectancy at birth (LEB) and infant mortality rate (IMR) are strongly associated with number of trained health staff (THS) and number of hospital beds available per one lakh population. Net State Domestic Product (NSDP) is strongly correlated with LEB and IMR. Hence, economic development is strongly associated with good health infrastructure.

3.2 Performance review of KRIDL by third parties

As per the Comptroller and Auditor General (CAG) report on PSUs of Karnataka state for the year ended March 2019⁷, KRIDL has grown strongly to become a major contributor of profits from public sector undertakings (PSUs) (other than power sector) to Government of Karnataka. It is the most profitable company among 103 non-power PSUs of Government of Karnataka.

The CAG review report also identified certain issues pertaining to KRIDL’s performance on construction works:

³ *Building Better Outcomes: The Impact of School Infrastructure on Student Outcomes and Behaviour; 2001; Kenn Fischer; Department of Education, Training and Youth Affairs, Australia*

⁴ *Barrett, Peter, Alberto Treves, Tigran Shmis, Diego Ambasz, and Maria Ustinova. 2019. The Impact of School Infrastructure on Learning: A Synthesis of the Evidence. International Development in Focus. Washington, DC: World Bank.*

⁵ *Health infrastructure, Health outcome and Economic Growth: Evidence from Indian Major States; Rittu Susan Varkey, Justin Joy, Prasant Kumar Panda; JOURNAL OF CRITICAL REVIEWS; May 2020*

⁶ *Health Infrastructure and Economic Development in India; Dibyendu Ghosh, Soumyananda Dinda; IGI Global; 2017*

⁷ *Report No 5 of the year 2020 – Public sector undertakings of the year ended March 2019; Government of Karnataka; Comptroller and Auditor General of India*

- Award of certain projects on nomination basis although the project value exceeds the upper limit mentioned for exemption provided by state government under clause 4(g) of KTPP act
- Incomplete or stoppage of work due to non-availability of funds with the concerned department
- Non-execution of works due to issues with land availability
- Retention of funds by user departments in cases where the cost of implementation was below the estimated cost
- Locking-up of funds in projects where execution has been affected

The Economic Survey exercise⁸ has also commented upon KRIDL's performance. As per the Economic Survey report 2019-20, the Rural Water Supply Department awarded KRIDL the job of installing 18,497 water purification plants in zilla panchayats, taluk panchayats, and gram panchayats. Out of these approved purification plants, 17,657 purification plants were installed of which 17,519 plants were operationalized by November 2019. In another instance, the Social Welfare department had entrusted KRIDL with 11 projects for construction of new hostel buildings and work of repairs during the period 2013-14 to 2017-18. KRIDL's performance was assessed to be much better than other construction companies involved in the same engagement – Nirmithi Kendra (NK) and Karnataka Residential Educational Institutions Society (KREIS).

3.3 Success and failure variables in construction sector

A study was published after doing extensive literature review on 'The project failure factors and their impacts on the construction industry'⁹. In the study, success and failures were defined from the project management perspective, success means the delivery of the project within the deadlines, budgets and its functionality fulfilling the mission and the planned objectives and meets the required expectation of the stakeholders. While the project is assumed to be a failure when the completion time exceeds the due date, occurrence of budget overruns and the outcomes did not satisfy the company's performance criteria or the stakeholder's expectations. The study highlights the practices to be adopted for the success of the projects by comprehensively analyzing the project failure factors. Firstly, project management in the construction companies should be developed at a higher level and the role of project management team should be appreciated to ensure higher percentage of project success. Also, the major stakeholders like contractors should be involved in the design and planning stage. Secondly, key to successful projects is to learn from past project failures and to put those lessons learned into action. Each construction failure points to a gap either in theory or practice, therefore an investigation of construction failures should be held regularly to identify the errors and causes of the failure. Thus, it can be used as a contribution to increase the safety and awareness of future projects and avoid similar failures. The information on past project failures should be used during planning to remove possible gaps that may exist.

⁸ Economic survey reports for FY 2018-19 and FY 2019-20; Directorate of Economics and Statistics; Karnataka

⁹Project failure factors and their impacts on the construction industry - A literature review, El-sokhn, N.H. and Othman, A.A.E, Proceedings of the 10th ICCAE-10 Conference, 27-29 May, 2014, <https://www.researchgate.net/publication/335359587>

A study was published on ‘Critical factors to company success in the construction industry by assessing 40 small medium sized Turkish firms through interviews of top-level managers and owners¹⁰. With large number of construction contractors in the industry, the aim of this study was to investigate the critical factors leading to construction company success in competitive environment. There have been many factors such as qualified employees, quality workmanship and financial management that can lead to company success in the construction industry. However, according to the results, business management, financial conditions and owner-manager characteristics were identified as the most important factors to success. Secondly, organizing and planning was perceived to be the most important factor contributing to company success. Further, technology usage was not considered as a highly essential item for company success by the managers/owners.

3.4 Comparative assessment with similar state-owned firms

We have identified a few state-owned firms from other states which are similar to KRIDL i.e. they are construction contractors. Below table provides a comparative assessment:

Table 6: Comparative analysis with similar state-owned firms

Parameters	Kerala State Construction Corporation Ltd. (KSCCL) ¹¹	Kerala Land Development Corporation Ltd. (KLDCL) ¹²	Odisha Construction Corporation Ltd. (OCCL) ¹³	Bihar Rajya Pul Nirman Nigam Ltd (BRPNNL) ¹⁴
Years of existence	46	49	59	41
Sectors and projects covered	The corporation executes infrastructure projects are of civil nature for Home, registration, and SC/ST department	The corporation executes projects especially in agriculture avenue for RIDF schemes, RKVY, NRHM, Social Justice Department, and works entrusted by SC Development Department, etc.	The corporation executes projects that are of civil and mechanical construction nature.	The corporation mainly executes civil engineering projects.
Services (expansion into consultancy, PMC, etc.)	KSCCL has expanded into consultancy services other than infrastructure executing works.	KLDCL is now regarded as the prime consultation apart from implementing agency for the works of	Apart from construction of mega projects, OCCL has developed proficiency in providing Engineering Consultancy.	BRPNNL has increased its expertise in the construction sector and now undertake many projects other

¹⁰ World Academy of Science, Engineering and Technology, Critical Factors to Company Success in the Construction Industry, G. Arslan, and S. Kivrak

¹¹ <https://kscc.in/home/>

¹² <https://kldc.org/>

¹³ <https://odishaconstruction.com/>

¹⁴ <http://brpnnl.bihar.gov.in/>

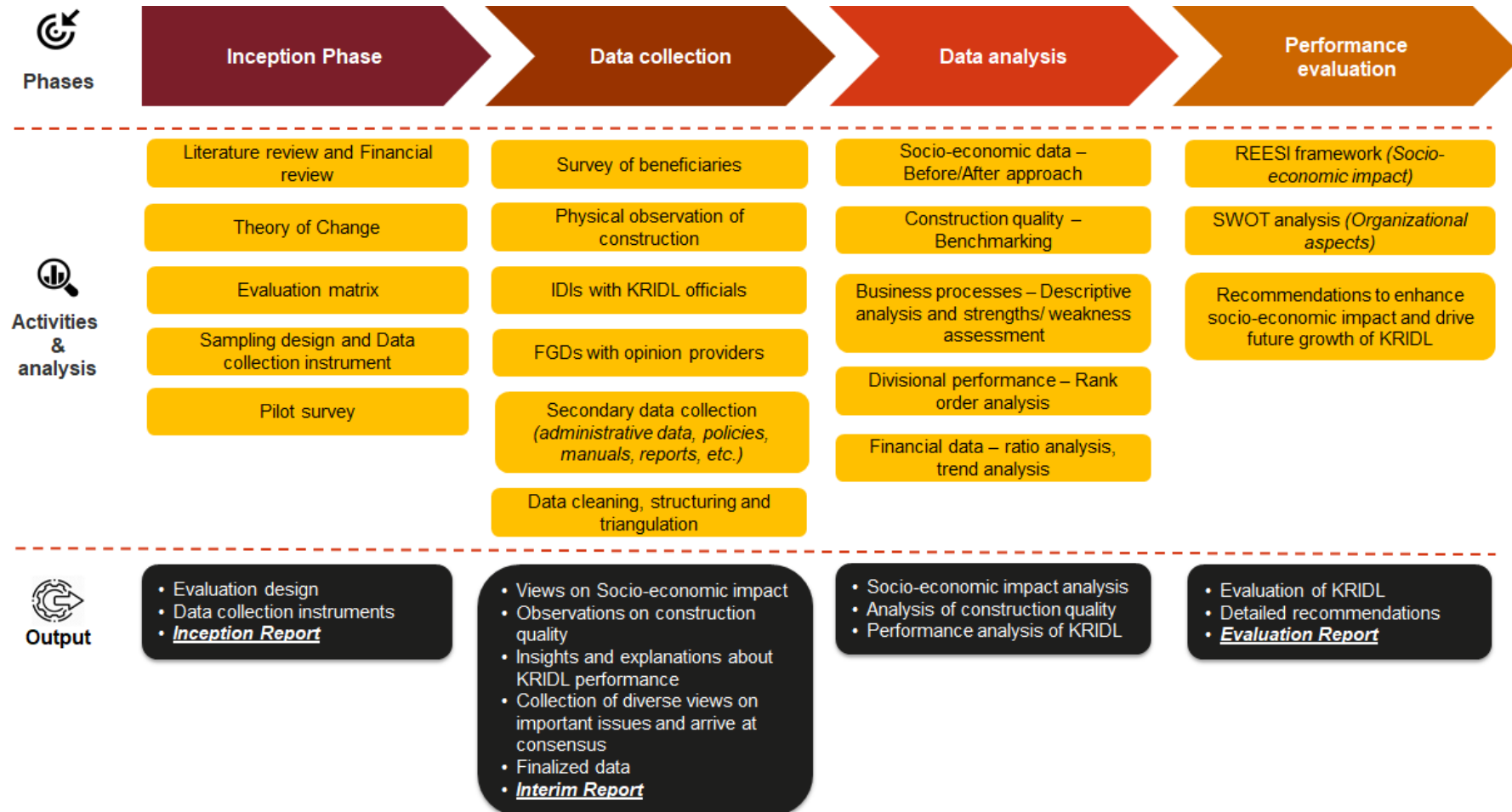
Parameters	Kerala State Construction Corporation Ltd. (KSCCL) ¹¹	Kerala Land Development Corporation Ltd. (KLDCL) ¹²	Odisha Construction Corporation Ltd. (OCCL) ¹³	Bihar Rajya Pul Nirman Nigam Ltd (BRPNNL) ¹⁴
		Agriculture Department.		than roads and bridges.
Complexity of projects undertaken	KSCCL projects includes Roads, Bridges, and constructing Hostel residence and court buildings.	Projects are complex in terms of technicality as the nature of projects include Integrated Farm Management projects with variety of works, irrigation and canal projects, and tissue culture lab.	Projects are very complex in terms of scale such as Dams, Hydraulic Gates, Spillway, Industrial structures, Highways, Bridges, Building, IT and consultancy projects.	Projects are complex in terms of varying works like Buildings (Flood Shelters, Medical Colleges, Hostels, Convention Center), Parks, Public Conveniences, Irrigation Structures, Interior Fabrication, Sports complex to Event Management.
Best practices in terms of adoption of technology, software, MIS, etc.	Financial data/operations are computerized which enables better quality work, updated project information, lower operating costs, better efficiency, greater accuracy, operational and financial transparency and minimum errors.	For automating preparation of estimates and operation, 'PRICE' (Project Information and Cost Estimation) software is used. The software could also be used for contractor's registration, tender approval, agreement, quality control and preparation and passing of contractor's bills.	An in-house computer aided design and management cell helps to perform simulation and create designs. It also aids in the creation, modification, analysis, or optimization of a design. This is especially crucial during the COVID-19 pandemic, which has affected the construction industry in ways that would make relying on manual drawings particularly infeasible.	Online recruitment portal for notifications of vacancy ensuring there is no demand supply gap. Registration rules for contractors are updated on website hence making it easy for engaging contractors eligible within the predefined guidelines.

4. Approach and methodology

4.1 Overall approach

The study is evidence driven and expected to be based on a rigorous evaluation design. The overall approach towards execution of the study consists of four phases – Inception, Data collection, Data analysis and Performance evaluation, as shown in the figure below.

Figure 3: Overall approach to execute the assignment



4.2 Data collection: approaches and methods

Considering the diverse data needs and analyses required, data collection for the study is relying on a mixed-methods approach. We started the data collection work with pilot survey which helped us refine the questionnaire. Findings of pilot study are present in annexure of this report.

1. Physical observation of KRIDL works

This involved physically visiting and observing the various works implemented by KRIDL. Data is collected using a structured observation sheet. Each work is traversed in entirety and evidence is gathered through observation. Evidence about facilities and safety features provided for beneficiaries, as well as quality of the asset constructed is collected in the form of photos and/ or videos. For example, for a road constructed by KRIDL, evidence about comfort facilities (bus stop, water points, toilets, etc.), safety features (road signs, reflectors, warning messages, etc.) and quality aspects (evenness of surface, wear and tear, potholes, etc.) are gathered.

Before visiting the asset, preliminary information about the asset is gathered from KRIDL and reviewed. This information is also shared with and training is provided to the enumerator – this process facilitates the gathering of contextual evidence and provide reference data for cross-validating with physical observation and beneficiary feedback. Such information includes:

1. Physical specifications: Taking an example of a road construction project, physical specifications like starting and ending points, length in kms, width in feet, number of lanes, etc.
2. KRIDL's scope: Scope elements like design responsibility, material responsibility, type of work (new construction/ capacity expansion/ repair/ renovation), terms of reference, etc. Information about KRIDL's scope helped us to restrict gathering of evidence to relevant items of the work.

Observation guides for select asset types have been provided in annexure of this report. They are included as a part of the Asset User questionnaires.

2. Primary survey of asset users

The survey of users was conducted immediately after completion of physical observation of the works. This helped in providing a reference of physical observation data in order to cross check responses of users and provide opportunity for counter questioning.

For each work visited, two users of the asset are interviewed. A necessary criterion for selection of the person to be interviewed was that s/he should have been regularly using the asset for a significant time period. Wherever possible, it is endeavored to select one of the users as the “on-site” administrator¹⁵ and the other as a regular user.

¹⁵ An “on-site” administrator could be any person of authority (in relation to the asset being studied) who can provide information from the perspective of the User department with which KRIDL has a contractual relationship. Such person could be administrative manager of a building, secretary of a housing complex, principal of a school, park security guard for a pathway present inside a park, etc. An on-site administrator may not be present for all assets – for example, a road or a water pipeline – in which case two regular users will be selected.

Data is collected using a structured questionnaire. The survey collects data on change in various socio-economic parameters which are attributable to the asset as well as validation questions about the asset quality. Examples of social parameters for an office renovation work is improved facilities and comfort for employees, whereas for a residential building construction it is pertaining to improved amenities and facilities for residents and their family members. Economic parameters for a road construction include improvement in mileage and vehicle maintenance cost. Questions are both in qualitative and quantitative formats – for example, respondents are asked to provide up to three significant improvements they have observed in the asset as compared to the *pre-facto* situation (qualitative) while they are also be asked to rate their satisfaction on a 3-point or 5-point quantitative scale (quantitative).

Asset User questionnaires for select asset types have been provided in annexure of this report.

3. In-depth interviews (IDIs)

IDIs are carried out with KRIDL officials across levels covering Chairman, Managing Director, Chief Engineers, Executive Engineers, Assistant engineers, Field staff and Support staff. The purpose of these interviews is to better understand performance trends, business processes, business strategy, competitive positioning, brand equity, future plans and roadmaps, etc.

Data is collected using a structured and semi-structured questionnaire. The areas of enquiry for IDIs are provided in annexure of this report. The following table describe the list of people interviewed:

Table 7: List of persons interviewed

S No.	Place	Name	Designation
1	Head Office	Gangadhara Swamy	MD
2	Head Office	Patharaju V KAS	CAO
3	Head Office	Mahadeva Swamy	CFO
4	Head Office	H. Nagaraju	CE
5	Head Office	Eshwarappa	CA
6	Bangalore Rural	MM Manjunath	AEE
7	Mahadevapura	Prakash CP	AEE
8	Bangalore Urban	Shridhar V	AEE
9	BBMP East	Suresh Reddy	AEE
10	BBMP-1	Ashok Kumar	EE
11	Bangalore	Praveen B Srihari	EE
12	BBMP-2	Shrinivas R	EE
13	South Zone	K Mahesh	CE
14	Mysore	Dileep	AE
15	Karwar	Mr. SR Meharwade	EE
16	Karwar	Mr. Lohith Nayak	AEE
17	Belgaum	Shegunashi	AEE
18	Belgaum	DhanyaKumar	EE/SE
19	Mangalore	Sadashivaih	EE
20	Mangalore	Pramod	AEE

4. Focused group discussions (FGDs)

FGDs are carried out with multiple groups of KRIDL officials. Each group is homogenous and heterogeneous across multiple dimensions of hierarchy, department/ functions, and geography. The following table describes the list of conducted FGD groups, Dyads¹⁶ and their compositions:

¹⁶ In a couple of cases, the participants have not turned up for FGD's, so we have conducted Dyads.

Table 8: FGD groups and their composition

S No.	Place	Date	No. of people	Participants
1	Head Office	26-10-2021	3	CAO, Office Superintendent, and FDA
2	Bangalore Urban	27-10-2021	7	EEs and AEEs
3	Chikkamagaluru	25-10-2021	9	EEs, AEEs and Work Inspector
4	Gulbarga	01-11-2021	25	AEEs, AEs, JEs,
5	Davangere	11-11-2021	8	AE, EEs and AEEs
6	Chitradurga	11-11-2021	9	SE, EEs, AEEs
7	Mysore	23-11-2021	8	AE, SE, EEs, AEEs

The issues to be discussed is communicated to the participants well in advance so that they remain prepared.

A general guide for conducting the FGD is provided below:

1. Moderator specifies the time for discussion (30-45 minutes)
2. Opening remarks are provided by the moderator, describing the issues that the group needs to discuss and general guidelines for discussions
3. Each participant is provided a time of two minutes to share opening remarks describing his/ her views about the discussion topics
4. The floor is opened for discussion and debate
5. Ten minutes before closing time, moderator invites participants who have not spoken to express their views
6. Five minutes before closing time, moderator announces time left for the discussion
7. At the closing time, moderator provides closing remarks summarizing key takeaways, issues discussed, consensus reached, etc.

Detailed format, FGD guide and the list of FGD's conducted are provided in annexure of this report. Few pictures of conducted FGD's and Dyad's in KRIDL's offices are present below:

Figure 4: FGD and Dyad Snapshots



FGD – Chikkamagaluru Division



FGD - Davanagere Division 1 and 2

FGD – Central Zone



Dyad - Mangalore Division



Dyad - Karwar Division

5. Secondary data

Most of the secondary data pertains to KRIDL. A list of such data is provided below:

- Finance - Annual accounts, financial statement of KRIDL, Financial statement of other private and public sector entities
- Works executed - Project reports
- Human Resources - Organization structure

The questionnaire for IDIs with KRIDL officials annexed to this report includes items from the above list.

4.3 Sampling approach

The sampling approach and selection of respondents used for the study is described below.

1. Works sampling and User selection (*for physical observation of works and survey of beneficiaries*)

481 works and 15 CSR projects executed by KRIDL are sampled for the study. The sample is drawn representatively across departments, schemes, time (2015-2020) and space (zone, division, sub-division, district and taluk). The sample also consider the satisfactory and not satisfactory works as graded by District Quality Monitoring Unit (DQM).

Two users per asset are selected for interview. Wherever feasible, one of the users is to be the “on-site” administrator.

The sampling of “Main” projects across user departments is shown in the table below. The population data provided by KRIDL did not contain data/ contained limited data pertaining to some of the department names provided in the TOR, hence some adjustments had been made which are explained in the table below.

Table 9: Sampling of “Main” projects across user departments

No	Department name	Sample as per TOR	Selected sample	Remarks
1.	Agriculture Marketing	1	0	Fully adjusted in Agriculture
2.	Agriculture	1	3	
3.	Animal Husbandry & Veterinary Services	6	6	
4.	Backward Classes	1	1	
5.	BBMP Bengaluru	146	146	
6.	BDA	2	2	

No	Department name	Sample as per TOR	Selected sample	Remarks
7.	Boards and Corporations	6	6	
8.	Commercial Tax	2		
9.	Department of Employment and Training	1	1	Fully substituted with Industrial Training Institute (ITI) Buildings
10.	Co-Operation	1	1	Fully substituted with Co-operative works
11.	Director Mines and Geology	1	1	
12.	Director of Commerce and Institution	1	0	Data not available
13.	E Governance	1	1	
14.	Education	5	5	
15.	Fisheries	1	1	
16.	Forest	1	1	
17.	Health	1	2	
18.	Hyderabad-Karnataka Regional Development Board (HKRDB)	1	2	
19.	Horticulture	1	2	
20.	Irrigation	10	10	Partly substituted with 6 projects of Karnataka Neeravari Nigam Limited (KNNL)
21.	Kannada & Culture Information	1	1	

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No	Department name	Sample as per TOR	Selected sample	Remarks
22.	Karnataka Water Supply and Sewerage Board	157	157	Partly substituted with 156 projects of Karnataka Rural Water Supply & Sanitation Agency
23.	Karnataka State Beverages Company Limited	1	1	
24.	Library	1	1	
25.	Medical Education	1	1	
26.	Mujarai Department (Dharmika Datti Ilakhe)	1	1	
27.	Municipal Administration	1	1	
28.	Others	19	19	
29.	Police	1	1	
30.	Rural Development & Panchayati Raj	59	59	
31.	Revenue	21	17	Partly adjusted in other departments
32.	Social Welfare	25	25	
33.	Tourism	1	2	
34.	Women & Child Welfare	1	1	
35.	Youth Service and Sports	1	1	
	Total	481	481	

Apart from the 481 “Main” projects, **15 “CSR” projects also had to be selected.** KRIDL provided data across 5 years for “CSR” projects. 15 projects were sampled based on a purposive selection method and due coverage was provided to all administrative zones. The next section provides details of the sampled projects.

Detailed list of sampled projects

This section provides detailed list of the sampled projects visited till now based on sample works selected. The “Main” projects list is divided in 3 parts:

1. Main work visited as per sample work selected (408 works)
2. Substituted work visited in place of sample work selected (15 works)
3. Main work visited but sample work not found (29 works)

For each project, name of the project, name of the user department and the corresponding name of zonal office, divisional office, and sub-divisional office of KRIDL is provided along with the field visit date. In case of substitute work visited and sample work not found, remarks column has also been added.

A separate list is provided for “CSR” projects. (12 works visit done, 1 work not found when visited)

Further, there are 19 works which are unidentified.

The list of “Main” projects categorized in 3 tables and “CSR” projects are annexed to the report along with detailed list of surveyed projects basis work type.

Statistics of work surveyed and respondents

This section provides summarized statistical view of the surveyed projects and respondents according to work type.

Table 10: Statistics of work surveyed and respondents

S No.	Work Type	Statistics of work surveyed	No. of respondents (2 per work surveyed)	Statistics of respondents
1	Drinking water unit	187	374	28% are females, Average age of respondents is 35 years, 81% represent the backward category (SC/ST/OBC) community
2	General building	27	54	11% are females, 5% are transgender, average age of respondents is 40 years, 44% represent the backward category (SC/ST/OBC) community
3	Pathway work	6	12	42% are females, Average age of respondents is 46 years, 92% represent the backward category (SC/ST/OBC) community
4	Sewerage works	28	56	14% are females, Average age of respondents is 42 years, 39% represent the backward category (SC/ST/OBC) community
5	Road works	86	172	9% are females, Average age of respondents is 39 years, 68% represent the backward category (SC/ST/OBC) community
6	Office building	13	26	42% are females, Average age of respondents is 43 years, 69% represent the backward category (SC/ST/OBC) community
7	Interior works	10	20	15% are females, Average age of respondents is 43 years, 65% represent the backward category (SC/ST/OBC) community
8	General works	43	86	12% are females, Average age of respondents is 39 years, 54% represent the backward category (SC/ST/OBC) community
9	Exterior works	7	14	36% are females, Average age of respondents is 39 years, 64% represent the backward category (SC/ST/OBC) community
10	Residential building	3	6	All are males, Average age of respondents is 28.5 years, 100% represent the backward category (SC/ST/OBC) community

2. Office sampling and staff selection (*for in-depth interviews*)

Sampling framework for conducting IDI is considered across Corporate, Zonal, Divisional and Sub-divisional offices. The IDI's sampled are spread across divisional offices and sub-divisional offices and they are selected considering offices from each Zone and geographically. The KRIDL staff interviewed sample includes Chief Engineers, Executive engineers, Assistant Executive Engineers, Chartered Accountant, and other field staff.

3. Group sampling and participant selection (*for focused group discussions*)

Composition of the groups on account of Corporate, Zonal and Divisional offices selection helped in capturing diverse viewpoints and perceptions, promote seeding of ideas and enrich outcomes of the discussions. In some cases, it also helped in consensus building on important issues. Group types sampled based on the issues is provided below:

- Performance issues, Customer perceptions, Strategies to enhance performance (Zonal office, Divisional office, South zone, Central zone, North zone)
- Sustaining performance in absence of KTPP exemption, Brand equity of KRIDL, Competitive positioning, Strategic roadmap, Action planning, Socio-economic impact (Corporate office, Zonal office)
- Major reasons for Quality issues, Cost overrun, Time delays affecting projects, Strategies to enhance performance (Divisional office, Zonal office)
- Employee motivation and compensation (Administration)
- Improving financial performance, strengthening financial controls and compliance, Mitigating financial risks (Finance)

4.4 Approach for data analysis

The analytical approach varies as per the nature of data and evaluation questions to be answered:

1. Quality check analysis

This approach is used for parameters related to construction quality. Standard accepted norms for construction quality to be used as reference and the actual data to be compared with such norms to analyze the quality of construction. For example, some of the norms for construction quality of a footpath are even surface, absence of broken tiles, uniform and adequate width to accommodate pedestrians during peak hours, etc. For general building norms for quality aspects included electrical fitting, plumbing, carpentry, civil work, cracks, peeling paint, water seepage, inferior material quality, broken slab, chipping off cement, rusted iron bars and vegetation growth. Similarly, for sewerage works include physical observations were made against 3 quality aspects – civil parts (e.g., cement-built structure), mechanical parts (e.g. manhole covers) and plumbing (e.g. pipes). Similarly, norms for sewerage works included potholes, cracks, washed-out road and sinking road.

2. Satisfaction scale

This approach will be used for data on socio-economic parameters of a qualitative nature and where personal views/ opinions are involved. The responses to be quantified on a five-point Likert scale (e.g. Very good/ Good/ Average/ Bad/ Very Bad) and the distribution of responses across the five points is analyzed. For example, quality of education offered and its impact on enrollment of students. Further drinking water unit has impact on health parameters of community, wellbeing of women and children, etc. Similarly, pathway and road works impact on safety and ease in commute.

3. Descriptive analysis and strengths/ weakness assessment

This approach is used to analyze business processes, procedures, policies, guidelines such as procurement framework, performance appraisal framework, quality control policy, financial control standards, etc. A listing of strengths and weaknesses for different elements provided which is used to suggest recommendations in order to strengthen the element, identify opportunities and eliminate the threats.

4. Ratio analysis, trend analysis

This approach is used to analyze quantitative nature performance data related to financial aspects. For example:

Financial performance – current ratio, quick ratio, profit margins, inventory days, etc.

Wherever historical data is available, the same is plotted on graph (line graph or bar graph) and the trend is observed and analyzed. This is applicable for parameters like revenue, net profit margin, etc.

4.5 Approach for descriptive analysis

1. REESI Analysis

We have used the REESI (Relevance, Effectiveness, Efficiency, Sustainability, Impact) framework for evaluation of KRIDL's performance on various objectives.

Figure 5: REESI framework



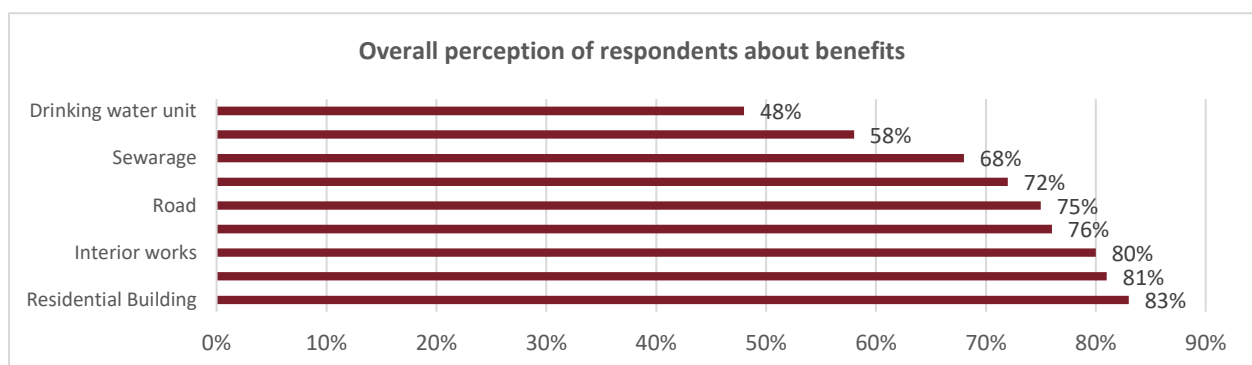
2. SWOT Analysis

For organizational data, SWOT analysis is used to evaluate organizational performance.

4.6 Hypothesis testing

The **first hypothesis** which has been tested is that **KRIDL works have generated and contributed towards significant socio-economic impact and benefits.**

The hypothesis has been tested against major work categories through opinion survey of users and found to be true:



Socio-economic impact and benefit	
Drinking water unit	<ul style="list-style-type: none"> • Improvement in Health parameters of the community • Improved water taste and water- color
General building	<ul style="list-style-type: none"> • Increase in enrolment in educational institutions, within the local community • Increased community bonding • Increase in number of animal patients who are able to avail health services locally
Pathway and Road works	<ul style="list-style-type: none"> • Improved experience of daily commute • Improved safety of travel
Drainage works	<ul style="list-style-type: none"> • Improvement in sanitation/ cleanliness standards
Office building	<ul style="list-style-type: none"> • Improvement in infrastructure as compared to earlier office • Improved training facilities
Interior works	<ul style="list-style-type: none"> • Community hall used for multipurpose activity • Increased impact on work productivity
General works	<ul style="list-style-type: none"> • Improved reliability and availability of power supply • Time and cost savings for students and workers • Improved perception of safety and security

Secondly, we have tested the hypothesis that **KRIDL works have resulted in significant employment generation due to their labor-intensive nature.**

The hypothesis has been tested through questions about employment in IDI's and FGD's and found to be true as KRIDL has a positive impact on job creation for unemployed and under-employed youth, labor costs as a share of the total project cost is high (up to 40%), labor is extensively sourced at a local level and paid in accordance with the SR and the labor working on urban projects have their origins from faraway rural areas ensuring fulfilling the objectives of creating employment opportunities for unemployed, under-employed youth thereby improving their livelihood. By calculating the man-days generated on absolute basis for execution of 66,657 works by KRIDL, a total a total of 14.2 crore man-days were generated split as 12.3 crore man-days for unskilled labor and 1.9 crore man-days for skilled labor.

4.7 Limitations/ constraints

The following are limitations/ constraints factors of the study:

1. Many of the infrastructure works surveyed were executed 5-6 years back, between the years of 2015-2020. In many cases, rework and repair of the work has been done thus challenging to assess the original work done by KRIDL. Thus, it was difficult to link outcome directly with only KRIDL's action. For e.g., in case of roads, repairing of roads and layering has been done and hence the enumerator was not able to validate and assess the baseline condition of the road which KRIDL built.
2. In a couple of instances, work was not found as per the sample provided. Thus, the ground reality of the work has changed, and it was a challenge to assess the original work done by KRIDL. For e.g., in many places RO plants were not found as they have been sold as scrap or shifted due to other reasons. In such cases, enumerators have visited alternate site to assess baseline work done by KRIDL.
3. Financial analysis of KRIDL is done for the period between FY 2011-12 to FY 2016-17 considering availability of audited financial statements.

5. Key results and discussions

5.1 Redesigned evaluation framework and key findings

The evaluation framework is a mapping of the objectives and scope of the evaluation study with the corresponding stakeholders involved and the input-output-outcome-impact level enquiry areas. The following table shows the evaluation framework which has been employed in the present study and maps key findings against each of the input-output-outcome-impact level enquiry areas.

Table 11: Redesigned evaluation framework with key findings

Evaluation objective	Evaluation scope	Stakeholders involved and Data collection sources	“Input-Output-Outcome-Impact” enquiry areas	Key findings
<p><i>Analyze the impact of infrastructure works on employment and livelihood</i></p>	<p>Employment and livelihood generation</p>	<ul style="list-style-type: none"> • KRIDL senior management • KRIDL field officials (EEs, AEEs) 	<ul style="list-style-type: none"> • KRIDL’s policies for employing labor (Input) • KRIDL’s policies for employing vendors/contractors (Input) • Nature of jobs/ livelihood opportunities generated (Outcome) • Local level impact created (Outcome) • Rural impact created (Outcome) • Compensation provided (Outcome) 	<ul style="list-style-type: none"> • Due to the physical nature and labor intensity of the works, a significant extent of direct employment is generated. Labor costs as a share of the total project cost is high, sometimes up to 40%. • KRIDL’s works have a positive impact on job creation for the unemployed and under-employed youth. Generally, the projects are of short to medium term duration and work content is unskilled or semi-skilled in nature, which involve a significant number of unemployed and under-employed youth. • Most of the labor working on urban projects have their origins in faraway rural areas spread throughout the state. Hence, despite the urban focus of projects, not only do they generate employment for rural people but also enable economic transfer to rural areas through employment and community projects. • Labor is extensively sourced at a local level. KRIDL relies on local area labor contractor (also referred to as “Group Leader” or “GL”) to bring in the labor. • Wherever relevant, sourcing of critical inputs is carried out locally. KRIDL relies significantly on local contractors for labor, for equipment (e.g. JCB, cranes) and for minor materials. • Laborers employed are paid in accordance with the employment rates specified in the SR. This ensures that wage-related exploitation is avoided.
<p><i>Examine the impact on</i></p>	<p>Procurement</p>	<ul style="list-style-type: none"> • KRIDL senior management 	<ul style="list-style-type: none"> • Procurement practices (Input) 	<ul style="list-style-type: none"> • Large sized procurements (e.g. cement, steel) are carried out centrally through e-procurement portal. Other material is procured directly by KRIDL through the Government e-market place portal. Smaller requirements (equipment, minor

Evaluation objective	Evaluation scope	Stakeholders involved and Data collection sources	“Input-Output-Outcome-Impact” enquiry areas	Key findings
<i>eliminating middlemen</i>		<ul style="list-style-type: none"> • KRIDL field officials (EEs, AEEs) 	<ul style="list-style-type: none"> • Extent of middleman involvement in procurement (Output) 	<p>material) are met locally. For supply of labor, KRIDL directly contracts with local level GLs.</p>
<i>Estimate the organizational efficiency</i>	Project management techniques during execution	<ul style="list-style-type: none"> • KRIDL senior management • KRIDL field officials (EEs, AEEs) 	<ul style="list-style-type: none"> • Project execution techniques (Input) • Cost control techniques (Input) • Time management techniques (Input) • Oversight and supervision (Input) • Extent of cost overrun (Output) • Extent of lingering works (Output) 	<ul style="list-style-type: none"> • A well-established process exists for planning and scheduling projects for execution which includes site visit, soil testing, budget preparation and design and reports preparation, etc. • Delays are majorly caused due to site specific issues such as site litigation, encroachment, site in hilly areas, traffic movement, delay in site clearance by EA, etc. Further, delays are also caused due to challenges in supply of materials in difficult to reach areas and sometimes political motivation. • Control mechanisms are available to mitigate the impact of time and cost escalations e.g. carrying out work during nighttime to overcome traffic issues. • While there is no formal mechanism to manage crisis situations, practical solutions are adopted to manage typical events e.g. labor related issues are handled in consultation with Group leaders. • According to inputs shared by KRIDL, around 5-10% of all projects get delayed.
	Financial efficiency	<ul style="list-style-type: none"> • KRIDL CFO 	<ul style="list-style-type: none"> • Strategies to enhance utilization of equipment, labor (Input) 	<p>Utilization of labor, material and equipment is not an issue since they are procured after contract is awarded. On most occasions, KRIDL has enough projects on hand to ensure optimal utilization.</p>

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Evaluation objective	Evaluation scope	Stakeholders involved and Data collection sources	“Input-Output-Outcome-Impact” enquiry areas	Key findings
	Construction technology and practices	<ul style="list-style-type: none"> • KRIDL senior management • KRIDL field officials (EEs, AEEs) 	<ul style="list-style-type: none"> • Extent of use of modern technology and practices (Output) 	<p>KRIDL works with vendors who have access to modern technology. However, scope to use modern technology is limited given the size and complexity of projects being undertaken by KRIDL. The technologies which are budget-friendly and are suitable for the kind of works taken up by KRIDL are generally adopted.</p>
	Cost effective procurement	<ul style="list-style-type: none"> • KRIDL senior management • KRIDL field officials (EEs, AEEs) 	<ul style="list-style-type: none"> • Procurement methods and documents used (Input) 	<ul style="list-style-type: none"> • Larger sized procurements are carried out centrally and competitively through e-procurement by Head Office, while smaller-scaled requirements are met locally like machines and equipment. Contractors are procured through the preferential sourcing method while labor is sourced locally through Group Leaders (GL). • While presently there are no standard bidding documents, KRIDL is in the process of preparing these which will include standardized technical specifications. KRIDL is also considering having contracts with Group Leaders (GLs) in future, with contractual guidelines on capacity, quality, and rural employment generation.
	Staffing levels	<ul style="list-style-type: none"> • KRIDL CAO 	<ul style="list-style-type: none"> • Staffing strategies (Input) • Staffing levels (Output) • Impact of staffing issues (Impact) 	<ul style="list-style-type: none"> • Staff turnover coupled with lack of recruitments has created a shortage of permanent staff. • In order to tide over the staff shortage issues, KRIDL has heavily resorted to an outsourcing model, both in corporate offices and field offices. Almost 60% of KRIDL staff is outsourced. • There is a looming risk of loss of institutional memory as most of the existing permanent staff will be retiring soon.

Evaluation objective	Evaluation scope	Stakeholders involved and Data collection sources	“Input-Output-Outcome-Impact” enquiry areas	Key findings
	Work allocation and co-ordination	<ul style="list-style-type: none"> • KRIDL CAO 	<ul style="list-style-type: none"> • Roles and responsibilities (Input) 	Roles and responsibilities, job descriptions are not written and formalized, but orally explained to employees. Nonetheless, most of the engineers are well aware about their roles and responsibilities.
	Performance management	<ul style="list-style-type: none"> • KRIDL CAO 	<ul style="list-style-type: none"> • Performance management process (Input) 	Performance management process lacks self-appraisal and a formal goal-setting process. KRIDL follows the confidential report (CR) system but a formalized mechanism for goal discussions and target setting at the start of the performance year is not available.
	Training	<ul style="list-style-type: none"> • KRIDL CAO 	<ul style="list-style-type: none"> • Extent of training (Output) 	Every year, KRIDL provides training opportunities to both managerial and technical employees covering technical and non-technical areas. Approximately 10% of the staff undergo training each year. New joiners also undergo induction training for 5-7 days.
	Employee welfare and motivation	<ul style="list-style-type: none"> • KRIDL CAO 	<ul style="list-style-type: none"> • Activities/ programs undertaken to ensure employee welfare and motivation (Input) 	<ul style="list-style-type: none"> • In terms of social security, KRIDL has taken a group medical insurance coverage for its employees. • In any case of death of laborer, compensation settlement is done through a separate department at Head office.
Comparative analysis of KRIDL vis-à-vis private construction companies and	Market mix	<ul style="list-style-type: none"> • KRIDL CFO • Secondary data (annual reports of peer companies) 	<ul style="list-style-type: none"> • Size of works executed (Outcome) • Complexity of works executed (Outcome) 	<ul style="list-style-type: none"> • A comparative analysis with 5 Indian infrastructure construction firms¹⁷ (3 private, 2 public) has shown that, as compared to KRIDL, projects executed by peer companies are larger in size and technologically more complex. Further the peer companies’ projects are spread across multiple States. • Some of the unique sectors in which the peer companies operate (but KRIDL does not) include environment, railways, highways, airport runways, power

¹⁷ NCC Limited, PNC Infratech Limited, NBCC India Limited, Engineers India Limited (EIL) and KNR Constructions Limited. Of these, EIL and NBCC are PSUs, while rest are private sector entities.

Evaluation of Karnataka Rural Infrastructure Development Limited from 2014-15 to 2019-20

Evaluation objective	Evaluation scope	Stakeholders involved and Data collection sources	“Input-Output-Outcome-Impact” enquiry areas	Key findings
<p><i>similar models in other states.</i></p>			<ul style="list-style-type: none"> • Sectors covered (Outcome) • Functional areas covered (Outcome) 	<p>transmission, power plants (coal, nuclear), oil & gas, petrochemicals. Solar power (which KRIDL aspires to operate in) is also one such sector.</p> <ul style="list-style-type: none"> • In terms of unique functional areas, one of the peer companies - EIL - provides engineering consultancy services. Another, PNC Infratech, provides asset operating and maintenance services through models such as Design-Build-Finance-Operate-Transfer (DBFOT), Operate-Maintain-Transfer (OMT) and Hybrid Annuity model (HAM).
	<p>Cost structure (operating costs and capital costs)</p>	<ul style="list-style-type: none"> • KRIDL CFO • Secondary data (annual reports of KRIDL and peer companies) 	<ul style="list-style-type: none"> • Cost structure (Input) 	<ul style="list-style-type: none"> • In terms of employee costs, the share of employee expenses within total expenses is the lowest for KRIDL at 2% whereas it ranges between 5-6% for peer companies. For EIL, the ratio is at 31% due to its focus on engineering consultancy services. The low spending ratio of KRIDL on employees is corroborated with findings from interactions with KRIDL officials, which indicated that many staffing positions are vacant and most of the staff being hired are on contractual basis. • For privately owned peer firms with heavy reliance on in-house machinery such as KNR constructions, the share of depreciation and amortization expense is highest at 12% followed by PNC Infratech (7%). The public sector companies (KRIDL, NBCC, EIL) KRIDL runs operations on an asset light model and have a very low depreciation and amortization expense ratio. • The public sector peer companies (KRIDL, NBCC, EIL) are largely debt free (very low debt to equity ratio) and have very little share of finance costs, which is almost zero percent. However, same costs for private sector entities are in the range of 5-9% indicating a higher use of leverage to finance projects. A higher reliance on debt finance indicates asset heavy operating models and longer

Evaluation objective	Evaluation scope	Stakeholders involved and Data collection sources	“Input-Output-Outcome-Impact” enquiry areas	Key findings
	Financial performance	<ul style="list-style-type: none"> • KRIDL CFO • Secondary data (annual reports of KRIDL and peer companies, CAG report) 	<ul style="list-style-type: none"> • Revenue performance (Output) • Profitability (Outcome) • Cash reserves (Outcome) • Non-monetized work in progress (Outcome) 	<p>tenure projects with generation of cashflows on longer term basis (such as DBFOT, OMT, HAM projects), which matches with servicing requirements of debt-based finance.</p> <ul style="list-style-type: none"> • KRIDL’s annual revenues have been steadily increasing at a CAGR¹⁸ of 23%¹⁹, indicating a robust turnover and market share within Karnataka. Amongst non-power PSUs within Karnataka, KRIDL is the most profitable company. • In comparison to peer companies, the peers had annual revenues ranging from ~ Rs. 2,500 to Rs. 9,000 crores (FY 2019-20) as compared to KRIDL’s revenue of ~ Rs. 2,400 crores (FY 2016-17). This is attributable to the larger scale and complexity of projects undertaken and wider presence across multiple States, of the peer companies. • The net profit (profit after tax) margin of KRIDL and peer firms is as follows: EIL (12.1%), KNR (10.2%), PNC (9.5%), KRIDL (5.2%), NCC (3.5%) and NBCC (1.0%). • The operating profit (profit before interest and tax) margin of KRIDL and peer firms is as follows: EIL (19.6%), KNR (12.9%), PNC (12.3%), KRIDL (7.9%), NCC (5.0%) and NBCC (4.4%). KRIDL’s operating profit margin is a reflection of the 5-10% price markup it is able to command within its financial quotes. Considering sectoral and functional focus of EIL, KNR and PNC, the above trend also indicates that better price markups may be available in oil & gas, road, highway sectors’ projects, as well as in the engineering consultancy business. • The cash reserve to revenue ratio of KRIDL is highest at 102% followed by EIL at 80%. This ratio for rest of the peer firms lies in the range of 3-16%. Cash

¹⁸ Compounded annualized growth rate

¹⁹ Over the period FY 2011-12 to FY 2016-17

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Evaluation objective	Evaluation scope	Stakeholders involved and Data collection sources	“Input-Output-Outcome-Impact” enquiry areas	Key findings
				<p>reserves can be used to reinvestment into the business to achieve growth and scalability. In the case of KRIDL, these reserves are increasing on yearly basis – the firm is parking most of the cash reserve into bank deposits, which could be earning around 8% of annual interest. Since KRIDL’s existing business is generating very low levels of Return on Assets (less than 5%), it makes sense to invest the money in either bank deposits at 8% interest income or in businesses which can earn better than 8% returns on the assets deployed.</p> <ul style="list-style-type: none"> • KRIDL’s inventory turnover days (number of days required for inventory to be converted into revenues) is very high at 971 days which indicates that KRIDL has significantly spent on material/ labor/ other construction related inputs without realizing the revenues. The same for peer companies ranges between 2 days to 72 days. This could be on account of lingering projects or projects which are stuck because of some issues.
	Competitive positioning	KRIDL CFO	<ul style="list-style-type: none"> • Exemption under KTPP Act (Input) • Brand equity (Output) • Long term sustainability (Outcome) 	<ul style="list-style-type: none"> • The exemption from competitive bidding provided to KRIDL is an important factor which assures order volumes to the company. The nature of work carried out by KRIDL being basic and non-complex, there are expected to be many entities which would be able to carry out the same work, at competitive prices and at assured quality. Thus, in the absence of the KTPP exemption, KRIDL would be exposed to a risk in reduction of order volumes as well as reduction in prices, which will ultimately affect revenues. • KRIDL’s brand equity amongst entrusting agencies (EAs) is for executing projects in limited time, thus ensuring timely completion and handover. The EAs entrust works to KRIDL due to its previous track record of accomplished works.

Evaluation objective	Evaluation scope	Stakeholders involved and Data collection sources	“Input-Output-Outcome-Impact” enquiry areas	Key findings			
				<ul style="list-style-type: none"> There was a reduction in the number of projects in FY 2020-21 as the 4(g) exemption was not renewed and KRIDL could not take up projects without participating in any bid. In the absence of KTPP exemption, long term sustainability of KRIDL would depend on its ability to procure critical construction inputs (material, labor, vendors/ contractors) at highly competitive rates (which could be lesser than the SR rates) as well as flexibility to bid at prices below the SR rates or accept profit markups below the standard norm of 5%, 10%. 			
<i>Study the quality of infrastructure works</i>	Quality assurance	<ul style="list-style-type: none"> KRIDL senior management KRIDL field officials (EEs, AEEs) 	<ul style="list-style-type: none"> Quality control (Input) Organizational capacity for quality assurance (Input) 	<ul style="list-style-type: none"> Periodic site visits and quality checks are done by EEs and AEEs. Some entrusting agencies like BBMP themselves undertake quality supervision and monitoring. Quality checks are also done through external third parties like engineering colleges. Quality control is managed by line departments. An independent and dedicated quality control department is not present within KRIDL. Such a department can strengthen the quality control capacity, bring in the required independence and help incorporate best practices. 			
	Physical checks	-- ²⁰	<ul style="list-style-type: none"> Physical check parameters (Output) 	<ul style="list-style-type: none"> Some commonly observed issues during physical check are summarized below: <table border="1" data-bbox="1211 1169 1953 1294"> <thead> <tr> <th>Work type</th> <th>Commonly observed quality issues</th> </tr> </thead> <tbody> <tr> <td>1. Drinking water unit</td> <td>Broken/ damaged filter, pipes, taps,</td> </tr> </tbody> </table> 	Work type	Commonly observed quality issues	1. Drinking water unit
Work type	Commonly observed quality issues						
1. Drinking water unit	Broken/ damaged filter, pipes, taps,						

²⁰ Independent observations done by CRISIL

Evaluation of Karnataka Rural Infrastructure Development Limited from 2014-15 to 2019-20

Evaluation objective	Evaluation scope	Stakeholders involved and Data collection sources	“Input-Output-Outcome-Impact” enquiry areas	Key findings	
				2. General building	Peeling paint, wall cracks, vegetation growth, water seepage
				3. Office building	Cracks, seepage and vegetation growth
				4. Road	Potholes, cracks, sinking roads, washed-out roads
				5. Pathway	Missing and broken tiles, sinking pathways
				6. Sewerage works	Damaged/ broken slabs, cement coming off
				7. Interior works	No major issues observed
				8. General works (lighting, electrical equipment)	Fitting, protection features, non-functional equipment
				General works (bus shelters, walls)	Broken roof, vegetation growth
				9. Exterior works	No major issues observed
				10. Residential building	No major issues observed

Evaluation objective	Evaluation scope	Stakeholders involved and Data collection sources	“Input-Output-Outcome-Impact” enquiry areas	Key findings																						
	Satisfaction of users/ beneficiaries	Project users and beneficiaries	<ul style="list-style-type: none"> Opinion on overall perception about the work (Outcome) 	<ul style="list-style-type: none"> The share of respondents with a positive²¹ overall perception about the work is provided below: <table border="1" data-bbox="1211 549 1951 1294"> <thead> <tr> <th data-bbox="1211 549 1585 651">Work type</th> <th data-bbox="1585 549 1951 651">Share of respondents with a positive overall perception</th> </tr> </thead> <tbody> <tr> <td data-bbox="1211 651 1585 715">1. Drinking water unit</td> <td data-bbox="1585 651 1951 715">48%</td> </tr> <tr> <td data-bbox="1211 715 1585 778">2. General building</td> <td data-bbox="1585 715 1951 778">81%</td> </tr> <tr> <td data-bbox="1211 778 1585 842">3. Pathway</td> <td data-bbox="1585 778 1951 842">58%</td> </tr> <tr> <td data-bbox="1211 842 1585 906">4. Sewerage</td> <td data-bbox="1585 842 1951 906">68%</td> </tr> <tr> <td data-bbox="1211 906 1585 970">5. Road</td> <td data-bbox="1585 906 1951 970">75%</td> </tr> <tr> <td data-bbox="1211 970 1585 1034">6. Office building</td> <td data-bbox="1585 970 1951 1034">48%</td> </tr> <tr> <td data-bbox="1211 1034 1585 1098">7. Interior work</td> <td data-bbox="1585 1034 1951 1098">80%</td> </tr> <tr> <td data-bbox="1211 1098 1585 1161">8. Exterior work</td> <td data-bbox="1585 1098 1951 1161">72%</td> </tr> <tr> <td data-bbox="1211 1161 1585 1225">9. General work</td> <td data-bbox="1585 1161 1951 1225">76%</td> </tr> <tr> <td data-bbox="1211 1225 1585 1294">10. Residential building</td> <td data-bbox="1585 1225 1951 1294">83%</td> </tr> </tbody> </table> 	Work type	Share of respondents with a positive overall perception	1. Drinking water unit	48%	2. General building	81%	3. Pathway	58%	4. Sewerage	68%	5. Road	75%	6. Office building	48%	7. Interior work	80%	8. Exterior work	72%	9. General work	76%	10. Residential building	83%
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²¹ Ranked as either 4 or 5 on a scale of 1 to 5, where 5 denotes most positive.

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Evaluation objective	Evaluation scope	Stakeholders involved and Data collection sources	“Input-Output-Outcome-Impact” enquiry areas	Key findings																
	Socio-economic impact	Project users and beneficiaries	<ul style="list-style-type: none"> Socio-economic outcome and impact parameters (Outcome, Impact) 	<ul style="list-style-type: none"> The outcomes/ impacts noted by a majority of the respondents (>50%) are as follows: <table border="1" data-bbox="1223 639 2029 1361"> <thead> <tr> <th data-bbox="1223 639 1507 783">Work type</th> <th data-bbox="1507 639 2029 783">Most significant outcomes (share of respondents with overall positive perception >50%)</th> </tr> </thead> <tbody> <tr> <td data-bbox="1223 783 1507 911" rowspan="2">1. Drinking water unit</td> <td data-bbox="1507 783 2029 842">Water taste</td> </tr> <tr> <td data-bbox="1507 842 2029 911">Water colour</td> </tr> <tr> <td data-bbox="1223 911 1507 1038" rowspan="2">2. Hostels for backward category</td> <td data-bbox="1507 911 2029 970">Improvement in social status</td> </tr> <tr> <td data-bbox="1507 970 2029 1038">Better access to schools</td> </tr> <tr> <td data-bbox="1223 1038 1507 1102">3. Community hall</td> <td data-bbox="1507 1038 2029 1102">Availability of space for community events</td> </tr> <tr> <td data-bbox="1223 1102 1507 1230" rowspan="2">4. Road</td> <td data-bbox="1507 1102 2029 1161">Improved daily commute</td> </tr> <tr> <td data-bbox="1507 1161 2029 1230">Improved travel safety</td> </tr> <tr> <td data-bbox="1223 1230 1507 1361" rowspan="2">5. Pathway</td> <td data-bbox="1507 1230 2029 1289">Time savings</td> </tr> <tr> <td data-bbox="1507 1289 2029 1361">Improved daily commute</td> </tr> </tbody> </table> 	Work type	Most significant outcomes (share of respondents with overall positive perception >50%)	1. Drinking water unit	Water taste	Water colour	2. Hostels for backward category	Improvement in social status	Better access to schools	3. Community hall	Availability of space for community events	4. Road	Improved daily commute	Improved travel safety	5. Pathway	Time savings	Improved daily commute
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Evaluation objective	Evaluation scope	Stakeholders involved and Data collection sources	“Input-Output-Outcome-Impact” enquiry areas	Key findings	
				6. Sewerage works	Sanitation/ cleanliness standards of the area
				7. Government resource building	Improved training facilities Improved office infrastructure
Estimate the impact of Covid-19 on implementation of works	Impact of COVID-19 on implementation of works	<ul style="list-style-type: none"> • KRIDL senior management • KRIDL field officials (EEs, AEEs) 	<ul style="list-style-type: none"> • Labor shortages (Input) • Delays in work completion (Outcome) 	<ul style="list-style-type: none"> • COVID-19 was an exceptional crisis, and its impact was greatly felt. As most of the laborers working on KRIDL projects were migrants, there was a significant disturbance in manpower availability. This led to delays in project implementation. • There was financial impact as well. The order flow was affected due to budget cuts across government departments. • In case of commissioned RO plants, COVID-19 affected the supply of replacement filters and other spares, which led to some of the RO plants being rendered non-usable. 	
Analyze the CSR activities and its compliance to policy	CSR activities carried out	<ul style="list-style-type: none"> • KRIDL CAO 	<ul style="list-style-type: none"> • Extent and nature of activities carried out (Output) 	<ul style="list-style-type: none"> • CSR activities mostly include setting up drinking water-based RO plants. Other activities include construction of convention halls, drinking water facility, tree guards, etc. • The focus during last 2 years has been towards COVID-19 related support in backward districts such as setting up oxygen plants. 	
	Compliance with CSR policy	<ul style="list-style-type: none"> • KRIDL CAO 	<ul style="list-style-type: none"> • CSR policy (Input) 	<ul style="list-style-type: none"> • KRIDL follows the CSR policy guidelines as prescribed by the Government of India under the Companies Act, 2013 – 2% of its gross profit is used for CSR activities. 	

5.2 Theory of change as observed in the field

The Theory of Change is a logical presentation of output, outcomes and impact resulting from developmental interventions. Based on the physical checks and survey of users carried out across Karnataka, the theory of change as observed in the field has undergone certain changes as compared to the initial hypothesis made during the inception stage of the assignment. The revised theory of change is presented below:

Table 12: Theory of change as observed in the field

Inputs	Asset type	Outputs	Outcomes	Impact
<ul style="list-style-type: none"> Material, equipment, and labor Project management, supervision, quality control Technology related inputs Organizational oversight and management 	Water Infrastructure	<ul style="list-style-type: none"> RO based drinking plants constructed Borewells constructed 	<ul style="list-style-type: none"> Reduction in distance travelled by women to fetch water Improved hydration levels Improved availability of water for drinking and household chores Improved well-being of children 	<ul style="list-style-type: none"> Increased time savings for women Improvement in women's health Improvement in local area sanitation standards Reduced absenteeism of children in school
	Roads	<ul style="list-style-type: none"> Asphalt roads constructed Cement roads constructed 	<ul style="list-style-type: none"> Increased width of the road Improved quality of the road i.e. smooth surface without potholes 	<ul style="list-style-type: none"> Improved experience with local level commute Improved travel safety
	Sewerage Infrastructure	<ul style="list-style-type: none"> Storm water drains built 	<ul style="list-style-type: none"> Reduction in incidence of drain choke-ups and overflow Reduction in instances of bad odor Reduction in instances of unpleasant appearance 	<ul style="list-style-type: none"> Improvement in local area sanitation standards Improvement in local area cleanliness standards
	Office buildings	<ul style="list-style-type: none"> Government offices constructed Multi-purpose 	<ul style="list-style-type: none"> Improved lighting and ventilation Increased access to training infrastructure 	<ul style="list-style-type: none"> Positive work environment due to lightning and ventilation

Inputs	Asset type	Outputs	Outcomes	Impact
		buildings constructed <ul style="list-style-type: none"> • Gram panchayat offices constructed • DPRC buildings constructed • Zilla Parishad training center constructed 	such as projector, training rooms, etc.	<ul style="list-style-type: none"> • Improved experience in training
	Residential buildings	<ul style="list-style-type: none"> • Hostel buildings constructed for backward category students/ youths 	<ul style="list-style-type: none"> • Better access to schools • Reduced rental expenses resulting in cost savings • Improvement in quality of infrastructure as compared to pre-facto situation • Improved lighting and ventilation 	<ul style="list-style-type: none"> • Improved social status • Enhanced satisfaction levels with the residential accommodation
	Educational institutions	<ul style="list-style-type: none"> • School buildings constructed • College buildings constructed • Library facility constructed 	<ul style="list-style-type: none"> • Increased availability of educational seats in the local areas 	<ul style="list-style-type: none"> • Increased enrollment from local community in educational institutes
	Commercial buildings	<ul style="list-style-type: none"> • Shops and marketplaces constructed 	<ul style="list-style-type: none"> • Increased availability of market facilities at a local level 	<ul style="list-style-type: none"> • Increase in local level economic/ business activity
	Pathway works	<ul style="list-style-type: none"> • Paved pathways constructed 	<ul style="list-style-type: none"> • Improved pathway quality with even and smooth surface, and without potholes 	<ul style="list-style-type: none"> • Improvement experience of daily commute • Enhanced travel safety

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Inputs	Asset type	Outputs	Outcomes	Impact
	Electrical transformers	<ul style="list-style-type: none"> Electrical transformers installed 	<ul style="list-style-type: none"> Reduced load shedding and power cuts 	<ul style="list-style-type: none"> Improved reliability and availability of power supply Increased study time for students due to availability of power at night
	Community Halls	<ul style="list-style-type: none"> Community halls constructed 	<ul style="list-style-type: none"> Increased access to a dedicated venue for community events 	<ul style="list-style-type: none"> Increase in number of community and social events Increased community bonding
	Community Toilets	<ul style="list-style-type: none"> Community toilets constructed 	<ul style="list-style-type: none"> Increased access to toilet facilities 	<ul style="list-style-type: none"> Improvement in hygiene and sanitation standards
	Bus Shelters	<ul style="list-style-type: none"> Construction of bus shelters 	<ul style="list-style-type: none"> Improved access to transport facilities Reduced dependency on private modes of transport Increased use of public transport for commuting 	<ul style="list-style-type: none"> Time savings for students and workers Cost savings for students and workers
	Veterinary Hospitals	<ul style="list-style-type: none"> Veterinary hospitals constructed 	<ul style="list-style-type: none"> Increase in facilities available for treatment of animals at a local level 	<ul style="list-style-type: none"> Improved satisfaction with the services available for treatment of animals
	Light works	<ul style="list-style-type: none"> Installation of streetlights along roads and pathways 	<ul style="list-style-type: none"> Improved level of lightning 	<ul style="list-style-type: none"> Increased travel safety
	Installation of security cameras	<ul style="list-style-type: none"> Installation of closed-circuit cameras 	<ul style="list-style-type: none"> Increased awareness about surveillance among local people 	<ul style="list-style-type: none"> Improved perception of safety and security

Inputs	Asset type	Outputs	Outcomes	Impact
		within building premises		
	Compound Wall	<ul style="list-style-type: none"> Construction of compound wall and gate 	<ul style="list-style-type: none"> Restriction on entry of unauthorized persons Restriction on entry of unwanted animals Reduction in theft incidents 	<ul style="list-style-type: none"> Improved safety of property Improved safety for humans
	Gym equipment	<ul style="list-style-type: none"> Installation of senior citizen gym equipment in the park 	<ul style="list-style-type: none"> Increased usage of gym equipment by local people 	<ul style="list-style-type: none"> Improved wellbeing of local people
	Statue	<ul style="list-style-type: none"> Installation of statues of important personalities 	<ul style="list-style-type: none"> Improved aesthetic beauty of area 	<ul style="list-style-type: none"> Increased awareness about legendary figures amongst students

5.3 REESI framework analysis

The REESI (Relevance, Effectiveness, Efficiency, Sustainability, and Impact) framework is used for evaluation of KRIDL's performance on various objectives:

Table 13: Evaluation of parameters under REESI Framework

Parameters	Evaluation
<p>Relevance</p> <p><i>Need for KRIDL, Relevance to development agenda</i></p>	<ul style="list-style-type: none"> <i>What is KRIDL's market share, brand equity, credibility?</i> <p>KRIDL's brand equity amongst EAs is for executing projects in limited time, thus ensuring timely completion and handover and it gets 6000-7000 projects every year.</p> <ul style="list-style-type: none"> <i>Are KRIDL's objectives in line with Gok's objectives for rural development?</i> <p>KRIDL works are focused on creating labor-intensive infrastructure works in rural areas thus generating employment, hence fulfilling its objective. Labor as a share of the total project cost is as high as 40% across KRIDL's works.</p> <ul style="list-style-type: none"> <i>Are KRIDL's activities in line with its Vision/ Mission (rural employment, labor intensive infra, eliminate middlemen)?</i>

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Parameters	Evaluation
	<p>KRIDL undertakes all rural development works directly by eliminating middlemen and hence in line with GoK Vision/Mission.</p> <ul style="list-style-type: none"> • <i>Whether KRIDL would sustain in the absence of exemption under KTPP Act?</i> <p>KRIDL need to participate in the bidding process of projects worth more than 2 crores and work in direction of business expansion to sustain and maintain its relevance in absence of exemption under the KTPP Act.</p> <ul style="list-style-type: none"> • <i>Is there a strong need for KRIDL's existence?</i> <p>KRIDL's executes some of the works for the Gram Panchayats and in rural areas executes community projects under schemes of SCP, TSP, etc. ensuring its relevance for development work. KRIDL also focuses on urban projects for maximizing revenue generation potential. But the economic transfer happens across the state and in rural areas as the employment is given to migrant workers coming from faraway rural areas. The above points substantiate a strong need for KRIDL's existence.</p>
<p>Effectiveness Level of achievement, Driving factors, Mitigation of risks</p>	<ul style="list-style-type: none"> • <i>What are the Achievement vs. Targets on KPIs (projects completed, timely completion, quality of works, jobs created, satisfaction of beneficiaries)?</i> <p>KRIDL is known for executing projects within a limited time. Asset's handover and release of funds take place after quality inspection. Beneficiaries are generally satisfied with KRIDL work. For instance, 80% of asset users while responding to survey of general buildings like community halls, schools, etc. termed the construction as good quality, spacious and with good ventilation which are important determinants of user satisfaction.</p> <ul style="list-style-type: none"> • <i>How well is the financial performance, profitability, risk mitigation?</i> <p>KRIDL has remained consistently profitable during the period FY 2011-12 to FY 2016-17 and the net profit margin has been in the range of 5%. Further KRIDL fixed 7% job savings on all its works from FY 2021-22 onwards. KRIDL effectively tries to complete all the projects within time to reduce risk mitigation and cost escalation.</p> <ul style="list-style-type: none"> • <i>What are the driving factors (KRIDL's intrinsic strengths, market/ sector changes, favorable policies)?</i> <p>Driving factors for KRIDL are a constant stream of projects due to an exemption under the 4(g) clauses of the KTPP act. KRIDL also has multiple empaneled departments as clients and maintains good rapport amongst them. Further in the market, KRIDL has access to local contractor and vendor network.</p> <ul style="list-style-type: none"> • <i>How strong is KRIDL's contribution in achieving socio-economic impacts?</i> <p>KRIDL's has effectively contributed towards achieving socio-economic impacts through local sourcing, contract and implementing various social works of different departments of GoK.</p>
<p>Efficiency Use of resources, Efficiencies achieved,</p>	<ul style="list-style-type: none"> • <i>What is the Utilization v/s Allocation of resources (time, money, labour, material) and what are the efficiencies achieved?</i> <p>Utilization of resources, tools and equipment is driven by the extent of new projects received by KRIDL and strategies to optimize their deployment efficiently. To ensure efficiency, least cost</p>

Parameters	Evaluation
<p><i>Steps taken to ensure efficiency</i></p>	<p>procurement is followed for larger sized procurements which are carried out centrally and competitively, while smaller scaled requirements are met locally. Materials are procured and used as per the requirement of the projects. Efficiency is maintained by procuring of equipment like JCB, cranes on a hiring basis, based on the requirement of the project. These strategies ensure effective cost control in procurement and project management and proper utilization of resources.</p> <ul style="list-style-type: none"> • <i>Have the costs incurred helped in achieving the benefits anticipated? Do the costs incurred justify the benefits derived?</i> <p>The costs incurred on development projects helped in achieving the benefits of employment, infrastructure building, eliminating middlemen' thus increasing efficiency. The costs incurred justify the benefits derived as it transfers the benefits largely to local and rural areas and the firm remains profitable by creating required development infrastructure efficiently for the progress of the state.</p> <ul style="list-style-type: none"> • <i>What are the Quality control mechanisms (material quality, supervision and inspection of works) used?</i> <p>There are multiple dimensions of Quality control mechanisms to ensure efficiency of the works. Quality check is undertaken for both material quality and workmanship. Further, supervision is done by KRIDL staff and a third party or EA inspection is also done for ensuring efficiency.</p> <ul style="list-style-type: none"> • <i>How effectively is modern technology used?</i> <p>Contractors are chosen having capability and capacity of using modern technology and resources increasing efficiency of the construction works.</p> <ul style="list-style-type: none"> • <i>What are the factors responsible for loss of efficiency?</i> <p>Main factors responsible for loss of efficiency are delays that occur during project execution and cost escalation. Delays are majorly caused due to site specific issues such as site litigation, encroachment, traffic movement, etc. Further, change in prices leads to cost escalation resulting in shortage of resources.</p> <ul style="list-style-type: none"> • <i>What are the steps taken to ensure efficiency?</i> <p>KRIDL is planning to implement measures to further enhance its efficiency a) cutting down unproductive expenditure, b) using IT initiatives (e.g., the planned procurement of ERP), and c) time savings, etc.</p>
<p>Sustainability + Equity</p> <p><i>Extent of sustainability, Mechanisms adopted, Risk mitigation</i></p>	<ul style="list-style-type: none"> • <i>What's the performance on various Sustainability elements such as local sourcing?</i> <p>KRIDL heavily prefers local sourcing of contractors, equipment's and laborers ensuring sustainability.</p> <ul style="list-style-type: none"> • <i>What's the performance on various Equity elements (women empowerment, development of backward communities, development of backward regions)</i> <p>Many of the schemes/ projects undertaken by KRIDL ensure the performance on various equity elements such as women empowerment, development of backward communities. Some of the examples of the work done in this field are hostels, schools, colleges, anganwadis, roads, hospitals, veterinary hospitals, rural markets (Halli Santhe), etc. These activities contribute to social and economic benefits for the people and ensure equitable availability and access of KRIDL projects to different and all social groups.</p>

Parameters	Evaluation
	<ul style="list-style-type: none"> • <i>How strong is the Risk mitigation?</i> <p>There is no formal mechanism to manage crisis or risk situations, practical solutions are adopted to manage typical events and ensuring sustainability. Like labor issues are sorted in discussions with GL's.</p> <ul style="list-style-type: none"> • <i>How strong is the organization to sustain itself based on physical and financial performance, profitability, and generation of its own resources?</i> <p>Organization is strong enough to sustain itself based on physical and financial performance, as it is getting enough projects from EA's. Also, KRIDL is able to execute the projects with profitability and manage resources through outsourcing.</p>
<p>Impact</p> <p><i>Development objectives achieved, Replicability/ Scalability of Outcomes</i></p>	<ul style="list-style-type: none"> • <i>What are the Catalytic impacts of KRIDL's activities (e.g. growth in rural economy, sectoral impacts)?</i> <p>KRIDL's activities have a catalytic impact across the construction informal sector as it implies more opportunities for local-level contractors, vendors and laborers creating local and sectoral growth.</p> <ul style="list-style-type: none"> • <i>What are the Socio-economic impacts created?</i> <p>KRIDL relies significantly on local contractors, which directly and indirectly impacts the local level socio-economic status. Further, KRIDL impact enhances as they execute quantum of CSR projects like recently establishment of Oxygen plants, RO units, etc. Employment generated through KRIDL ensures that wage related exploitation is avoided. Also, KRIDL takes up works under different schemes of the TSP, SCP, Minority, Tourism, Veterinary departments, etc. in rural areas benefitting marginalized and vulnerable communities especially the poor and the women resulting in social equity.</p> <ul style="list-style-type: none"> • <i>What is the longevity of works created?</i> <p>Quality inspection is performed across multiple dimensions at multiple stages, by internal and external entities, and for material as well as workmanship ensuring the longevity of the projects.</p> <ul style="list-style-type: none"> • <i>Can the projects/ methodologies etc. be replicated/ scaled up?</i> <p>Since most of the work of EA's are similar in nature like buildings, offices, etc. Thus, the projects/methodologies are replicable in nature and can be scaled up.</p>

5.4 SWOT analysis

SWOT analysis is used to evaluate organizational performance. The SWOT analysis of KRIDL is present in below chart:

Figure 6: SWOT analysis

6. Analysis and findings

6.1 Employment generation

Employment generated for unemployed and under-employed youth as against the number of works executed and turnover made. Employment generation through KRIDL works vis-is-vis employment generated through community projects of Gram Panchayats.

KRIDL's works have a positive impact on job creation for the youth. Considering the civil construction nature, KRIDL's works are labor intensive - labor as a share of the total project cost is as high as 40% as stated by MD. Due to the physical nature of works, a significant proportion of youth are employed as labor on KRIDL's projects. Generally the projects are of short to medium term duration and work content is unskilled or semi-skilled in nature, thereby making it amenable to have unemployed and under-employed persons.

In addition to KRIDL, some of the development works in rural areas are also carried out by the local Gram Panchayat. The main difference is that the Gram Panchayat is a local government institution while KRIDL is an executing agency. While some of the rural works are executed by KRIDL for the Gram Panchayat (where Gram Panchayat represents the entrusting agency), similar works are also executed by Zilla Panchayats and Gram Panchayats themselves, through other contractors/ executing agencies.

As an organization, KRIDL's earlier objective was of rural development works only but in recent past, the Government has allowed KRIDL to take up projects in urban areas as well. Due to the larger size of the urban projects, the revenue generation potential can be maximized. Most of the labor working on urban projects have their origins in faraway rural areas spread throughout the state. Hence, despite the urban focus of projects, not only do they generate employment but also enable economic transfer to rural areas.

Significant local content is involved in KRIDL's projects. KRIDL relies significantly on local contractors, which directly and indirectly impacts the local level socio-economic status. Taking the example of labor, KRIDL does not identify and hire labor for its works centrally, but rather relies on local area labor contractor (also referred to as "Group Leader" or "GL") to bring in the labor. As the labor contractor recruits labor from surrounding areas, this assures local level employment generation. Local vendors are also relied upon to bring in locally available material through their local area-specific knowledge.

Employment generated through KRIDL ensures that wage related exploitation is avoided. All labor employed on KRIDL's projects is paid in accordance with the rates specific in the standard Schedule of Rates (SR).

Analysis of employment generated through KRIDL's work

For calculating the man-days generated, applied the 40% labor cost share on project cost of all the projects executed by KRIDL during the last 6 years to estimate the labor cost in absolute terms. Of this cost, assumed 75% unskilled and 25% skilled labor share. Further, divided this number by the standard average labor rates (Rs. 750 for skilled and Rs. 350 for unskilled labor as per SR rates), to estimate the quantum of skilled and unskilled employment generated by KRIDL sampled works. During execution of 66,657 works, a total of 14.2 crore man-days were generated split as 12.3 crore man-days for unskilled labor and 1.9 crore man-days for skilled labor.

Table 14: Man-day's calculation for the projects between FY 2014-15 to FY 19-20

Year	Total cost of the sampled projects (in Crore)	Labor cost (in Crore)	Total wages paid to unskilled labor (in Crore)	Total wages paid to skilled labor (in Crore)	Man-days (in crore) generated for unskilled labor	Man-days (in crore) generated for skilled labor
		<i>40% of labor cost share in project cost</i>	<i>75% of labor cost</i>	<i>25% of labor cost</i>	<i>Assumed Rs. 350 for unskilled labor</i>	<i>Assumed Rs. 750 for unskilled labor</i>
2014-15	1277.5	511.0	383.3	127.8	1.1	0.2
2015-16	1503.2	601.3	450.9	150.3	1.3	0.2
2016-17	1877.3	750.9	563.2	187.7	1.6	0.3
2017-18	3029.4	1211.8	908.8	302.9	2.6	0.4
2018-19	2997.6	1199.0	899.3	299.8	2.6	0.4
2019-20	3632.1	1452.8	1089.6	363.2	3.1	0.5
Total	14317.0	5726.8	4295.1	1431.7	12.3	1.9

Table 15: Man-day's calculation across work types for the FY 19-20

Work Type	Percentage of works (representation sample)	Man-days (in lakh) generated across works for the FY 2019-2020 for unskilled labor	Man-days (in lakh) generated across works for the FY 2019-2020 for skilled labor
Drinking water unit	44%	13.70	2.13
Road	21%	6.54	1.02
General work	11%	3.42	0.53
General building	7%	2.18	0.34
Sewerage	6%	1.87	0.29

Work Type	Percentage of works (representation sample)	Man-days (in lakh) generated across works for the FY 2019-2020 for unskilled labor	Man-days (in lakh) generated across works for the FY 2019-2020 for skilled labor
Office building	3%	0.93	0.15
Interior work	3%	0.93	0.15
Exterior works	2%	0.62	0.10
Pathway	2%	0.62	0.10
Residential buildings	1%	0.31	0.05

6.2 Organizational process for implementation of works

Proper use of scheduling techniques, site-layout planning, procurement scheduling, work assignment and organization, and proper approaches to crisis management, feedback, and control mechanisms.

A well-established process exists for planning and scheduling projects for execution. As stated by CE (Chief Engineer), KRIDL undertakes in-house planning and scheduling of projects. The procedure starts once the entrusting agency grants the project to KRIDL. Firstly, a site visit is conducted, when preliminary investigations are done and soil samples are taken. The samples so collected are tested and based on the results, a budget estimate and preliminary report are prepared. In parallel to this, the design for the project is prepared. Once these tasks are achieved, plans are prepared for execution of the project.

Basic designs for common projects like roads are prepared in-house by EEs/ AEEs as the central design department is closed due to staff shortage. The designs which require expertise not available within KRIDL are usually outsourced. In-house designs are prepared as per guidelines of the entrusting agency (for e.g. in case of hostels, the Social Welfare department specifies the requirement for number of rooms, dormitories, etc.). Design enhancements are done if technically feasible and the same can be accommodated within the fixed budget. Once the design is finalized, administrative approval is taken which enables release of funds²². Once funding is secured, focus shifts on procuring material, engaging contractors and arranging laborers.

Timely completion of works is critical to control costs. Each project has an associated cost budget and timeline as planned; nonetheless escalations do occur. It is estimated that 5-10% of overall projects get delayed as stated by AEE's in different zones divisions like Bangalore urban, Mahadevapura. Time delay is the single biggest driver for cost escalations. As discussed with AEEs, CEs in Davangere FGD delays are majorly caused due to site specific issues such as site litigation, encroachment, site in hilly areas, traffic movement, etc. Sometimes land clearance from the EA takes time. Further, in interior areas and in areas like Chikkamagalur, due to climatic conditions and difficult terrain, supply of materials gets delayed. There could be political reasons as well – public representatives sometimes raise legal issues

²² The authority to approve projects depends on project cost - projects costing under INR one crore can be approved by the Superintending Engineer (SE) while the higher ones can be approved by the Chief Engineer (CE).

against projects and get a stay order granted by the courts or exerts pressure to hire specific contractors as stated by EE's and AEE's in Banagalore Urban FGD.

The delays in turn impact the actual cost of project execution – prices of critical inputs such as cement, bitumen, diesel, petrol, etc. escalate on a fortnightly basis, especially in a metropolitan city like Bangalore. There could also be a change in labor rates, work overruns or spills, etc. which could lead to cost escalation.

Control mechanisms are available to mitigate impact of time and cost escalations. In order to mitigate impact of ground level issues, KRIDL resorts to practical strategies – for example, to overcome obstructions caused due to traffic movements especially in urban areas, KRIDL carries out most of the work during night time. Financial factors can also play a role – timely receipt of funds from entrusting agencies helps in deployment of resources and inputs, and thereby ensure timely completion and avoid cost escalations. In case of delays due to uncontrollable factors like site dispute, the SR value is revised and notified to the entrusting agency, thereby helping to pass on the cost escalation.

While there is no formal mechanism to manage crisis situations, practical solutions are adopted to manage typical events. For labor related crises such as unrests, absenteeism, unavailability, etc. KRIDL relies on the Group Leader to assess the problem and formulate a solution in form of discussions with labor. During natural calamities like excessive rainfall, earthquakes, etc. KRIDL stops the ongoing work and restart once the situation normalizes as stated by CE.

6.3 Impact of Covid-19 on implementation of works

Impact of COVID-19 was greatly felt: During the period of COVID-19 induced lockdown from March 2020, as stated by MD all the workers migrated to their native creating a huge disturbance in manpower. Due to the shortage of labor and material during lockdown, prices of resources increased abnormally thus creating impact on work implementation., Due to limited resources of manpower and material, all the works got delayed. In order to mitigate impact on laborers, KRIDL paid their salaries (despite no work) and made arrangements for food, accommodation, etc. wherever possible.

As stated by CE of south zone, COVID-19 also led to budget cuts across government departments. This impacted award of new projects as well as delays in funding of existing projects from EA's. Delays in funding was one of the major reasons for lingering projects.

6.4 Human Resource Efficiency

Performance assessment of officers and staff employee turnover rate, employee review, work allocation, co-ordination among cadres, accountability of staff at different levels, labor distribution, equipment distribution, material report.

Work allocation, co-ordination amongst cadres and staff accountability at different levels are routine and standardized processes ingrained within KRIDL. Roles and responsibilities, job descriptions are not written and formalized, but orally explained to employees. Given that the KRIDL structure is nearly as same as that of the Public Works Department (PWD) most of the engineers are well aware about the roles and responsibilities. Employees are involved during entrustment of works by EAs and thus they are well aware of assigned budgets and timelines. Execution of works involves staff from divisional and sub-divisional offices, and they work as a team in order to finish the job. Further for work co-ordination and accountability, social media apps like whatsapp group are used where projects and field related update of employees is shared as described in Chikkamagaluru FGD by work inspectors.

Staff turnover coupled with lack of recruitments have created a shortage of staff. There is a looming risk of loss of institutional memory. There is a general shortage of technical and managerial staff which is fulfilled by hiring of contractual employees. This is the trend not just in the corporate office but across most of the field offices as informed by CA²³. The major reason for employee turnover is retirement since there are very few cases of employee resignation or transfers out of KRIDL (most of the transfers are affected within KRIDL itself). Regular recruitment has not been undertaken since 1997-98; very few people have been recruited and that too in order to fulfil the rules for recruiting under the reservation quota.

In order to tide over the staff shortage issues, KRIDL has heavily resorted to an outsourcing model, both in corporate office and field offices. Almost 60-70% of KRIDL staff is outsourced as stated by CAO. The outsourced personnel mostly include the office staff (like data entry operators) and field staff (engineering graduates). For example, in Bangalore division, most of the AEs are outsourced.

Most of the existing permanent staff will be retiring soon and there is a risk of loss of institutional memory, which could affect the Company's operations. As informed by the CAO, 99% of the permanent employee base leaves on account of retirement. Also, contracts are extended/ renewed whenever contract duration completes. Thus, there is a need for the Government to approve for starting of the process of recruitment again. As informed by Office superintendent, KRIDL Board has approved hiring of new staff through competitive exams or the Karnataka Examination Authority (KEA). KRIDL is also proposing to undertake a manpower study in order to understand the staffing gaps, identify issues and propose solutions.

Human resource analysis:

- Assessed the gap between supply and demand by calculating the attrition rate of permanent employees for the last 4 years. The total attrition rate has been increasing and the highest attrition

²³ Few exceptions to this are the Mahadevapura and BBMP East sub divisional offices where there are no shortages

rate was for Group B employees during the last year. In the last 4 years, Group D has faced an average attrition rate of 10%.

Table 16: Attrition rate of permanent employees

Designation/ Grade	Human Resource	FY ending 2018	FY ending 2019	FY ending 2020	FY ending 2021
Group A (MD, CE, CAO, CFO, SE, Executive Engineers, Assistant Executive Engineers, and others)	Sanctioned	155	155	155	155
	Working	135	133	132	133
	Average employee base		134	133	133
	Exits		2	1	0
	Attrition rate		1%	1%	0%
Group B (Assistant Engineers)	Sanctioned	205	205	204	205
	Working	163	147	153	114
	Average employee base		155	150	134
	Exits		16	0	39
	Attrition rate		10%	0%	29%
Group C (First Division Assistants, Second Division Assistants, Junior Engineers, Superintendents-Accounts, Work Inspectors, Drivers and others)	Sanctioned	505	505	505	505
	Working	378	357	354	312
	Average employee base		368	356	333
	Exits		21	3	42
	Attrition rate		6%	1%	13%
Group D (Assistant Work Inspectors, Peons, Attenders, Watchmen, Sweepers and others)	Sanctioned	223	223	223	223
	Working	154	137	124	112
	Average employee base		146	131	118
	Exits		17	13	12
	Attrition rate		12%	10%	10%
Total	Sanctioned	1088	1088	1087	1088
	Working	830	774	763	671

Designation/ Grade	Human Resource	FY ending 2018	FY ending 2019	FY ending 2020	FY ending 2021
	Average employee base		802	769	717
	Exits		56	11	92
	Attrition rate		7%	1%	13%

Table 17: Contractual employees

Human Resource	FY ending 2018	FY ending 2019	FY ending 2020	FY ending 2021
Data Entry Operators, Office Assistants, and Group 'D' employees	632	805	805	712
Assistant Engineers/ Junior Engineers	333	438	438	446
Drivers	64	68	68	68
Total Staff	1029	1311	1311	1226

Table 18: Percentage of contractual employees

Human Resource	FY ending 2018	FY ending 2019	FY ending 2020	FY ending 2021
Permanent employees	830	774	763	671
Contractual employees	1029	1311	1311	1226
Total Staff	1859	2085	2074	1897
Average employee base		1972	2080	1986
Percentage of contractual staff	55%	63%	63%	65%

Performance management process lacks self-appraisal and a formal goal setting process. KRIDL follows the Confidential Reports (CR) system for communicating the performance of employees. The direction of communication is only one-way – neither any formalized system for self-appraisal by the employee exists nor are performance appraisal discussions conducted. A formalized mechanism for goal discussions and target setting at start of the performance year is also not present.

Policies adopted for human resource (Labor) management: Motivation, Safety, healthy and proper working conditions, communication, training, social security, compliance with Labor laws, Measures taken to improve leadership, team building, competency, skill, etc.

Every year, KRIDL provides training opportunities to both managerial and technical employees as informed by MD. The training mostly covers technical areas (new construction methods and technologies), IT (software and hardware), legal/ compliance (labor law, Right to Information Act (RTI), GST), etc. Site visits, industrial visits are also carried out to add to the practical knowledge base of the

employees. Further, soft skills training on motivational skills is available to employees who opt for it. Approximately 10% of the staff undergo training each year. Despite this, gap still exists in fulfilling the training needs, especially at division and sub-division levels.

New joiners (including EEs/ AEEs) undergo induction training for 5-7 days at state training institutes or in some outsourced agencies.

In terms of social security, KRIDL has taken a group medical insurance coverage for its employees. In case of any event of death of labourer in workspace, compensation settlement will be provided through a separate department from head office and there are labour commissions too.

No monetary benefits like incentives are in place for motivation of employees. Currently KRIDL does not have any system to monitor progress of employees and projects, basis which incentive could be materialized. Most of the staff is outsourced, hence incentive is not a major issue for KRIDL. Though there is no policy for motivation, many employees are self-motivated as working in KRIDL provides a social status and recognition among peer and social groups.

6.5 Financial Analysis

Financial analysis approach is used to analyze quantitative nature performance data related to financial and operational aspects based on historical data availability by assessing different ratios.

Table 19: Key financial indicators for KRIDL

Parameter	Units	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Profitability ratios							
EBITDA	Rs. crore	35	78	104	171	173	191
EBIT	Rs. crore	34	77	103	169	171	189
Profit before tax	Rs. crore	34	77	103	169	171	189
Net profit after tax	Rs. crore	31	51	69	114	110	124
EBITDA margin	%	4.2%	6.9%	7.5%	8.8%	8.6%	8.0%
EBIT margin	%	4.1%	6.8%	7.4%	8.7%	8.5%	7.9%
Profit before tax margin	%	4.1%	6.8%	7.4%	8.7%	8.5%	7.9%
Net profit after tax margin	%	3.8%	4.5%	5.0%	5.9%	5.5%	5.2%
Solvency ratios							
Debt to assets	Number	0.96	0.95	0.95	0.93	0.93	0.93

Parameter	Units	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Long term debt to equity	Number	0.62	0.37	0.22	0.14	0.00	0.00
Liquidity ratios							
Current ratio	Number	1.01	1.02	1.03	1.03	1.03	1.03
Quick ratio	Number	0.29	0.30	0.26	0.30	0.28	0.32
Cash ratio	Number	0.28	0.19	0.25	0.29	0.27	0.31
Cash to current assets ratio	Number	0.28	0.19	0.24	0.28	0.26	0.30
Inventory							
Inventory days	Days	797	724	903	726	912	972
Inventory to revenue ratio	Number	2.1	1.8	2.3	1.8	2.3	2.5

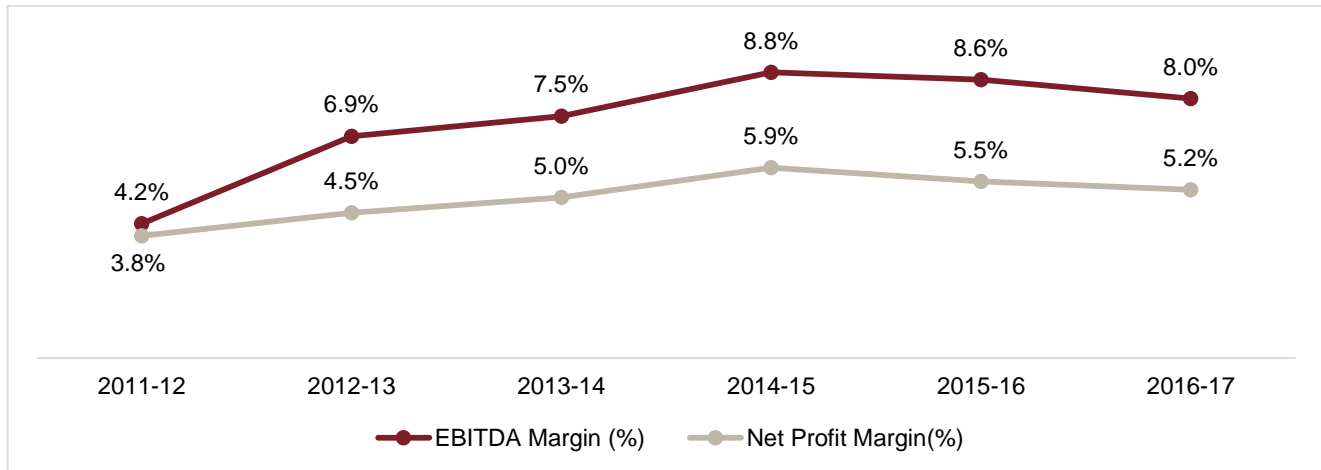
KRIDL has executed 40,715 works during the period FY 2015-16 to FY 2019-20. The number of works has been steadily increasing each year except for the last two years. The revenues during the period FY 2011-12 to FY 2016-17 have also been steadily increasing at compounded annual growth rate (CAGR) of 23%. The main driver of revenue growth is the number of works executed. The average revenue per work (for the period 2015-16 and 2016-17) is about Rs. 27 lakh per work, which shows the small nature of works executed by KRIDL.

Table 20: Trend in KRIDL revenue and works executed from 2011-12 to 2019-20

Parameter	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Number of works executed	N.A.	N.A.	N.A.	N.A.	6,896	8,193	12,947	10,894	6,095
Revenue from operations (Rs. crore)	789	1,088	1,320	1,825	1,892	2,240	N.A.	N.A.	N.A.

Source: Terms of Reference for this evaluation study, Annual reports of KRIDL

Figure 7: Trend in KRIDL profitability over the period 2011-12 to 2016-17



Source: Terms of Reference for this evaluation study, Annual reports of KRIDL

KRIDL’s operations have remained consistently profitable during the period FY 2011-12 to FY 2016-17. Its EBITDA²⁴ margin is in the range of 8%. Being exempted from competitive tendering under section 4(g) of the Karnataka Transparency in Public Procurement (KTPP) Act, KRIDL receives work orders on a nomination basis. These works are priced on a cost-plus basis using a 10% markup on schedule of rates applicable to KRIDL.

On a net profit basis (profit after accounting for all costs including depreciation, financing costs and taxes), KRIDL has remained profitable during the period FY 2011-12 to FY 2016-17. The net profit margin has been in the range of 5%.

KRIDL is largely a debt free company which is indicated by the solvency ratios. The liabilities, both current and non-current, on the balance sheet are either unspent amount under a specific scheme or advances provided by user departments. The current ratio of the firm in the recent past has stayed constant at 1.03, indicating a comfortable liquidity position.

It is important to note that inventories kept by the company have increased over time – the inventory to revenue ratio has increased from 1.8 in 2014-15 to 2.5 in 2016-17. The inventory days reached a value of 972 days in 2016-17 which means that inventory is not getting converted into sales for at least 2.5 years – this indicates that projects are lingering for a long time without attaining completion.

The company enjoys a comfortable cash position. Cash and cash equivalents have grown consistently from Rs. 633 crores in 2011-12 to Rs. 2420 crore in 2016-17. This could be attributable to the consistent positive net profit generated by the company over the last few years. The cash to current asset ratio indicates that cash comprises almost one-third of current assets, with the rest comprising of inventory – this indicates that cash is largely lying-in banks and not being invested in short term investment opportunities (e.g. money market, short term commercial paper, etc.) to generate additional income.

²⁴ EBITDA is Earnings before Interest, Tax, Depreciation and Amortization. It is a measure of profitability at operating level, before considering impact of fixed nature expenses like interest and depreciation.

A summary of the financial analysis of the company is provided in the graphic below.

Figure 8: Summary of financial analysis of KRIDL

Positives	Improvement areas
<ul style="list-style-type: none"> • Strong revenue growth • Consistently profitable operations • Strong cash position • Debt free and high solvency 	<ul style="list-style-type: none"> • High inventory levels and elongated period to turnover inventory • Cash and cash equivalents comprise almost one third of current assets

6.6 Financial Efficiency

Efficiency of KRIDL in using fixed assets to generate sales (Turnover of Property, Plant and Equipment), KRIDL's ability to meet short-term and long-term financial liabilities (Calculation of Cash ratio, Quick ratio and Current ratio based on current assets, Cash, inventory, and marketable securities), SCP/TSP works implemented to the total works.

KRIDL's revenue is generated from operational and non-operational sources. Operational revenue is derived from project work while non-operational income is received from interest earned on bank deposits. Considering KRIDL's profitable operations since the last few years, the company has high levels of cash. Being a government company, KRIDL chooses to invest the cash in safe instruments such as bank deposits. KRIDL tries to optimize the interest income by floating tenders for high-interest rates and ultimately deposits with the highest bidding bank. As of March 2020, KRIDL has parked a total of INR 3,646 crores in fixed and flexi deposits as per information provided by CFO. Another source of non-operational income is rent on land leased to Gas Authority of India Limited (GAIL), which generates about INR 30-35 lakhs per annum.

Measures taken to monitor and control project costs, setting Labor burden markups, tracking general overhead budgets, Setting the minimum profit margin for use in bidding and analyzing the profitability of different parts of the company and making the necessary changes to improve profitability. Financial efficiency of KRIDL vis-à-vis Industry Standards, profitability of works undertaken by KRIDL (the increment by which revenues exceed costs), Value created by KRIDL per unit of investment (Profitability Index), Present and the future earning capacity and solvency status of the organization.

As per discussion with MD, it was found out that the number of works executed by KRIDL has been steadily rising over the last 6 years (FY 2014-15 to FY 2019-20), except during the last 2 years when there was a decline. The reason for decline has been spillover works from FY 2017-18 – however, the overall turnover of the firm continues to increase.

For the works executed, KRIDL invoices the EAs on the following basis:

Invoice to EA = SR rate + KRIDL Administrative Charge (3% of SR) + GST on project cost (12% or 18%) + Labor cess (1% of SR)

KRIDL follows the SR rates approved by PWD. These rates cover costs of all necessary inputs (including material, labour, equipment, etc.) + contractor profit to the extent of 10%. Basis the 10% contractor profit included in SR rates, KRIDL is able to generate job savings or profit or value creation.

The tables below provide an analysis of zone-wise financial performance of KRIDL for the last 2 financial years.

Table 21: KRIDL zone-wise financial performance for FY 2018-19

S No.	Zone	Share of works executed	Share of SR	SR per work executed (INR lacs)	Job savings as % of SR (included in SR)	Share of job savings	Job savings per work executed (INR lacs)
1	BBMP	16%	39%	9.21	5%	29%	0.49
2	Bangalore	11%	12%	4.13	8%	14%	0.32
3	Mysore	17%	13%	2.92	8%	15%	0.23
4	Belgaum	19%	13%	2.63	8%	16%	0.22
5	Central	20%	13%	2.59	8%	15%	0.20
6	Kalburgi	16%	10%	2.34	8%	12%	0.19
	Overall total	100%	100%	3.86	7%	100%	0.27

Source: KRIDL, CRIS analysis

Table 22: KRIDL zone-wise financial performance for FY 2019-20

S No.	Zone	Share of works executed	Share of SR	SR per work executed (INR lacs)	Job savings as % of SR (included in SR)	Share of job savings	Job savings per work executed (INR lacs)
1	BBMP	15%	49%	13.86	6%	38%	0.78
2	Bangalore	11%	12%	4.38	9%	15%	0.39
3	Mysore	18%	10%	2.34	9%	12%	0.20
4	Belgaum	20%	8%	1.63	9%	10%	0.15

S No.	Zone	Share of works executed	Share of SR	SR per work executed (INR lacs)	Job savings as % of SR (included in SR)	Share of job savings	Job savings per work executed (INR lacs)
5	Central	20%	13%	2.58	8%	14%	0.21
6	Kalburgi	16%	7%	1.86	9%	9%	0.17
	Overall total	100%	100%	4.07	7%	100%	0.29

Source: KRIDL, CRIS analysis

Some key inferences from the above tables are as follows:

- While the number of works executed across various zones are almost equally distributed, the per work SR revenue generated in BBMP zone is almost 3-6 times that of other zones. This is attributable to the highly urbanized nature of the area and consequent larger scope of work, as well as the higher SR rates available for urban/ metropolitan areas. The BBMP zone alone contributes almost 40-50% of SR revenue generated across KRIDL.
- Since the value created by KRIDL per unit of investment (profit index) is derived from the contractor profit share included in the SR rate, it is almost the same across all offices and projects. For all zones except BBMP, the value created per unit of investment (profit index) through job savings is effectively 8-9%, whereas for BBMP zone it is 5-6%. Due to the large size of works awarded, BBMP has a policy of paying job savings to the tune of 5% as against 10% included in the SR rates.
- Job savings in absolute terms (INR per work executed) are generally lower for rural areas as compared to urban areas. This could be attributable to smaller size of works (leading to lower efficiencies of scale) and lower SR rates for rural areas.

In relation to the lower job savings rate offered by BBMP, KRIDL did petition to BBMP for increasing job savings up to 10% but there was no favourable decision in this regard. KRIDL has now decided to fix the job savings at 7% for all works including BBMP, from FY 2021-22 onwards.

KRIDL is planning to implement measures to further enhance profitability such as a) cutting down unproductive expenditure, b) using IT initiatives (e.g., the planned procurement of ERP), c) time savings, d) negotiating interest rates on surplus funds, etc.

6.7 Elimination of middleman

Cost control technique followed while procuring machines, goods, and services thus eliminating middlemen

Larger sized procurements are carried out centrally and competitively, while smaller scaled requirements are met locally.

A variety of procurement methods and channels are used, depending upon the type, size and time schedule of the requirements. Wherever relevant, local sourcing is used extensively²⁵.

Large scale material procurement (like that of cement and steel) is undertaken centrally by the Head Office through e-procurement. A competitive selection method is followed, which ensures price reasonableness. Smaller scale material procurement is undertaken through the Government e-Marketplace (GEM) portal.

Equipment like JCB, crane, etc. is sourced locally, through hiring arrangements with private parties – only equipment is sourced but services are not hired. Minor materials, equipment, etc. are also locally purchased depending on need of the project.

Contractors are procured through the preferential sourcing method. Generally, contractors who have past work experience with KRIDL and good track record are preferred. Capability to execute projects using modern technology and better equipment is also a factor.

Labor is sourced locally through Group Leaders (GL), who organize and supervise the labor and bring in basic tools and equipment as stated by South zone CE.

6.8 Adoption of modern technology

Capacity of the organization to adopt to modern technology, best and sustainable practices at all levels from planning to execution of work.

All modern construction technologies that are available in other countries are now available in India. KRIDL prefers vendors who have access to modern technology as stated by AEE in Mahadevapura. This includes use of piped scaffolding, pre-cast technology, chemical curing, fibre reinforced concrete, etc. Vibrators, compactors are now available for narrow or congested places (upto 60 cm width), which were not available earlier. Karnataka State Beverages Corporation Limited (KSBCL) building is an example for adopting modern technology in execution of work as stated by EE of BBMP-2 division.

But the scope to use modern technology is limited. Such technology is expensive and for smaller projects it is financially not viable. Thus, the technologies which are suitable for the kind of works taken up by KRIDL are generally adopted.

²⁵ Earlier KRIDL managed on its own the supply of raw material, equipment, machines to construction sites through their Chitradurga and Bellary workshops. Presently both are closed due to capacity issues. The workshops were used to supply raw materials like cement, steel, furnished accessories like doors, windows, ceiling fans etc. Now, EAs ask KRIDL to take support from third party suppliers and ensure completion of work.

With advanced technology, best and sustainable practices are adopted in material management and for execution of work. For instance, for ensuring quality and sustainability, M sand (manufactured sand) i.e. machine manufactured sand is used. Even for cement, there is a testing process, through which KRIDL ensures best quality of cement as stated in Chikkamagaluru FGD by AEE's.

6.9 Sustainability and Competitiveness

Competitiveness of overhead costs and bidding price, brand equity developed by KRIDL, sustainability of KRIDL in the absence of exemption from KTPP Act.

There are no competitors for KRIDL, but the departments and agencies for civil work such as PWD, PRED, KRRDA, etc. do similar works using contractors. Thus, such departments and agencies can be EAs for KRIDL and not competitors. Though Nirmithi Kendra (NK) could be considered as a competitor for KRIDL as stated by EE of BBMP-1, as they work on a nomination basis, mostly in sustainable low-cost technologies building. But Nirmithi Kendra size is small as compared to KRIDL.

KRIDL's brand equity amongst EAs is for executing projects in limited time, thus ensuring timely completion and handover. The EAs entrust works to KRIDL as mentioned by CE due to its previous track record of accomplished works. KRIDL closely coordinates and maintains good relations with EAs, approaches department heads, senior bureaucrats, politicians, etc. to get more projects. The pitch for KRIDL centres around the past work accomplishments.

Currently, KRIDL enjoys exemption under the 4(g) clause of the KTPP Act, which ensures a constant stream of projects. However, there could be challenges to long term sustainability in absence of the KTPP exemption. There was a reduction in the number of projects in FY 2020-21 as the 4(g) exemption was not renewed and KRIDL could not take up projects without participating in any bid.

There is a separate wing for the bidding process in which CE, EE and AEE are all involved but KRIDL hasn't participated in the bidding process so far. To increase the business of the firm, KRIDL management is working in the direction of participating in projects worth more than 2 crores. KRIDL is considering obtaining a PWD contractor's license and plans to participate in the bidding for projects. With a Class 1 PWD contractor license, KRIDL aims to bid for larger projects without any restriction on the amount.

Moving forward, KRIDL is looking to diversify its area of expertise and execute larger scale signature projects to increase visibility. Some of the proposals in this regard are solar power projects and multi-storey commercial complexes as stated by Chief Engineer.

Issues in awarding projects on nomination basis

Development of public infrastructure like roads, bridges, buildings is an important mandate for the government and projects have been awarded by central and state government to PSUs on nomination

basis. However, as per available literature²⁶ awarding projects on nomination basis leads to cost escalations. Central Government created PSUs (like NBCC) to compete with private contractors for award of government projects. Nine works were awarded to NBCC at a margin of 8-10% of the estimated cost of the works that is approx. Rs 43,000 crore. The average fee obtained through price competition for PMC provided by NBCC is approximately 1.5% of project cost for “Comprehensive Engineering & Architectural Planning services” (all consultancy jobs till NIT stage) and is approximately 1% of project cost for “construction supervision consultancy” (post NIT stage). If competition was allowed to be held even within the 27 PSUs only, then the rate of about 3% of project cost would have been realized for such services. Thus, an approximate direct loss between Rs 3,010 crore (7%) to Rs 3,870 crore (9%) could have been avoided. Besides above direct loss, there will be huge indirect loss due to cost escalation which is inevitable in the absence of any supervision of NBCC work by CPWD. In an audit study conducted by Kerala government, it was found that absent any competition the PSUs were also not able to complete the works on time and were facing cost over-run.

The Kerala government (Finance Department) vide a government order dated 30.7.2014 issued stringent guidelines prescribing accreditation of the state PSUs by a high-level committee before becoming eligible to be considered for government projects and restricted award of project contracts by nomination by only such departments or autonomous bodies which did not have any permanent engineering wing to only such PSUs (both Central and State PSUs) which agreed to follow Kerala PWD manual. Further, it fixed the PMC cost to 5% for all such projects with estimated cost exceeding Rs 5 crore and a maximum PMC cost of 8% for projects for all works below Rs 1 crore.

The Competition Commission of India (CCI) on a complaint from the Builders Association of India (Kerala chapter) examined the issue of preferential treatment given to the Kerala State Construction Corporation Ltd (KSCCL) in the award of projects for civil construction works for the State government and held that while a separate market for ‘provision of services for civil construction works of the government’ exists but since in the said relevant market, KSCCL competes with 2,488 ‘A’ class private contractors, it could not be said to be dominant, and closed the complaint in 2015. This shows that due to steps taken by the State since 2014, the State PSU is now made to compete with private contractors.

Taking a cue from the Kerala government, the Ministry of Finance (GOI) re-introduced the distinction between PWO and PSUs dealing in construction projects. The amended GFR 126(3) mandates that while awarding projects to PSUs the ministries, departments, etc, shall ensure competition amongst such PSUs, essentially on the service charges or PMC to be claimed. This amendment clearly prohibits award of contract by central government to any PSU on nomination basis.

In another case²⁷, Kerala PWD has planned to shift current practice of sub-contracting entire work. By subcontracting the work, quality control and management become an issue, there needs to be a policy to sub-contract only labor component.

²⁶<https://www.financialexpress.com/economy/why-policy-makers-must-stop-awarding-contracts-to-psus-on-nomination-basis/646646/>

²⁷ <https://timesofindia.indiatimes.com/citythiruvananthapuram/pwd-to-blacklist-bridge-contractor/articleshow/59415113.cms>
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Sustainability of KRIDL in the absence of exemption from KTPP Act.

As discussed above, stringent steps have been taken by the Kerala government in the direction of competitive bidding instead of awarding projects on nomination basis to state corporations and central PSU's. Also, the analysis of NBCC firm shows that the government could have saved 7% to 9% of the total project cost by awarding projects competitively.

Thus, from the above analysis, it is imperative for KRIDL to adopt practices in areas like efficiency, expertise, cost control etc. for ensuring sustainability in case the 4(g) exemption is removed. The suggestions in this regard are provided in the recommendations chapter.

6.10 Comparative analysis

Comparative analysis of KRIDL with other engineering and construction companies

In this section, we have compared the performance of KRIDL against five firms operating in similar segment i.e. construction and engineering works. These five firms were selected to be a mix of public and private ownership and having a revenue size in similar order of magnitude as that of KRIDL (KRIDL's revenue for FY 2016-17 was approximately Rs. 2,400 crore).

Table 23: List of companies chosen for comparative analysis with KRIDL

No.	Name of the Company	Ownership	Revenue for FY 2019-20 (Rs. crore)
1.	NCC Limited	Private	8,901
2.	PNC Infratech Limited	Private	5,602
3.	NBCC India Limited	Public	5,179
4.	Engineers India Limited	Public	3,236
5.	KNR Constructions Limited	Private	2,451

Source: Financial statements

6.10.1 Overview of the firms

1. NCC Limited

NCC Limited is the second largest construction company in terms of revenue in India. The company is diversified with presence of works across buildings & housing, roads, water & environment, railways, irrigation, metals, mining, and railways. With pan India presence, the order book of NCC is dominated with works from buildings (58%), water, environment and railways (17%), roads (6%), electrical (7%) amongst others.

2. PNC Infratech Limited

PNC Infratech is among the leading infrastructure construction, development, and management companies in India with vast experience and demonstrated expertise in major infrastructure projects such as expressways, highways, bridges, flyovers, airport runways, railways, power transmission, and industrial area development. The major service offerings of PNC Infratech are Engineering, procurement & construction (EPC); Design-Build-Finance-Operate-Transfer (DBFOT) – toll & Annuity; Operate-Maintain-Transfer (OMT) model; Hybrid Annuity model (HAN).

3. NBCC India Limited

Established in 1960, NBCC India Limited is the construction arm of Government of India to execute civil engineering projects for the state governments, various central government ministries, public and private sectors. The major service areas or offerings of NBCC are Project Management Consultancy (PMC); Engineering, Procurement and Construction (EPC); and Real Estate Development. The works undertaken include residential and commercial projects such as housing, shopping malls, townships, and buildings, Industrial projects such as coal handling plants, cooling towers, civil works such as roads, water supply systems, educational institutions, and hostels. NBCC has been awarded the status of a 'Navratna' company in 2014.

4. Engineers India Limited

Engineers India Ltd (EIL), a Navratna public-sector undertaking of Government of India, is a leading global engineering consultancy and EPC company. Established in 1965, EIL provides engineering consultancy and EPC services principally focused on the oil & gas and petrochemical industries. The company has also diversified into sectors like infrastructure, water and waste management, solar & nuclear power and fertilizers to leverage its strong technical competencies and track record.

5. KNR Constructions Limited

KNR constructions limited is a leading engineering, procurement and construction company. The majority of its projects are from roads sector followed by irrigation and urban water infrastructure management sectors. KNR constructions has presence in 13 states and expanding. During the past five years, the company executed about 30% of total projects work Rs. 2,100 crore in Karnataka.

6.10.2 Cost-structure analysis

We looked at the cost-structure of KRIDL and five companies to understand the spending patterns of these companies. The major cost item across the firms was cost of construction materials and contractual services. However, this ratio was lower for PNC infratech and Engineers India due to higher share of other expense which includes provisions for contractual obligations, administrative and general expenses.

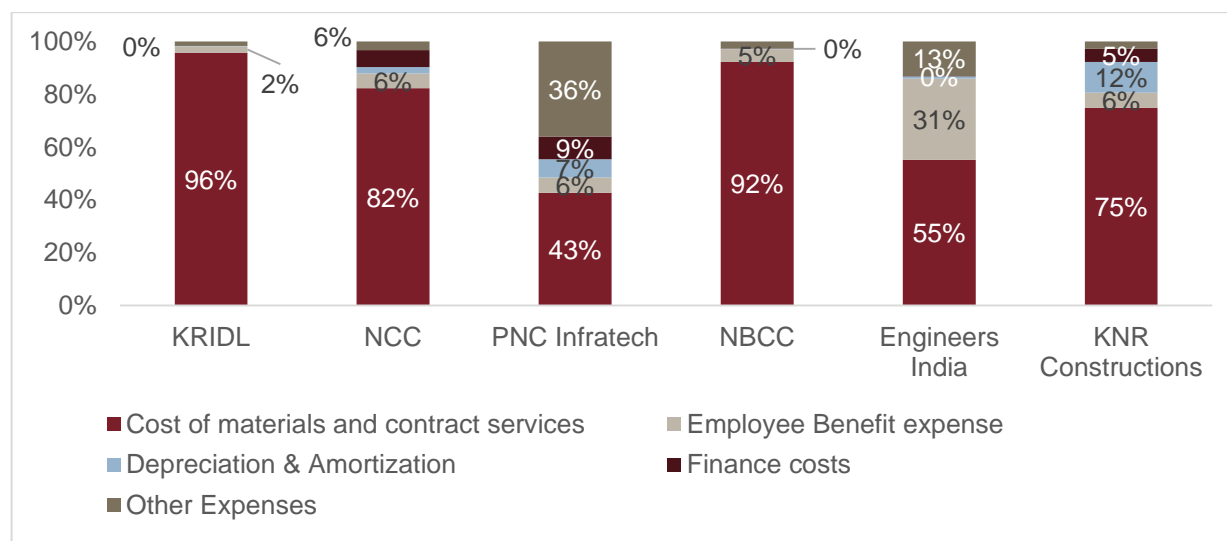
While the employee expense ratio in total costs of each company is about 5-6% with an exception of Engineers India, The employee expense of the KRIDL is the lowest among all firms at two percent.

Engineers India limited has the largest employee expense ratio at 31% which can be attributed to technical and engineering consultancy services provided to large energy and engineering focused companies in India and world.

The public enterprises, including KRIDL, are debt free have very little finance costs which is almost zero percent. However, These costs for NCC Limited, PNC Infratech, and KNR constructions are 6%, 9%, and 5%.

For firms with in-house machinery such as KNR constructions, The depreciation and amortization expense is higher at 12% followed by PNC Infratech. Similar to NBCC and Engineers India, KRIDL runs operations on an asset light model with very low depreciation and amortization expense.

Figure 9: Cost structure of KRIDL

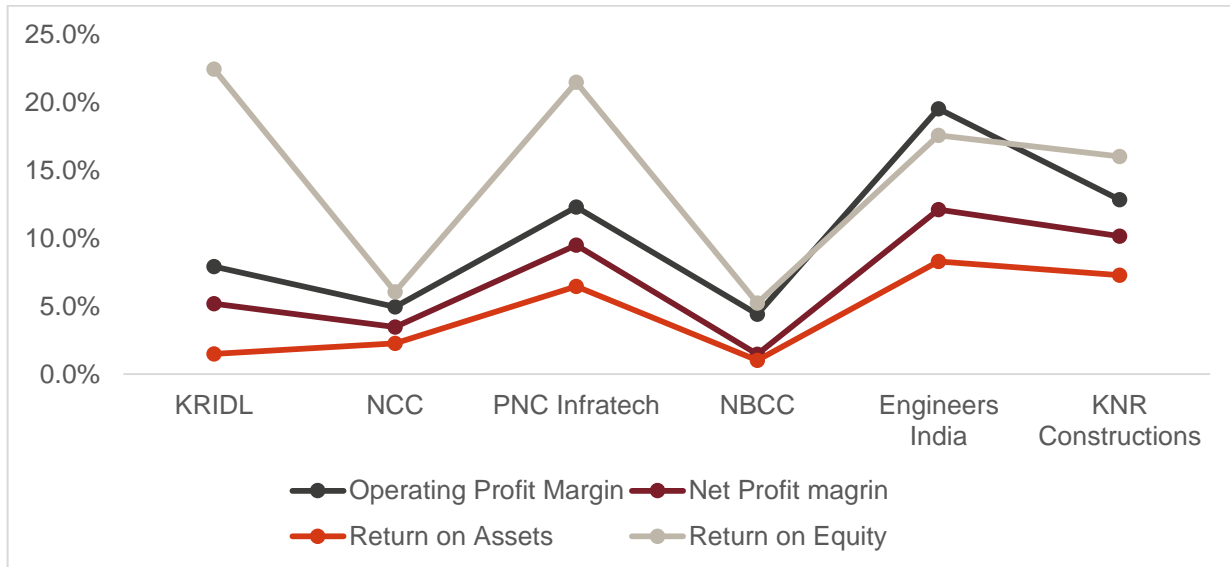


Source: Company annual account statement FY 19-20

6.10.3 Profitability Ratios

The Net profit margin of KRIDL at 5.2% is better than that of NCC and NBCC while that of PNC Infratech, Engineers India, and KNR constructions are 9.5%, 12.1%, and 10.2%. Further, KRIDL has the highest return on equity at 22.5% followed by PNC Infratech at 21.5%. However, Return on asset of KRIDL seems to be in line with NBCC and NCC at 1.5%, 2.3%, and 1%. The RoA of other firms well above 5% is explained from the fact that they have lower current assets on their balance sheet which includes inventory, cash equivalents etc.

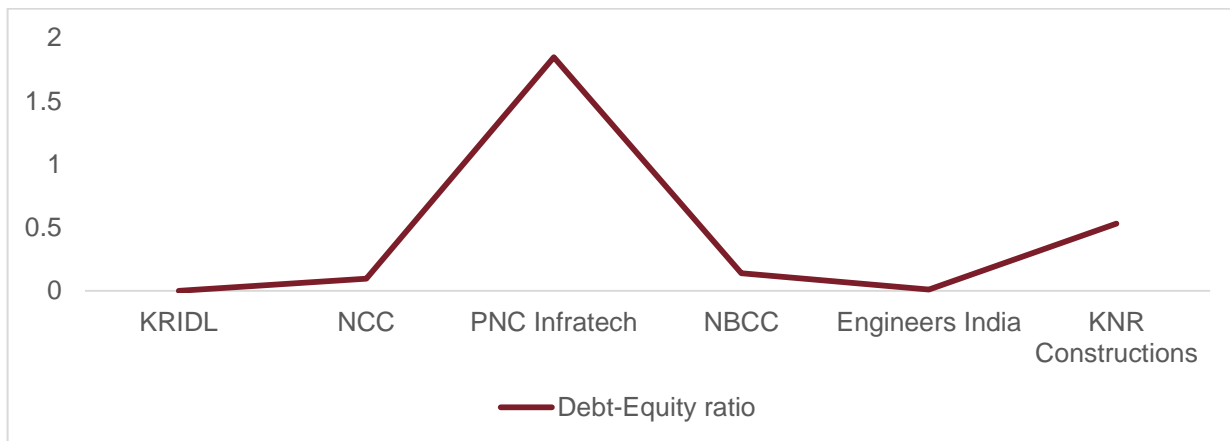
Figure 10: Profitability ratios of KRIDL and peers



6.10.4 Debt to Equity Ratio

KRIDL is debt free company and has zero debt to equity ratio. Similarly, NBCC and Engineers have low debt-equity ratio while other companies have greater debt-to-equity ratios. The significance of debt-equity ratio or leverage is to reduce cost of capital with raising debt at proper leverage and lower costs.

Figure 11: Debt-Equity ratio of KRIDL and peers

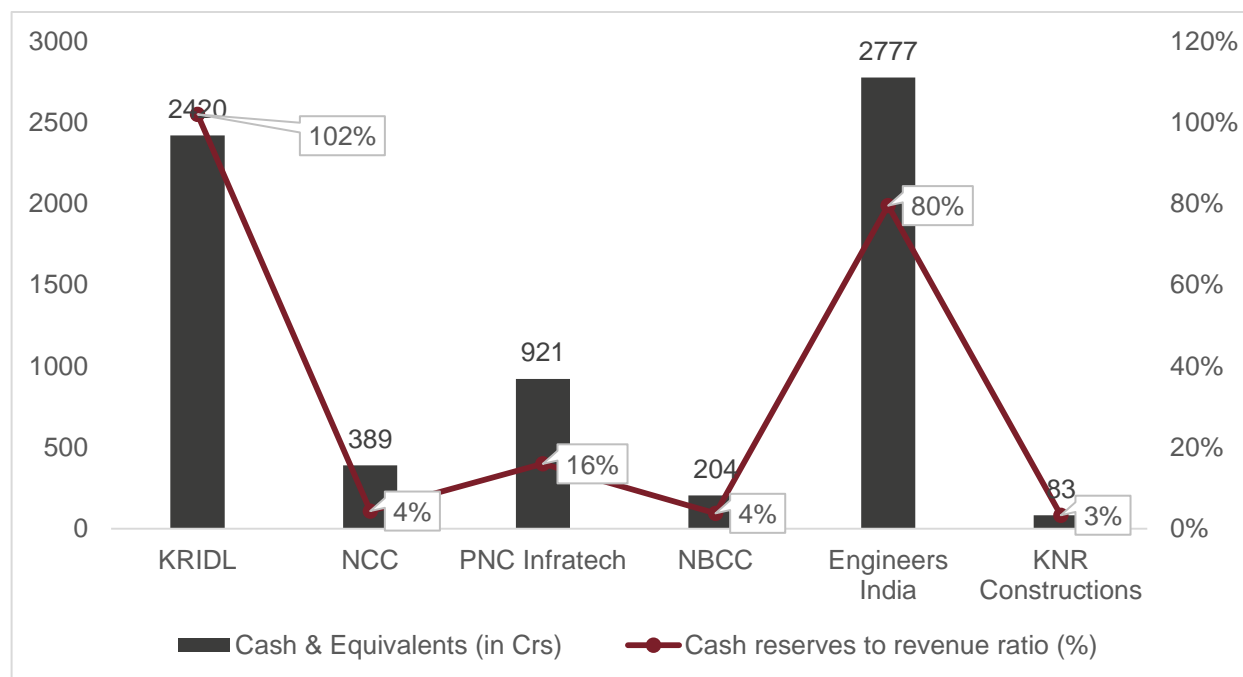


6.10.5 Cash, Cash Equivalents, and other bank balances

Increase in cash and equivalents available with a company improves the reinvestment ability, growth and scalability of the company. Consequently, if these resources are increasing on yearly basis, it is an indicator or alarm for poor investment or growth or improper management. KRIDL has INR 2420 crores of cash equivalents which is about 102% of its total revenue. Although Engineers India limited has this

ratio at 80%, it can be explained from the niche services provided by the firm. Further, Engineers India is expected to decrease its cash reserves considering expansion into EPC services and focused diversification to other sectors. The following chart captures the cash reserves and ratio of these reserves to total revenue

Figure 12: Cash reserves and ratios of KRIDL and peers



6.10.6 Inventory

KRIDL has been holding large inventory worth INR 5593 crores while the revenue from operations is at INR 2240 crores. While the ratio of inventory to total revenue for other companies range from 0% to 15%, the same ratio for KRIDL is about 235% which has been steadily increasing Y-o-Y basis. Further, the inventory days for KRIDL are 972 days while it ranges from 2 days to 75 days for other companies.

Table 24: Inventory management indicators

Parameter	KRIDL	NCC	PNC Infratech	NBCC	Engineers India	KNR Constructions
Inventory (Rs Crs)	5593	1391	267	147	7	123
Inventory to revenue ratio	235%	15%	5%	3%	0%	5%
Inventory days	971	72	45	11	2	27

6.11 CSR activities and Compliance

The socio-economic impact is enhanced due to the nature of works undertaken by KRIDL. KRIDL takes up works under schemes of the Tribal Sub-Plan (TSP), Scheduled Caste Sub-Plan (SCP), Minority, Tourism, Veterinary departments, etc. Thus, all social work for the entrusting agency is implemented by KRIDL. All these schemes/ projects are undertaken in rural areas benefitting marginalized and vulnerable communities especially the poor and the women. Some of the examples for the work done in this field are hostels, schools, colleges, anganwadis, roads, hospitals, veterinary hospitals, rural markets (Halli Santhe), etc. These activities contribute to social and economic benefits for the people. In Bangalore rural areas, community halls, convention halls are also constructed which can be used for functions with very minimal charges or sometimes for free of cost too.

Projects have also been executed under the Corporate Social Responsibility (CSR) initiative, thereby broadening the socio-economic impact. KRIDL follows the CSR policy guidelines as prescribed by the Government of India under the Companies Act, 2013 - 2% of its gross profit is used for CSR activities as informed by CFO. CSR works are done as per the needs and requests that come through people's representatives, senior bureaucrats, etc. While traditionally KRIDL has been setting up drinking water-based RO plants under its CSR activities, the focus during last 2 years has been towards COVID related support in backward districts. During the current year, 8 oxygen plants were set up by KRIDL under CSR activity to cater to the needs of hospitals and COVID-19 affected people. According to EE from Banagalore, they have been set up majorly in Ramanagara district in different blocks like Kanakpura, Magadi, etc. Further, KRIDL has built convention halls, drinking water facility, tree guards, etc. under the CSR initiative.

The quantum of CSR works executed can be gauged through the following table which describes the funds released towards CSR activities, on an annual basis for the last 6 years. It can be inferred that the quantum of works carried out have largely shown an increasing trend, year on year²⁸.

Table 25: Annual funding for CSR activities

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Funds released (INR crore) ²⁹	1.00	2.40	3.11	7.26	0.35	3.53

CSR work analysis

Total CSR works surveyed – 15³⁰

²⁸ The CSR expenditure of 2017-18 is adjusted in 2018-19, as more funds were released during 2017-18

²⁹ Source: KRIDL

³⁰ Analysis of 13 CSR work is done as one work was not found when visited and, in another work, got no response from KRIDL.

Table 26: Distribution of CSR work surveyed based on work category

S No.	Nature of work	Type of work	Total no. of works
1	Water infrastructure	<ul style="list-style-type: none"> RO plant/unit and RO water filter 	4
2	General buildings	<ul style="list-style-type: none"> School building and library, community building, and toilet 	4
3	Road works	<ul style="list-style-type: none"> CC Road 	5

Total no. of respondents – 26

Male – 92%, Female -8%

Average age of respondents – 35

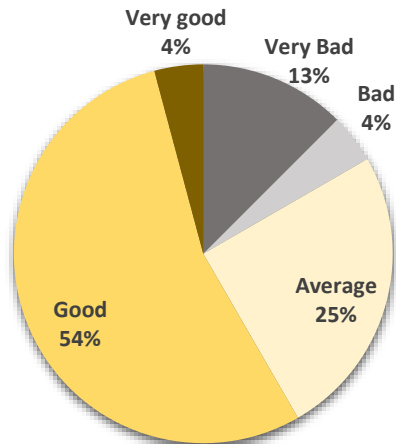
Table 27: Quality and socio-economic aspect of CSR works

Nature of work	Quality Issues	Socio Economic Aspects
Water infrastructure	<ul style="list-style-type: none"> Water filter issue in 1 RO plant 	<ul style="list-style-type: none"> Enhanced health parameter of the nearby community Decreased expenditure for health expenses Improvement in water taste, watercolor, and water turbidity
General buildings	<ul style="list-style-type: none"> Toilet not usable due to water unavailability, no light, broken doors and water tap Chipping of cement, broken slab, and no paint in toilet Vegetation growth in school building 	<ul style="list-style-type: none"> Slight impact in enrollment Increase in no. of community functions Significant improvement in lightning, ventilation
Road works	<ul style="list-style-type: none"> Potholes, cracks on 2 roads No drainage facility on 2 roads 	<ul style="list-style-type: none"> Ease in daily commute Enhanced safety of travel Increase in no. of shops after road construction

Table 28: Overall perception of CSR works

Overall perception of CSR works					
Perception	Very bad	Bad	Average	Good	Very good
%	13%	4%	25%	54%	4%
Prime reason for choice	Bad odor of water from a RO water unit, water not filtered properly	Toilet not in working condition	No specific reason	Clean water; Hygiene through RO water plants. Due to road works, ease in commute.	Community hall can be used for multipurpose activity

Figure 13: Overall perception of CSR works



Overall perception of CSR works

6.12 Socio-Economic Impact

The socio-economic impacts of the employment created

The socio-economic impact is enhanced due to the nature of works undertaken by KRIDL. KRIDL’s MD stated that KRIDL takes up works under schemes of the Tribal Sub-Plan (TSP), Scheduled Caste Sub-Plan (SCP), Minority, Tourism, Veterinary departments, etc. Thus, all social work for the entrusting agency is implemented by KRIDL. All these schemes/ projects are undertaken in rural areas benefitting marginalized and vulnerable communities especially the poor and the women. Some of the examples for the work done in this field are hostels, schools, colleges, anganwadis, roads, hospitals, veterinary

hospitals, rural markets (Halli Santhe), etc. These activities contribute to social and economic benefits for the people. As informed by Bangalore Rural AEE in Bangalore rural areas, community halls, convention halls are also constructed which can be used for functions with very minimal charges or sometimes for free of cost too.

Impact and benefit of implemented works:

For quantification of direct and indirect impact/ benefit of KRIDL works, we have quantified the potential impact by calculating population of the village/ ward where the work is situated. We have quantified the population data of village/ ward/ town of surveyed works as per Census, 2011 data. Below table showcase average population benefitted against the category of work types.

Table 29: Average population benefitted

Type of Work	Average population benefitted ³¹
Office building	48,118
Interior work	45,013
Sewerage	24,293
General work	21,944
Pathway	21,556
Road work	16,139
Residential building	16,123
General building	14,909
Exterior work	11,837
Drinking water unit	9420
Average	17,536

Analysis of socio-economic benefits of infrastructure works surveyed

This section provides a description of the key findings and analysis of infrastructure socio-economic benefits emanating from the primary survey carried out across Karnataka, of the works executed by KRIDL. Each of the sampled work was physically visited and observations are recorded by the enumerator. The content in this section is structured as per the broad categories of works executed by KRIDL in the sample set:

³¹ The calculation in the table is weighted average as in each work category the number of works and percentage is different. For eg of the total sample works, road works constitute 21% whereas office building and interior work constitute only 3%, etc. Also, during quantification of the population data of village/ ward/ town of surveyed works as per Census, 2011 data, we have removed outliers for better reliability of the results.

Table 30: Socio- economic benefits from Drinking water unit

Outcomes attributable to the project									
Quantitative assessment						Descriptive assessment			
Change in parameters on a 5-point Likert scale* as noted by respondents:						Key outcomes noted by respondents are as follows: <ol style="list-style-type: none"> i. Reduction in distance travelled to fetch water → Improvement in women’s health, Time savings ii. Improved hydration levels → Improvement in overall health iii. Better availability of water for cooking cleaning and washing → Improvement in sanitation standards iv. Improvement in children’s overall health/ well-being → Reduced absenteeism in school 			
No.	Parameters	-2	-1	0	+1			+2	Not responded
1.	Water taste	0%	2%	39%	50%			9%	0
2.	Water colour	0.3%	1.6%	38.5%	48.5%			11.1%	0
3.	Water turbidity	0%	1%	40%	45%			10%	4%
4.	Health parameters of community	0%	0%	45%	32%			9%	14%
5.	Wellbeing of Women	0%	1%	59%	7%			7%	26%
6.	Wellbeing of Children	0%	1%	44%	11%	10%	34%		
Thus, most respondents reported no change or slight improvement in water taste, colour and turbidity after installation of the RO plant. In terms of impact of the water unit on health parameters, wellbeing of women and wellbeing of children, 40% respondents noted improvement in health parameters while there was no significant impact noted in wellbeing of women and children.									

* “Negative 2” denotes significant worsening while “Positive 2” denotes significant improvement

Table 31: Socio- economic benefits from General building

Outcomes attributable to the project	
Key outcomes noted by respondents are as follows:	
i.	Creation of space for treating animals → Increase in number of animal patients who are able to avail health services locally
ii.	Increase in number of educational seats available, especially of Government quota → Increase in enrolment in educational institutions, within the local community
iii.	Creation of space for community events → Increase in number of community and social events → Increased community bonding
iv.	Increase in availability of marketplaces at a local level → Increase in business activity
v.	Increase in availability of toilet facilities locally → Improvement in sanitation and hygiene standards

Table 32: Socio- economic benefits from Pathway works

Outcomes attributable to the Project									
Quantitative assessment				Descriptive assessment					
Change in parameters on a 3-point scale^ as noted by respondents:				Key outcomes noted by respondents are as follows:					
No.	Parameters	-1	0				+1		
1	Time savings	0%	83%				17%		
2	Cost savings	67%	11%				22%		
Change in parameters on a 5-point Likert scale* as noted by respondents:				i. Improved pathway quality (smoothness, absence of potholes) → Improved experience of daily commute ii. Improved lighting, even surface, ease of entry/ exit → Improved safety of travel					
No.	Parameters	-2	-1				0	+1	+2
1	Daily commute	0%	8%				42%	25%	25%
2	Safety of the travel	0%	0%				58%	25%	17%
Rating of facilities provided, by respondents:									
No.	Parameters	Negative	Neutral				Positive		
1	Lighting at night	17%	8%				75%		
2	Width of pathway	16.7%	16.7%				66.6%		

Outcomes attributable to the Project	
Quantitative assessment	Descriptive assessment
Most respondents have noted improvement in daily commute and safety of travel. They also feel that nighttime lighting and width of the pathway is adequate. No significant improvement was noted in terms of time and cost savings, which could be due to the fact that most pathways are short in length and constructed within parks.	

^ The 3-point scale is comprised of: (+1) – Improvement; (0) – No change/ Not applicable; (-1) – Worsening

* “Negative 2” denotes significant worsening while “Positive 2” denotes significant improvement

Table 33: Socio- economic benefits from: Sewerage works

Outcomes attributable to the Project															
Quantitative assessment	Descriptive assessment														
<p>Change in parameters on a 5-point Likert scale* as noted by respondents:</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Parameters</th> <th>-2</th> <th>-1</th> <th>0</th> <th>+1</th> <th>+2</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Sanitation/ cleanliness standards of the area</td> <td>0%</td> <td>7%</td> <td>27%</td> <td>50%</td> <td>13%</td> </tr> </tbody> </table> <p>Thus, most respondents have noted improvement in sanitation/ cleanliness standards in their area and 4% of respondents have not provided response.</p>	No.	Parameters	-2	-1	0	+1	+2	1	Sanitation/ cleanliness standards of the area	0%	7%	27%	50%	13%	<p>Key outcomes noted by respondents are as follows:</p> <ul style="list-style-type: none"> i. Reduced instances of sewage blockages, overflows, bad odour, unpleasant appearance → Improvement in sanitation/ cleanliness standards
No.	Parameters	-2	-1	0	+1	+2									
1	Sanitation/ cleanliness standards of the area	0%	7%	27%	50%	13%									

Table 34: Socio- economic benefits from Road works

Outcomes attributable to the Project															
Quantitative assessment	Descriptive assessment														
<p>Change in parameters on a 5-point Likert scale* as noted by respondents:</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Parameters</th> <th>-2</th> <th>-1</th> <th>0</th> <th>+1</th> <th>+2</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Improvement in daily commute</td> <td>0%</td> <td>2%</td> <td>20%</td> <td>52%</td> <td>27%</td> </tr> </tbody> </table>	No.	Parameters	-2	-1	0	+1	+2	1	Improvement in daily commute	0%	2%	20%	52%	27%	<p>Key outcomes noted by respondents are as follows:</p> <ul style="list-style-type: none"> i. Increased width of the road, quality of the road (smoothness, potholes) → Improvement in daily commute
No.	Parameters	-2	-1	0	+1	+2									
1	Improvement in daily commute	0%	2%	20%	52%	27%									

Outcomes attributable to the Project						
Quantitative assessment						Descriptive assessment
2	Improvement in travel safety	0%	1%	38%	42%	19%
<p>Thus, most respondents have noted an improvement in daily commute. A lower percentage, but nonetheless majority ones also feel that safety during travel has improved.</p>						<p>ii. Improved lighting, increased width → Improved travel safety</p>

Table 35: Socio- economic benefits from Office building

Outcomes attributable to the Project							
Quantitative assessment						Descriptive assessment	
Change in parameters on a 5-point Likert scale* as noted by respondents:						<ul style="list-style-type: none"> Most respondents stated the following improvements as compared to the earlier office – lighting, ventilation, availability of toilets, electricity and security. 	
No.	Parameters	-2	-1	0	+1		+2
1	Improved training facilities	0%	0%	50%	44%		6%
<p>Thus, 44% of the respondents noted a slight improvement in the facilities made available for training due to the building.</p>						<p>Key outcomes noted by respondents are as follows:</p> <ul style="list-style-type: none"> i. Increase in training infrastructure (training rooms, resources like projector) → Improved training experience ii. Large sized windows, presence of non-tinted glasses → Improved perception about lighting and ventilation 	
Change in parameters on a 2-point Before-After scale as noted by respondents:							
No.	Parameters	Negative		Neutral	Positive		
1	Improvement in infrastructure as compared to earlier office	35%		0%	65%		

Table 36: Socio- economic benefits from Interior works

Outcomes attributable to the Project	
Quantitative assessment	Descriptive assessment
Change in parameters on a 3-point scale as noted by respondents:	<p>Key outcomes noted by respondents are as follows:</p> <ul style="list-style-type: none"> i. Usability of the infrastructure has enhanced. For example, work bearing Sr no 354 (under Mysore

Outcomes attributable to the Project					
Quantitative assessment					Descriptive assessment
No.	Parameters	Decreased	Neutral	Increased	
1	Impact on work productivity attributed to the project	5%	65%	30%	Central office) involved renovation of old JCO quarters. Earlier the quarters were old and damaged and hence not inhabited. With the renovation carried out by KRIDL, the condition has significantly improved, and the quarters are now occupied.

Table 37: Socio- economic benefits from General works

Outcomes attributable to the Project							
Quantitative observations							Descriptive observations
Change in parameters on a 5-point Likert scale* as noted by respondents:							Some of the specific outcomes noted by respondents include the following: <ul style="list-style-type: none"> i. Installation of electrical transformer → Reduced power cuts, reduced load shedding → Improved reliability and availability of power supply ii. Installation of electrical transformer → Reduced power cuts, reduced load shedding → Increase in number of hours (especially night time) students are able to study due to better lighting iii. Installation of security cameras → Increased awareness about surveillance amongst local people → Improved perception of safety and security iv. Construction of compound wall, gate → Restriction on entry of unwanted animals, humans, reduction in theft incidents → Improved safeguard of humans and property v. Construction of bus shelter → Improved access to transport facilities → Time savings for students and workers
No.	Parameters	-2	-1	0	+1	+2	
1	Income levels	0%	0%	92%	7%	1%	
2	Employment opportunity	0%	0%	83%	17%	0%	
3	Time savings	0%	0%	90%	4%	6%	
4	Cost savings	0%	0%	84%	8%	8%	
5	Local area economy	0%	0%	91%	5%	4%	
6	Well-being of surrounding communities	0%	2%	80%	7%	11%	
7	Local level security and safety	4%	5%	64%	13%	19%	
8	Welfare of girls, women, backward communities, marginalized people.	0%	0%	87%	7%	6%	

Outcomes attributable to the Project						
Quantitative observations				Descriptive observations		
9	Business activities	0%	0%	99%	1%	0%
<p>Thus, KRIDL's works have not had significant impact on achievement of any major outcomes. However, amongst the outcomes where some impact has been observed, i) local level security & safety, ii) well-being of surrounding communities, and iii) welfare of women & marginalized communities have been the primary achievements.</p>				<p>vi. Construction of bus shelter → Reduced need to take another mode of transport to reach bus stops → Cost savings for students and workers</p> <p>vii. Construction of bus shelter → Increased use of public transport for commuting instead of private transport → Cost savings for students and workers</p> <p>viii. Construction of senior citizen gym equipment → Increase in usage of gym equipment by surrounding people</p> <p>ix. Installation of statues → Improved aesthetic beauty of the area, Reinforces memory of legendary persons amongst youngsters</p> <p>x. Employment provided to girls → Improvement in welfare of women</p>		

Table 38: Socio- economic benefits from Residential Building

Outcomes attributable to the Project
<ul style="list-style-type: none"> Considering that the works are hostels and occupied by backward community persons, most respondents stated the following improvements as compared to the earlier situation, where they were staying in old residential structures – improvement in social status, better access to school, savings in travel cost, reduction in rentals, better quality of infrastructure (lighting, proper ventilation etc.)

Case Study

1. CC Road works

Chikkamagalur District Kelagur, Madenerau village, ST Colony Concrete Road (S no. 474)

The ST colony concrete road works in Chikkamagaluru District was built during May-October period in 2019 with an objective of providing CC road for locals. While interacting with locals, it was found out that prior to making of CC road by KRIDL, the road was in a very bad condition. Earlier the road condition used to deteriorate from bad to worse especially during the rainy seasons, leading to numerous petty accidents and requiring frequent maintenance. The locals further confirmed that the people in this area faced problems in their day to day works like commuting to work, going towards their coffee estates

and fields, etc. Since the road also leads to a public crematorium, people used to face problems to go for the funeral rites either on foot or vehicles. For building of the CC road, local people and frequent users raised the request with local and political leaders, government officials, etc.

After laying of CC road, people are much contented as they can commute on the road without facing difficulties. Locals have told that there are significant improvements in commute as quality work is done and road is smooth and without potholes. Now they face ease in visiting a number of places including marketplace, banks, government offices, educational institutions, medical centers, hospitals, crematorium, other cities, taluk, district headquarter etc. The locals have reported since the road is built, we can now easily commute in 4 wheelers which was not possible earlier. This has increased their quality of life. Locals have appreciated the efforts of KRIDL for their quality work. However, some felt the need that the road should have been extended up to the end of ST colony area which is still not well built.



2. Water RO Unit in Hostel

Drinking water unit, Bhoomanagunda Village, Devadurga Taluk, Raichur District, ST Hostel RO Plant (150 LPH), (S no.410)

The RO Plant in ST hostel in Bhoomanagunda Village, was installed in the month of May 2019 with an objective of providing pure drinking water to the less privileged ST children residing in government hostel- cum school. While interacting with school admin, it was found out that the RO plant was



functional for just 15 days after installation. It started malfunctioning after couple of days and is dysfunctional for the past 18 months. The officials of the hostel also confirmed that the plants from Nuotech RO system have issues with its products' quality, and there after-sales service is very bad. They don't provide proper customer support and do not respond positively to any of the complaint calls.

Since, water is very hard, the filters may have less capacity of filtering or purifying water. The filters and membranes are not working efficiently and hence the water does not get filtered. Also, the quality of water is poor, hence the water unit does not have significant improvement in water quality and wellbeing of children.

Meanwhile, they are providing bottled/ can water (25 liters/ bottle) to children and each cost about Rs 30 which result in increase in expenditure proportionately for just purchasing drinking water. Thus, the enumerators have witnessed more such cases of dysfunctional RO plants in Raichur District.

6.13 Quality of Infrastructure works

Quality control standards laid down to check technical and managerial inadequacies and operational skills. Quality of supervision, material management responsibility & control, procurement, material handling, constructability, change management.

Quality inspection is performed across multiple dimensions. First, at multiple stages of the project – during **implementation** as well as **post completion-before asset handover**. Second, it is performed by entities **internal** as well as **external** to KRIDL. Third, it is undertaken for **material** as well as **workmanship**.

A framework and process exists within KRIDL for quality supervision, however there is scope for improvement. Periodic site visits and quality checks are carried out by Executive Engineer (EE), Additional Executive Engineer (AEE) and Assistant Engineer (AE) while the work is under progress. However, an independent quality control department within KRIDL still does not exist. It is noteworthy that KRIDL is in the process of seeking approval from its Board for setting up an independent Quality Control wing within KRIDL, which should help address this issue.

Significant capacity exists for carrying out third party inspections. Third-party inspections are mandatory for government projects, and hence that is done thoroughly. These can be done by agencies registered under the National Accreditation Board for Certification Bodies (NABCB), engineering colleges, Public Works Department (PWD) and Rural Development and Panchayati Raj department (RD&PR) as stated by AEE of Belgaum division. Presently, KRIDL relies significantly on engineering colleges to carry out these inspections – a large universe of engineering colleges is available at KRIDL’s disposal for this³². MD highlighted that almost 90% of the projects are visited by these empaneled institutions. Inspections are carried out on materials (through quality tests) as well as on workmanship. Other than the empaneled institutions, in some areas independent bodies also undertake a broad process of quality check – for example, in Mahadevapura, Bangalore this task is carried out by a citizen vigilance organization called “Whitefield Rising” as stated by Mahadevapura AEE.

Quality control is maintained through a change management process. The findings from third party quality inspections are reported to the concerned Executive Engineer (EE) of KRIDL, under whose jurisdiction the work was carried out. When there are instances of poor quality, the same is rectified by KRIDL. If a contractor fails to deliver the promised quality material and work in the stipulated time,

³² In response to a recent call for expression of interest issued by KRIDL, response was received from 41 engineering colleges

alternate contractors are explored. Asset's handover and release of funds take place only after quality inspection.

For its projects, BBMP undertakes quality supervisions, control and management. BBMP has its own Vigilance Cell, which does inspection and quality monitoring for all BBMP works (the services of empaneled engineering colleges are not used for BBMP works) as described by CE. BBMP uses defect liability period as a warranty instrument to ensure quality. The defect liability period ranges from 1 to 3 years, which largely depends on nature of the project as stated by AEE in Bangalore urban division. KRIDL is required to maintain a fixed security deposit ranging from 5% to 7.5% of the project cost, which gets released only after completion of the defect's liability period.

Quality in the procurement process.

KRIDL is moving towards standardization of the procurement process. In regard to vendor rates, these are standardized since the SR is followed. There is standardization for purchase of raw materials for some works. Like for a school building, standard price quote for purchasing a jelly stone is Rs. 10,000. In terms of bidding and contract structure, presently there are no Standard Bidding Documents (SBDs) and contracts that KRIDL has signed. KRIDL has prepared SBDs (K1, K2, K3 and K4) with technical specifications for works, goods and services that are approved by the finance department and are pending for Board approval. KRIDL is also considering having contracts with Group Leaders (GLs) in future, with contractual guidelines on capacity, quality, and rural employment generation as informed by CFO. For e-procurement of steel and cement, security deposit, EMD, bank guarantees are to be furnished by the bidders which provides a mechanism to ensure quality control.

Adherence to specifications and standards

KRIDL largely follows Indian industry standards and practices as stated by CE. Currently, no international industry standards are followed. In future, KRIDL is proposing to get itself rated under International Organization for Standardization (ISO), Occupational Health and Safety Assessment Series (OHSAS), etc.

Analysis of quality of infrastructure works surveyed

This section provides a description of the key findings and analysis of infrastructure quality emanating from the primary survey carried out across Karnataka, of the works executed by KRIDL. Each of the sampled work was physically visited and observations are recorded by the enumerator. The content in this section is structured as per the broad categories of works executed by KRIDL in the sample set:

Table 39: Quality checks of Drinking Water Unit

Quality checks																																			
Quantitative observations	Descriptive observations																																		
<p>i. Physical observations were made against 6 quality aspects - broken parts, damaged structure, sinking foundation, pipes, taps and storage structure.</p> <p>ii. Of the 1122 observation points recorded (187 works X 6 observation points in each work), 152 points showed quality issues. Most issues were observed in categories of pipes, taps, broken parts and damaged structures.</p> <p>iii. Geographical spread of the 152 points as per works carried under various offices as follows:</p> <table border="1"> <tbody> <tr><td>Bagalkote-1</td><td>9</td></tr> <tr><td>Bangalore Rural</td><td>13</td></tr> <tr><td>BBMP-South</td><td>3</td></tr> <tr><td>BBMP-West</td><td>4</td></tr> <tr><td>Belgavi</td><td>5</td></tr> <tr><td>Bellary</td><td>8</td></tr> <tr><td>Bidar</td><td>9</td></tr> <tr><td>Devadurga</td><td>15</td></tr> <tr><td>Dharawad-2</td><td>2</td></tr> <tr><td>Dharawad-3</td><td>2</td></tr> <tr><td>Lingasugur</td><td>21</td></tr> <tr><td>Mysore</td><td>1</td></tr> <tr><td>Raichur-1</td><td>26</td></tr> <tr><td>Tumkur</td><td>3</td></tr> <tr><td>Yadagir</td><td>29</td></tr> <tr><td>Mangalore</td><td>1</td></tr> <tr><td>Karwar</td><td>1</td></tr> </tbody> </table>	Bagalkote-1	9	Bangalore Rural	13	BBMP-South	3	BBMP-West	4	Belgavi	5	Bellary	8	Bidar	9	Devadurga	15	Dharawad-2	2	Dharawad-3	2	Lingasugur	21	Mysore	1	Raichur-1	26	Tumkur	3	Yadagir	29	Mangalore	1	Karwar	1	<p>i. Amongst broken/ damaged parts, pipes and taps were observed to be most commonly affected. Issue of water leakage has been reported at many places, which could be attributable to this factor.</p> <p>ii. Damaged filter is another major problem area due to which many RO plants have become non-usable. As the cost of replacement filter is high and availability of these components in rural areas is a problem, these are often not replaced. COVID-19 induced lockdown has exacerbated the problem.</p>
Bagalkote-1	9																																		
Bangalore Rural	13																																		
BBMP-South	3																																		
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Dharawad-3	2																																		
Lingasugur	21																																		
Mysore	1																																		
Raichur-1	26																																		
Tumkur	3																																		
Yadagir	29																																		
Mangalore	1																																		
Karwar	1																																		

Table 40: Quality checks of General building

Quality checks	
Quantitative observations	Descriptive observations
<p>i. Physical observations were made against 12 quality aspects - electrical fitting, plumbing, carpentry, civil work, cracks, peeling paint, water seepage, inferior material quality, broken slab, chipping off cement, rusted iron bars and vegetation growth.</p> <p>ii. Of the 324 (27 X 12) observation points recorded, 24 points showed quality issues. Most issues were observed in categories of peeling paint, vegetation growth, cracks, water seepage, inferior material quality, electrical fitting, carpentry, broken slab, chipped-off cement and rusted iron bars.</p> <p>iii. In terms of geographical spread, of the 24 points, 33% of the points were contributed by works done under Bidar office, 20% by Ramanagara while works carried out under Yelahanka, Belgavi and Tumkur offices contributed 10% each.</p>	<p>i. Peeling paint, wall cracks, vegetation growth and water seepage are commonly observed issues.</p> <p>ii. Lack of protective treatment/ paint is one of the reasons for rusted windows</p>

Table 41: Quality checks of Pathway Work

Quality checks	
Quantitative observations	Descriptive observations
<p>i. Physical observations were made against 4 quality aspects – cracked tiles, missing tiles, uneven surface and sinking path.</p> <p>ii. Of the 24 (6 X 4) observation points recorded, 4 points recorded quality issues which were missing tiles and uneven surface.</p> <p>iii. One was found in works carried out under BBMP-West and 3 work in BBMP-South offices.</p>	<p>No particular observations</p>

Table 42: Facility checks of Pathway work

Facility checks		
Facility	Available in majority cases?	Descriptive observations
1. Shade along the pathway	Yes	On account of surrounding elements (buildings, trees, etc.)
2. Sitting area/ benches	Yes	--
3. Water point	Yes	--

Facility checks		
Facility	Available in majority cases?	Descriptive observations
4. Toilet	No	--
5. Ramp/ stairs at entry/ exit	Yes	--
6. Street lighting	Yes	--
7. Safety railing	No	--

Table 43: Quality checks of Sewerage Work

Quality checks	
Quantitative observations	Descriptive observations
<p>i. Physical observations were made against 3 quality aspects – civil parts (e.g. cement built structure), mechanical parts (e.g. manhole covers) and plumbing (e.g. pipes).</p> <p>ii. Of the 84 (28 X 3) observation points recorded, 11 points showed quality issues. Most issues were observed in categories of civil parts.</p> <p>iii. In terms of geographical spread, most of the issues were observed in works carried out under BBMP-RR Nagara/Byatarayanapura, BBMP-South and Yelahanka offices.</p>	Commonly occurring issues related to civil parts include damaged/ broken slabs and cement coming off.

Table 44: Operational checks of Sewerage work

Operational checks	
Quantitative observations	Descriptive observations
<p>i. Physical observations were made against 4 operational aspects – prevalence of insects & pests, bad odour, blockages and overflowing sewage.</p> <p>ii. Of the 60 (15 X 4) observation points recorded, 9 points showed issues. Most issues were observed in categories of bad odour and blockages.</p> <p>iii. In terms of geographical spread, most of the issues were observed in BBMP-South and Yelahanka offices.</p>	Commonly occurring issues include prevalence of silt and filth leading to bad odour, blocked sewage.

Table 45: Quality checks of Road work

Quality checks	
Quantitative observations	
<p>i. Physical observations were made against 4 quality aspects – potholes, cracks, washed-out road and sinking road,</p> <p>ii. Of the 344 (86 X 4) observation points recorded, 65 points showed quality issues. Most issues were observed in categories of potholes, followed by cracks, sinking road and washed-out road.</p> <p>iii. Geographical spread of the 65 points in terms of works carried out under various offices is as follows.</p>	
Bagalkote-1	2
Bangalore Rural	3
BBMP-Mahadevapura	8
BBMP-South	16
BBMP-West	4
Bellary	3
Devadurga	1
Lingasugur	3
Mysore Central	1
Raichur-1	1
Ramanagara	0
Tumkur	0
Yadagir	6
Yelahanka & Yeshawantpur	8
Bidar	3
Gulbarga-1	2
Mangalore	2
Chikkamagalur	2

Table 46: Quality checks of Office building

Quality checks	
Quantitative observations	Descriptive observations
<p>i. Physical observations were made against 12 quality aspects - electrical fitting, plumbing, carpentry, civil work, cracks, peeling paint, water seepage, inferior material quality, broken slab, chipping off cement, rusted iron bars and vegetation growth.</p> <p>ii. Of the 156 (13 X 12) observation points recorded, 19 points showed quality issues. Most issues were observed in categories of cracks, seepage and vegetation growth.</p> <p>iii. In terms of geographical spread, of the 19 points, 10 works done under Karwar office and 5 works done under Bidar office were the key contributors.</p>	<p>i. No particular observations</p>

Table 47: Quality checks of Interior Works

Quality checks	
Quantitative observations	
<p>i. Physical observations were made against 14 quality aspects - electrical fitting products, electrical workmanships, plumbing products, plumbing workmanship, carpentry fitting, carpentry material, carpentry design, tiles, painting, ceiling, wall/ partition, table, chair and storage.</p> <p>ii. Of the 160 (8 X 20) observation points recorded, only 10 points showed quality issues. The issues were observed in categories of electrical fitting workmanship, plumbing workmanship, carpentry design, table and painting (peeling paint).</p> <p>iii. In terms of geographical spread, the 10 points were spread one each in the works carried out under Mysore Central, Belgavi, Tumkur and Gulbarga-1 offices, Mangalore.</p>	

Table 48: Quality checks of General work

Quality checks							
Quantitative observations	Descriptive observations						
<p>i. Physical observations were made against 28 quality aspects. Of all the observation points recorded, 74 points showed quality issues as described below:</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><i>Public lighting works, Fitting/ installation of electrical equipment, Solar systems and equipment, Waste management systems</i></p> </div>	<p>Some of the specific quality issues observed are described below:</p> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>Work id</th> <th>Work type</th> <th>Observations</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Work id	Work type	Observations			
Work id	Work type	Observations					

Evaluation of Karnataka Rural Infrastructure Development Limited from 2014-15 to 2019-20

Quality checks			
Quantitative observations		Descriptive observations	
1. Product	5	138 Bus shelter Few tiles on the top broken, leading to problem of water leakage during rains	
2. Workmanship	2		
3. Improper fittings	8		
4. Poor quality of material	4		137 Bus shelter One side of the roof is damaged
5. Poor technical design	0		47 Waste management building Building is dilapidated and in poor condition. Complaints have been made to BBMP multiple times, but problem still persists
6. Lack of protection features	8		
7. Any other issues	8		
<i>Sporting equipment, Sports infrastructure</i>			
8. Broken/ Non-functional gym/ sporting equipment	0	90, 450 Closed circuit cameras Cameras are missing/ non-functional, cameras are openly placed without any protection	
9. Damaged material	0		
10. Broken tiles	0	147 Statue Paint has come off at few places	
11. Water leakage/ Moisture issue	0		
12. Cracks in the civil structure	0	476 Ranga mandira Poor quality	
13. Vegetation growth	5		
14. Any other issues	0	336 Compound wall and security room Water seepage	
<i>Bridge, Road related works</i>			
15. Potholes and cracks	0		
16. Washed out roads	0	328 Solar Lights Worked only for a month, 2 poles are dismantled completely	
17. Sinking Road	0		
<i>All other works eg. aesthetics, landscaping, trees, bus shelter, statues, walls, etc.</i>			
18. Inferior equipment quality	1		
19. Broken material	6		
20. Unstable/ Tilted structure	1		

Quality checks																								
Quantitative observations		Descriptive observations																						
21. Poor foundation	1																							
22. Poor workmanship	4																							
23. Poor aesthetic design	1																							
24. Cracks	2																							
25. Paint issue	5																							
26. Water leakage/ moisture issue	4																							
27. Vegetation growth	10																							
28. Any other issues	1																							
<p>ii. The 74 points were geographically spread as below in terms of works carried out under various offices:</p> <table border="1"> <tbody> <tr> <td>BBMP-South</td> <td>23</td> </tr> <tr> <td>Yelahanka & Yeshawantpur</td> <td>12</td> </tr> <tr> <td>BBMP-Mahadevapura</td> <td>8</td> </tr> <tr> <td>BBMP-West</td> <td>14</td> </tr> <tr> <td>Tumkur</td> <td>4</td> </tr> <tr> <td>Dharawad-1</td> <td>4</td> </tr> <tr> <td>Mysore</td> <td>3</td> </tr> <tr> <td>Mysore Central</td> <td>2</td> </tr> <tr> <td>Belgavi</td> <td>1</td> </tr> <tr> <td>BBMP-RR Nagara/Byatarayanapura</td> <td>2</td> </tr> <tr> <td>Chikkamagalur</td> <td>1</td> </tr> </tbody> </table>			BBMP-South	23	Yelahanka & Yeshawantpur	12	BBMP-Mahadevapura	8	BBMP-West	14	Tumkur	4	Dharawad-1	4	Mysore	3	Mysore Central	2	Belgavi	1	BBMP-RR Nagara/Byatarayanapura	2	Chikkamagalur	1
BBMP-South	23																							
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Tumkur	4																							
Dharawad-1	4																							
Mysore	3																							
Mysore Central	2																							
Belgavi	1																							
BBMP-RR Nagara/Byatarayanapura	2																							
Chikkamagalur	1																							

Table 49: Quality checks of Exterior Work

Quality checks	
Quantitative observations	Descriptive observations
<p>i. Physical observations were made against 8 quality aspects – cracks, peeling paint, water seepage, inferior material quality, broken slabs, chipping-off cement, rusted iron bars and vegetation growth.</p> <p>ii. Of the 56 (7 X 8) observation points recorded, 4 points showed quality issues. Most issues were observed in categories of water seepage, cracks and peeling paint.</p> <p>iii. In terms of geographical spread, of the 4 points, 3 out of the 4 points were observed in the work carried out under the Ramanagara office.</p>	No particular observations

Table 50: Quality checks of Residential building

Quality checks	
Quantitative observations	Descriptive observations
<p>i. Physical observations were made against 12 quality aspects - electrical fitting, plumbing, carpentry, civil work, cracks, peeling paint, water seepage, inferior material quality, broken slab, chipping off cement, rusted iron bars and vegetation growth.</p> <p>ii. Of the 36 (3 X 12) observation points recorded, only 1 point showed quality issue which was vegetation growth, observed in the work done under Bangalore Urban office.</p>	No particular observations

Table 51: Aggregate analysis of quality of infrastructure works

No.	Work Type	Total physical observation points	Total observation points	Points which showed quality issues	% of quality issues observed	Common issues
1	Road	4	344	65	19%	Potholes, cracks, sinking roads, washed-out roads
2	General works	28	430	74	17%	Water seepage, installed material broken like cameras, peeling paint, broken tiles and roof of bus shelter
3	Pathway works	4	24	4	17%	Cracked and missing tiles, uneven surface, sinking path

No.	Work Type	Total physical observation points	Total observation points	Points which showed quality issues	% of quality issues observed	Common issues
4	Drinking water unit	6	1122	152	14%	Broken/ damaged pipes and taps, damaged filter
5	Drainage works	3	84	11	13%	damaged/ broken slabs and cement coming off
6	Office building	12	156	19	12%	Cracks, seepage, and vegetation growth
7	General building	12	324	24	7%	Peeling paint, wall cracks, vegetation growth and water seepage
8	Exterior works	8	56	4	7%	No common issues
9	Interior works	14	160	10	6%	No common issues
10	Residential building	12	36	1	3%	No common issues

Analysis of DQM reports of infrastructure works:

KRIDL's officers constantly visit the site for monitoring the quality of the works. As per the data shared by KRIDL, officers planned 4041 site visits between the period of FY 2014-15 to FY 2018-19. Out of which, they did quality monitoring checks for 3608 works or a total of 89.2% of the planned visits. Overall, 96% of the works were found satisfactory, 1% unsatisfactory and 3% of the works that needs improvement. It emphasizes the fact that KRIDL does quality works. It is important to note that 100% of all the BBMP works have been graded satisfactory. Also, it is to be noted that quality of works needs to be improved in districts Raichur, Bagalkot, Chickballapur as they have got the lowest percentage below 90% for the satisfied works. Out of the sampled works, 17 works have gone through quality checks, and they have been found satisfactory.

Table 52: Zone wise DQM report analysis from FY 2014-15 to FY 2018-19

Zone/Grade	RI (Needs to be improved)	Satisfactory	Unsatisfactory	Total	% of satisfied works
FY 2014-15					
BBMP Zone	0	11	0	11	100%
Mysore Zone	5	77	2	84	92%
Central Zone	11	90	0	101	89%

Evaluation of Karnataka Rural Infrastructure Development Limited from 2014-15 to 2019-20

Zone/Grade	RI (Needs to be improved)	Satisfactory	Unsatisfactory	Total	% of satisfied works
Bangalore Zone	11	88	2	101	87%
Gulbarga Zone	13	82	1	96	85%
Belgaum Zone	18	103	2	123	84%
Grand Total	58	451	7	516	87%
FY 2015-16					
BBMP Zone	0	40	0	40	100%
Belgaum Zone	1	145	0	146	99%
Central Zone	0	96	3	99	97%
Gulbarga Zone	0	41	2	43	95%
Mysore Zone	5	92	0	97	95%
Bangalore Zone	8	103	5	116	89%
Grand Total	14	517	10	541	96%
FY 2016-17					
Bangalore Zone	0	77	0	77	100%
Belgaum Zone	0	151	0	151	100%
Mysore Zone	0	179	0	179	100%
Central Zone	2	202	0	204	99%
Gulbarga Zone	1	142	0	143	99%
Grand Total	3	751		754	100%
FY 2017-18					
Central Zone	1	200	0	201	100%
Gulbarga Zone	0	125	0	125	100%
Bangalore Zone	1	99	0	100	99%
Mysore Zone	3	160	2	165	97%
Belgaum Zone	9	237	3	249	95%

Zone/Grade	RI (Needs to be improved)	Satisfactory	Unsatisfactory	Total	% of satisfied works
Total	14	821	5	840	98%
FY 2018-19					
Central Zone	0	210	2	212	99%
Mysore Zone	2	191	0	193	99%
Bangalore Zone	2	115	2	119	97%
Gulbarga Zone	5	136	1	142	96%
Belgaum Zone	12	274	5	291	94%
Total	21	926	10	957	97%
FY 2014-15 to 2018-19					
BBMP Zone	0	51	0	51	100%
Central Zone	14	798	5	817	98%
Mysore Zone	15	699	4	718	97%
Gulbarga Zone	19	526	4	549	96%
Belgaum Zone	40	910	10	960	95%
Bangalore Zone	22	482	9	513	94%
Grand Total	110	3466	32	3608	96%
%	3%	96%	1%	100%	96%

Table 53: District wise DQM report analysis from FY 2014-15 to FY 2018-19

S No.	District/ Grade	RI (Needs to be improved)	Satisfactory	Unsatisfactory	Total	% of satisfied works
1	Bangalore (Rural)	0	51	0	51	100%
2	Dakshin Kannada	0	43	0	43	100%
3	Udupi	0	37	0	37	100%
4	Vijaynagara	0	8	0	8	100%
5	Yadgir	0	92	0	92	100%
6	Mysore	1	184	0	185	99%
7	Kalaburagi	2	164	0	166	99%

S No.	District/ Grade	RI (Needs to be improved)	Satisfactory	Unsatisfactory	Total	% of satisfied works
8	Bellary	4	266	0	270	99%
9	Davangere	1	266	3	270	99%
10	Belagavi	3	261	1	265	98%
11	Bangalore (Urban)	3	167	0	170	98%
12	Bidar	1	90	1	92	98%
13	Haveri	2	87	0	89	98%
14	Chamarajanagar	3	117	0	120	98%
15	Gadag	3	95	0	98	97%
16	Hassan	2	93	1	96	97%
17	Shivamogga	2	123	2	127	97%
18	Chitradurga	9	230	0	239	96%
19	Mandya	6	131	0	137	96%
20	Uttar Kannada	4	84	0	88	95%
21	Kodagu	2	38	0	40	95%
22	Dharwad	6	95	0	101	94%
23	Chickmagalur	1	61	3	65	94%
24	Koppala	8	135	1	144	94%
25	Tumkur	6	109	2	117	93%
26	Vijayapura	8	109	1	118	92%
27	Ramnagara	2	43	2	47	91%
28	Kolar	5	66	2	73	90%
29	Chickballapur	6	66	3	75	88%
30	Raichur	8	70	2	80	88%
31	Bagalkot	12	85	8	105	81%
	Grand Total	110	3466	32	3608	96%

6.14 Overall perception of Infrastructure works

Planned versus actual utilization of tools and equipment, functionality of the works completed and achievement of 'fitness for purpose', degree of conformance to technical and financial aspects.

Utilization of resources, tools and equipment is driven by the extent of new projects received by KRIDL and strategies to optimize their deployment. KRIDL usually always has enough projects on hand and in pipeline. KRIDL gets around 6000-7000 new projects every year on an average. It is regularly in touch with the EAs for new projects. Around 500 projects are in the pipeline in the Bangalore Urban area alone.

Once projects are awarded, the resources are procured as per requirement. Materials are procured and used as per the requirement of the projects. Equipment like JCB, cranes is procured on a hiring basis, based on requirement of the project. Basic tools are brought in by the labor or the GLs arrange the tools for the labor. If additional equipment is required, it is hired through outsourcing. These strategies ensure optimum utilization of the material, equipment and tools.

Analysis of overall perception of infrastructure completed works surveyed

This section provides a description of the key findings and analysis of overall infrastructure perception emanating from the primary survey carried out across Karnataka, of the works executed by KRIDL. Each of the sampled work was physically visited and observations are recorded by the enumerator. The content in this section is structured as per the broad categories of works executed by KRIDL in the sample set:

Table 54: Overall perception of Drinking water units

Behaviors/ Perceptions/ Issues					
Behaviors:					
<ul style="list-style-type: none"> Where the RO water plants have become non-functional on account of various reasons, users have resorted to pouring canned water or borewell water into the filters and then drinking from the tap. 					
a. Overall perception about the drinking water unit:					
	Very bad	Bad	Average	Good	Very good
	34%	11%	7%	38%	10%
Prime reason for choice	Not in working condition	Not in working condition	No specific reason	Clean water; Hygiene	Sweet taste/ Good taste of water as compared to baseline situation of saline bore-well water; Promotes better health and well-being
Developmental issues:					
b. At few places, inadequate availability of bore well water is a problem, due to which RO plants have been rendered non-functional.					
c. At few places (e.g. Bellary sr no. 250, Bagalkote-1 sr.no. 274) the water filter installed by KRIDL is not being used. In one instance, the users had their own filter installed before which was providing a higher output of water (in liters per hour). In another instance, the installed water filter was of a size which was larger than what the hostel room could accommodate, hence the users returned back the KRIDL filter and installed another one.					

Figure 14: RO water unit snapshots



1. Water filter installed in Bellary not in use



2. Clean Drinking Water Unit at Goripaliya Minority Colony of BBMP Warda No-137

Table 55: Overall perception of General buildings

Behaviors/ Perceptions/ Issues					
Behaviors:					
a. Community buildings are being used for a variety of purposes like general meetings, health camps, farmer meetings, festival gatherings, spiritual activities.					
Overall perception about the building:					
	Very bad	Bad	Average	Good	Very good
	3.9%	0%	15.7%	70.6%	9.8%
Prime reason	Cracks on building, peeling paint, issue	--	No specific reason	Good quality construction,	Good quality construction,

Behaviors/ Perceptions/ Issues					
for choice	with tiles, water seepage			fittings, spacious, good ventilation	fittings, spacious, good ventilation
<p>Developmental issue:</p> <p>b. Buildings need to be “fit for purpose” – thus, design of construction is critical. Secondly, quality of the construction, ventilation, adequacy of space, quality of fittings (electrical, plumbing, etc.) are important determinants towards user satisfaction.</p>					

Figure 15: General Building snapshots



1. **Construction of Pilgrimage residence near the throne of Lord Jagadguru Rambhapuri Peetha**



2. **Laboratory building for Moodigere Tau Government College, Chikkamagaluru District**

Table 56: Overall perception of Pathway works

Behaviors/ Perceptions/ Issues
<p>Behaviors:</p> <p>a. Most people use pathways for travel to work, travel to market places and for leisure/ exercise activities.</p> <p>Perceptions:</p> <p>b. Overall perception about the pathway:</p>

Behaviors/ Perceptions/ Issues					
	Very bad	Bad	Average	Good	Very good
	0%	17%	25%	25%	33%
Prime reason for choice	--	Reduced perception of safety due to presence of drug addicts during evenings	Time savings, better safety, improved business activities	--	Neatly done, well maintained, good quality material, smooth surface, ease of commuting

Figure 16: Pathway work snapshots



1. Development of Snail Park in Ward No 105



2. Construction of Pathways in front of Ameswara Temple

Table 57: Overall perception of Sewerage works

Behaviors/ Perceptions/ Issues
a. Frequency of occurrence of damage/ breakage/ maintenance incidents in relation to the constructed works:

Behaviors/ Perceptions/ Issues					
	Very often	Often	Sometimes	Rarely	Never
	38%	7%	14%	16%	21%
Prime reason for choice	Quality of civil material, workmanship	Quality of civil material, workmanship	Quality of plumbing material	Quality of civil material	Quality of civil material

4% of respondents have not provided their response on frequency of occurrence of damage/ breakage/ maintenance incidents.

b. Overall perception about the sewerage works:

	Very bad	Bad	Average	Good	Very good
	5%	4%	23%	59%	9%
Prime reason for choice	Clogged sewage	Clogged sewage	No specific reason	Good quality of work	No specific reason

Figure 17: Sewerage work snapshots



1. Road & Sewer Construction & Development Works in BBMP BBMP RR Nagara



2. Old Sanitary Line and Manhole Maintenance Works of Ward No. 69

Table 58: Overall perception of Road works

Perceptions/ Issues					
Overall perception about the road:					
	Very bad	Bad	Average	Good	Very good
	7%	1%	17%	58%	17%
Prime reason for choice	Potholes, water accumulation during rainy season	Water accumulation during rainy season	Water accumulation during rainy season	Quality of construction, width of the road, time saving, ease of commuting	Quality of construction, absence of potholes, well laid out
<p>a. According to the respondents, in Lingasugur, the work sr no. 491 was not fully constructed due to insufficient funds (half portion of the road is CC road, while the remaining half is mud road). Consequently, the material which remained was used by the local Gram Panchayat for some purpose which was not originally intended.</p> <p>b. According to the respondents, in Devadurga (work sr no. 113) and Lingasugur (work sr no. 490), proper space for drainage alongside the road was not provided due to which there is water logging reported on the road.</p> <p>c. According to the respondent, in BBMP South (work sr no. 120), the central portion of the road has risen while the sides have sunk due to which water stagnates in front of shops and houses.</p>					

Figure 18: Road work snapshots



1. Uneven roadwork in BBMP South



2. Proper space for drainage alongside the road was not provided in Lingasugur



3. Intersection of Netravathi River Road in Bantwal Taluk Tumbe village



4. Development of back Road of Mangalore Taluk 49th Kankanady Ward

Table 59: Overall perception of Office building

Perceptions and Issues					
Overall perception about the office building:					
	Very bad	Bad	Average	Good	Very good
	4%	8%	40%	40%	8%
Prime reason for choice	Non-usable as building was empty	Non-usable	Water seepage, electrical switches situated at inconvenient locations	No specific reason	Easily accessible location, time-savings
<p>a. At work sr no 17 (under Bidar office) respondents reported that the building is currently non-usable since it is vacant.</p> <p>b. At work sr no 327 (under BBMP-West office) respondent reported issue of seepage and inconvenient location of electrical switches.</p>					

Figure 19: Office building snapshots



1. Building under Bidar office is currently non-usable since it is vacant



2. Issue of seepage and inconvenient location of electrical switches in BBMP West office



3. Construction of District Panchayat Resource (Power) Crushing Center in Navanagar



4. Nadakkal Office Building Work in Mirzana Village, Kumta Taluk

Table 60: Overall perception of Interior works

Perceptions and Issues					
a. Perception about work management by KRIDL:					
			Negative	Neutral	Positive
	Responsiveness		5%	40%	55%
	Attention to detail		15%	50%	35%
	Resolution of queries		0%	65%	35%
	Measures to avoid inconvenience to staff while working		5%	70%	25%
	Safety measures adopted		5%	60%	35%
b. Overall perception about the interior works:					
	Very bad	Bad	Average	Good	Very good
	5%	0%	15%	70%	10%
Prime reason for choice	--	--	No specific observation	Good quality, good workmanship, neat work, individual and well segregated working space provided	Good quality of furniture like computer tables, etc.

Figure 20: Interior work snapshots



1. Interior Renovation and Furniture Works for SPRC Office in Rural District Panchayat Office Old Building

2. Implementation of Digital Library, Geo Portal and Decision System for Bangalore Urban Development Department

Table 61: Overall perception of General works

Perceptions and Issues					
a. Overall perception about the works:					
	Very bad	Bad	Average	Good	Very good
	0%	5%	19%	54%	22%
Developmental issues					
b. Well-designed seating arrangement, well maintained bus shelter are important determinants towards comforts and convenience of bus passengers.					
c. Siting the works close to residential areas, work places, educational institutes can significantly enhance usage and impact of these facilities.					

Figure 21: General works snapshot

1. Compound wall construction, walkway and other works for Ward No. 18 Indira Canteen

2. Construction of Waste Disposal Unit at Kemral Village in Mangalore

Table 62: Overall perception of Exterior works

Perceptions and Issues					
a. Perception about work management by KRIDL:					
			Negative	Neutral	Positive
	Responsiveness		15%	31%	54%
	Attention to detail		0%	54%	46%
	Resolution of queries		0%	62%	38%
	Measures to avoid inconvenience to staff while working		0%	62%	38%
	Safety measures adopted		0%	69%	31%
b. Overall perception about the works:					
	Very bad	Bad	Average	Good	Very good
	7%	7%	14%	43%	29%
Prime reason for choice	--	--	No specific observation	No specific observation	--

Figure 22: Exterior work snapshots



Painting on the building in Village

Table 63: Overall perception of Residential building

Perceptions and Issues					
a. Overall perception about the residential building:					
	Very bad	Bad	Average	Good	Very good
	0%	0%	17%	83%	0%
Prime reason for choice	--	--	No specific observation	New building, construction of good quality	--

Figure 23: Residential building snapshots

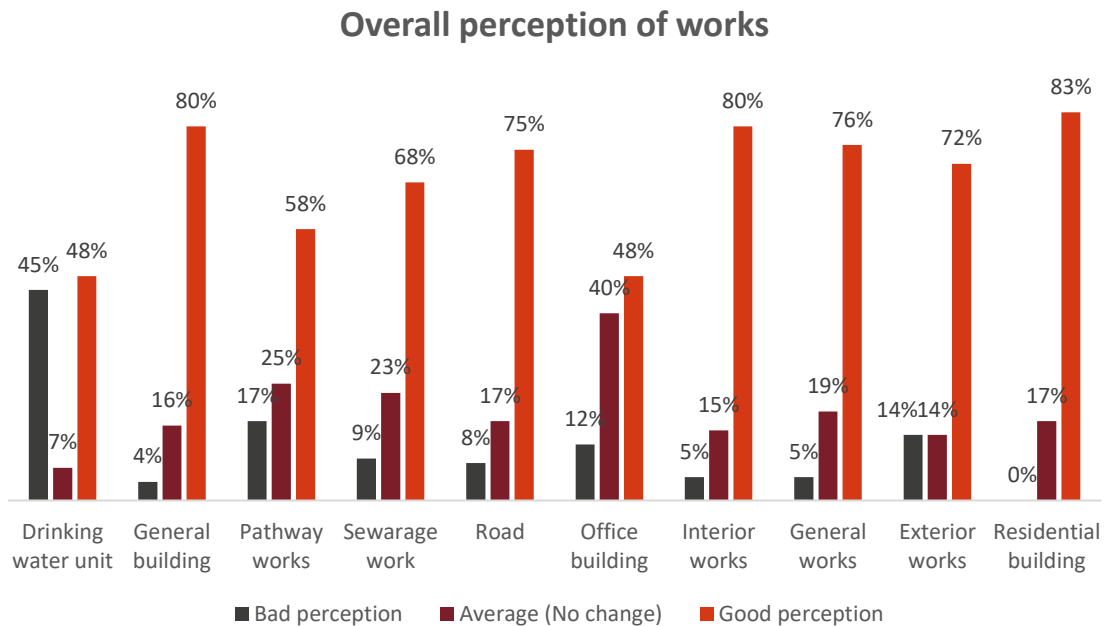


1. **Extra building work with kitchen block and store room in the premises of Government Science College Boys' College, MG Road, Bangalore.**



2. **Additional Courts Complex for Scheduled Castes in Bellary Town Kaul Bazaar Bandihatti in Bellary District**

Figure 24: Aggregate analysis of overall perception of infrastructure works³³



6.15 Relevance of KRIDL at the time when established and now

Since 2005, rural employment was being provided under the flagship programme of MGNREGA for fixed number of days, ensuring that rural jobs are created. However, over the last few years, the jobs provided under MGNREGA have reduced and it is no longer the flagship programme for employment generation. Secondly, due to COVID pandemic and labor migration, the jobless in rural areas has increased. Hence, KRIDL’s role is relevant in rural areas for creating jobs.

In urban areas, there are issues of poor quality of works and avenues for collusion amongst private sector bidders in order to influence the tendering process. KRIDL, being a government agency and on account of its good quality of works, is relevant to address these issues. By improving its efficiency, obtaining a Class 1 license and bidding for larger and more complex works, it can effectively compete with private sector contractors.

³³ Good perception includes both 'Good' and 'Very Good' perception of the survey participants. Similarly, Bad perception includes both 'Bad' and 'Very Bad' perception of the survey participants.

7. Analysis of RO water plants

7.1 Overview of RO water plants

The Government of India (GoI) had launched the first Reverse Osmosis (RO) plant for the purification of water in the year 2000 in Gujarat, India for the benefit of the community. According to information provided on Rural Drinking Water and Sanitation Department, Karnataka website; currently, more than 18,000 water purification plants have already been installed in the state so far³⁴. Thus, in the last few years, the GoI and state government had launched many RO plants in rural areas which could be the reason that the source of drinking water has changed from piped water to RO water³⁵. A study (2020) substantiating the above point assessing housing conditions among the residents of a village in rural Karnataka with the data on source of drinking water and different parameters of housing standards was published in the National Journal of Community Medicine³⁶. It was found out that, almost 55% of the households bought water from the community RO plant. Thus, more than half of the village households are dependent on the RO water plant for drinking water.

To assess RO desalination as an alternative water resource project for drinking water production, a study (2014) was conducted in Gadag District of Karnataka and published by the International Journal of Engineering Research & Technology (IJERT)³⁷. In the study, it was found out that RO technology is an effective means to purify non-potable water and make it potable for human consumption. In another study published on Nebraska Extension Publications³⁸, it was stated that RO is an effective method to reduce the presence of ions and metals, like nitrate, arsenic. The Tamil Nadu study³⁹ done in 1999 by NEERI has found that the efficiency of the plant in salt rejection reduces from 99% to less than 90% in 3-4 years of operation (Figure 25). In another study⁴⁰ of Gujarat, it was found out that performance of the RO plants is satisfactory in removing high TDS (Figure 26). Though regular usage leads to wear and tear of RO parts such as filter, reducing the efficiency in removing high TDS over a period of time.

Further, as discussed in the study conducted in the Gadag district, it was found out that community scale RO plants are appropriate and cost effective in Gadag and other districts of India with similar water supply challenges and the RO water purification plants become economically viable within 3 years of installation.

³⁴ Water Purification Plants, Rural Drinking Water and Sanitation Department, <https://english.swachhamevjayate.org/water-2/>

³⁵ Case Study: RO Water Plant Mission Gagillapur. :1–12. Available from: <http://apmas.org/gagi/A Case Study on RO Water Plant-Mission Gagillapur.pdf>

³⁶ Nagaraj D, Agrawal T, Madtha J, Edgard R, Norris JJ, Manuel J, Fathima FN. Assessment of Housing Conditions among the residents of a village in rural Karnataka. *Natl J Community Med* 2020;11(3):107-111

³⁷ Avin J. Kajekar, B. M. Dodamani, Arun M. Isloor, 2014, Reverse Osmosis Desalination as an Alternative Water Resource Project for Drinking Water Production a Case Study, *INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH & TECHNOLOGY (IJERT) Volume 03, Issue 12 (December 2014)*,

³⁸ Bruce I. Dvorak, Sharon O. Skipton, *Natural Resources / Water Management, Institute of Agriculture and Natural resources, University of Nebraska-Lincoln, 2003.*

³⁹ M. H. Ansari, P. S. Kelkar, M. Z. Hasan and R. Paramasivan, *Drinking Water Supply Through Reverse Osmosis Desalination Plants In Ramanathapuram District Of Tamil Nadu, India, NEERI*

⁴⁰ Sunderrajan Krishnan1, Rajnarayan Indu1, Sankalp Bhatt2, Falgun Pathak2, Ankit Thakkar2 and Urvish Vadgama2. *Reverse Osmosis Plants for Rural Water Treatment In Gujarat.*

Table 64: Physio-chemical characteristics of RO Feed, Product and Reject water

Physico-chemical Characteristics of Feed, Product and Reject Water from RO Plants in Ramanathapuram District

Sl. No.	Parameter	Melasirupodhu				Sikkal				BIS : 10500 (1991) Desirable Limit
		Feed Water	Product Water	Reject Water	Rejection (Percent)	Feed Water	Product Water	Reject Water	Rejection (Percent)	
1.	pH	7.1-7.5	6.5-6.9	7.6-7.9	-	7.1 - 7.5	6.5 - 6.9	7.7 - 7.9	-	6.5 - 8.5
2.	Turbidity (NTU)	0.7	ND	1.0	100	0.1	ND	0.2	100	5
3.	TDS	7,480	780	12,900	89.6	5,620	545	11,500	90.7	500
4.	Total Alkalinity (CaCO ₃)	572	50	1,100	91.2	300	25	600	91.7	200
5.	Total Hardness (CaCO ₃)	1,500	140	2,700	90.7	945	80	1,900	91.5	300
6.	Calcium (CaCO ₃)	425	40	700	90.6	305	25.0	600	91.8	-
	Calcium (Ca ⁺⁺)	170	16	280	90.6	122	10.0	240	91.8	75
7.	Magnesium (CaCO ₃)	1,075	100	2,000	90.7	640	55.0	1,300	91.4	-
	Magnesium (Mg ⁺⁺)	260	25	486	90.7	155	13.0	316	91.4	30
8.	Sodium (Na ⁺)	2,240	230	3,700	89.7	1,800	180	3,500	90.0	200 (WHO)
9.	Potassium (K ⁺)	20	2.1	39	89.5	11.0	1.2	21	89.1	NA
10.	Chloride (Cl ⁻)	3,410	345	5,590	89.9	2,780	280	5,420	89.9	250
11.	Sulphate (SO ₄ ²⁻)	980	95	1,800	90.3	600	45	1,250	92.5	150
12.	Nitrate (NO ₃ ⁻)	12.3	1.3	21	89.3	0.3	Nil	0.6	100	45
13.	Fluoride (F ⁻)	0.5	0.06	1.0	88.0	0.5	0.06	1.0	88.0	0.6 - 1.2
14.	Silica (SiO ₂)	3.0	0.3	5	90.0	2.5	0.25	4.8	90.0	NA
15.	Total Iron (Fe)	0.35	ND	0.8	100	0.3	ND	0.6	100	0.3
16.	Manganese (Mn)	0.04	ND	0.07	100	0.02	ND	0.04	100	0.1
17.	Langelier Index	0.5 - 0.9	-1.9	1.5 - 1.8	-	0.1 - 0.5	-2.4	1.3 - 1.5	-	-

All values except pH, and turbidity are in mg/L; ND - Not detected, NA - Not available

Figure 25: TDS (ppm) of raw, treated and effluent water

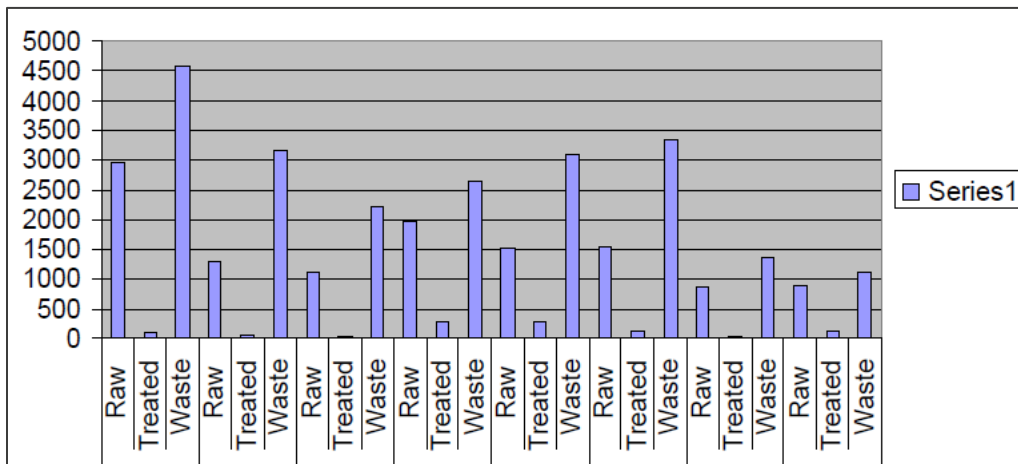
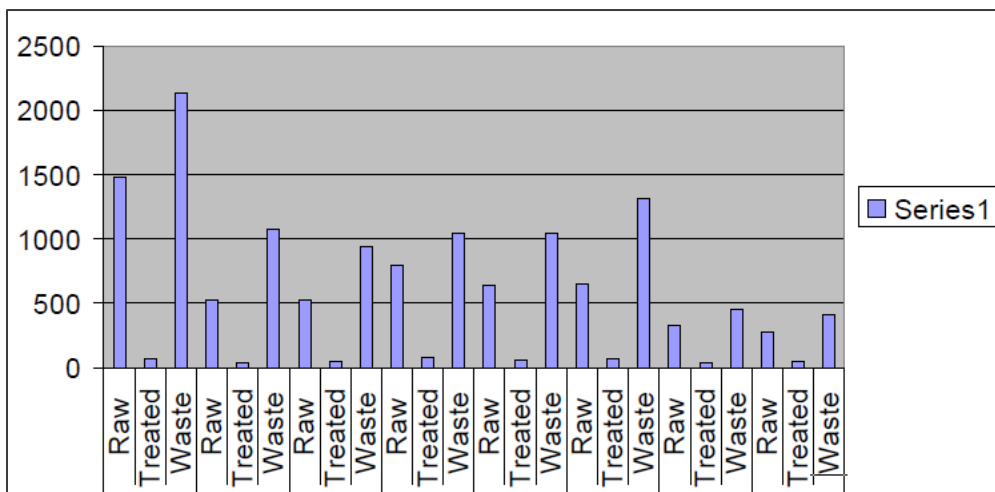


Figure 26: Chloride (mg/l) of raw, treated and effluent water



7.2 Issues of RO water plants

Though RO water plants are efficient but remain ineffective in many cases. The committee on Local Bodies and Panchayati Raj Institutions, Karnataka; in its report has stated that out of the total 5911 plants installed and handed over to the Rural development department in 2019 by KRIDL, around 20% of RO plants were found dysfunctional.⁴¹ Some of the reasons for non-functioning purifiers mentioned in the report are that borewell attached to water purifier has no water, officials paid complete amount to a contractor who has done incomplete work, bad quality of pipes used which would have broken causing water leakage, the overhead tank was too small or not as per the standards, bad quality of materials used for RO plant, etc. Issues were found out in different studies as well:

⁴¹ <https://www.deccanherald.com/state/top-karnataka-stories/over-1000-ro-water-plants-dysfunctional-house-panel-807187.html>

- First, the raw water, low pressure, and high-pressure pumps break down very often, which cannot be repaired locally or at district levels.
- Another issue found is that if plants remain in shut-down condition for a longer period, chemical preservation of the membranes is needed to prevent their fouling. It requires specialized skill and training and failure to do so results in the fouling of the membranes.
- The rejected water contains a high concentration of salts and conveying it to safer discharge places involves a financial burden. For instance, data released by the central ministry of drinking water and sanitation show 20 of the Karnataka districts have areas with high fluoride affected habitations. Thus, the disposal of the rejected water in the villages is important but it poses a difficult problem of land pollution.
- According to a Tamil Nadu study, RO plants in rural areas suffer from low levels of average utilization (46%) as compared to the design capacity due to issues such as non-availability of power in rural areas, time-lapsed in the repair of key components and non-availability of spares.
- The capital cost and O&M cost are high and not affordable for the rural population. Low utilization levels further increase the cost of product water.

7.3 Practices to be adopted

To tackle the challenges and for better usage, the following practices should be adopted:

- a. Serious iron fouling results from the oxidation or corrosion of inline materials, therefore, plant components should be made of non-ferrous materials like PVC.
- b. Fortnightly and monthly chemical cleaning of the RO membranes is critical to keep the system in efficient condition and avoid the formation of scales of calcium and magnesium on the RO membranes.
- c. Regular maintenance of membrane, replacement of filters, cartridges are critical factors to maintain effectiveness and reduce bacterial contamination.
- d. It is also recommended in the outcome of the study conducted in the Gadag district to incorporate ultrafiltration (UF) pre-treatment unit to reduce biofouling of the RO membranes and further improve the cost-effectiveness of RO water purification.
- e. Also, the selection of RO systems needs to be based on water analysis and assessment of the users' needs.

As discussed, RO plant has externalities that the wastewater with high contaminations of fluoride, arsenic is released outside or nearby the plant. To tackle this a village named Sonnahallipura in Hoskote taluk of Bangalore Rural district sets an example of reusing wastewater by innovative usage to eliminate fluoride contamination⁴². In this case, the brick kiln utilized the wastewater from the RO to make bricks

⁴² <https://www.indiawaterportal.org/articles/closing-loop>
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and prevent the fluoride-concentrated wastewater from compromising the groundwater quality. Allowing the wastewater to seep into the ground would only contaminate the source of water further, exacerbating the problem and rendering the RO plant useless. Thus, the RO plants are socially acceptable since the population is satisfied with the treated water quality.

7.4 Analysis of RO water plant

This section provides a description of the analysis of status of RO water plants emanating from the primary survey carried out across Karnataka, of the works executed by KRIDL. Each of the sampled work was physically visited and observations are recorded by the enumerator.

Table 65: Status of RO water plants

Status of RO water plants			
<ul style="list-style-type: none"> While surveying of 167 RO water plants, 53.6% of respondents out of 334 participants have said that there is issue with RO water plants. They are either not in working condition on account of various reasons, not in use and some are operating but have issues. 			
a. Overall status about the drinking water unit:			
Status	Not in working condition	Not in use	Used plant with issues
	87%	9%	3%
Prime reason for choice	Major issues are that RO components such as motor, filter, membrane, pressure pump is not working or fitting issues of wiring, piping, electricity. Also, another issue in not maintained or stopped working as not used in school in the last 2 years.	Major issues for not using RO plants are no water source, leakage and cleaning issues	Used but issues exist such as water filtration, bad odor, less capacity, low flow rate and timing issues

7.5 Sample testing

KRIDL does not do testing of water, either before or after the installation of RO water plant. Testing is usually done by Rural Drinking Water Supply department and the test reports are not available with KRIDL.

Please find below an illustrative example of a test report that was done after installation:

Figure 27: Test Report of RO water plant

TEST REPORT						
MESEL/W/FORM/10/00						
Name of the Project : M/S. KRIDL, Ballari						
Location of Samples : 24 th Ward, Cowl Bazar, Ballari						
Date of Samples Collection : 01.07.2020						
Date of Samples Receipt : 01.07.2020						
Nature of Samples : 1. Bore water 2. RO Treated water						
Particulars of Sample Collected : Drinking Purpose						
Date of Report : 06.07.2020						
Samples Referred By : Hanuman Water World, Ballari						
Technical Reference (IS code) : IS 10500-2012 Drinking Water Standards						
Sl.	Parameters	Test Method	Units of Results	Result		Acceptable Limit
				Bore Water	RO Water	
1	Colour	IS:3025 (part 4)	Hazen Units	5	1	5
2	Odour	IS:3025 (part 5)		Agreeable	Agreeable	Agreeable
3	pH	IS:3025 (part 11)	0-14	7.15	6.90	6.5 to 8.5
4	Taste	IS:3025 (part 8)		Agreeable	Agreeable	Agreeable
5	Turbidity	IS:3025 (part 10)	NTU	2	0.5	1
6	Total Dissolved Solids	IS:3025 (part 16)	mg/l	1080	112	500
7	Calcium as Ca	IS:3025 (part 40)	mg/l	68	4	75
8	Chlorides as Cl	IS:3025 (part 32)	mg/l	205	42	250
9	Fluoride as F	IS:3025 (part 60)	mg/l	1.75	0.50	1.0
10	Iron as Fe	IS:3025 (part 53)	mg/l	0.08	0.05	0.3
11	Magnesium as Mg	IS:3025 (part 46)	mg/l	29	1.2	30
12	Nitrates as NO ₃	IS:3025 (part 34)/APHA	mg/l	30	5	45
13	Sulphates as SO ₄	IS:3025 (part 24)	mg/l	170	15	200
14	Total Alkalinity as CaCO ₃	IS:3025 (part 23)	mg/l	450	24	200
15	Total Hardness as CaCO ₃	IS:3025 (part 21)	mg/l	290	15	200
Bacteriological Tests						
16	Total Coliform	IS:1622-1981	cfu/100 ml	--	Absent	Absent
17	E - Coli	IS:5887 (part 1)	cfu/100 ml	--	Absent	Absent
Note : 1. NTU - Nephelometric Turbidity unit 2. RO Treated water is fit for Drinking 3. Samples were not drawn by Mineral Engineering Services, Ballari.						

8. Recommendations

8.1 Expansion strategies

KRIDL has been in existence for 50 years now. The nature of business (construction), operating model (EPC), domain (social infrastructure) and geographical presence (Karnataka state) has hardly changed over these years. During the course, KRIDL has gained significant experience and expertise and has a significant cash reserve available at disposal. These can be utilized to expand the business in order to increase the turnover and profit generated by the firm. Based on assessment of similar firms, the possible options are provided below:

1. Larger and more complex projects: While KRIDL does have a design wing, it is underutilized since in most cases designs provided by EAs have to be accepted. KRIDL can strengthen the design wing through hiring of architects, design engineers and acquiring modern design software. This will help in strengthening technical capabilities for larger scale and more complex projects (e.g. multi-storey buildings and complexes, solar projects, highways, etc.). Examples of other similar organizations executing larger and more complex projects are - Odisha Construction Corporation Ltd. (dams), Kerala Land Development Corporation Ltd. (irrigation and canal projects) and Bihar Rajya Pul Nirman Nigam Ltd. (bridges and flyovers).
2. Consultancy: Engineering consultancy is a possible option for upstream expansion. Presence in consultancy business will not only provide early market intelligence on business opportunities but also help in strengthening chances for more downstream business. KRIDL can use its organizational experience and expertise of its vast pool of engineering staff to undertake services such as design consultancy, lender's engineer, independent engineer, technical feasibility studies, preparation of detailed project reports, etc. The example of Engineers India Limited (EIL) (a PSU) discussed earlier in the report shows that engineering consultancy can be a viable option to increase the financial turnover and profitability of the company. Besides this, the following similar organizations are also executing engineering consulting projects - Kerala State Construction Corporation Ltd., Kerala Land Development Corporation Ltd. and Odisha Construction Corporation Ltd.

8.2 IT solutions

The audit of KRIDL carried out by the Comptroller and Auditor General of India (CAG) for the period FY 2010-11 has recommended for tightening of internal control system and improvement in maintenance of work-related records within the company. The CAG highlighted following issues across the entire lifecycle management of works:

- Work award and commencement: In the case of some of the works executed for BBMP, it was observed that works were carried out by field offices without a work order being in place or without getting mobilization advance at the head office. In other cases, work codes had not been allocated to works which were being executed – on the other hand, for some works, codes had been allotted without receipt of administrative approval from the EAs.

- Work monitoring: No system exists for regular monitoring of works.
- Work completion and closure: Once work is completed, delays were experienced in preparing handing over notes and completion certificates. Work codes remained even after completion of the work on ground, as the works were not marked as completed in the database.
- Billing and payments for works: Works executed by group of workers (led by Group Leader (GL)) are expected to be measured and recorded in Measurement Books (MBs). In Job Work Bills (JWB), the details of all laborers who worked on the project need to be attached. In the CAG audit it was observed that payments were released to GLs in lumpsum, without providing details of laborers and work done by each laborer.

The above issues arise due to a lack of internal control system, use of manual interventions in key business processes and maintenance of manual records. Further, operational data is not synchronized across various departments and between head office and field offices. In order to bring about greater transparency, enhance seamless operations and improve the level of automation, implementing the following solutions is recommended:

1. Enterprise Resource Planning (ERP)

ERP is an integrated software solution encompassing all functional departments of the company. It helps automate business processes and provides a single, integrated data view across the company. An ERP solution can cover all the functions performed within the company:

- Accounts and finance management
- Budgeting
- Project estimation
- Planning and project management
- Purchase, stores and inventory control
- Labor contract management
- Human resource management
- Quality control
- Tender management, contract management and client billing
- Equipment management and maintenance
- Fixed asset management
- Plant management and maintenance
- Vehicle tracking, fuel management

There are specific ERP solutions available for contractor companies such as KRIDL (e.g. Highrise ERP). Some of the typical modules offered are:

- Engineering
- Material management

- Contract management
- Financial accounts
- Tender management
- MIS

The solution being modular in nature, it allows the company to choose which of the modules it would like to implement. Most of the business processes carried out within each functional department are covered under these modules. For example, the contract management module can cover multiple types of contractors viz. specialized contractors, labor contractors, etc. and can address various permutations and combinations of work orders required by the company to get generated. The module covers the following business processes:

- Contractor registration and grading
- Creation of payment templates
- Generation of work orders (with and without materials)
- Monitoring of work
- Checking the quality and workmanship of the contractors
- Automatic generation of Running Account (RA) bills
- Approval of RA Bills (linked to material consumption and quality approvals)
- Handling retention, advance and securities
- Handling tax deduction, levying of various taxes such as GST, VAT, etc.



Following are some of the benefits of implementing an ERP solution:






- Provide a single, seamless and integrated data view across the company thus helping improve accuracy and timeliness of business processes.
- Automate business processes and thus improve compliance and timelines.
- Reduce manual intervention and help bringing in greater transparency.
- Promote discipline and establish accountability.
- By providing a centralized view of data across the organization and useful features like MIS, dashboards, etc. the internal as well as external performance reporting of KRIDL will improve.

2. Project management solutions

Since KRIDL executes many projects and most are small sized in nature, planning and project management is a challenge. Use of manual processes can cause delays, increase stress on employees and lead to quality issues. Based on the literature review carried out in this study, planning and organizing have been identified as critical elements for a construction company. Software based project management solutions automate the tasks of planning, design, price and quantity estimation, resource management, demand scheduling, project management and governance. Benefits of such solutions include efficiency, estimation accuracy and better monitoring of budgeted v/s actual scenarios. Some examples of project management solutions include Nick's Software (NS), Corecon, PlanGrid, etc. An illustrative snapshot of a project management solution is provided below:

Figure 28: Illustrative snapshot of a project management solution

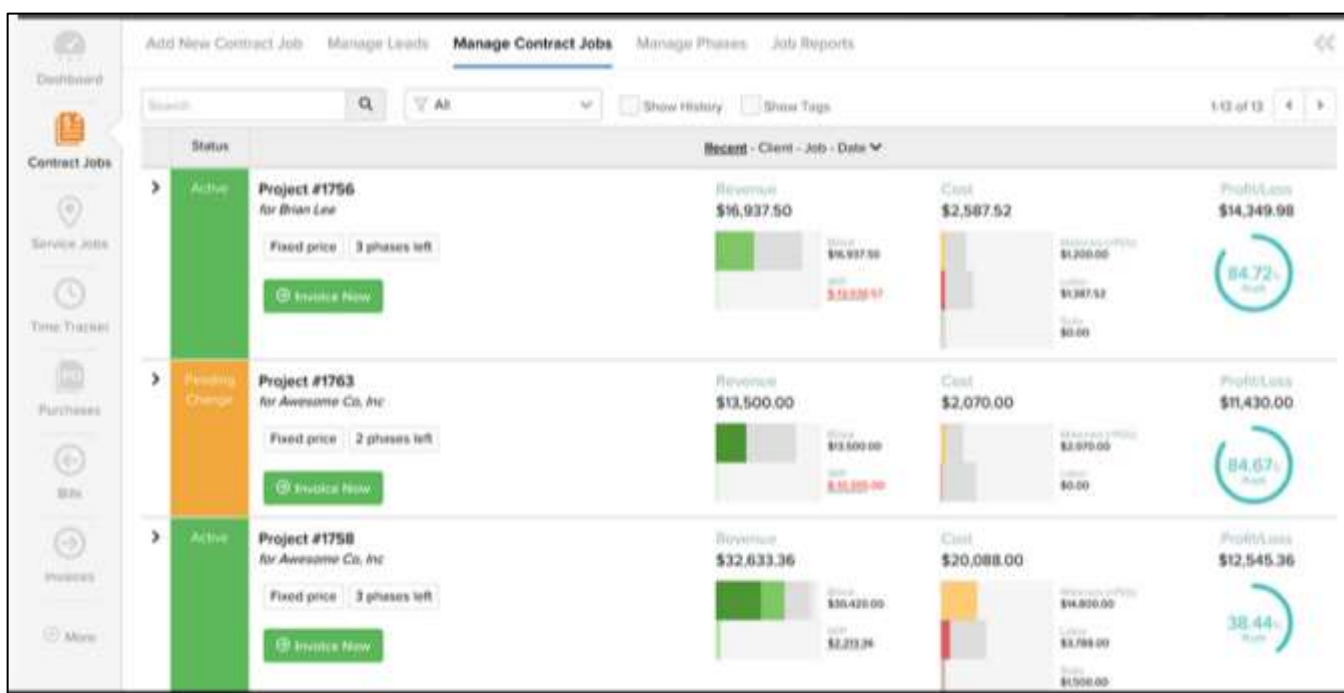
Displaying 1 - 13 of 13 50  

		Idacttr	Task	Task Description	Open Date	Due Date ↑	Task Status	Owner	Notes	Project Name	Project Description	Project Owner	Project Status	Project Due Date
		Edit Task	Sent to Steve F pics of CP6 for sale	If ar any buyers - sale else strip it for spares and scrap the chassis:	18-Mar-19	29-Mar-19	On Track	Nick Niculita	pics sent to Steve 18/3	Yamaha Line	Move Yamaha's in Production	Nick Niculita	On Track	30-Apr-19
		Edit Task	Reduce number of Production Shortages	Analyse data captured in SMS: 1. Create Pareto charts for Production Shortages: More ...	09-Aug-18	30-Mar-19	On Track	Nick Niculita	establish the framework and assign an owner to this monthly task Follow up and More ...	Improvement Committee	Action Tracker based on discussions from Improvement Committee Meetings - NEW!	Nick Niculita	On Track	21-Dec-18

3. Work progress monitoring solution

The CAG audit of KRIDL has revealed issues related to monitoring of work, work completion and closure, billing and payments, etc. A software solution can automate these tasks and bring in greater transparency. Such solutions help to track job costs through work-in-progress reporting, labor analysis, projected costs, unit production, real time revenue, cost and profit margin, checking of budgeted v/s actual costs. This will ensure that allocated funds will be used in time for executing of the projects, with real time monitoring of funds and billings, inputs to financial monitoring system for follow-up on invoices, generation of completion certificate on work closure for final billing, etc. Some of the solutions available for job monitoring include Knowify, ComputerEase, etc. A sample snapshot of job monitoring solution which shows tracking of revenue v/s actual costs is shown below:

Figure 29: Sample snapshot of job monitoring solution



8.3 Human resources

1. Strengthen recruitment

The evaluation study has revealed a high attrition rate of permanent staff, especially at Group B (Assistant Engineers) and Group C (Division Assistants, Junior Engineers, Work Inspectors, etc.) levels – main reason for this being retirement and lack of recruitment. As of March 2021, 65% of the staff were consisting of contractual employees. To address this issue, a proper manpower study should be undertaken which will determine the human resources gaps at various levels and offices, identify talent sources and define a time bound plan and activity roadmap for recruitment. Each of the employee groups will need a different strategy for recruitment as described below:

Table 66: Cadre wise staff hiring

Employee groups	Attrition rate (average) for the past 3 years	Recruitment strategy
Group B (AE, AEE, EE)	13%	Senior officers can be recruited through Karnataka Public Services Commission. Junior engineers can be hired (through advertising in newspapers and online jobs portals) as apprentice at AE levels and can be transitioned to higher levels after certain period in service and gaining the requisite experience.
Group C (First Division Assistants, Second Division Assistants, Junior Engineers, Superintendents-Accounts, Work Inspectors, etc.)	10.6%	These can be recruited through Karnataka Examinations Authority.

2. Encouraging high performance culture

There is neither a performance appraisal system nor a rewards and recognition program existing currently within KRIDL – this may lead to lower levels of motivation for high performance and a lack of competitive attitude. A performance management system should be put in place which should include defining key performance indicators (KPIs), goal setting at start of performance monitoring period, linking of compensation with achievement of targets on KPIs, undertaking quarterly and annual performance appraisal discussions and evaluations. Further, a rewards and recognition program could be instituted with various categories covering technical skills, people management aspects, leadership, etc. – managers may be encouraged to nominate employees and a transparent system for evaluation could be constituted.

3. Learning and development

The evaluation study has revealed that only 5-10% of the KRIDL employees undergo training each year. For better execution and adapting in a fast-changing environment, it is imperative that all employees undergo regular training. An annual training calendar should be prepared, and designation wise training plans should be prepared. KRIDL can tie-up with online learning platforms or government training institutes for this. Completion of certain hours of training can also be included in the performance target of employees.

8.4 Better utilization and deployment of financial resources and existing assets

KRIDL has significant amount of cash reserves available and idle lying machinery/ assets. These can be utilized efficiently for financial gain as follows:

1. Efforts should be made to engage with the EAs and explore ways to close the projects and realize revenues, so that the large amount of inventory levels lying on KRIDL's books can be reduced and converted to cash. This will help further strengthen the cash balance.
2. Upgrading the equipment/ machinery/ infrastructure by KRIDL can be planned by utilizing percentage of amount from cost savings (say 30%) as it will provide a niche in the sector with comparative advantage in the longer run. The amount can be utilized for upgradation of the equipment/ machinery/ infrastructure that will reduce labor inputs cost and secondly, it will help in executing projects which are larger in size and more complex in nature. Along with the upgradation, KRIDL needs to focus on capacity building of employees so that the employees are technically equipped to handle machinery and equipment.
3. Presently, KRIDL is investing the cash balance in bank deposits which earn relatively lower post tax returns. KRIDL should also explore investing in reliable mutual funds, long term pension funds, etc. which are relatively safe instruments and offer higher returns. Investment in the mutual funds, long term pension funds, etc. is beneficial in the longer run as it showcase company's stability and idle funds which are not used for expansion or business activities can be utilized for better returns.
4. KRIDL can also explore utilizing its existing assets such as land, buildings, etc. through leasing/ renting arrangements and earn regular income.

The decision to invest the surplus cash in financial instruments (like fixed deposits, equity market instruments) or in the business is a critical one. The options are: 1) Investing surplus cash in more remunerative investment instruments (e.g. equity market linked instruments such as mutual funds, pension funds) in lieu of low returns yielding bank fixed deposits; 2) Investing surplus cash in the business (for upgradation of assets) – the options (1) and (2) are not “either - or” but “both - and” i.e. both can be done together. It's a financial decision as to what percentage of surplus cash should be invested in both the options and the same should be done considering risk-return profile of each of the two options. Both options provide cash flows at a later date and the cash flows are not certain i.e. there is a “risk” element involved. The decision should be taken considering past returns offered by equity market linked instruments, return expectations from upgrading assets and certainty of the returns in both investment options. Of-course, upgrading assets is also a strategic decision since it leads to the following advantages:

- increase in mechanization, automation which will lead to increase in efficiency. This will further lead to reduced costs and in turn higher surplus cash available
- increase in market size as KRIDL can target larger, more complex and diverse projects
- enhanced technical capabilities and increase in competitive advantage for KRIDL.

We suggest that multiple investment avenues be explored in various categories ... the proportion to invest in each should be based on a risk-return profile assessment:

Option 1: Bank fixed deposits (lowest risk and lowest returns)

Option 2: Equity market linked instruments (medium risk and medium returns)

Option 3: Upgrading assets (high risk and high returns)

8.5 Decentralized management

Presently, there is a high degree of centralization in management of works which leads to delays and hinders local level capacity development. In order to overcome this, every KRIDL division office should be made a Strategic Business Unit (SBU) with required autonomy, responsibility and clear KPIs to track performance. The SBU should engage with local level entrusting agencies (such as gram panchayats, zila panchayats, urban local bodies) to identify business opportunities and execute works. It should be given powers to undertake material procurement and recruit human resources, up to a certain threshold.

8.6 Maintenance of the works

Presently, the scope of work provided by EAs to KRIDL is restricted to constructing the works and handing them over for further operations and maintenance by the EA. In order to ensure that the assets are well maintained post commissioning, KRIDL should engage with the EAs for entrusting the maintenance scope as well. This will not just ensure long term sustainability of the assets but also provide a steady stream of revenues to KRIDL. The maintenance scope can be either included in the main construction contract (as a percentage of the construction cost) or provided as a separate contract post asset commissioning. KRIDL can be entrusted to maintain the assets for different periods depending upon nature of the asset - for example, 3-5 years for RO water plants, 7-10 years for road works and 10-15 years for building works.

Carrying out maintenance works will require KRIDL to establish a maintenance wing in all field level divisional offices. Any grievances/ maintenance requests related to the works can be raised with the concerned divisional office, which should be capacitated with the necessary tools, equipment and human resources to carry out the maintenance.

8.7 System for quality check

The following measures are recommended to establish a quality check system within KRIDL:

- Material quality: Labs should be established at divisional level for testing of material and non-destructive testing. Each lab should be manned with at least 2 trained technicians. For sophisticated and major material, another lab can be established at State level for advanced testing.
- Guidelines and processes: Guidelines and SOPs should be prepared for quality check. These should establish responsibilities for quality check, describe procedures, provide criteria for sampling of works, describe reporting templates, etc. For e.g., Engineers working on the project should not be part of the quality check for that work. Secondly, percentage of work that needs to be checked can be fixed like 10% of all the projects to be checked by sub-division engineers, division officers to check 1% of the total projects on a random basis before completion of the work, etc.

- Independent quality control wing: An autonomous and independent quality control wing should be established within KRIDL – this wing will directly report to the Managing Director and will not include any of the line staff (executing engineers) in order to ensure the desired level of independence.
- IT based solutions for field level monitoring: KRIDL's works are spread across a vast geography and many of these are in remote or rural areas. Thus, monitoring and inspection of works is heavily dependent on field staff and real time information is not always available. Thus, an integrated and centralized monitoring system is needed to collate data from sub-division, division and zonal offices to ensure real time status update of each of the works. KRIDL can procure mobile based monitoring solutions (e.g., Field Eagle) for inspection and site-specific reporting. It will help in generating reports for monitoring of work progress, field activities compliance, etc. thus proactively ensure quality and reduce risks. Each of the data points can be linked with GPS enabled systems, for maintaining authenticity and real time monitoring.

8.8 Licenses, standards and certifications

KRIDL should obtain a Class 1 PWD contractor's license which will enable it to participate in bidding for larger projects without any restriction on the amount.

KRIDL currently does not possess any international certifications for compliance with standards. KRIDL can explore certifications such as International Organization for Standardization (ISO), Occupational Health and Safety Assessment Series (OHSAS), etc. This will strengthen brand equity of the organization and help win larger and more complex projects.

8.9 Improving competitiveness

Taking measures to improve cost efficiency can help in improving competitiveness. Some suggestions in this regard are as follows:

- Works can be executed through sub-contract packages rather than through labor oriented contracts with Group Leaders. Subcontractors can be made responsible for executing various work packages and providing material, labor and supervision. KRIDL can undertake project management of the various sub-contract packages. Subcontractors can be selected through competitive price based selection. This will bring in cost efficiency in execution of works.
- KRIDL should upgrade the old machinery and equipment and put them to use. This will improve utilization levels of business assets and also lead to greater automation, mechanization of works, etc. which will bring in desired efficiency.
- The closed material workshops should be revived and restarted. Apart from captive use of KRIDL for material inputs and repairs, these can also be used to serve needs of external clients. This will help lowering cost of material inputs for KRIDL and also provide additional revenue stream.
- KRIDL can explore alternate strategies for reducing cost of materials. For example, use of fly ash bricks instead of conventional bricks.

8.10 Implementation road map

The various recommendations provided in the preceding sections have been divided in short, medium and long term goals in terms of timelines proposed for implementation as shown below:

Table 67: Implementation goals

Short term goals (6 months to 1 year)	Medium term goals (1 to 3 years)	Long term goals (3 to 5 years)
<ul style="list-style-type: none">• Human resources related recommendations - recruitment, high performance culture, learning and development• Obtaining Class 1 PWD license and other certifications	<ul style="list-style-type: none">• IT solutions• Quality monitoring system	<ul style="list-style-type: none">• Business expansion strategies

The roadmap for implementing various recommendations in terms of an activity chart with timelines is provided below.

Figure 30: Road map for implementing various recommendations

No.	Recommendations	2022				2023				2024				2025				2026			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
A	Human Resources																				
1	Strengthen recruitment																				
a	Conduct manpower study	▲																			
b	Advertising vacancies based on gaps (KEA/Apprentice)		▲																		
c	Recruitment of AEs as apprentice (for filling immediate positions)		▲																		
d	Conducting exam and interview through KEA			▲																	
e	Recruitment of staff				▲																
2	Encouraging high performance culture																				
a	Defining KPIs and goal setting for employees	▲			▲																
b	Institutionalizing reward and recognition program																				
c	Undertaking annual performance appraisal evaluations				▲																
3	Learning and Development																				
a	Preparation of annual training calendar	▲																			
b	Tie up with online training platforms and government training institutes		▲																		
B	Licenses, standards and certifications																				
1	PWD Contractor's license																				
a	Check eligibility criteria, and forms		▲																		
b	Apply for license		▲																		
2	Apply for ISO, OHSAS, etc.																				
a	Choose ISO certification agency and type		▲																		
b	System implementation and operation			▲																	
c	Document review and action plan			▲																	
d	Audit and certification				▲	▲															

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No.	Recommendations and Activities	2022				2023				2024				2025				2026			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
C	Quality monitoring systems																				
a	Monitoring SOP's				▲																
b	Independent quality control wing					▲															
c	Training and workshop for lab technicians training					▲															
d	Establishing quality control labs						▲	▲													
e	IT solution for field monitoring								▲	▲											
D	IT solutions for business process																				
a	Scoping & appointment for consultant for software solutions							▲													
b	Designing								▲												
c	Development								▲												
d	Training									▲											
e	Commissioning & Acceptance									▲	▲										

No.	Recommendations and Activities	2022				2023				2024				2025				2026			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
E	Expansion Strategies																				
1	Large and complex projects																				
a	Expanding team - engage technical experts													▲							
b	Capacity building of the team													▲							
c	Exploring funding options for equipment and working capital requirement														▲						
d	Purchasing technical equipment														▲						
e	Bidding for large and complex projects															▲					
2	Consultancy																				
a	Identify capabilities and target market													▲							
b	Create SOPs, guiding material and pricing structure														▲						
c	Training and marketing														▲						
d	Take up organic projects (small size)															▲	▲				
e	Procurement of advanced database and tools (as per requirement)																	▲			

8.11 Summary of Recommendations

Improving efficiency

- Financial efficiency can be improved by executing larger and more complex projects, which shall yield better profit margins. This will need a strengthening of the design wing within KRIDL through hiring of technical manpower and acquisition of design tools.
- Engineering consultancy is a possible option for upstream expansion. KRIDL can explore services such as design consultancy, lender's engineer, independent engineer, technical feasibility studies, preparation of detailed project reports, etc.
- KRIDL should obtain a Class 1 PWD contractor's license and also get accredited for international certifications & standards which will enable it to participate in bidding for larger projects.
- KRIDL needs to better utilize its significant cash reserves and fixed assets. Existing equipment/ machinery/ infrastructure should be upgraded and put to use. Old workshops should be revived so that material can be procured and their repairs can be done in house. Leasing/ renting arrangements for existing fixed assets such as land, buildings can be explored for earning regular income. Surplus cash can be invested in higher return earning instruments like reliable mutual funds, long term pension funds, etc.

Enhancing expertise

- To address the issue of lack of permanent manpower, a proper manpower study should be undertaken which will determine the human resources gaps at various levels and offices, identify talent sources and define a time bound plan and activity roadmap for recruitment. Cadre at higher levels can be recruited through Karnataka Public Services Commission while those at lower levels can be recruited through Karnataka Examinations Authority.
- In order to promote a high-performance culture, a performance management system should be put in place which should include defining key performance indicators (KPIs), goal setting at start of performance monitoring period, linking of compensation with achievement of targets on KPIs, undertaking quarterly and annual performance appraisal discussions and evaluations. Further, a rewards and recognition program should be instituted.
- A greater focus needs to be placed on learning and development of the staff. An annual training calendar should be prepared with designation wise training plans. KRIDL can tie-up with online learning platforms or government training institutes for this. Completion of certain hours of training can be included in the performance target of employees, in order to provide the desired push.

Strengthening monitoring and controls

- Implementing Enterprise Resource Planning (ERP) solution across key modules such as Engineering, Material management, Contract management, Financial accounts, Tender management, and MIS. This will help to provide a single, seamless and integrated data view across the company and improve accuracy and timeliness of business processes.
- Procure software-based project management solutions which can automate the tasks of planning, design, price and quantity estimation, resource management, demand scheduling, project management and governance.
- A software solution for work progress monitoring, work completion and closure, billing and payments, etc. It should help track job costs through work-in-progress reporting, labor analysis, projected costs, unit production, real time revenue, cost and profit margin, checking of budgeted v/s actual costs. This will ensure that allocated funds will be used in time for executing of the projects, with real time monitoring of funds and billings, inputs to financial monitoring system for follow-up on invoices, generation of completion certificate on work closure for final billing, etc.
- A field level monitoring and inspection solution for inspection and site-specific reporting. It will help in generating reports for monitoring of work progress, field activities compliance, etc. thus proactively ensure quality and reduce risks. Each of the data points can be linked with GPS enabled systems, for maintaining authenticity and real time monitoring.

9. Annexure

9.1 Work's survey: Observation sheet and User questionnaire

9.1.1 Asset type: Educational institute

Guide for the enumerator

A. Asset details

The following details will pre-filled based on information received from KRIDL

Details	Responses
Name of the asset	
Location	
Estimated construction duration before start of the project	
Actual start date	
Actual end date	
Estimated project cost before start of the project	
Final completed project cost	
Sq. ft. built up area	
Student capacity	
Number of communities around the institution	
Student population around the institution	
New construction/ renovation If "Renovation", what was the state of the previous construction	
Scope of work for KRIDL	

B. Instructions for enumerator:

1. *Enumerator needs to inspect all the works undertaken in building the infrastructure.*
2. *Please click photographs for the features mentioned below.*
3. *Features to be checked:*

a. *Facilities*

Facilities	Observations on facilities
Ramps	
Lifts	
Stairs	
Adequate ventilation	
Adequate lighting	
Safety measures	
<ul style="list-style-type: none"> • Emergency exits 	
<ul style="list-style-type: none"> • Fire extinguishers 	
<ul style="list-style-type: none"> • Boundary wall 	
<ul style="list-style-type: none"> • Common lighting 	
<ul style="list-style-type: none"> • Safety railing 	
Water point on every floor	
Toilets on every floor	
Others, please specify	

b. *Furniture and fittings*

Aspect	Observations
Fitting	
<ul style="list-style-type: none"> • Electrical fitting 	
<ul style="list-style-type: none"> • Plumbing 	

Aspect	Observations
• Carpentry	
• Civil work	
Furniture	
• Table	
• Bench	
• Chair	
• Storage	
• Others, please specify	

a. *Exterior quality aspects*

Quality aspect	Present (Yes/No/NA)	Observations on quality
Cracks		
Peeling paint		
Water seepage		
Inferior material quality		
Broken slab		
Chipping-off of cement/concrete		
Rusted iron bars		
Vegetation growth		
Others, please specify		

Questions for respondents

C. Instructions for enumerator:

4. *This survey is to be carried out for two users 1) Student 2) Administrator.*

D. Introduction

<<Introductory text>> CRISIL has been appointed by the Government of Karnataka to evaluate performance of KRIDL, which is responsible for implementing a number of infrastructure assets across Karnataka. The study's aim is to evaluate the extent to which KRIDL has been able to implement good quality construction/ repair/ renovation works and fulfil the socio-economic objectives towards larger society. We are conducting today's interview with the aim to collect feedback from actual users of the asset. We are grateful for your time and inputs in this regard.

Student

E. Basic details

Details	Responses
Name of respondent	
Age (in years)	
Gender	
Marital status	
Social category (General/SC/ST/OBC)	
Educational background	
Occupation	
Address	
Landline/Mobile No.	
Email id	
Role in relation to the asset (e.g. student, administrator, secretary etc.)	
Date of survey	

F. Socio- economic impact

5. Please provide responses to the following questions

Question	Response
<i>(Question for administrator only)</i> Total number of seats in the institution	
<i>(Question for administrator only)</i> Total number of staff in the institution	
Travel distance to institution (km) <ul style="list-style-type: none"> • Previous institution • Current institution 	

6. Please provide responses to the following questions

Question	Yes/ No	Reasons/ remarks	Supporting
Has this school enabled securing admissions more easily as compared to the previous case because of seat availability?		<i>Please provide up to three reasons</i>	
Is there a significant improvement in the infrastructure as compared to earlier institution (availability of toilets, rest area, lighting, proper ventilation etc.)		<i>Please describe up to three facilities that have improved significantly</i>	

7. *(Question for administrator only)* Please provide cadre wise split of staff (e.g. principal, teachers, administrative staff, security guard, peon, etc.) and average salary range

Cadre	Number of staff	Salary range

8. Please describe improvement in following parameters on account of these facilities

Aspect	View
Improvement in comfort	
<ul style="list-style-type: none"> • Ventilation 	
<ul style="list-style-type: none"> • Lighting 	
<ul style="list-style-type: none"> • Movement area (e.g. corridors, stairs etc.) 	
<ul style="list-style-type: none"> • Sitting area (e.g. benches etc.) 	
Improvement in grade	

9. Are you facing any issues with the building? (Yes/ No) : _____

If answer is “Yes”, please specify the following based on your knowledge

Type of issue	Causes of the issue	Since when is the issue present?	Impact

10. How good is the overall quality of work undertaken?

Very good	Good	Average	Bad	Very bad

9.1.2 Asset type: Residential building

Guide for the enumerator**A. Asset details**

The following details will pre-filled based on information received from KRIDL

Details	Responses
Name of the asset	
Location	
Estimated construction duration before start of the project	
Actual start date	
Actual end date	
Estimated project cost before start of the project	
Final completed project cost	
Sq. ft. built up area	
Number of residential units	
Sq. ft. area of each unit	
Population being served by the building	
New construction/ renovation If “Renovation”, what was the state of the previous construction	
Scope of work for KRIDL	

B. Instructions for enumerator:

1. *Enumerator needs to inspect all the works undertaken in building the infrastructure.*
2. *Please click photographs for the features mentioned below.*
3. *Features to be checked:*
 - c. *Facilities*

Facilities	Observations on facilities
Ramps	
Lifts	
Stairs	
Adequate ventilation	
Adequate lighting	
Safety measures	
<ul style="list-style-type: none"> • Emergency exits 	
<ul style="list-style-type: none"> • Fire extinguishers 	
<ul style="list-style-type: none"> • Boundary wall 	
<ul style="list-style-type: none"> • Common lighting 	
<ul style="list-style-type: none"> • Safety railing 	
Community center	
Park	
Walking track	
Sports facility	
Common seating area (e.g. benches etc)	
Others, please specify	

d. *Fittings*

Aspect	Observations
Fitting	
<ul style="list-style-type: none"> • Electrical fitting 	
<ul style="list-style-type: none"> • Plumbing 	

Aspect	Observations
• Carpentry	
• Civil work	

e. *Exterior quality aspects*

Quality aspect	Present (Yes/No/NA)	Observations on quality
Cracks		
Peeling paint		
Water seepage		
Inferior material quality		
Broken slab		
Chipping-off of cement/concrete		
Rusted iron bars		
Vegetation growth		
Others, please specify		

f. *Commercial establishment*

Establishment	Present within complex (Yes/No)	Present in surrounding area (Yes/No)	Observations on the establishment
Shops			
Eating joints			
Market place			
ATM machine			
Bank			
Petrol pumps			
Vehicle service center			

Establishment	Present within complex (Yes/No)	Present in surrounding area (Yes/No)	Observations on the establishment
Others, please specify			

Questions for respondents

C. Instructions for enumerator:

4. *This survey is to be carried out for two users of the building.*
5. *Please ask the respondent whether he/she has been staying since the building was constructed or atleast for the last 3 years. If not, please select another respondent.*

D. Introduction

<<Introductory text>> CRISIL has been appointed by the Government of Karnataka to evaluate performance of KRIDL, which is responsible for implementing a number of infrastructure assets across Karnataka. The study's aim is to evaluate the extent to which KRIDL has been able to implement good quality construction/ repair/ renovation works and fulfil the socio-economic objectives towards larger society. We are conducting today's interview with the aim to collect feedback from actual users of the asset. We are grateful for your time and inputs in this regard.

E. Basic details

Details	Responses
Name of respondent	
Age (in years)	
Gender	
Marital status	
Social category (General/SC/ST/OBC)	
Educational background	
Occupation	

Address	
Landline/Mobile No.	
Email id	
Role in relation to the asset (e.g. student, administrator, secretary etc.)	
Date of survey	

F. Socio- economic impact

6. Please provide responses to the following questions

Question	Response
Total number of residential units in the building	
Number of schools within 5km radius	
Number of hospitals within 5km radius	
Number of market places within 5km radius	
A major road is accessible within (km)	
Annual cost of living (rentals/ EMIs) (Rs/ month) a. In this complex b. In previous complex	

7. Please provide responses to the following questions

Question	Yes/ No	Reasons/ remarks	Supporting
Is there a significant increase in the business activities (shops, restaurants, banks etc.) in the surrounding area which can be directly attributed to this building?		<i>If answer is "No", please provide up to three reasons</i>	

Question	Yes/ No	Reasons/ Supporting remarks
Has living in this complex helped in improvement of the social wellbeing of you/ your family (better access to workplace, school, relatives, improvement in social status, etc.) as compared to the earlier place?		<i>Please provide up to three reasons</i>
Has living in this complex helped in improvement of the economic wellbeing of you/ your family (reduction in rentals, saving of travel cost, etc.) as compared to the earlier place?		<i>Please provide up to three reasons</i>

8. Is there a significant improvement in the infrastructure as compared to earlier dwelling (lighting, proper ventilation etc.)? (Yes/No) : _____

Please describe the facilities that have improved significantly and their impact on overall wellbeing

Facility	Impact

9. Are you facing any issues with the building? (Yes/ No) : _____

If answer is “Yes”, please specify the following based on your knowledge

Type of issue	Causes of the issue	Since when is the issue present?	Impact

10. How good is the overall quality of work undertaken?

Very good	Good	Average	Bad	Very bad

Very good	Good	Average	Bad	Very bad

9.1.3 Asset type: Exterior works

Guide for the enumerator

A. Asset details

The following details will pre-filled based on information received from KRIDL

Details	Responses
Name of the asset	
Location	
Estimated construction duration before start of the project	
Actual start date	
Actual end date	
Estimated project cost before start of the project	
Final completed project cost	
What was underlying condition before the work was undertaken	
Scope of work for KRIDL	

B. Instructions for enumerator:

1. *Enumerator needs to visually inspect all the works undertaken.*
2. *Please click photographs for the features mentioned below.*
3. *Features to be checked:*

a. *Quality aspects*

Quality aspect	Present (Yes/No/NA)	Observations on quality
Cracks		
Peeling paint		
Water seepage		
Inferior material quality		
Broken slab		
Chipping-off of cement/concrete		
Rusted iron bars		
Vegetation growth		
Others, please specify		

b. *Has the work been able to address the underlying issues? (Yes/ No)*

Underlying issue	Work undertaken	Current status

Questions for respondents

C. Instructions for enumerator:

4. *This survey is to be carried out for two users 1) Employee/ User 2) Administrator.*
5. *Please ask the respondent whether he/she was using the asset before and after the work was executed. If not, please select another respondent.*

D. Introduction.

<<Introductory text>> CRISIL has been appointed by the Government of Karnataka to evaluate performance of KRIDL, which is responsible for implementing a number of infrastructure assets across Karnataka. The study's aim is to evaluate the extent to which KRIDL has been able to implement good quality construction/ repair/ renovation works and also fulfil the socio-economic objectives towards larger society. We are conducting today's interview with the aim to collect feedback from actual users of the asset. We are grateful for your time and inputs in this regard.

E. Basic details

Details	Responses
Name of respondent	
Age (in years)	
Gender	
Marital status	
Social category (General/SC/ST/OBC)	
Educational background	
Occupation	
Address	
Landline/Mobile No.	
Email id	
Role in relation to the asset (e.g. student, administrator, secretary etc.)	
Date of survey	

F. Socio- economic impact

6. What are the underlying issues for the work to be carried out?

7. Has the work been able to address the underlying issues? (Yes/ No)

Underlying issue	Work undertaken	Current status

8. How good is the overall quality of work undertaken?

Very good	Good	Average	Bad	Very bad

Please elaborate on quality aspect, which justifies your response

9. Please provide your observations on the work management by KRIDL

Work management	Observations
Responsiveness	
Attention to detail	
Resolution of queries	

Work management	Observations
Measures to avoid inconvenience to staff	
Safety measures adopted	
Others, please specify	
Issues observed	

9.1.4 Asset type: Footpath

Guide for the enumerator

A. Asset details

The following details will pre-filled based on information received from KRIDL

Details	Responses
Name of the asset	
Length of the footpath	
Starting point (location name)	
Ending point (location name)	
Type of footpath (e.g. cement/concrete/brick paved/stone paved)	
Estimated construction duration before start of the project	
Actual start date	
Actual end date	
Estimated project cost before start of the project	
Final completed project cost	
What was existing at this location before the asset was constructed?	

Number of communities around the path	
Population being served by the path	
Scope of work for KRIDL	

B. Instructions for enumerator:

1. Enumerator needs to traverse the entire footpath from starting point to ending point.
2. Please click photographs for the features mentioned below.
3. Features to be checked:

a. *Facilities*

Facility	Present (Yes/No)	Observations on facility
Bus-stop with shade		
Bus-stop without shade		
Water point		
Toilets		
Others, please specify		

b. *Quality aspects*

Quality aspect	Present (Yes/No)	Observations on quality
Cracked tiles		
Missing tiles		
Sinking path		
Street infrastructure lighting		
Artificial shade		
Tree shade		
Even surface		
Ramp/ Stairs at entry/exits		

Quality aspect	Present (Yes/No)	Observations on quality
Safety Railing		
Covered manhole		
Others, please specify		

c. *Commercial establishment*

Establishment	Present (Yes/No)	Observations on the establishment
Shops		
Eating joints		
Hawkers		
Others, please specify		

Questions for respondents

C. Instructions for enumerator:

4. *Enumerator needs to traverse the entire footpath from starting point to ending point.*
5. *This survey is to be carried out for two users who use that footpath often for travelling.*

D. Introduction

<<Introductory text>> *CRISIL has been appointed by the Government of Karnataka to evaluate performance of KRIDL, which is responsible for implementing a number of infrastructure assets across Karnataka. The study's aim is to evaluate the extent to which KRIDL has been able to implement good quality construction/ repair/ renovation works and also fulfil the socio-economic objectives towards larger society. We are conducting today's interview with the aim to collect feedback from actual users of the asset. We are grateful for your time and inputs in this regard.*

E. Basic details

Details	Responses
Name of respondent	
Age (in years)	
Gender	
Marital status	
Social category (General/SC/ST/OBC)	
Educational background	
Occupation	
Address	
Landline/Mobile No.	
Email id	
Role in relation to the asset (e.g. student, administrator, secretary etc.)	
Date of survey	

F. Socio-economic impact

6. What is the purpose of using the footpath? (*Select all that apply*)

- a. Travel to work
- b. Travel to market place
- c. Travel to educational facility
- d. Travel for leisure/ exercise
- e. Any other, please specify : _____

7. What was at this location before the pathway was built?

8. Please provide responses to the following questions

Question	Response
-----------------	-----------------

Average daily time saving in minutes due to use of this footpath	
Reduction in daily travel cost due to use of this footpath (Rs)	
Number of important places which are easy to reach by using this footpath Please provide names of up to three most important places	

9. Please provide responses to the following questions

Question	Yes/ No	Reasons/ Supporting remarks
Is there adequate lighting at night?		
Has the footpath has resulted in time savings?		<i>If “Yes”, please describe the features of the footpath which have helped to achieve this.</i>
Has the footpath resulted in cost savings?		<i>If “Yes”, please describe the features of the footpath that have helped to achieve this.</i>
Does the path have adequate width to walk?		<i>If answer is “No”, then what should be the adequate width?</i>

Question	Yes/ No	Reasons/ Supporting remarks
Is there a significant increase in the business activities (shops, restaurants, hawkers etc.) in the surrounding area which can be directly attributed to the footpath?		<i>If answer is “No”, please provide up to three reasons</i>

10. What is the impact of the footpath on daily commute as compared to before?

Significant improvement	Slight improvement	No change	Slight worsening	Significant worsening

Please mention up to three reasons for the choice

11. Has the footpath enhanced the safety of the travel? :

Significant improvement	Slight improvement	No change	Slight worsening	Significant worsening

Please mention three safety aspects

12. Are there any issues with the footpath? (Yes/ No)

If answer is “Yes”, please specify the following based on your knowledge

Type of issue	Causes of the issue	Since when is the issue present?	Impact on commute

13. What is the overall view on the quality of footpath

Very good	Good	Average	Bad	Very bad

Please mention up to three reasons for the choice

9.1.5 **Asset type: Interior works**

Guide for the enumerator

A. Asset details

The following details will pre-filled based on information received from KRIDL

Details	Responses
Name of the asset	
Location	
Estimated construction duration before start of the project	
Actual start date	
Actual end date	
Estimated project cost before start of the project	
Final completed project cost	
What was underlying condition before the work was undertaken	
Scope of work for KRIDL	

B. Instructions for enumerator:

1. *Enumerator needs to visually inspect all the works undertaken.*
2. *Please click photographs for the features mentioned below.*
3. *Features to be checked:*
 - g. *Fittings and furniture*

Aspects	Present (Yes/No/ NA)	Observations
Fitting		
Electrical fitting		
<ul style="list-style-type: none"> • Issues with product 		
<ul style="list-style-type: none"> • Issues with workmanship 		
<ul style="list-style-type: none"> • Others, please specify 		
Plumbing		
<ul style="list-style-type: none"> • Issues with product 		
<ul style="list-style-type: none"> • Issues with workmanship 		
<ul style="list-style-type: none"> • Others, please specify 		
Carpentry		
<ul style="list-style-type: none"> • Improper fitting 		
<ul style="list-style-type: none"> • Poor quality of material 		
<ul style="list-style-type: none"> • Improper design 		
<ul style="list-style-type: none"> • Others, please specify 		
Civil work		
<ul style="list-style-type: none"> • Tile 		
<ul style="list-style-type: none"> • Painting 		
<ul style="list-style-type: none"> • Ceiling 		
<ul style="list-style-type: none"> • Wall/ Partition 		
<ul style="list-style-type: none"> • Others, please specify 		

Aspects	Present (Yes/No/ NA)	Observations
Fitting		
Furniture		
• Table		
• Chair		
• Storage		
• Others, please specify		

Questions for respondents

C. Instructions for enumerator:

4. *This survey is to be carried out for two users 1) Employee/ User 2) Administrator.*
5. *Please ask the respondent whether he/she was using the asset before and after the work was executed. If not, please select another respondent.*

D. Introduction.

<<Introductory text>> CRISIL has been appointed by the Government of Karnataka to evaluate performance of KRIDL, which is responsible for implementing a number of infrastructure assets across Karnataka. The study's aim is to evaluate the extent to which KRIDL has been able to implement good quality construction/ repair/ renovation works and also fulfil the socio-economic objectives towards larger society. We are conducting today's interview with the aim to collect feedback from actual users of the asset. We are grateful for your time and inputs in this regard.

E. Basic details

Details	Responses
Name of respondent	

Age (in years)	
Gender	
Marital status	
Social category (General/SC/ST/OBC)	
Educational background	
Occupation	
Address	
Landline/Mobile No.	
Email id	
Role in relation to the asset (e.g. student, administrator, secretary etc.)	
Date of survey	

F. Socio- economic impact

6. What are the underlying issues for the work to be carried out?

7. Has the work been able to address the underlying issues? (Yes/ No)

Underlying issue	Work undertaken	Current status

8. How good is the overall quality of work undertaken?

Very good	Good	Average	Bad	Very bad

Please elaborate on quality aspect, which justifies your response

9. Has the worked helped in enhancing overall productivity at work? (Yes/ No) _____

Please provide up to three reasons justify your response

10. Please provide your observations on the work management by KRIDL

Work management	Observations
Responsiveness	
Attention to detail	
Resolution of queries	
Measures to avoid inconvenience to staff	
Safety measures adopted	
Others, please specify	
Issues observed	

9.1.6 Asset type: Recreational pathway

Guide for the enumerator**A. Asset details**

The following details will be pre-filled based on information received from KRIDL

Details	Responses
Name of the asset	
Length of the footpath	
Location of the pathway	
Type of pathway (e.g. cement/concrete/brick paved/stone paved)	
Estimated construction duration before start of the project	
Actual start date	
Actual end date	
Estimated project cost before start of the project	
Final completed project cost	
What was existing at this location before the asset was constructed?	
Number of communities around the path	
Population being served by the path	
Scope of work for KRIDL	

B. Instructions for enumerator:

1. *Enumerator needs to traverse the entire pathway from starting point to ending point.*
2. *Please click photographs for the features mentioned below.*

3. *Features to be checked:*

a. *Quality aspects*

Quality aspect	Present (Yes/No)	Observations on quality
Cracked tiles		
Missing tiles		
Sinking path		
Street lighting infrastructure		
Artificial shade		
Tree shade		
Even surface		
Ease of entry/exits		
Covered manhole		
Others, please specify		

b. *Commercial establishment*

Establishment	Present (Yes/No)	Observations on the establishment
Hawkers		
Entertainment facilities		
Others, please specify		

Questions for respondents

C. Instructions for enumerator:

4. *Enumerator needs to traverse the entire pathway from starting point to ending point.*
5. *This survey is to be carried out for two users, 1) who uses the pathway often 2) Administrator/Security guard.*

D. Introduction

<<Introductory text>> CRISIL has been appointed by the Government of Karnataka to evaluate performance of KRIDL, which is responsible for implementing a number of infrastructure assets across Karnataka. The study's aim is to evaluate the extent to which KRIDL has been able to implement good quality construction/ repair/ renovation works and also fulfil the socio-economic objectives towards larger society. We are conducting today's interview with the aim to collect feedback from actual users of the asset. We are grateful for your time and inputs in this regard.

E. Basic details

Details	Responses
Name of respondent	
Age (in years)	
Gender	
Marital status	
Social category (General/SC/ST/OBC)	
Educational background	
Occupation	
Address	
Landline/Mobile No.	
Email id	
Role in relation to the asset (e.g. student, administrator, secretary etc.)	
Date of survey	

F. Socio-economic impact

6. What was the condition of this path before the pathway was built?
7. Please provide responses to the following questions

Question	Response
Number of people regularly visiting the area on a daily basis : a) Before construction of pathway b) After construction of pathway	
Time spent in the area on a daily basis : c) Before construction of pathway d) After construction of pathway	

8. Please provide responses to the following questions

Question	Yes/ No	Reasons/ Supporting remarks
Is there adequate lighting at night?		
Is there a significant increase in the business activities (hawkers, entertainment facilities etc.) in the surrounding area, which can be directly attributed to the pathway?		<i>If answer is "No", please provide up to three reasons</i>
Does the path have adequate width to walk?		<i>If answer is "No", then what should be the adequate width?</i>

9. Are there any issues with the pathway? (Yes/ No)

If answer is "Yes", please specify the following based on your knowledge

Type of issue	Causes of the issue	Since when is the issue present?	Impact on commute

10. What is the overall view on the quality of pathway

Very good	Good	Average	Bad	Very bad

Please mention up to three reasons for the choice

9.1.7 **Asset type: Road**

Guide for the enumerator

A. Asset details

The following details will pre-filled based on information received from KRIDL

Details	Responses
Name of the asset	
Length of the road	
Width of the road	
Number of lanes	
Starting point (location name)	
Ending point (location name)	
Estimated construction duration before start of the project	
Actual start date	
Actual end date	
Estimated project cost before start of the project	
Final completed project cost	
What was existing at this location before the asset was constructed?	
Number of communities around the road	
Population being served by the road	
Estimated vehicle count at the time of commissioning	

Scope of work for KRIDL	
-------------------------	--

B. Instructions for enumerator:

1. *Enumerator needs to traverse the entire road from starting point to ending point and reach the village/ location that would be a major user of this road.*
2. *Please click photographs for the features mentioned below.*
3. *Features to be checked:*

a. *Facilities*

Facility	Present (Yes/No)	Observations on facility
Bus-stop with shade		
Bus-stop without shade		
Water point		
Police help post		
Toilets		
Others, please specify		

b. *Quality aspects*

Quality aspect	Present (Yes/No)	Observations on quality
Potholes		
Cracks		
Washing out of roads		
Sinking road		

Quality aspect	Present (Yes/No)	Observations on quality
Steep turns		
Road furniture:		
• Speed breaker		
• Guide posts		
• Reflectors		
• Safety barriers		
• Road signs		
• Warning signs		
Road divider		
Road shoulder		
Street lighting		
Others, please specify		

c. Commercial establishment

Establishment	Present (Yes/No)	Observations on the establishment
Shops		
Eating joints		
Petrol pumps		
Vehicle service center		
Others, please specify		

Questions for respondents

C. Instructions for enumerator:

4. Enumerator needs to traverse the entire road from starting point to ending point and reach the village/ location that would be a major user of this road.
5. This survey is to be carried out for two users who use that road often as driver of a vehicle.

D. Introduction

<<Introductory text>> CRISIL has been appointed by the Government of Karnataka to evaluate performance of KRIDL, which is responsible for implementing a number of infrastructure assets across Karnataka. The study's aim is to evaluate the extent to which KRIDL has been able to implement good quality construction/ repair/ renovation works and also fulfil the socio-economic objectives towards larger society. We are conducting today's interview with the aim to collect feedback from actual users of the asset. We are grateful for your time and inputs in this regard.

E. Basic details

Details	Responses
Name of respondent	
Age (in years)	
Gender	
Marital status	
Social category (General/SC/ST/OBC)	
Educational background	
Occupation	
Address	
Landline/Mobile No.	
Email id	
Role in relation to the asset (e.g. student, administrator, secretary etc.)	
Date of survey	

F. Socio-economic impact

6. What was the condition here before the road was built (e.g. dirt road, no road etc.)? :

7. What is the impact of the road on daily commute as compared to before?

Significant improvement	Slight improvement	No change	Slight worsening	Significant worsening

Please mention up to three reasons for the choice

11. Please provide responses to the following questions

Question	Response
Length of road (km) is used by you daily	
Average daily time saving in minutes due to this road	
Number of important places which are easy to reach by using this road Please provide names of up to three most important places	
Mileage (kmpl) a) Mileage before the road was constructed b) Mileage after the road was constructed	
Vehicle maintenance cost (Rs/ month) a) Vehicle maintenance cost before the road was constructed b) Vehicle maintenance cost after the road was constructed	

8. Has the road enhanced the safety of the travel? :

Significant improvement	Slight improvement	No change	Slight worsening	Significant worsening

Please mention three safety aspects

12. Please provide responses to the following questions

Question	Yes/ No	Reasons/ Supporting remarks
Is there a significant increase in the business activities (shops, petrol pumps, restaurants etc.) in the surrounding area which can be directly attributed to the road?		<i>If answer is "No", please provide up to three reasons</i>

9. Are you facing any issues with the road? (Yes/ No) : _____

If answer is "Yes", please specify the following based on your knowledge

Type of issue	Causes of the issue	Since when is the issue present?	Impact on commute

10. What is the overall view on the quality of road

Very good	Good	Average	Bad	Very bad

Please mention up to three reasons for the choice

9.2 Areas of enquiry for in-depth interviews

9.2.1 Procurement of Machines, Goods and Services from third party vendors

Overview

1. Overview of procurement systems
 - Standard bidding documents
 - Procurement manual
 - Use of electronic procurement methods as against hard copy
 - Adoption of reverse auctions
 - Constitution of a tender committee to evaluate tenders

Cost control

2. What is the methodology for fixing rates for empaneled vendors? What is the frequency of revision for these rates?
3. How is cost competitiveness included in the vendor selection criteria? For example, what criteria is used - QCBS, QBS, LCS or Nomination based vendor selection?
4. What are the key strategies adopted for vendor negotiation? Please describe the strengths/weaknesses of these strategies.
5. Please provide data on the following indicators:

Indicator	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Number of procurements done through competitive bidding as % of total procurements.						
Number of tenders out of total tender that were closed in time. (Provide						

Indicator	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
<i>disaggregation for few large value and low value tenders)</i>						
Number of tenders out of total tenders procured within the budget						
Average number of bidders for each bid						
Number of empaneled vendors						

Quality control

6. How are you ensuring inclusion of quality aspects while procuring vendors? Please provide strengths/weaknesses of this process.
7. Please provide details on the technical criteria to qualify vendors and evaluate vendors. How are the criteria decided for different types of procurement?
8. What types of clauses like penalty/LDs are levied for quality breaches?
9. What is the role of other departments like works, material and other technical departments in drafting of the technical specifications for procurement?

Documents required

1. Bidding documents
2. Procurement policy and guidelines
3. General terms and conditions of bidding
4. Bid evaluation reports (for different type of vendors and sample report for each year for the period of evaluation i.e. 2014-15 to 2019-20).

9.2.2 Execution of Works

Project management

1. Please explain the process for work assignment and organization.
2. Explain the process employed at various stages of the work execution
 - Design

- Site-layout planning
 - Scheduling
 - Procurement
 - Material management
 - Labor management
 - Supervision and control
 - Handover
3. Techniques and best practices employed for the processes mentioned in Q. 2
 4. How are change requests handled?
 5. Approaches to crisis management, feedback, and control mechanisms
 6. Impacts of COVID-19 and mitigation strategies employed

Time management

7. Major reasons for delays
8. Reasons for lingering projects
9. Time management techniques employed
10. Number of progress meetings conducted in each project and areas covered
11. If time overrun occurs, what are the mechanisms used for controlling it and mitigating the impact?
12. Impact of time delays
13. Please provide data on the following indicators:

Indicator	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Number of projects where time delays were observed out of total projects						
Average time delay						
Rate of lingering projects						

Cost control

14. What is the typical cost structure of different types of projects?

15. Please provide details on the project wise DPR cost and executed cost for all projects undertaken in the period of evaluation 2014-15 to 2019-20.
16. What are the major reasons for cost escalation?
17. What are the types of contract structures executed with user department? Fixed cost/ Variable cost?
18. Please describe the cost optimization techniques.
19. Describe process adopted for tracking general overhead budgets.
20. If cost overruns occur, what are the various mechanisms used to control it?
21. What is the impact of cost overrun on the project?
22. Please provide data on the following indicators:

Indicator	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Number of projects where cost overruns were observed						
Average percentage of cost deviation w.r.t DPR cost						

Quality control

23. Quality control techniques/ methods used (Supervision, material management responsibility & control, procurement, material handling, constructability, change management)
24. Describe the tools and systems used for quality control
25. Is there a separate department for quality control? Is it independent?
26. Please provide the current staffing levels and qualifications of personnel in the quality control department
27. Regular communication and sensitization of quality policies of staff
28. Training and skill enhancement – Initiatives, number of programs and participants (cadre wise)
29. Different types of quality checks and their scope
30. Please describe the sampling methodology adopted for selection of projects for quality check
31. Mechanisms to mitigate quality lapses
32. Impact of quality issues
33. Please provide data on the following indicators:

Indicator	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Proportion of total projects checked for quality						
Quality results – high, medium, low						
Number of instances when performance security encashed/ penalty levied/ vendor blacklisted by KRIDL						

Documents required

34. Policies, guidelines and manuals for quality control
35. DQM reports
36. External and internal quality check reports
37. Progress reports (for different type of vendors and sample report for each year for the period of evaluation i.e. 2014-15 to 2019-20).

9.2.3 Socio-economic impacts of works constructed

Coverage of infrastructure works in rural areas

1. Details of works

Year	Total number of projects completed	Total cost of all completed projects	How many in rural areas?	Major asset types (e.g. building, road, school etc.)	How many involved middlemen and the extent of involvement?	Whether SCP/TSP work?
2014-15						
2015-16						

Year	Total number of projects completed	Total cost of all completed projects	How many in rural areas?	Major asset types (e.g. building, road, school etc.)	How many involved middlemen and the extent of involvement?	Whether SCP/TSP work?
2016-17						
2017-18						
2018-19						
2019-20						

2. Office details geography wise
3. Regional segregation of staff across various cadres
4. Policy regarding works in rural areas

Employment generation

Please provide data on the following indicators:

5. Number of jobs created – – Direct (*arising from construction works*) & Indirect (*resulting due to the asset created*)

Number of jobs created	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Direct						
Indirect						

Man-days generated	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Direct						
Indirect						

6. Disaggregation on basis of skilled, semi-skilled and unskilled categories.

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Number of jobs created	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Skilled						
Semi- skilled						
Unskilled						

Man-days generated	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Skilled						
Semi- skilled						
Unskilled						

7. Disaggregation on basis of gender, unemployed/ underemployed, and social category (SC/ST/OBC), domicile (rural/ semi-urban/ urban)

Number of jobs created	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Gender						
Unemployed/ underemployed						
Social category (SC/ST/OBC),						
Domicile (rural/ semi-urban/ urban)						

Man-days generated	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Gender						
Unemployed/ underemployed						
Social category (SC/ST/OBC),						
Domicile (rural/ semi-urban/ urban)						

8. Nature of employment created- short term, medium term and long term

Number of jobs created	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Short term (0-3 months)						
Medium term (3-6 month)						
Long Term (>6 months)						

Man-days generated	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Short term (0-3 months)						
Medium term (3-6 month)						
Long Term (>6 months)						

9. How do KRIDL projects compare with Gram panchayat projects in terms of nature of project, employment generated and wages offered?

Economic impact

10. Please provide data on the following indicators:

Indicator	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Average salary level of laborers						
Increase in salary by eliminating middlemen						

Social impact

11. What has been the impact of your projects on the quality of life, social, health, sanitation, etc. indicators?

9.2.4 CSR Activities

1. What is the CSR policy for the organization? Which projects/ sectors/ areas are covered?
2. What is the extent of compliance with the CSR policy for the last 6 years?
3. What has been the impact of the CSR projects on the quality of life, social, health, sanitation, etc. indicators?
4. Details of CSR projects undertaken

Year	Project name	Scope	Location	Number of beneficiaries
2014-15				
2015-16				
2016-17				
2017-18				
2018-19				
2019-20				

Documents required

5. CSR policy document

9.2.5 Commercial

1. How are various business opportunities tracked and identified?
2. Please explain the process used to arrive at the bid value. What are the models and templates used?
3. What is the basis for setting the minimum profit margin used in bidding? What are the markups applicable for different functions of the company?
4. What are the mechanisms being used to enhance profitability?
5. Who are the major competitors of KRIDL? What are their relative strengths and weaknesses?
6. Please comment on the competitiveness of overhead costs and bidding price employed by KRIDL.
7. What was the impact of COVID 19 on the flow of tenders?

Documents required

8. Bidding guidelines and templates

9.2.6 Finance

1. Please provide 6 - year trend in financial parameters

Indicator	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Revenue						
Revenue						
Offices						
Urban and rural						
Asset type						
Revenue per project						
Revenue per unit of fixed assets						
Revenues per employee						
Profitability						

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Indicator	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Gross profit margin, Net profit margin (client, asset type, divisional office wise)						
Return on total assets						
Utilization of equipment and machinery						
Utilization and work distribution of employees and labor						
Solvency						
Debt-service coverage ratio						
Debt-equity ratio						
Cash ratio						
Quick ratio						
Current ratio						

2. Forecasted growth in revenue for next 6 years and main drivers for the growth

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

3. Which are the methods being used to enhance utilization of tools, equipment, machinery, material and labor?

Documents required

4. Business plan

5. Strategic plan

6. Financial plan

9.2.7 **Human Resources**

Please provide details on the following:

Organization structure

1. Roles & responsibilities defined at each level
2. Staffing levels and vacancies across various cadres
3. Employee turnover rate across various cadres

Goal setting

4. What are the procedures and timelines for goal setting?
5. How and when are the goals communicated to the employees?

Training & Development

6. Number of training and development programs
7. Number of employees benefited across various cadres
8. Measures taken to improve leadership, team building, competency and skill
9. Policies adopted for human resource management:
 - Motivation
 - Safety
 - Health and proper working conditions
 - Welfare
 - Communication
 - Training
 - Social security
10. Evidences of implementation of these policies

Labor laws

11. Compliance with labor laws

Performance appraisal

12. What is the framework and process for performance appraisal?
13. What are the incentives and penalties provided in the framework?
14. Please provide data on the following indicators:

Indicator	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Number of employees appraised						
Number of times performance appraisal is						

Indicator	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
conducted during the year						

Documents required

15. Training plans

16. Training reports

17. Policy documents for human resource management:

- Motivation
- Safety
- Health and proper working conditions
- Welfare
- Communication
- Training
- Social security

9.2.8 Competitive positioning

Market for construction works

- Please provide data for 6 - year trend in market share of rural infra projects executed by KRIDL in Karnataka

Indicator	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Rural projects by KRIDL						
Estimate of total rural projects in Karnataka						

- Please provide current and 6 - year forecast for supply-demand of infrastructure works in Karnataka

Indicator	Current	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Supply of infrastructure works in Karnataka (Rs. Cr.)							
Demand of infrastructure works in							

Karnataka (Rs. Cr.)							
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- Existing pipeline of projects for future
- Key client accounts and client wise profitability
- Strategies to increase the pipeline of projects

Competitive positioning

- KRIDL positioning as compared to other PSUs in Karnataka (Revenues, profitability, number of employees)
- Competitors or peers for KRIDL in Karnataka
- Strengths/ Weaknesses of KRIDL w.r.t its peers
- Brand equity of KRIDL
- Sustenance without K TPP act
- Share of projects awarded on nomination basis and through competitive bidding
- Future plans of KRIDL

Documents required

- Business plan
- Strategic plan
- Financial plan

9.2.9 Adoption of technology and sustainable practices

1. What are the modern technologies in construction? What has been the adoption of these by KRIDL?
2. What are some of the sustainable practices in construction from planning to execution of work? What has been the adoption of these by KRIDL?

9.3 Format for Focus Group Discussions (FGD)

This section provides a general template for conducting FGDs. It covers general guidelines, questionnaire template and a general guide to actually conducting the exercise.

9.3.1 Guidelines

Introduction: The FGD's purpose is to capture the opinions of KRIDL officials/ designated personnel and develop consensus building on important issues like

- Performance and efficiency of the organisation
- Barriers/solutions of various organisational and implementation challenges
- Future plans and sustainability
- Cross-check the information given in field visits

Participants: The selection will be based on the details of groups as provided in the Approach & Methodology section of this report. The participants selected would be expected to have suitable knowledge and experience of the topic. Ideally, the participants shall reflect a range of ages, levels, gender, activity groups etc. The group should not be too large so that the discussion can be conducted efficiently.

Participant consent: Participants will sign a consent form to participate in the focus group discussion which will be retained by the FGD facilitator. They will be informed that the information learned in this focus group will be used to carry out analysis and shall be included in the evaluation report.

Demographic data: It is important to collect anonymous demographic data from focus group participants. Simple questionnaires for this purpose will be handed out as participants arrive, then collected at the end of the focus group discussion.

Facilitator/ Moderator: Running an effective focus group is a skill and requires planning and an experienced facilitator/ moderator to smoothly carry out the discussion. A capable facilitator shall be chosen who can effectively carry out the discussion.

Discussion guide: A discussion guide shall be prepared to facilitate structuring the discussion by highlighting the topics that need to be covered. During the focus group discussion, the facilitator will encourage participants to explore topics in depth, to reflect, to raise their own issues, etc.

Time and place: The focus group may last about 30 to 45 mins depending on the topic and group. The participants will receive clear details of where and when the focus group will take place and how long it will last. They shall be informed about the topic in advance so as to remain prepared.

9.3.2 Questionnaire template

Basic participant details

Name of respondent	
Designation	
Department	
Age (in years)	
Gender	
Marital status	
Social category (General/SC/ST/OBC)	
Educational background	
Years of experience	
Address	
Landline/Mobile No.	
Email id	
Role and responsibilities	
Date of FGD	
Topic of FGD	

Guiding questions

The questions will be related to the topics and vary with various groups. Some suggested topics along with recommended group types is provided below:

- Performance issues, Customer perceptions, Strategies to enhance performance (Zonal office, Divisional office, South zone, Central zone, North zone)
- Sustaining performance in absence of KTRP exemption, Brand equity of KRIDL, Competitive positioning, Strategic roadmap, Action planning, Socio-economic impact (Corporate office, Zonal office)
- Major reasons for Quality issues, Cost overrun, Time delays affecting projects, Strategies to enhance performance (Architecture, Design and Works)
- Employee motivation and compensation (Administration)

- e) Improving financial performance, Strengthening financial controls and compliance, Mitigating financial risks (Finance)

9.3.3 General guide to actually conducting the exercise

Facilitator's welcome, introduction and instructions to participants

Welcome and thank you for taking part in this focus group discussion for the study “Evaluation of Karnataka Rural Infrastructure Development Ltd (KRIDL) from 2014-15 to 2019-20”.

CRISIL has been appointed by the Government of Karnataka to evaluate performance of KRIDL, which is responsible for implementing a number of infrastructure assets across Karnataka. The study's aim is to evaluate the extent to which KRIDL has been able to implement good quality construction/ repair/ renovation works and also fulfil the socio-economic objectives towards larger society. We are conducting today's FGD with the aim to collect data and your views, which are critical to carry out the study. We are grateful for your time and inputs in this regard.

*The facilitator will explain thoroughly the **purpose of the FGD** and how it will be used, in order to have accurate and unbiased answers (as much as possible).*

We request you to answer and comment as accurately as possible. I and the other focus group participants would appreciate it if you would refrain from discussing the comments of other group members outside the focus group. If there are any questions or discussions that you do not wish to answer or participate in, you do not have to do so; however please try to answer and be as involved as possible.

Rules

- The time for the discussion is 30-45 minutes
- The most important rule is that only one person speaks at a time. There may be a temptation to jump in when someone is talking but please wait until they have finished.
- There are no right or wrong answers
- You do not have to speak in any particular order
- When you do have something to say, please do so. There are many of you in the group and it is important that I obtain the views of each of you
- You do not have to agree with the views of other people in the group
- Does anyone have any questions?
- OK, let's begin

Warm up

- First, I would request everyone to introduce themselves. Can you tell us your names, designation and department?

Introductory question

<< Opening remarks shall be provided by the moderator, describing the issues that the group needs to discuss and general guidelines for discussions>>

I am just going to give you a couple of minutes to think about *<< Specific topic of the FGD>>* and your views and opinions on the same.

<< Each participant shall be provided a time of two minutes to share opening remarks describing his/ her views about the discussion topics >>

(The floor shall then be opened for discussion and debate)

Concluding the FGD

- Ten minutes before closing time, moderator shall invites participants who have not spoken to express their views
- Five minutes before closing time, moderator announces time left for the discussion
- At the closing time, moderator provides closing remarks summarizing key takeaways, issues discussed, consensus reached, etc.

Conclusion

- Thank you for participating. This has been a very successful discussion
- Your opinions will be a valuable asset to the study
- We hope you have found the discussion interesting
- If there is anything feedback or additional information you wish to share, please contact the *<< Details of contact person>>*
- Before you leave, please hand in your completed personal details questionnaire

9.4 Findings from pilot study

9.4.1 Conduct of pilot study and challenges faced

For the pilot study, KRIDL provided CRISIL with details of Bengaluru Urban sub-division, BMRCL division and Ramanagara division offices. Both staff details and works details were provided. Details of 24 works across the three offices were provided.

Due to COVID-19 pandemic and imposition of a lockdown in Karnataka, many of the work locations were not accessible and KRIDL staff were not available for discussions. Secondly, some of the respondents insisted on a written authorization issued by KRIDL (*which was not issued at the time of conducting the pilot study*) and were not willing to accept authorization issued by KEA.

The issues faced at various locations visited are described in the following table.

Issues faced at various work locations for the pilot study

Name of the work	Description of issues
<p>NPK Campus Magadi Road, Bangalore</p> <ol style="list-style-type: none"> 1. Secretary CRC Quarters 2. Gust House 3. Administrative Block 	<p>NPK Campus Officer FDA Tukaram (Superintendent of Campus) was unwilling to interact since CRISIL did not have authorization letter from KRIDL. AEE of BMRCL 2 division (Mr. Sridhar) also insisted on similar authorization.</p> <p>- Similar challenge was faced at the Administrative block where the officer did not allow CRISIL to enter inside the block.</p>
<p>Renovation and Furniture works at Karnataka Skill Development Authority Office, 4th floor Kalyana Surkasha Bhavana, Dairy Circle, Bengaluru</p>	<p>Site was not accessible due to COVID-19 related lockdown</p>
<p>Construction of Govt. Primary & Middle Urdu Boys & Girls School at Chickpet Metro Station, Bangalore</p>	<p>The site was in a COVID-19 containment zone and hence the CRISIL representative was denied entry into the area by the police</p>
<p>Const., of DPRC Building at Banashankari, Bengaluru.</p>	<p>New office and was not yet functional. No user department official available for interview.</p>
<p>NGEF, Khanija Bhavan, Race Course Road, Bengaluru</p>	<p>Met the CFO and Admin officer of NGEF, Bangalore. The officials insisted on authorization letter from KRIDL</p>

Figure 31: Pictures of locations visited during pilot survey

1) DPRC Building at Banashankari Bengaluru, 2) NGEF office at Khanija Bhavan



For testing the in-depth interview questionnaire with KRIDL officials, the CRISIL representative interacted with officials from the following offices:

- Bangalore Urban Sub Division
- Bangalore Rural Sub Division
- BMRCL 1 Sub Division
- BMRCL2 Sub Division
- Ramanagara Sub Division

CRISIL was able to conduct an in-person meeting with the Bangalore Urban Sub Division office and submit the questionnaire. However, no response was received at the time of writing this report. For the rest of the offices, due to imposition of COVID-19 lockdown in Karnataka, CRISIL emailed the questionnaires to these offices and followed up telephonically, however no material response was received.

CRISIL was able to successfully conduct the pilot study at two works constructed by KRIDL:

- **Pathway** – at Indira Gandhi Musical Fountain Park (parallel to Chowdaiah road and Ali Asker Road) Chowdaiah Road, Bengaluru.
- **Residential building** – Secretary CRC Quarters, NPK Campus, Magadi Road, Bengaluru.

The observations made and responses received are described in the next section.

9.4.2 KRIDL works: Observations made and responses received

Two users were interviewed for each asset:

Pathway:

Parameters	User 1	User 2
Name of respondent	Latha	Karpagan Prakash
Age (in years)	36	42
Gender	Female	Female
Marital status	Married	Married
Educational background	Masters	Masters
Occupation	Working Professionals	Working Professionals
Date of survey	26th April 2021	26th April 2021

Residential building:

Parameters	User 1	User 2
Name of respondent	Pankaja	Shashikala
Age (in years)	48	26
Gender	Female	Female
Marital status	Married	Married
Educational background	Not disclosed	Not disclosed
Occupation	Housewife	Housewife
Date of survey	25th April 2021	25th April 2021

The observations and responses received are described below.

1. Pathway

Asset details

Name of the asset: Pathway at Indira Gandhi Musical Fountain Park (parallel to Chowdaiah road and Ali Asker Road) Chowdaiah Road, Bengaluru

Responsible KRIDL office: Bangalore Urban sub-division, Bangalore zone.

User department: Horticulture department

Start date: 2018

End date: 2019

Project cost: Rs. 50 lakh

The pathway is situated within the Indira Gandhi Musical Fountain Park, which is a famous recreational park in Bengaluru. The pathway is majorly used for leisure/ exercise related activities by the public while around 25% of people use it to visit nearby facilities like the DRDO exhibition center, musical fountain, etc. Boundary walls around the park and the presence of security personnel make the overall pathway safe for the use of the public.

Figure 32: Pathway at Indira Gandhi Musical Fountain Park



The surface of the pathway is clear and even. The adequate width and proper lighting make the walk comfortable for the user. The park has well designed and covered drainage and sewage works, which enhance the safety and avoid any flooding, especially due to rains. The park's trees provide a suitable shade to the users. The overall feedback from the users was positive and they appreciated the quality of work.

Figure 33: Covered drain



At a few locations along the pathway, the following issues were observed:

- Cracks in tiles towards edge of the pathway
- Broken tiles, missing tiles
- Sinking surface

Figure 34: Damages along the pathway



2. Residential building

Asset details

Name of the asset: Secretary CRC Quarters, NPK Campus, Magadi Road, Bengaluru

Responsible KRIDL office: BMRCL division, Bangalore zone.

User department: NPK

Start date: 2014

End date: 2016

Project cost: Rs. 49.40 lakh

The CRC residential complex consists of 24 houses, 6 in each of the 4 buildings located in the complex. It is located in the heart of the city; hence, all facilities are easily accessible to the residents of the complex. There are two schools, two hospitals and two market places located within 5 km radius from the complex. A major road is accessible just within 1 km from the complex. The complex includes a park for recreation of the residents.

Figure 35 : External view of quarters



The residents are staff members of NPK and their families and government pays for their living expenses. Hence, they do not incur any cost of living (e.g. rent etc.) despite being at a prime location of the city. The residents found the overall quality of the building and material to be good. There are suitable access element like ramps, stairs with railing etc. and adequate safety measures like boundary wall, common lighting etc. The surface of the stairs and ramp are smooth and made from marble slabs to enable easy access for the residents. The manholes, tanks etc. of the building are well covered to ensure safety of the residents. The building has a spacious terrace, which consists of a solar installation, and ample space for the residents' personal uses like drying clothes, recreation etc.

Figure 36: Presence of stairs with railings and ramps



Figure 37: Well covered manhole and tank



Figure 38: Building terrace



At few places the following issues were observed related to the construction quality:

- a. Water seepage was observed at various locations of the building

Figure 39: Water seepage



- b. Cracks on walls and concrete slabs

Figure 40: Cracks



c. Vegetation growth on surfaces

Figure 41: Vegetation growth



d. Damaged, broken and sinking surfaces

Figure 42: Damaged surface

9.5 Distribution of works surveyed

Statistics of distribution of works across Sub-Divisional Offices

Work Type 1: Drinking water unit

Description: Mostly RO based drinking water plants and a few bore wells

- Total works are 187, distributed as:

Name of sub-divisional office	No. of work surveyed
Yadagir	30
Raichur-1	25
Lingasugur	17
Belgavi	15
Devadurga	14
Bellary	10
Bangalore Rural	9
Bagalkote-1	9
Haveri	8
Dharawad-2	6

Name of sub-divisional office	No. of work surveyed
BBMP-West	5
BBMP-South	4
Karwar	4
Chitradurga	4
Dharawad-1	4
Mangalore	3
Tumkur	3
Ramanagara	2
BBMP-Mahadevapura	2
Chelkere-1	2
Bidar	2
Mysore	2
Mysore Central	1
Chikkamagalur	1
Sandoor	1
Dharawad-3	1
BBMP-RR Nagara/Byatarayanapura	1
Bangalore Urban	1
Yelahanka & Yeshawantpur	1
Grand Total	187

Work type 2: General Building

Description: community hall, school/ college/ library building, veterinary hospital, shops, exhibition halls, etc.

- Total works are 27, distributed as:
- Chitradurga -4, Belgavi -3, Lingasugur -2, Tumkur -2, Chelkere 1 -2, Mysore-Central -2, Bidar -2, Dharawad1 -1, Dharawad 2 -1, Yelahanka -1, Arasikere -1, Ramanagara -1,

Sandoor -1, Chikkamagalur – 2, BBMP-RR -1, Mangalore – 1, Nagara/Byatarayanapura -1

Work type 3: Pathway works

Description: Paved pathways

- Total works are 6, distributed as:
- BBMP West -2, BBMP South -2, Dharawad-3 -1, Lingasugur -1.

Work type 4: Sewerage Works

Description: storm water drains

- Total works are 28, distributed as:
- Yelahanka -8, BBMP South -6, Ramanagara -1, BBMP-Mahadevapura-2, Bangalore Urban -1, BBMP-West-2, BBMP-RR Nagara/Byatarayanapura – 8

Work type 5: Road Works

Description: asphalt road, cement concrete road

- Total works are 86, distributed as:

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Name of sub-divisional office	No. of works surveyed
Yelahanka & Yeshawantpur	15
BBMP-Mahadevapura	10
Mysore Central	9
BBMP-South	9
Mangalore	6
Yadagir	5
Chitradurga	5
BBMP-West	4
Chikkamagalur	3
Lingasugur	3
Bangalore Rural	2
Bagalkote-1	2
Arasikere	2
Bellary	2
Karwar	1
Gulbarga-1	1
Ramanagara	1
Tumkur	1
Devadurga	1
Dharawad-2	1
Dharawad-1	1
Raichur-1	1
Bidar	1
Grand Total	86

Work type 6: Office Building

Description: Office, multi-purpose building, gram panchayat office, DPRC building, zilla parishad training center

- Total works are 13, distributed as:
- Bidar -1, Haveri-1, Bagalkote-1 -1, BBMP West -1, Tumkur -1, Yelahanka -1, Raichur -1, Karwar -5, Managlore-1

Work type 7: Interior Works

Description: painting, furniture, interior works

- Total works are 10, distributed as:
- Bangalore Urban -3, Tumkur -2, Mysore Central -1, Belgavi -1, Gulbarga-1 -2, Mangalore-1.

Work type 8: General works

Description: compound wall, statue, bus shelter, waste management system, parking shelter, rainwater shelter, parks, senior citizen gym equipment, installation of electricity transformer, installation of electrical equipment within building (e.g. closed circuit camera)

- Total works are 43, distributed as:

Name of sub-divisional office	Number of Works
BBMP-Mahadevapura	7
BBMP-West	6
Yelahanka & Yeshawantpur	5
BBMP-South	4
Tumkur	3
Mysore Central	2
Dharawad-1	2
Bellary	2
Gulbarga-1	2
Chikkamagalur	1
Dharawad-3	1
BBMP-RR Nagara/Byatarayanapura	1
Mysore	1
Karwar	1
BBMP-BDA	1
Mangalore	1
Ramanagara	1
Bangalore Urban	1
Belgavi	1
Grand Total	43

Work type 9: Exterior works

Description: Building painting

- Total works are 7, distributed as:
- Bellary -1, Chelkere-1 -1, Ramanagara -1, BBMP-Mahadevapura-1, Chikkamagaluru-1, BBMP-West-2

Work type 10: Residential Building

Description: construction of hostels

- Total works are 3, distributed as one each in Bellary, Bidar and Bangalore Urban

9.6 Details of works surveyed**Table 68: Detailed list of “Main” projects site visited**

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
1	Department of Veterinary Medicine Department of Animal Husbandry	Tumkur District Koratagere Taluk Hulavanahalli Veterinary Hospital Building Construction Work	Tumkur	Bangalore	Tumkur	16/9/2021
2	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Corrugated Repair Works in Ward No/156	BBMP South Zone	BBMP	Division 3	18/9/2021
3	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Corrugated Repair Works in Ward No/124	BBMP South Zone	BBMP	Division 3	18/9/2021
4	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Corrugated Repair Works in Ward No/134	BBMP South Zone	BBMP	Division 3	30/9/2021
5	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Padachari Maga, a warehouse located in the Alosur Lake enclosure at Wad No/ 90, Ganesha discharge Kalyani	BBMP Mahadevapura	BBMP	Division 5	21/10/2021
6	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	RCC Sewerage Works at 1st Head (right) of Valliyan Lane, Ward No/31	BBMP Mahadevapura	BBMP	Division 5	21/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
7	BBMP BRAHT BANGALORE Municipal Policy MLA GOK	Defense Quartus CH from HMT Road to HMT School on Tumkur Road; Dumping work on roads from 0/00 to 720/00	BBMP RR Nagara / Byatarayanapur a AEE	BBMP	Division 4	23/9/2021
8	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Defense Quartus CH from HMT Road to HMT School on Tumkur Road; Dambarkana works on 720/00 to 1400/00 roads	BBMP RR Nagara / Byatarayanapur a AEE	BBMP	Division 4	23/9/2021
9	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Ward No: 04, Dambarikana and Pavement Works on the 3rd and 8th, 9th and 10th Main Roads of the Yalahanka Zone, Alessandra, Judicial Development	BBMP Yalahanka- Yashvanthpura AEE	BBMP	Division 3	23/9/2021
10	BBMP BRAHT BANGALORE Municipal Policy MLA GOK	Ward No: 40, Dambiyarakalinna, Andhrahalli Circle to Hegganahalli Main Road	BBMP Yalahanka- Yashvanthpura AEE	BBMP	Division 3	24/9/2021
11	BBMP BRAHT BANGALORE Municipal Policy MLA GOK	Syndicate Bank Colony Road Prasanagaram Road Improvement and Embankment Works	BBMP West Zone	BBMP	Division 2	14/9/2021
12	BBMP BRAHT BANGALORE Municipal Policy MLA GOK	Kamalnagar, Shaktangapatinar Road, Ring Road to 1st Cross Road (West of Cord Road via Basaveshwara Nagar Road (15th Main Road))	BBMP West Zone	BBMP	Division 2	14/9/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
13	Department of Education Works of the Department of Education	Extra room construction works at Government Polytechnic Aura in Beedra district	Bidar	Gulbarga	Bidar	21/9/2021
14	RD&PR Dept Rural Development and Panchayat Raj Rajiv Gandhi Panchayat Empowerment Project (DPRC) 2014-15	Construction of District Panchayat Resource Center at Chitradurga	Chitradurga	Chitradurga	Chitradurga	11/10/2021
15	RD&PR Dept Rural Development and Panchayat Raj Rajiv Gandhi Panchayat Empowerment Project (DPRC) 2014-15	District Panchayat Resource Center Building, Chikmagalur District/	Chikkamagaluru	Mysore	C/ Mangalore	25/10/2021
16	RD&PR Dept Rural Development and Panchayat Raj Rajiv Gandhi Panchayat Empowerment Project (DPRC) 2014-15	Construction of District Panchayat Resource Center Building in Beedara District/	Bidar	Gulbarga	Bidar	21/9/2021
17	RD&PR Dept Rural Development and Panchayat Raj 3054 Works (Road Development)	Construction of 7 cd road from Yamnura to Tirlapur in Nawalgunda taluk in Dharwad district	Dharwad	Belgaum	Dharwad	23/9/2021
18	RD&PR Dept Rural Development and Panchayat Raj Rajiv Gandhi Panchayat Empowerment Project (DPRC) 2014-15	Construction of District Panchayat Resource (Power) Crudation Center in Navanagar	Bagalkotte-1	Belgaum	Bagalkot	5/10/2021
19	SCSTDC Scheduled Caste and Scheduled Tribes Development Corporation	Additional Courts Complex at Bellary Town Kaul Bazaar	Bellary	Chitradurga	Bellary	6/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	Department of Social Welfare	Bandihatti in Bellary District				
20	Department of Social Welfare Additional Works	Extra building work with kitchen block and store room in the premises of Government Science College Boys' College, MG Road, Bangalore/	Bangalore City	Bangalore	Bangalore	12/10/2021
21	DC, DC - District Social Welfare Department	Construction of CC Road in Scheduled Caste Colony of Bundadi Village, Yadagiri Taluk/	Yadagiri	Gulbarga	Yadagir	25/9/2021
22	Department of Social Welfare Department of Social Welfare	Concrete road construction works at Bhovi Colony in Bammapura village/	Dharwad	Belgaum	Dharwad	23/9/2021
23	Health Department Health Department Works	Improvement of Belgaum Technical College and Hostel Buildings (Vehicle Parking Shelter) Works	Belgaum	Belgaum	Belgaum	28/9/2021
24	KSHDC Karnataka State Handicrafts Development Corporation Modernization	Solid Block Compound Wall Construction Aravana Art Complex Channapatna Town	Ramanagara	Bangalore	Ramanagar	8/9/2021
25	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Anjanappa Garden Health Center Upgrading / Renovation	BBMP West Zone	BBMP	Division 2	13/11/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
26	RD&PR Dept Rural Development and Panchayat Raj Rajiv Gandhi Panchayat Empowerment Project (DPRC) 2014-15	District Headquarters in Haveri Shahar	Haveri	Belgaum	Haveri	4/10/2021
27	RD&PR Dept Rural Development and Panchayat Raj MP L/A/D/	SSM Sewerage & CC Sewerage Works Mayasandra Gram Panchayat, Pahal Taluk, Bangalore	Bangalore City	Bangalore	Bangalore	
28	DC D/C— District Revenue Department Works	Construction of boutique shops near Sri Amareshwara temple in Lingasaguru taluk	Lingasagoor	Gulbarga	Raichur	4/10/2021
29	Department of Veterinary Medicine Department of Animal Husbandry	Construction of concrete road from cattle shed to compost pits at Tegur buffalo breeding center in Dharwad Taluk	Dharwad	Belgaum	Dharwad	21/9/2021
30	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Sewerage Works at JP Nagar 3rd Stage 13th Main and Vidyaniketana School in Ward No/177	BBMP South Zone	BBMP	Division 3	30/9/2021
31	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Ward No: 72 Road Development and Improvement Project from Balaji Project Crossing Road at Herohalli to Mahadeswaranagar Road	BBMP Yalahanka-Yashvanthpura AEE	BBMP	Division 3	24/9/2021
32	BBMP BRAHT BANGALORE Municipal Policy	Improvement of Main Road from 3rd Cross to 11th Cross at Kundalahalli	BBMP Mahadevapura	BBMP	Division 5	18/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	BBMP Department Works	Colony, Ward No/ 85				
33	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Drainage and sidewalk works from Ward No/128, Jyotirnagar 3rd Cross Road to 6th Cross Road	BBMP West Zone	BBMP	Division 2	
34	BBMP BRAHT BANGALORE Municipal Policy B Urban Development Authority	Ward No/64 Raj Mahal Gutthahalli near Sudindranagar and Kabaddi Ground/	BBMP West Zone	BBMP	Division 2	7/10/2021
35	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Drainage and road development works at Wade 53	BBMP Mahadevapura	BBMP	Division 5	21/10/2021
36	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Dry Waste Treatment Plant Works at Kakatiyanagar Bus Stand	BBMP South Zone	BBMP	Division 3	20/9/2021
37	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Renovation work for Bangalore One Building at Ramamurthy nagara , Ward No/ 26	BBMP Mahadevapura	BBMP	Division 5	21/10/2021
38	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Mysore road winds near the bridge of the temple of Anjaneya Pre-Retenstio Cum RCC Approach Slab and Re-Grading of Road Works	BBMP South Zone	BBMP	Division 3	15/9/2021
39	Department of Education RIDF (19)	Construction of Classroom and	Chitradurga	Chitradurga	Chitradurga	12/10/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
		Toilet for Chikkadurga Taluk				
40	RD&PR Dept Rural Development and Clean Drinking Water (RO) Units in Panchayat Raj 2016	Hard Soil (1000LPH) Construction of Water Purification Plant in Hiramagadi Village, Hunugunda Taluk	Bagalkotte-1	Belgaum	Bagalkot	6/10/2021
41	RD&PR Dept Rural Development and Clean Drinking Water (RO) Units in Panchayat Raj 2016	Water treatment plant in Nagaraha village	Bellary	Chitradurga	Bellary	6/10/2021
42	RD&PR Dept Rural Development and Clean Drinking Water (RO) Units in Panchayat Raj 2016	Pure Drinking Water Unit, Solapur Gr/, Vishwanathpur Gp/Devanahallita , Bangalore (G) District/	Bangalore Rural	Bangalore	Bangalore	18/10/2021
43	RD&PR Dept Rural Development and Clean Drinking Water (RO) Units in Panchayat Raj 2016	In the Hanumanahalli village of Hoollakere Taluk, R/O/ Plant Construction	Chitradurga	Chitradurga	Chitradurga	12/10/2021
44	ZP District Panchayat Corporation	Mangalore: Construction of Waste Disposal Unit at Kemaral Village and Continuous Works of Roofing Unit	Mangalore	Mysore	Mangalore	26/10/2021
45	Power Grid Power Grid Works	From Chidananda House to K/ Narsappa's house in Ashapur village of Raichur Taluk/ Road construction	Raichur	Gulbarga	Raichur	30/9/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
46	HKRDB Hyderabad Karnataka Development Board (HKDB) Hyderabad Karnataka Development Program	Road construction work (1/75 km) from Gopalpur side of Yadagiri taluk to Gopalapura and Yellari village road built in liquor/	Yadagiri	Gulbarga	Yadagir	24/9/2021
47	RD&PR Dept Rural Development and Panchayat Raj Rajiv Gandhi Panchayat Empowerment Project (DPRC) 2014-15	Construction of District Panchayat Resource Center at Matche Village, Belgaum Taluk	Belgaum	Belgaum	Belgaum	29/9/2021
48	RD&PR Dept Rural Development and Panchayat Raj Rajiv Gandhi Panchayat Empowerment Project (DPRC) 2014-15	Construction of Tumkur District Panchayat Resource Center (RGSP) under the Rajiv Gandhi Panchayat Empowerment Campaign (RGSP) for the year 2013-14 and 2014-15	Tumkur	Bangalore	Tumkur	16/9/2021
49	RD&PR Dept Rural Development and Panchayat Raj R/O/ Water Supply Project	Pulikatti village in Dharwad taluk leader village in Dharwad district	Dharwad	Belgaum	Dharwad	21/9/2021
50	RD&PR Dept Rural Development and Panchayati Raj District Panchayat Works	Construction of District Panchayat Resource Center at Raichur	Raichur	Gulbarga	Raichur	30/9/2021
51	RD&PR Dept Rural Development and Panchayat Raj Mysore Dasara Works	Shop by Karnataka Rural Development Department at Mysore Dasara 2015	Mysore (Central)	Mysore	Mysore	4/10/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
52	RD&PR Dept Rural Development and Clean Drinking Water (RO) Units in Panchayat Raj 2016	Challakere Taluk is a fresh water plant in Gollahalli village	Challakere - 1	Chitradurga	Challakere	13/10/2021
53	Department of Social Welfare Department of Social Welfare	Matric Postpartum Boys' Hostel No/ 2, Bellary Town	Bellary	Chitradurga	Bellary	7/10/2021
54	DC, DC - District Social Welfare Department	Dr/ BR Ambedkar's building at Uchagana village in Belgaum taluk	Belgaum	Belgaum	Belgaum	28/9/2021
55	DC, DC - District Social Welfare Department	Construction of CC Road and Sewerage for the Tocoru TA Board Scheduled Class Colony of Mangalore Taluk Padupanambur Gram Panchayat	Mangalore	Mysore	Mangalore	26/10/2021
56	DC, DC - District Social Welfare Department	CC to Kavattur Scheduled Caste Colony of Mangalore Taluk Bekkunje Gram Panchayat Road and sewer construction	Mangalore	Mysore	Mangalore	26/10/2021
57	RD&PR Dept Rural Development and Panchayat Raj Others	Photograph exhibition for the Gandhi Village Reception Awards Ceremony	Bangalore City	Bangalore	Bangalore	12/10/2021
58	ITI Industrial Training Institute (ITI) Buildings	Construction of additional teaching rooms of Government Industrial Training Institute, Bharmasagar, Chitradurga Taluk	Chitradurga	Chitradurga	Chitradurga	12/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
59	K/N/L/ - Kaveri Irrigation Corporation Limited KNNL- Kaveri Irrigation Corporation Limited Works	From Mademma Gudi to Yadagalli village in Yadagiri district Road Construction Works/	Yadagiri	Gulbarga	Yadagir	25/9/2021
60	K/N/L/ - Kaveri Irrigation Corporation Limited KNNL- Kaveri Irrigation Corporation Limited Works	CC Road Construction Works from Sharanappa Yempad Home to Horuncha Road in Yadagalli Village in Yadagiri District/	Yadagiri	Gulbarga	Yadagir	25/9/2021
61	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	P/W/D from B/ Narayanpur lake in Ward 56/ Asphalt and development works for the road up to the water tank	BBMP Mahadevapura	BBMP	Division 5	21/10/2021
62	BBMP Brihat Bangalore Metropolitan Policy Modernization	Ward No: Bangalore-One Construction Works at LaxmiDevnagar, 42	BBMP RR Nagara / Byatarayanapura AEE	BBMP	Division 4	27/9/2021
63	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Button closing works in Ward No/ 134	BBMP South Zone	BBMP	Division 3	18/9/2021
64	BBMP BRAHT BANGALORE Municipal Policy MLA GOK	Ward No/ 17 JP Park Beautiful City and 4th Cross from 4th Main Street and 4th Main Street & Sewerage Development Works from Chennappa Gardens	BBMP Yalahanka-Yashvanthpura AEE	BBMP	Division 3	23/9/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
65	AC - Assistant Commissioner of Revenue Department	Transformers installed to connect the exterior of the pilgrim residence to the Shree Ravanasiddheshwara Temple at Rewaggi, Chittapur Taluk/	Kalburgi - 1	Gulbarga	Kalburagi-1	22/9/2021
66	Works of the Tahsildar Revenue Department	Repair works for the Tehsildars office of Chittapur town/	Kalburgi - 1	Gulbarga	Kalburagi-1	22/9/2021
67	DC D/C— District Revenue Department Works	Harihara Taluk is an infrastructure project for a stock yard recognized for sand mining in Palya village/	Harihara	Chitradurga	Davanagere -2	
68	DITC DITC, Department of Animal Husbandry	Construction of veterinary hospital underwater	Mangalore	Mysore	Mangalore	26/10/2021
69	Department of Veterinary Medicine Department of Animal Husbandry	Veterinary Hospital in Gurumitakal town, Yadagiri Taluk/	Yadagiri	Gulbarga	Yadagir	23/9/2021
70	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Community Building Premium in Ward No/166 and Flagging Concrete Works in Kaverinagar	BBMP South Zone	BBMP	Division 3	30/9/2021
71	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Ward No: RCC sewer and slab works in 5th and 6th cross sections of 130th Janata Party	BBMP RR Nagara / Byatarayanapura AEE	BBMP	Division 4	22/9/2021
72	BBMP BRAHT BANGALORE Municipal Policy	Ward No: RCC sewer and slab works on University Roads adjacent to	BBMP RR Nagara / Byatarayanapura AEE	BBMP	Division 4	22/9/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	BBMP Department Works	the main road at 130 Janata Stadium				
73	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Road and Sewer Development Works (052-13-000023) from 9th Cross of SRL layout to Cambridge College Headquarters, Ward No/ 52	BBMP Mahadevapura	BBMP	Division 5	21/10/2021
74	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	CCTV Camera, Fire Alarm, Safety System, Lighting, Fan Installation Works at Dr BR Ambedkar Dialysis Center, RKG, Ward No/97	BBMP West Zone	BBMP	Division 2	6/10/2021
75	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Ward no/ 159, Kengeri, Shirke Main Road and Cross Roads	BBMP Yalahanka-Yashvanthpura AEE	BBMP	Division 3	22/9/2021
76	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Ward No: RCC drainage and slab installation works on 1st and 2nd intersections of 130th Janata Party	BBMP Yalahanka-Yashvanthpura AEE	BBMP	Division 3	22/9/2021
77	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Music Fountain, Landscape Design and Track Walking Works at Dayanandanagar Park, Ward No/97	BBMP West Zone	BBMP	Division 2	6/10/2021
78	Department of Education RIDF (21)	Laboratory building for Moodigere Tau Government College,	Chikkamagaluru	Mysore	C/ Mangalore	25/10/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
		Chikkamagaluru District				
79	RD&PR Dept Rural Development and Panchayat Raj Water Supply Project	Regular Model Water Purification Plant at B/Aralikatti Village, Hubli Taluk, Dharwad District	Dharwad	Belgaum	Dharwad	21/9/2021
80	RD&PR Dept Rural Development and Panchayat Raj Phase 3 Pure Drinking Water (RO) Units for 2016-17 (No/ 1680)	Construction of Regular Phase-3 Water Purification Plant (Unit-2) in sixteen villages of Nanjangud Taluk	Mysore	Mysore	Mysore	4/10/2021
81	KUWS & DB KUWS & amp; D/B/ - Karnataka Urban Development Water Supply and Drainage Board KWS & DB - Karnataka Urban Water Supply and Drainage Board Works	Tumkur City Shettihalli Railway Complete Rain Water Shelter Works	Tumkur	Bangalore	Tumkur	17/9/2021
82	RD&PR Dept Rural Development and Panchayat Raj Phase 3 Pure Drinking Water (RO) Units for 2016-17 (No/ 1680)	RO & UV Water Purification Unit-2 in Badagala Village, Beedar Taluk, Beedar District	Bidar	Gulbarga	Bidar	20/9/2021
83	RD&PR Dept Rural Development and Panchayat Raj Phase 3 Pure Drinking Water (RO) Units for 2016-17 (No/ 1680)	Bantwal Taluk Vitlapadnoor Grapam Vitlapadnur Village RO Water Supply (Unit-2) KM	Mangalore	Mysore	Mangalore	26/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
84	RD&PR Dept Rural Development and Panchayat Raj Phase 3 Pure Drinking Water (RO) Units for 2016-17 (No/ 1680)	Construction of Clean Water Unit (Unit-1) RM	Chikkamagaluru	Mysore	C/ Mangalore	25/10/2021
85	RD&PR Dept Rural Development and Panchayat Raj Phase 3 Pure Drinking Water (RO) Units for 2016-17 (No/ 1680)	Challakere Taluk Water purification plant works in a large village/	Challakere - 1	Chitradurga	Challakere	13/10/2021
86	RD&PR Dept Rural Development and Panchayat Raj Phase 3 Pure Drinking Water (RO) Units for 2016-17 (No/ 1680)	R/O, in Haikal village of Chitradurga Taluk/ Plant Construction	Chitradurga	Chitradurga	Chitradurga	12/10/2021
87	RD&PR Dept Rural Development and Panchayat Raj Phase 3 Pure Drinking Water (RO) Units for 2016-17 (No/ 1680)	Fresh Drinking Water Unit 3rd Stage, 1000LPH Adigarakkalli, Anekal Taluk (KIOSK)	Bangalore City	Bangalore	Bangalore	
88	RD&PR Dept Rural Development and Panchayat Raj Compact RO Works 2016-17 (Phase I)	Water purification plant, Gottihalli, Kanakapura Taluk	Ramanagara	Bangalore	Ramanagar	
89	RD&PR Dept Rural Development and Panchayat Raj Phase 3 Pure Drinking Water (RO) Units for 2016-17 (No/ 1680)	Construction of a Clean Drinking Water Unit at Chattanahalli Village, Shahpura Taluk/ (Regular)	Yadagiri	Gulbarga	Yadagir	25/9/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
90	RD&PR Dept Rural Development and Panchayat Raj Phase 3 Pure Drinking Water (RO) Units for 2016-17 (No/ 1680)	Water Treatment Plant (kiosk) in Bekal Taluk, Rekulagi Village, Beedra District	Bidar	Gulbarga	Bidar	21/9/2021
91	RD&PR Dept Rural Development and Panchayat Raj Compact RO Works 2016-17 (Phase I)	R/O/ Unit Unit in Yadlapur Village, Raichur Taluk	Raichur	Gulbarga	Raichur	30/9/2021
92	RD&PR Dept Rural Development and Panchayat Raj Phase 3 Pure Drinking Water (RO) Units for 2016-17 (No/ 1680)	Kioska Model Water Purification Plant (unit-2) kiosk at Nulvi-2 Village, Hubli Taluk, Dharwad District	Dharwad	Belgaum	Dharwad	21/9/2021
93	SWD Department of Social Welfare (SWD) Works of Social Welfare Department	Challakere Ta Dr/ Ramajogihalli in the village BR Ambedkar Bhavan Construction Works	Challakere - 1	Chitradurga	Challakere	13/10/2021
94	SWD Department of Social Welfare (SWD) Works of Social Welfare Department	Construction of CC Road in Neelagunda Village, Badami Taluk, Scheduled Tribes Colony, No:	Bagalkotte-1	Belgaum	Bagalkot	6/10/2021
95	DC, DC - District Social Welfare Department	S/C/ of Arakera village in Devadurga Taluk/ In the Colony, C/C/ Road Construction Works/ (SCP)	Raichur (PE)	Gulbarga	Raichur	1/10/2021
96	Works of the Tahsildar Revenue Department	Aluminum partition and interior refurbishment to the loft premises of Tiptur Taluk office	Tumkur	Bangalore	Tumkur	21/9/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
97	Works of the Tahsildar Revenue Department	Court hall renovation works of Tiptur Taluk office	Tumkur	Bangalore	Tumkur	21/9/2021
98	ZP District Panchayat Department of Social Welfare	Construction of ST Colony CC Road at Mannarayodu village of Bantwal Taluk	Mangalore	Mysore	Mangalore	26/10/2021
99	Department of Veterinary Medicine RIDF (22)	Veterinary Hospital Building in Khanapur Town, Belgaum District/ (R/ I/ D/ F-22)	Belgaum	Belgaum	Belgaum	24/9/2021
100	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Ward No/ 176 Btm 2nd Stage Sewage and Footpath Improvement Works around Medina City (176-17-000064)	BBMP South Zone	BBMP	Division 3	16/9/2021
101	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Wondering No/ 148 Izipur main road around (148-17-000050)	BBMP South Zone	BBMP	Division 3	23/9/2021
102	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Ward No: 160 Water Supply Works through Tanker (160-17-000024) at Rajarajeshwari City Parks	BBMP Yalahanka-Yashvanthpura AEE	BBMP	Division 3	
103	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Repairs and refinishing of new street signage boards to old nameplates at Vidyaranyapuram, Ward No/ 11 (Kuvempunagar)	BBMP RR Nagara / Byatarayanapura AEE	BBMP	Division 4	8/11/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
		Works (011-14-000026)				
104	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Road & Sewer Construction & Development Works (006-18- 000020) at Sai Road, Hegadenagar, Ward No/ 06	BBMP RR Nagara / Byatarayanapur a AEE	BBMP	Division 4	8/11/2021
105	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Road & Sewerage & Development Works (006-18- 000021) in Hegadenagar area of Ward No/ 06	BBMP RR Nagara / Byatarayanapur a AEE	BBMP	Division 4	8/11/2021
106	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Joint Wall Work (Violated Part) Organization for Social and Economic Change Bangalore	BBMP Yalahanka- Yashvanthpura AEE	BBMP	Division 3	24/9/2021
107	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Concrete and Asphalt Works (119- 16-000021) in Ward No/119, Kalasipaliya Ext Roads, AM Roads	BBMP South Zone	BBMP	Division 3	20/9/2021
108	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Ward No/119 of Dharmaswamy Devasthanam Ward Banappa Park Road from 11th Cross to 15th Cross Development Works (119-16- 000019)	BBMP South Zone	BBMP	Division 3	20/9/2021
109	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Sewerage & Road Improvement Works (161-17- 000053) at	BBMP South Zone	BBMP	Division 3	17/9/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
		Hoskerehalli, Ward No/161				
110	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Sewerage & Road Improvement Works (182-17-000055) at Ward No/ 182, Padmanabhanagar Road	BBMP South Zone	BBMP	Division 3	17/9/2021
111	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Ward No/ 162 to 1st, 2nd, 3rd, 4th, 5th intersection of T/ Block, 21st, 22nd, 23rd, 24th Head (Ward No/ 162)	BBMP South Zone	BBMP	Division 3	6/9/2021
112	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Drainage and Road Improvement Works (056-16-000030) on 2nd Main Road and surrounding roads of Pileout, A/Narayanapura, Wad No/56	BBMP Mahadevapura	BBMP	Division 5	21/10/2021
113	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Ward No 105 Development of Snail Park (105-16-000030)	BBMP West Zone	BBMP	Division 2	7/10/2021
114	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Bus East Side (DC) to the right of Hodi Sakal Ashram, Bangalore East Taluk, Mahadevapura Assembly constituency	BBMP Mahadevapura	BBMP	Division 5	18/10/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
115	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Bangalore East Taluk, Mahadevapura Legislative Assembly Area, Bus Standing Bus (DC) near Hodi Circle Signal	BBMP Mahadevapura	BBMP	Division 5	18/10/202 1
116	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Bus Municipal Corporation (DC) near Mullur Government Ground, Bangalore East Taluk, Mahadevapura Assembly Constituency	BBMP Mahadevapura	BBMP	Division 5	18/10/202 1
117	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Drainage Pump Machinery and Pipeline Works (106-17-000062)	BBMP West Zone	BBMP	Division 2	
118	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Road and Sewer Development Works (113-16- 000065) on the west side exit from the air port of Ward No/113	BBMP Mahadevapura	BBMP	Division 5	18/10/202 1
119	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Closing and De- silting of Drain and Debris Removal Works (VAT No/89) (089-13-000046)	BBMP Mahadevapura	BBMP	Division 5	21/10/202 1
120	BBMP Brahat Bangalore Metropolitan Traffic Enforcement Cell (TEC)	Existing Hamps, HRPC Junction Identification and Medium Painting, Installation of Signage Boards, Solar Studs, Reflectors and Risk Boards in the	BBMP West Zone	BBMP	Division 2	13/11/202 1

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
		Western Region (304-17-000212)				
121	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Ward No/ 172 Quattrus Development Works of Madiwala Silk Board (172-17- 000015)	BBMP South Zone	BBMP	Division 3	16/9/2021
122	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Ward No: 40, Water Purification Unit (310-17-000026)	BBMP Yalahanka- Yashvanthpura AEE	BBMP	Division 3	24/9/2021
123	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Development of Trees in the Park of Part II of the BCCHS Project under Wad No/198 (198-17- 000005)	BBMP Yalahanka- Yashvanthpura AEE	BBMP	Division 3	8/10/2021
124	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Construction of Bronze Daughter of Nadaprabhu Kempegowder's Soucy Mrs/ Lakshmedevi at BBMP Headquarters (110-17-000058)	BBMP Mahadevapura	BBMP	Division 5	18/10/2021
125	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Of Ward No/ 139, K/R/ Borewell works around the market/ (139-17- 000080)	BBMP West Zone	BBMP	Division 2	13/11/2021
126	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Ward No/ 139, old KR building building (south side) paint job/ (139-17- 000075)	BBMP West Zone	BBMP	Division 2	13/11/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
127	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Andhra Muniyappa layout of the outer drainage of Wad No/25, Anganwadi main road and main road of Ganesha temple and cross roads (025-14-000031)	BBMP Mahadevapura	BBMP	Division 5	21/10/2021
128	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Ward no/ ISRO Layout 7th, 8th, 9th, 14th, Cross Road (ISRO Bus Stand to Dead End) 3rd Main Road (SBM to ISRO Bus Stand) at 181 KS Layout (181-13-000021)	BBMP South Zone	BBMP	Division 3	17/9/2021
129	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Binny Layout of Ward No/132 and Drainage Development Works (132-17-000009)	BBMP South Zone	BBMP	Division 3	18/9/2021
130	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Road Development and Demobilization Works (081-15-000031) at Ranganatha Layout and Teja Layout near Mahadevapur, Ward No/81	BBMP Mahadevapura	BBMP	Division 5	21/10/2021
131	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	6 Borewells Drilling Works (310-17-000119) in villages surrounding Mavallipura Solid Waste Treatment Plant	BBMP RR Nagara / Byatarayanapura AEE	BBMP	Division 4	8/11/2021
132	BBMP BRAHT BANGALORE Municipal Policy	Improvement and expansion of Sadashiva Nagar Police Station	BBMP West Zone	BBMP	Division 2	7/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	BBMP Department Works	Junction (304-17-000241) to provide free left turn to new BEL Road within BBMP limits				
133	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Lugare site number/ 11 and 12, providing special repair and restoration work for old dilapidated houses in Lakmidevinagar (Type-1-A Block No/ 17 to 20)/ (042-17-000017)	BBMP Yalahanka-Yashvanthpura AEE	BBMP	Division 3	27/9/2021
134	Department of Education Works of the Department of Education	Bellary Diet Office Hostel Building Kitchen & Dining Hall	Bellary	Chitradurga	Bellary	6/10/2021
135	HKRDB Hyderabad Karnataka Development Board (HKDB) Hyderabad Karnataka Development Program	Post-matric girls' hostel building in Beedara City (2016-17)	Bidar	Gulbarga	Bidar	20/9/2021
136	HKRDB Hyderabad Karnataka Development Board (HKDB) Hyderabad Karnataka Development Program	CC Road and Sewerage Works in Bobbukunte Village, Bellary Taluk	Bellary	Chitradurga	Bellary	6/10/2021
137	KSBCCL Karnataka State Beverage Corporation KS BCL	Disaster and Refurbishment in Tumkur Taluk	Tumkur	Bangalore	Tumkur	16/9/2021
138	SWD Department of Social Welfare	Graduation at Amaragola Village,	Dharwad	Belgaum	Dharwad	20/9/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	(SWD) Works of Social Welfare Department	Hubli Taluk, Pooja Boys' Residential School				
139	SWD Department of Social Welfare (SWD) 3054 Works (Road Development)	Chikmagalur Ta Hiregauja S/C/ Colony Road Works	Chikkamagaluru	Mysore	C/ Mangalore	25/10/2021
140	SWD Department of Social Welfare (SWD) Works of Social Welfare Department	Matricolor of BGKare Village	Challakere - 1	Chitradurga	Challakere	13/10/2021
141	SWD Department of Social Welfare (SWD) Disaster Management	Pooja Vidyathi Nilayam Degree of Sakri Boys	Tumkur	Bangalore	Tumkur	21/9/2021
142	RD&PR Dept Rural Development and Panchayati Raj Policy Commission RO Works (No/ 287)	Chitradurga Ta Construction of a clean drinking water plant in Muttayanahati village in the Gonnor Grama Panchayat range	Chitradurga	Chitradurga	Chitradurga	12/10/2021
143	RD&PR Dept Rural Development and Panchayat Raj 3054 Works (Road Development)	Development of Vishnumoorthy Temple - Kernike Road in Kavattaru Village of Mangalore Taluk/	Mangalore	Mysore	Mangalore	26/10/2021
144	RD&PR Dept Under Rural Development and Panchayat Raj SCP / TSP Scheme Works (No/ 1129)	Clean water plant in SC / ST Colony at Yadagiri town near Chachakra village/	Yadagiri	Gulbarga	Yadagir	23/9/2021
145	RD&PR Dept Under Rural Development and Panchayat Raj SCP / TSP	Construction of Shuddhi Drinking Water Unit under SCP / TSP Scheme at	Bagalkotte-1	Belgaum	Bagalkot	5/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	Scheme Works (No/ 1129)	Kirasooru Village, Bagalkot Taluk				
146	RD&PR Dept Rural Development and Panchayat Raj Suvarna Village Project Phase-V	5th Phase Change Works, Megapallya, Magadi Taluk	Ramanagara	Bangalore	Ramanagar	9/9/2021
147	RD&PR Dept Under Rural Development and Panchayat Raj SCP / TSP Scheme Works (No/ 1129)	Construction of Purified Drinking Water Unit at Kunal Village, SC / ST Colony, Kunala Gram Panchayat, Gubbi Taluk/	Tumkur	Bangalore	Tumkur	21/9/2021
148	RD&PR Dept Rural Development and Panchayat Raj Village	Hoollakere Taluk Construction of village samte in Ramgiri village	Chitradurga	Chitradurga	Chitradurga	
149	RD&PR Dept Under Rural Development and Panchayat Raj SCP / TSP Scheme Works (No/ 1129)	Clean drinking water unit at Bellary Taluk Belgal village	Bellary	Chitradurga	Bellary	6/10/2021
150	RD&PR Dept Rural Development and Panchayati Raj Policy Commission RO Works (No/ 287)	Construction of Clean Drinking Water Unit at Allkur Village, Raichur Taluk (1000 LPH Capacity Regular Mode) (Policy Commission)	Raichur	Gulbarga	Raichur	30/9/2021
151	RD&PR Dept Rural Development and Panchayati Raj Policy Commission RO Works (No/ 287)	Construction of Clean Drinking Water Unit at Dinni Village, Raichur Taluk (1000 LPH Capacity Regular Mode) (Policy Commission)	Raichur	Gulbarga	Raichur	30/9/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
152	RD&PR Dept Rural Development and Panchayat Raj Phase 3 Pure Drinking Water (RO) Units for 2016-17 (No/ 1680)	Construction of Regular Model Water Purification Unit in Narasipura Taluk Hunsur Village	Mysore (Central)	Mysore	Mysore	5/10/2021
153	AC - Assistant Commissioner of Revenue Department	Pathway Construction	Lingasagur	Gulbarga	Raichur	4/10/2021
154	DC D/C/— District Revenue Department Works	Road and ground level works in the complex office building of Javergi town/	Kalburgi - 1	Gulbarga	Kalburagi-1	22/9/2021
155	DC D/C/— District Revenue Department Works	Granite Flooring Works for Shop Complex in Javergi Town	Kalburgi - 1	Gulbarga	Kalburagi-1	22/9/2021
156	DC D/C/— District Revenue Department Works	Construction of curtain wall for Shop Complex in Javergi Town	Kalburgi - 1	Gulbarga	Kalburagi-1	22/9/2021
157	DC D/C/— District Revenue Department Works	Nadakkal Office Building Construction (Phase-4) in Mirzana Village, Kumta Taluk, Uttarakhand	Uttara Kannada (Karwar)	Belgaum	Karwar	27/10/2021
158	DC D/C/— District Revenue Department Works	Nadakkal Office Construction Work (Phase-3) at Mirzana Village, Kumta Taluk, Uttarakhand	Uttara Kannada (Karwar)	Belgaum	Karwar	27/10/2021
159	Karwar DC Revenue Department Works	Nada Office Building in Kokata Taluk, Uttara Kannada District	Uttara Kannada (Karwar)	Belgaum	Karwar	27/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
160	DC D/C/— District Revenue Department Works	Nadakkal Office Building Construction Work (Phase II) at Mirzana Village, Kumata Taluk, Uttarakhand	Uttara Kannada (Karwar)	Belgaum	Karwar	27/10/2021
161	DC D/C/— District Revenue Department Works	Nadakkal Office Building Construction Work (Phase I) at Mirzana Village, Kumata Taluk, Uttarakhand	Uttara Kannada (Karwar)	Belgaum	Karwar	27/10/2021
162	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of a Purified Drinking Water Unit for Government East Matric Boys' Hostel at Naikkal Village, Shahapur Taluk, Yadagiri District (50 LPH)	Yadagiri	Gulbarga	Yadagir	25/9/2021
163	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of a Pure Drinking Water Unit for Government East Matric Boys' Hostel at Honagera Village, Yadagiri Taluk/ (50 LPH)	Yadagiri	Gulbarga	Yadagir	25/9/2021
164	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of a Pure Drinking Water Unit for Government East Matric Boys' Hostel in Malhara Village, Yadagiri Taluk/ (50 LPH)	Yadagiri	Gulbarga	Yadagir	24/9/2021
165	RO Works for SC / ST Hostels (No/ 2142) under	Construction of a Pure Drinking Water Unit for	Yadagiri	Gulbarga	Yadagir	24/9/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Government East Matric Boys' Hostel in Berechur Village, Yadagiri Taluk/ (50 LPH)				
166	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of a Purified Drinking Water Unit for Government East Matric Boys' Hostel at Lingeri Village, Yadagiri Taluk/ (50 LPH)	Yadagiri	Gulbarga	Yadagir	24/9/2021
167	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of a Pure Drinking Water Unit for Government East Matric Boys' Hostel in Konkal Village (50 LPH)	Yadagiri	Gulbarga	Yadagir	24/9/2021
168	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of a Pure Drinking Water Unit for Government East Matric Boys' Hostel in Anupura Village, Yadagiri Taluk (50 LPH)	Yadagiri	Gulbarga	Yadagir	24/9/2021
169	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of a Pure Drinking Water Unit for Government East Matric Boys' Hostel in Madwara Village, Yadagiri Taluk (50 LPH)	Yadagiri	Gulbarga	Yadagir	24/9/2021
170	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation	Construction of Purified Drinking Water Unit for Government East Matric Boys' Hostel in Motnalli Village,	Yadagiri	Gulbarga	Yadagir	25/9/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	Agency SCP / TSP grant	Yadagiri Taluk/ (100 LPH)				
171	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Installation of water purification plant (50 LPH) for post-matric girls' dormitory in Arakera village, Devadurga Taluk/	Raichur (PE)	Gulbarga	Raichur	1/10/2021
172	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Installation of water purification plant (50 LPH) for post-matric boys' dormitory in Jalahalli village of Devadurga Taluk/	Raichur (PE)	Gulbarga	Raichur	1/10/2021
173	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of water purification plant (50 LPH) for the pre-matric pre-school children's dormitory of the Scheduled Tribes Welfare Department at B/Garekal village, Devadurga Taluk/	Raichur (PE)	Gulbarga	Raichur	1/10/2021
174	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of water purification plant (100 LPH) for the pre-matric girls' dormitory of the Scheduled Tribes Welfare Department at Arakera village, Devadurga Taluk/	Raichur (PE)	Gulbarga	Raichur	1/10/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
175	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of water purification plant (100 LPH) for the pre-matric girls quarters of the Scheduled Tribes Welfare Department in Kotadoddi village in Devadurga Taluk/	Raichur (PE)	Gulbarga	Raichur	1/10/2021
176	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Government Metric East Girls' Hostel in Gabbur Village, Devadurga Taluk	Raichur (PE)	Gulbarga	Raichur	1/10/2021
177	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Government Metric East Girls' Hostel in Jagira Jadaladinni Village, Devadurga Taluk	Raichur (PE)	Gulbarga	Raichur	1/10/2021
178	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Boys' Hostel after Government Metric in Aneoshoor Village, Lingasaguru Taluk	Lingasagur	Gulbarga	Raichur	3/10/2021
179	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Government Metric East Boys' Hostel in Yalagatta Village, Lingasaguru Taluk	Lingasagur	Gulbarga	Raichur	4/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
180	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Government Metric Pre-Boys' Hostel in Eachanal Village, Lingasaguru Taluk	Lingasagur	Gulbarga	Raichur	3/10/2021
181	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Government Metric Pre-Boys' Hostel in Nagarahala Village, Lingasaguru Taluk	Lingasagur	Gulbarga	Raichur	3/10/2021
182	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Government Metric Pre-Boys' Hostel in Nagalapura Village, Lingasaguru Taluk	Lingasagur	Gulbarga	Raichur	4/10/2021
183	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	A water purification plant (100 LPH) for girls' dormitory after government metric in Manawi town/	Lingasagur	Gulbarga	Raichur	2/10/2021
184	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	The girls' P/U/ Installation of Water Purification Unit (100 LPH) for College Hostel	Lingasagur	Gulbarga	Raichur	2/10/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
185	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Post-Matric Boys' Hostel of Scheduled Tribes Welfare Department in Manavi Town	Lingasagur	Gulbarga	Raichur	2/10/2021
186	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of water purification plant (100 LPH) for the pre-matric pre-school children's dormitory of the Scheduled Tribes Welfare Department at Manavi Town	Lingasagur	Gulbarga	Raichur	2/10/2021
187	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of water purification plant (50 LPH) for the pre-matric girls' quarters of the Scheduled Tribes Welfare Department at Kavithala village in Manavi Taluk/	Lingasagur	Gulbarga	Raichur	2/10/2021
188	Karnataka Rural Water Supply & Sanitation Agency SCP & TSP	Construction work of Scheduled Caste Community Toilet and Bathroom Complex under the Swachh Bharat Mission (GR) Project in Kutinonagar (Ramagurwadi Panchayat), Belgaum District, Khanapur Taluk/	Belgaum	Belgaum	Belgaum	24/9/2021
189	Karnataka Rural Water Supply & Sanitation Agency SCP & TSP	Implementation of Clean Drinking Water Unit of Post-Matric girls'	Bangalore Rural	Bangalore	Bangalore	18/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
		dormitory at Hoskote, Bangalore Rural District/ (100LPH)				
190	Karnataka Rural Water Supply & Sanitation Agency SCP & TSP	Implementation of Clean Drinking Water Unit of Devanahalli Town Government Metric East Girls Student Hostel in Bangalore Rural District/ (100LPH)	Bangalore Rural	Bangalore	Bangalore	18/10/2021
191	Karnataka Rural Water Supply & Sanitation Agency SCP & TSP	Implementation of Clean Drinking Water (50 LPH) of Post-Matric Boys' Student Home in Vijayapura Town, Devanahalli Taluk, Bangalore Rural District (50 LPH)	Bangalore Rural	Bangalore	Bangalore	18/10/2021
192	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Fresh Drinking Water Unit at Zakouri Pre-Matric Girls Hostel in Tumkur Taluk	Tumkur	Bangalore	Tumkur	16/9/2021
193	Karnataka Rural Water Supply & Sanitation Agency under the SCP / TSP Scheme Works (No/ 1129)	Fresh Drinking Water Unit at Sakouri Pre-Matric Boys Hostel, Tipatur Taluk	Tumkur	Bangalore	Tumkur	21/9/2021
194	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation	Implementation of Water Purification Unit (100 LPH) for Government Metric Residency in	Raichur	Gulbarga	Raichur	30/9/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	Agency SCP / TSP grant	Devanapalli Village, Raichur Taluk				
195	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Government Metric Pre-Boys' Hostel in Jegarakal Village, Raichur Taluk	Raichur	Gulbarga	Raichur	30/9/2021
196	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Government Metric East Girls Hostel at Jegarakal Village, Raichur Taluk	Raichur	Gulbarga	Raichur	30/9/2021
197	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Government Metric Pre-Residence in Kurdi Village, Manavi Taluk	Raichur	Gulbarga	Raichur	30/9/2021
198	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Govt/ Metric East Girls Hostel of Scheduled Tribes Welfare Department, Raichur	Raichur	Gulbarga	Raichur	29/9/2021
199	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation	The government metric in Raichur city followed by P/J/ Implementation of Water Purification Unit (50	Raichur	Gulbarga	Raichur	29/9/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	Agency SCP / TSP grant	LPH) for Girls College Hostel				
200	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Govt/ Water Purification Unit (150 LPH) for Girls Hostel	Raichur	Gulbarga	Raichur	29/9/2021
201	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Government Metric Pre-Residence in Kalmala Village, Raichur Taluk/	Raichur	Gulbarga	Raichur	30/9/2021
202	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Boys Hostel in Raichur City	Raichur	Gulbarga	Raichur	29/9/2021
203	Karnataka Rural Water Supply & Sanitation Agency under the SCP / TSP Scheme Works (No/ 1129)	Construction of Clean Drinking Water Units under SC / ST Scheme in Varkanalli Village, Yadagiri Taluk/ (Additional No/ 198)	Yadagiri	Gulbarga	Yadagir	23/9/2021
204	Karnataka Rural Water Supply & Sanitation Agency under the SCP / TSP Scheme Works (No/ 1129)	Construction of Purified Drinking Water Units under SC / ST Project in Horuncha Village, Yadagiri	Yadagiri	Gulbarga	Yadagir	25/9/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
		Taluk/ (Additional No/ 198)				
205	Karnataka Rural Water Supply & Sanitation Agency under the SCP / TSP Scheme Works (No/ 1129)	Construction of Purified Drinking Water Units under SC / ST Project in Tatalagera Village, Yadagiri Taluk/ (Additional No/ 198)	Yadagiri	Gulbarga	Yadagir	24/9/2021
206	Karnataka Rural Water Supply & Sanitation Agency under the SCP / TSP Scheme Works (No/ 1129)	Construction of Clean Drinking Water Units under the SC / ST Project in Ganapura Village, Yadagiri Taluk/ (Additional No/ 198)	Yadagiri	Gulbarga	Yadagir	24/9/2021
207	Karnataka Rural Water Supply & Sanitation Agency under the SCP / TSP Scheme Works (No/ 1129)	Construction of Clean Drinking Water Units under SC / ST Project in Pagalapura Village, Yadagiri Taluk/ (Additional No/ 198)	Yadagiri	Gulbarga	Yadagir	24/9/2021
208	Karnataka Rural Water Supply & Sanitation Agency under the SCP / TSP Scheme Works (No/ 1129)	K/ of Yadagiri Taluk/ Construction of Clean Drinking Water Components under SC / ST Scheme in Hosalli Village/ (Additional No/ 198)	Yadagiri	Gulbarga	Yadagir	25/9/2021
209	Karnataka Rural Water Supply & Sanitation Agency under the SCP / TSP Scheme Works (No/ 1129)	Construction of Purified Drinking Water Units under SC / ST Project in Bhimanagara Village, Yadagiri Taluk/ (Additional No/ 198)	Yadagiri	Gulbarga	Yadagir	23/9/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
210	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Water Purification Unit (100L) for the Eastern Children's Vidyalaya of the Raravi P/P/ Welfare Department, Siruguppa Taluk	Bellary	Chitradurga	Bellary	6/10/2021
211	Karnataka Rural Water Supply & Sanitation Agency Water Supply Project	Water Purification Unit (100L) for the post-boys' welfare center at Siruguppa town	Bellary	Chitradurga	Bellary	7/10/2021
212	Karnataka Rural Water Supply & Sanitation Agency Water Supply Project	Water Purification Unit (50L) for the Eastern Children's Vidyalaya, Department of Welfare of Rawihala Pulses of Siruguppa Taluk	Bellary	Chitradurga	Bellary	6/10/2021
213	Karnataka Rural Water Supply & Sanitation Agency Water Supply Project	Water Purification Unit (50L) for the Eastern Children's Vidyalaya of Takkalakote Tribal Welfare Department of Siruguppa Taluk	Bellary	Chitradurga	Bellary	7/10/2021
214	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Drinking Water Unit (200LPH) for Scheduled Castes (SC) Residential School in Dharwad	Dharwad	Belgaum	Dharwad	
215	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural	Drinking Water Unit (100LPH) for Dharwad City Scheduled Tribes	Dharwad	Belgaum	Dharwad	20/9/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	Water Supply & Sanitation Agency SCP / TSP grant	Welfare Department Post-Matric Girls' Hostel (ST)				
216	Karnataka Rural Water Supply & Sanitation Agency SCP & TSP	Implementation of clean drinking water component of post-matric boys' dormitory in Bangalore Rural District	Bangalore Rural	Bangalore	Bangalore	20/10/2021
217	Karnataka Rural Water Supply & Sanitation Agency SCP & TSP	Implementation of Clean Drinking Water Component of Post-Matric Boys' Hostel at Hoskote, Bangalore Rural District/	Bangalore Rural	Bangalore	Bangalore	18/10/2021
218	Karnataka Rural Water Supply & Sanitation Agency SCP & TSP	Implementation of a Pure Drinking Water Unit of Government Matric Pre-Boys' Hostel in Hoskote Town, Bangalore Rural District/	Bangalore Rural	Bangalore	Bangalore	18/10/2021
219	Karnataka Rural Water Supply & Sanitation Agency Water Supply Project	Water Purification Unit (100L) for Chellaguriki Bali Taluk East Caste Welfare Department	Bellary	Chitradurga	Bellary	6/10/2021
220	Karnataka Rural Water Supply & Sanitation Agency Water Supply Project	Water Purification Unit (100L) for the Eastern Children's Home of the Sirigare P/A/ Welfare Department, Siruguppa Taluk	Bellary	Chitradurga	Bellary	6/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
221	Karnataka Rural Water Supply & Sanitation Agency Water Supply Project	Water Purification Unit (100L) for the Eastern Children's Vidyalaya, Tekkalakote, SC Department of Welfare, Siruguppa Taluk	Bellary	Chitradurga	Bellary	7/10/2021
222	Karnataka Rural Water Supply & Sanitation Agency under the SCP / TSP Scheme Works (No/ 1129)	Construction of Clean Drinking Water Plant at Kalmala Village, Raichur Taluk/ (SCP / TSP) (Black Soil)	Raichur	Gulbarga	Raichur	30/9/2021
223	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	100 Lph Pure Drinking Water Unit for Matric East Boys' College (SC) in Ilakalla Town	Bagalkotte-1	Belgaum	Bagalkot	6/10/2021
224	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Installation of Purified Drinking Water (200 LPH) at Scheduled Tribes (SC) Residential School in Haveri	Haveri	Belgaum	Haveri	4/10/2021
225	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Clean Drinking Water Unit (100 LPH) at Metric Student Hostel in Shigamawa Town	Haveri	Belgaum	Haveri	4/10/2021
226	RO Works for SC / ST Hostels (No/ 2142) under	Implementation of a Clean Drinking Water Unit (150	Haveri	Belgaum	Haveri	1/10/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	LPH) at Matric East Boys' Hostel in Hanagal Town				
227	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Clean Drinking Water Unit (50 LPH) at Matric Pre-Student Hostel in Adura Village, Hanagal Taluk	Haveri	Belgaum	Haveri	1/10/2021
228	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Installation of Purified Drinking Water (50 LPH) at Metric Pre-Students' Hostel in Belagalapet Village, Hanagal Taluk	Haveri	Belgaum	Haveri	1/10/2021
229	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Clean Drinking Water Unit (150 LPH) at Metric East Girls' Hostel in Hanagal Town	Haveri	Belgaum	Haveri	1/10/2021
230	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Pure Drinking Water Unit (100 LPH) in Post-Matric Boys' Hostel at Rice-Aloor Village, Hanagal Taluk	Haveri	Belgaum	Haveri	1/10/2021
231	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation	250 Lph Pure Drinking Water Unit for Post-Matric Girls School in Bagalkot Town	Bagalkotte-1	Belgaum	Bagalkot	5/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	Agency SCP / TSP grant					
232	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	50 Lph Pure Drinking Water Unit for Scheduled Tribes Welfare Student's Girls Hostel in Bagalkot	Bagalkotte-1	Belgaum	Bagalkot	5/10/2021
233	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	100 Lph Pure Drinking Water Unit for Matric East Girls' Hostel in Shirur Village, Bagalkot Taluk	Bagalkotte-1	Belgaum	Bagalkot	6/10/2021
234	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	100 LPH Water Purification Unit at Matrica East Boys' Student Residence, Scheduled Tribes Welfare Department run by the Department of Social Welfare, Belgaum Taluk	Belgaum	Belgaum	Belgaum	28/9/2021
235	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	50 LPH Water Purification Unit at Matrica Post-Matric Boys' Hostel of Scheduled Tribes Welfare Department, Department of Social Welfare, Belgaum	Belgaum	Belgaum	Belgaum	30/9/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
236	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	200 LPH Water Purification Plant at Scheduled Tribes (SC) Residential School run by Belgaum Town, Belgaum Town Department of Social Welfare	Belgaum	Belgaum	Belgaum	30/9/2021
237	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	200 LPH Water Purification Unit at Scheduled Caste (SC) Residential School run by Department of Social Welfare, Nehru Nagar, Belgaum Taluk/	Belgaum	Belgaum	Belgaum	28/9/2021
238	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	200 LPH Water Purification Unit at Matrica East Girls' Hostel run by Department of Social Welfare in Belgaum	Belgaum	Belgaum	Belgaum	28/9/2021
239	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	150 LPH Water Purification Unit at Matrica Pre-Kindergarten Student Hostel run by Department of Social Welfare in Belgaum	Belgaum	Belgaum	Belgaum	30/9/2021
240	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	50 LPH Water Purification Unit at Matrica Pre-Kindergarten Student Hostel run by Department of Social Welfare in Itagi Village, Khanapur Taluk	Belgaum	Belgaum	Belgaum	24/9/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
241	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	100 LPH Water Purification Unit at Matrica East Girls' Hostel run by Department of Social Welfare in Khanapur Taluk	Belgaum	Belgaum	Belgaum	24/9/2021
242	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	100 LPH Water Purification Plant at Matrica East Boys' Hostel run by Department of Social Welfare in Khanapur Taluk	Belgaum	Belgaum	Belgaum	24/9/2021
243	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	250 LPH Water Purification Unit - No/ 1 in Matrica Post-Boys' Hostel run by Department of Social Welfare in Belgaum City	Belgaum	Belgaum	Belgaum	30/9/2021
244	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	50 LPH Water Purification Unit - No/ 3 in Matrica Post-Boys' Hostel run by Department of Social Welfare in Belgaum City	Belgaum	Belgaum	Belgaum	30/9/2021
245	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	100 LPH Water Purification Plant - No/ 6 in Matrica Post-Boys' Hostel run by Department of Social Welfare in Belgaum City	Belgaum	Belgaum	Belgaum	29/9/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
246	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	100 LPH Water Purification Plant - No/ 5 in Matrica Post-Boys' Hostel run by Department of Social Welfare in Belgaum City	Belgaum	Belgaum	Belgaum	29/9/2021
247	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	50 LPH Water Purification Plant - No/ 4 in Matrica Post-Boys' Hostel run by Department of Social Welfare in Belgaum City	Belgaum	Belgaum	Belgaum	29/9/2021
248	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	150 LPH Water Purification Unit - No/ 1 in Post-Matrica Girls' Hostel run by Department of Social Welfare in Belgaum City	Belgaum	Belgaum	Belgaum	28/9/2021
249	Karnataka Rural Water Supply & Sanitation Agency under the SCP / TSP Scheme Works (No/ 1129)	Construction of Water Purification Plant under the SCP / TSP Project in Ramanagar, Joida Taluk, Uttarakhand/	Uttara Kannada (Karwar)	Belgaum	Karwar	27/10/2021
250	Karnataka Rural Water Supply & Sanitation Agency under the SCP / TSP Scheme Works (No/ 1129)	Construction of Water Purification Plant under the SCP / TSP Project at Nadumaskeri, Kumata Taluk, Uttarakannad District/	Uttara Kannada (Karwar)	Belgaum	Karwar	27/10/2021
251	Karnataka Rural Water Supply & Sanitation Agency under the SCP / TSP	Construction of Water Purification Plant under the SCP / TSP Project in Kumata Taluk	Uttara Kannada (Karwar)	Belgaum	Karwar	27/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	Scheme Works (No/ 1129)	Hegde (Part) of Uttarakhand District/				
252	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of a Clean Drinking Water Unit (50 LPH) at Matric Pre-School in Ramanagaram, Joida Taluk, Uttarakhand	Uttara Kannada (Karwar)	Belgaum	Karwar	27/10/2021
253	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of Purified Drinking Water Unit (100 LPH) for Metric Pre-School in Yellowknife, Honnavar Taluk	Uttara Kannada (Karwar)	Belgaum	Karwar	27/10/2021
254	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of Clean Drinking Water Unit (50 LPH) for Boys Student Quarters after Kumata Town Metric in Kumata Taluk	Uttara Kannada (Karwar)	Belgaum	Karwar	27/10/2021
255	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Installation of Clean Drinking Water Unit at SC Post Matriculated Girls Hostel in Lingarajan Nagar, Hubli (150 LPH)	Dharwad	Belgaum	Dharwad	22/9/2021
256	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation	Implementation of a Clean Drinking Water Unit at the Government Metric East Boys' Hostel at	Dharwad	Belgaum	Dharwad	22/9/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	Agency SCP / TSP grant	Kolliwada Village, Hubli (50 LPH)				
257	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of a Clean Drinking Water Unit at the Government Metric Post-Boys' Hostel-II at Hubli-Shahri (100 LPH)	Dharwad	Belgaum	Dharwad	21/9/2021
258	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of a Clean Drinking Water Unit at a Government Matriculate Boys' Hostel in Shirdinagar, Hubli (100 LPH)	Dharwad	Belgaum	Dharwad	27/9/2021
259	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of a Clean Drinking Water Unit at the Government Metric East Girls Hostel in Hubli, Hubli (100 LPH)	Dharwad	Belgaum	Dharwad	27/9/2021
260	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of a Clean Drinking Water Unit at Government Metric East Boys' Hostel at Surashettikoppa Village, Kalaghatgi Taluk (50 LPH)	Dharwad	Belgaum	Dharwad	21/9/2021
261	Joint Agreeculter Dept Belagavi Works of the Department of Agriculture	Joint Director of Agriculture at Belgaum Taluk, Renovation of paint and interior rooms at his office/	Belgaum	Belgaum	Belgaum	30/9/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
262	Ramanagara CEO ZP Department of Agriculture	Channapattan Taluk New Agricultural Room Building at the top of the Assistant Director of Agriculture	Ramanagara	Bangalore	Ramanagar	8/9/2021
263	Animal Husbandry & Veterinary Department, Bangalore Department of Animal Husbandry	Sewage, Pump House, Stair Repair and PVC Pipe Fitting Works in Dharwad Livestock Breeding & Training Center/ (4 works)	Dharwad	Belgaum	Dharwad	27/9/2021
264	BCM - Backward and Minority Department Backward Class Minority Works	C/C/ Road and Sewer Works, Bachenahatti Village, Magadi Taluk	Ramanagara	Bangalore	Ramanagar	9/9/2021
265	EE Hebbal BBMP BBMP Department Works	Compound wall construction and other cosmetic work at Indira Cantei to a park near Ward No/ 18 BEL Road/ (018-18-000071)	BBMP West Zone	BBMP	Division 2	13/10/2021
266	EE Hebbal BBMP BBMP Department Works	Compound wall construction, sidewalk and other works for Ward No/ 18 Indira Canteen/ (018-18-000072)	BBMP West Zone	BBMP	Division 2	16/10/2021
267	EE Hebbal BBMP BBMP Department Works	Providing Compound Wall to Ward No/ 21, Gateway to Indira Canteen and Other Works (021-18-000073)	BBMP West Zone	BBMP	Division 2	13/10/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
268	EE Hebbal BBMP BBMP Department Works	Beauty and development works in and around Ward No/ 20 Indira Canteen/ (020-18-000049)	BBMP West Zone	BBMP	Division 2	13/10/2021
269	Govindrajnagar Division, EE, BBMP BBMP Department Works	Ward No/125 Beautification of Indira Canteen at Marenahalli & Gate and Grille Works (125-18-000039)	BBMP West Zone	BBMP	Division 2	4//10/2021
270	RR Nagara, EE BBMP BBMP Department Works	Solid Waste Unit Large Scale Phase-5	BBMP Yalahanka-Yashvanthpura AEE	BBMP	Division 3	27/9/2021
271	RR Nagara, EE BBMP BBMP Department Works	Solid Waste Unit Lingadheeranahalli (Hardscape) Step-5	BBMP Yalahanka-Yashvanthpura AEE	BBMP	Division 3	28/9/2021
272	RR Nagara, EE BBMP BBMP Department Works	Solid Waste Unit Lingadheeranahalli (Landscape) Phase-4/	BBMP Yalahanka-Yashvanthpura AEE	BBMP	Division 3	28/9/2021
273	Chickpet Div EE BBMP BBMP Department Works	Sewage and Footpath Improvement Works (144-18-000012) in areas around Ward No/ 144	BBMP South Zone	BBMP	Division 3	22/9/2021
274	Mahadevpura EE BBMP District Collector	Establishment of a Pure Drinking Water Unit in the Minority Colony at the Back of the Maramma Temple, Pesh Mohalla, in the Chalarajapet Assembly constituency	BBMP Mahadevpura	BBMP	Division 5	13/11/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
275	Mahadevpura EE BBMP District Collector	Establishment of Pure Drinking Water Unit at Jagjivan Ram Minority Colony of BBMP Ward No-137 from Chamarajapet Assembly constituency,	BBMP Mahadevpura	BBMP	Division 5	18/10/2021
276	Mahadevpura EE BBMP District Collector	Establishment of Clean Drinking Water Unit at Goripaliya Minority Colony of BBMP Warda No-137 from Chamarajapet Assembly constituency	BBMP Mahadevpura	BBMP	Division 5	13/11/2021
277	KRPuram Division, EE, BBMP BBMP Department Works	Concrete Implementation of Wad No/53, Medavalli Road, Basavanapura (053- 16-000047)	BBMP Mahadevpura	BBMP	Division 5	21/10/2021
278	Kengeri Division EE BBMP BBMP Department Works	Ward No: 40 in the Great Lumber Sanitary UGD Maintenance Works (040-17-000036)	BBMP RR Nagara / Byatarayanapur a AEE	BBMP	Division 4	27/9/2021
279	BTM Layout, EE, BBMP BBMP Department Works	Tractor tippers of Ward No/ 147 (Tailor) for road cleaning works (147-17-000073)	BBMP South Zone	BBMP	Division 3	23/9/2021
280	EE Projct (West) BBMP BBMP Department Works	Multipurpose Building Works at Waver No/103, Kaveripuram (103- 17-000037)	BBMP West Zone	BBMP	Division 2	4/10/2021
281	Chamaraajapete EE BBMP BBMP	Ward No/ 137 Solar System Works at BBMP School	BBMP West Zone	BBMP	Division 2	

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	Departmental Works	College, Padarayanapura (137-18-000034)				
282	Bayalu Seeme Area Development Board (BADB) Chitradurga Plains Area Board Works	In the Govindanayaka Palya of Tumkur Taluk, CC/ Road and sewer works	Tumkur	Bangalore	Tumkur	17/9/2021
283	Thanda Development Corporation Bangalore/ Vertical infrastructure development works	CC Road Construction from Noor Bin Keeru House to Thippanna Home (2017-18)	Bidar	Gulbarga	Bidar	20/9/2021
284	Thanda Development Corporation Bangalore/ Sewalal Bhavan Works	Sewalal Community Building Workshop at Hordoli Kadaranahalli Thanda, Tumkur Taluk	Tumkur	Bangalore	Tumkur	
285	E-Governance Bangalore Other	Mangalore Taluk Karnataka One Center KSR Memorial Building Flag	Mangalore	Mysore	Mangalore	26/10/2021
286	Ramanagara CEO ZP Works for the Department of Education	Repair Works, Government High School Building, Gangonahalli, Magadi Taluk	Ramanagara	Bangalore	Ramanagar	9/9/2021
287	Deputy Conservator of Forests Training School, Dharwad Forest Department Works	Swimming Pool Campground & Security Cabin Construction Works at Dharwad Forest Campus Forest Academy Campus	Dharwad	Belgaum	Dharwad	21/9/2021
288	Horticulture Dpt Mysore Works of Horticulture Department	Underground horticulture project (S-19) in Mysore, 2018-19/	Mysore (Central)	Mysore	Mysore	4/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
289	Kaveri Neeravari Nigama Niyamitha KNNL -Kaveri Irrigation Corporation Limited Works	T/ Narasipura Ta/ Rangaswamy house in Biarapur village to Guddappa house, road Babu Jagajiveenaram S/Bhavana road to Maramma Temple & road from Smashana in SC Colony CC Road & Sewage	Mysore (Central)	Mysore	Mysore	5/10/2021
290	Kaveri Neeravari Nigama Niyamitha KNNL -Kaveri Irrigation Corporation Limited Works	Concrete road and sewer works within the boundary of Valiyamalgudu village in Narasipura Taluk	Mysore (Central)	Mysore	Mysore	5/10/2021
291	Commissioner Irrigation Dept (Central) Other	Implementation of Digital Library, Geo Portal and Decision System for Bangalore Urban Water Development Department/	Bangalore City	Bangalore	Bangalore	12/10/2021
292	Visweshwarayya Jala Nigam Ltd/, Blore Small Irrigation Department Works	CC Road and Sewerage Works in the Scheduled Caste Colony of Karenahalli Village, Periyaballapur Taluk, Bangalore Rural District/	Bangalore Rural	Bangalore	Bangalore	20/10/2021
293	Karnataka Neeravari Nigam Ltd/, Bangalore KNNL-Kaveri Irrigation Corporation Limited Works	Sisi Road and Sewerage Works in Benakahalli Village, Narasipura Taluk	Mysore (Central)	Mysore	Mysore	5/10/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
294	Library Department Library Building Works	Construction of T/ Narasipura Taluk Talukadu Village Panchayat Library	Mysore (Central)	Mysore	Mysore	5/10/2021
295	Karwar DC Revenue Department Works	Nadakkana office building work in Mirzana village of Kumta taluk of Uttarakhand district	Uttara Kannada (Karwar)	Belgaum	Karwar	27/10/2021
296	Chikmagalur DC MLA Lad	Chikkamagaluru Tha // Beekanahalli Gram Hampapuram Maramma Community Hall Construction (72 / 2016-17)	Chikkamagaluru	Mysore	C/ Mangalore	25/10/2021
297	Chitradurga DC MLA Lad	From SJM College to Prabhulingaswamy's house at Dhawagiri building in Hollulkere Chitradurga Road, Chitradurga City/ Road construction	Chitradurga	Chitradurga	Chitradurga	11/10/2021
298	Mangaluru DC MLA Lad	Development of Kapithaniyo Board School Road, Mangalore Taluk 49th Kankanady Ward/	Mangalore	Mysore	Mangalore	26/10/2021
299	Chitradurga DC MLA Lad	Installation of Borewell and Pump Motor near Welfare Society Community Center of Retired Police Officers of Chitradurga	Chitradurga	Chitradurga	Chitradurga	11/10/2021
300	Chitradurga DC MLA Lad	Krishna Hotel (Channagiri Hotel) near Chittendurga City Chitradurga, front road, around	Chitradurga	Chitradurga	Chitradurga	11/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
		the Bannikalamma temple and adjacent to the CC/ Road construction				
301	Bengaluru- Rural CEO ZP Golden Village	Thackerekare village in Hoskote taluk in Bengaluru rural district/	Bangalore Rural	Bangalore	Bangalore	18/10/2021
302	ZP District Panchayat Golden Village Project Stage-V	CC Road & Sewer Works from Banni Building in Abbethumakuram Village in Yadagiri District to Sharanamma Raya Reddy Home (5th Stage Residual Grant Work)	Yadagiri	Gulbarga	Yadagir	25/9/2021
303	Commissioner of Police Department, Bangalore Police Department Works	Number of JCO Houses in KARP Mysore Unit 2848 & 2846	Mysore (Central)	Mysore	Mysore	4/10/2021
304	RD&PR Dept Rural Development and Panchayati Raj Policy Commission RO Works (No/ 287)	Fresh Drinking Water Component, Naganahalli, Magadi Taluk/	Ramanagara	Bangalore	Ramanagar	9/9/2021
305	RD&PR Dept Rural Development and Panchayat Raj 3054 Works (Road Development)	Intersection of Netravathi River Road in Bantwal Taluk Tumbe village/	Mangalore	Mysore	Mangalore	26/10/2021
306	Ballari DC Social Welfare Department works	Cemetery development works in the village of Pappanahalu in Siruguppa taluk	Bellary	Chitradurga	Bellary	7/10/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
307	Chickmagalur DC Social Welfare Department works	Purchase of graveyard land and other facilities in the cemetery site for M / s/	Chikkamagaluru	Mysore	C/ Mangalore	25/10/2021
308	Chikmagaluru CEO ZP Works for the Department of Social Welfare	Chief Minister's Village Development Project (2017-18) at Makonahalli Village	Chikkamagaluru	Mysore	C/ Mangalore	25/10/2021
309	Director of Tourism Department Bangalore Works for the Department of Tourism	N/pura ta Construction of Pilgrimage residence near the throne of Lord Jagadguru Rambhappuri Peetha	Chikkamagaluru	Mysore	C/ Mangalore	25/10/2021
310	Ballari DC Works for the Department of Women and Child Welfare	Government of Bellary provides infrastructure to the Government Children's Boys' Institute/	Bellary	Chitradurga	Bellary	6/10/2021
311	Karnataka Rural Water Supply & Sanitation Agency R/O/ Water Supply Project	Bangalore Rural District Srinivasapura GNP Nilamangala Taluk Clean water unit works in Bhairasandra village/	Bangalore Rural	Bangalore	Bangalore	20/10/2021
312	Karnataka Rural Water Supply & Sanitation Agency SCP & TSP	Bengaluru Rural District Pure Water Unit (50 LPH) at Metric East Boys' Student Home in Periyaballapur Town/	Bangalore Rural	Bangalore	Bangalore	20/10/2021
313	Karnataka Rural Water Supply & Sanitation Agency SCP & TSP	Pure Water Unit Works in the Boys' Student Home in Periyaballapur Town, Bangalore	Bangalore Rural	Bangalore	Bangalore	20/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
		Rural District (150 LPH)				
314	Karnataka Rural Water Supply & Sanitation Agency Policy Commission RO Works (No/ 287)	Implementation of Rising Technology for Clean Drinking Water Unit at Sankalapura Village, Hunagund Taluk	Bagalkotte-1	Belgaum	Bagalkot	6/10/2021
315	Karnataka Rural Water Supply & Sanitation Agency Policy Commission RO Works (No/ 287)	Work on Applying Rising Technology to the Pure Drinking Water Unit of the Policy Commission at Yemmetti Village, Hunugunda Taluk	Bagalkotte-1	Belgaum	Bagalkot	6/10/2021
316	Karnataka Rural Water Supply & Sanitation Agency Policy Commission RO Works (No/ 287)	Work on Applying Rising Technology to Pure Drinking Water Unit at Pudukeri Village, Hunugunda Taluk	Bagalkotte-1	Belgaum	Bagalkot	6/10/2021
317	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of Pure Drinking Water Unit for Government Matric East Boys' Hostel in Yadagiri City (Old Yadagiri) (150 LPH)	Yadagiri	Gulbarga	Yadagir	25/9/2021
318	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of Clean Drinking Water Unit for Government School Scheduled Residential School in Borabanda Village, Yadagiri Taluk/ (200 LPH)	Yadagiri	Gulbarga	Yadagir	25/9/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
319	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of Clean Drinking Water Unit for Government Pre Matric Girls' Hostel (150 LPH)	Yadagiri	Gulbarga	Yadagir	23/9/2021
320	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of Pure Drinking Water Unit for Government Pre-Matric Boys' Hostel at Yadagiri City (150 LPH)	Yadagiri	Gulbarga	Yadagir	25/9/2021
321	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of a Clean Drinking Water Unit for Government Pre Matric Boys' Hostel (200 LPH)	Yadagiri	Gulbarga	Yadagir	23/9/2021
322	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of a Clean Drinking Water Unit at Government School Scheduled Tribes (SC) Residential School in Andipuram Village, Yadagiri Taluk/ (200 LPH)	Yadagiri	Gulbarga	Yadagir	25/9/2021
323	Karnataka Rural Water Supply & Sanitation Agency SCP & TSP	Implementation of a Purified Drinking Water Unit at the Boys' Student Home of Yaliyur Village, Devanahalli Taluk, Bangalore Rural District/ (50 LPH)/	Bangalore Rural	Bangalore	Bangalore	18/10/2021
324	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural	Implementation of Water Purification Unit (100 LPH) for Government Metric	Raichur	Gulbarga	Raichur	30/9/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	Water Supply & Sanitation Agency SCP / TSP grant	Residency at Kallur Village in Manavi Taluk				
325	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Roads of the Lingasugaru Taluk Implementation of Water Purification Unit (150 LPH) for Government Metric East Boys Hostel	Lingasagur	Gulbarga	Raichur	3/10/2021
326	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	PUCs of Scheduled Caste Boys after Government Metric in Lingasugur town Installation of water purification plant (200 LPH) for residential	Lingasagur	Gulbarga	Raichur	4/10/2021
327	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (150 LPH) for Government Metric Pre-Boys' Hostel in Gurugunda Village, Lingasaguru Taluk	Lingasagur	Gulbarga	Raichur	4/10/2021
328	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (200 LPH) for Government Metric East Boys Hostel in Lingasagur Town	Lingasagur	Gulbarga	Raichur	4/10/2021
329	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (150 LPH) for Government Metric Pre-Boys' Hostel at Khairavadgai Village, Lingasaguru Taluk	Lingasagur	Gulbarga	Raichur	3/10/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
330	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (150 LPH) for Government Metric Pre-Boys' Hostel in Bayapura Village, Lingasagar Taluk	Lingasagar	Gulbarga	Raichur	3/10/2021
331	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (200 LPH) for Scheduled Castes Residential School in Raichur	Raichur	Gulbarga	Raichur	29/9/2021
332	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (200 LPH) for Scheduled Castes (Sc) Residential School in Khanapur Village, Udhamagal, Raichur Taluk	Raichur	Gulbarga	Raichur	29/9/2021
333	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Scheduled Tribes Welfare Department Government Pre-Matriculate Student Home in Gunjalli Village, Raichur Taluk	Raichur	Gulbarga	Raichur	30/9/2021
334	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Post-Matric Girls' Hostel of Scheduled Tribes Welfare Department, Raichur	Raichur	Gulbarga	Raichur	29/9/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
335	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (250 LPH) for Post-Matric Boys' Hostel of Scheduled Tribes Welfare Department, Raichur	Raichur	Gulbarga	Raichur	29/9/2021
336	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (150 LPH) for Government Metric Pre-Residence in Yapaladinni Village, Raichur Taluk	Raichur	Gulbarga	Raichur	30/9/2021
337	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Find ads for used cars and used car seekers in Raichur Installation of Water Purification Unit (250 LPH) for BR Ambedkar Boys' College Hostel	Raichur	Gulbarga	Raichur	29/9/2021
338	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (150 LPH) for Professional Boys' College Hostel after Government Metric in Raichur	Raichur	Gulbarga	Raichur	29/9/2021
339	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Government PU in Raichur Installation of water purification plant (250 LPH) for boys' college dormitory	Raichur	Gulbarga	Raichur	29/9/2021
340	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural	Implementation of Water Purification Unit (150 LPH) for Government Metric	Raichur	Gulbarga	Raichur	30/9/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	Water Supply & Sanitation Agency SCP / TSP grant	Pre-Residence in Matamari Village, Raichur Taluk				
341	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (250 LPH) for Government Metric East Boys Hostel in Raichur	Raichur	Gulbarga	Raichur	29/9/2021
342	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (200 LPH) for Scheduled Tribes Residential School in Bandegudda Village, Devadurga Taluk	Raichur (PE)	Gulbarga	Raichur	1/10/2021
343	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (150 LPH) for Scheduled Tribes Welfare Department Ashram School in Bhummanagunda Village, Devadurga Taluk/	Raichur (PE)	Gulbarga	Raichur	1/10/2021
344	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (150 LPH) for Government Metric East Boys' Hostel in Alcode Village, Devadurga Taluk/	Raichur (PE)	Gulbarga	Raichur	1/10/2021
345	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	A water purification plant (200 LPH) for Government Metric East Girls Hostel in Devadurga Town/	Raichur (PE)	Gulbarga	Raichur	1/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
346	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (150 LPH) for Government Metric East Boys' Hostel in Arakera Village, Devadurga Taluk/	Raichur (PE)	Gulbarga	Raichur	1/10/2021
347	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (250 LPH) for Government Metric East Boys' Hostel in Devadurga Town/	Raichur (PE)	Gulbarga	Raichur	1/10/2021
348	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (150 LPH) for Government Metric East Boys' Hostel in Jalahalli Village, Devadurga Taluk	Raichur (PE)	Gulbarga	Raichur	1/10/2021
349	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (150 LPH) for Government Metric East Boys' Hostel at Lingasagur Taluk Hatty	Lingasagur	Gulbarga	Raichur	4/10/2021
350	Kengeri Division EE BBMP BBMP Department Works	Upkar layout (Balance Works) in Ward No/130 Improvements to the main and cross roads and asphalt (130-17-000066)	BBMP Yalahanka-Yashvanthpura AEE	BBMP	Division 3	29/9/2021
351	Kengeri Division EE BBMP BBMP Department Works	Improvements to the main and cross roads in the RR Layout (Balance Works) in Ward	BBMP Yalahanka-Yashvanthpura AEE	BBMP	Division 3	28/9/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
		No/130 and (130-17-000056)				
352	Kengeri Division EE BBMP BBMP Department Works	Improvements to the main and cross roads and tambourine at Wagga Jothi Building in Ward No/130 (130-17-000054)	BBMP Yalahanka- Yashvanthpura AEE	BBMP	Division 3	28/9/2021
353	Kengeri Division EE BBMP BBMP Department Works	Ward No: 130 AGS Layout (Balance Works) Asphalt and Development Works for Main and Cross Roads (130-17-000065)	BBMP Yalahanka- Yashvanthpura AEE	BBMP	Division 3	29/9/2021
354	BTM Layout, EE, BBMP BBMP Department Works	RC Road and Building Works (172-19-000036) for the junction of the VP Road in Madiwala, Ward No/172	BBMP South Zone	BBMP	Division 3	23/9/2021
355	Malleswram Division EE BBMP BBMP Department Works	Ward No/66 Palace is a drinking water supply project in the city/ (035-19-000004)	BBMP West Zone	BBMP	Division 2	16/10/2021
356	Chamaraajapete EE BBMP BBMP Departmental Works	Ward No/141, Nizar Ahmed Road in Azad city and the construction of sewage and rainwater works in and around the city/ (141-18-000091)	BBMP West Zone	BBMP	Division 2	13/11/2021
357	Chamaraajapete EE BBMP BBMP Departmental Works	CCC Road Improvement Works near Arundhati School on	BBMP West Zone	BBMP	Division 2	8/10/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
		Ward No/141, Main Road, Mysore Road, Azad City/ (141-18-000090)				
358	Byatarayanapura Division BBMP BBMP Departmental Works	Solid Waste Management Works in Ward No/ 08 (008-17-000063)	BBMP RR Nagara / Byatarayanapura AEE	BBMP	Division 4	8/11/2021
359	RR Nagara, EE BBMP BBMP Department Works	Old Sanitary Line and Manhole Maintenance Works of Ward No/ 69 (069-18-000003)	BBMP RR Nagara / Byatarayanapura AEE	BBMP	Division 4	9/11/2021
360	RR Nagara, EE BBMP BBMP Department Works	Lugare Main Road in Ward No/ 69 and Surrounding Sewers (069-18-000004)	BBMP RR Nagara / Byatarayanapura AEE	BBMP	Division 4	9/11/2021
361	EE MPED, BBMP BBMP Department Works	Renewal of Basaveshwara's daughter in Basaveshwara circle (110-19-000043)	BBMP Mahadevpura	BBMP	Division 5	18/10/2021
362	Mahadevpura EE BBMP Bangalore Metropolitan Transport Corporation	Implementation of Street Lights (084-18-000064) in Nagadanahalli Village, Hagadur, Ward No/84	BBMP Mahadevpura	BBMP	Division 5	21/10/2021
363	Mahadevpura EE BBMP BBMP Department Works	Improvement Works (310-18-000273) on Sushmana Road, Kadusonnappanahalli Village	BBMP Mahadevpura	BBMP	Division 5	18/10/2021
364	BTM Layout, EE, BBMP BBMP Department Works	Drainage & Foot Path Development Works (147-19-000020) in Block 8,	BBMP South Zone	BBMP	Division 3	16/9/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
		Block 8, Ward No/ 147				
365	RR Nagara, EE BBMP BBMP Department Works	Jnanabharathi 2nd and 3rd Main Road and Cross Road and NGEF Drainage Improvement and Improvement Works in Surrounding Area (129-20-000043)	BBMP RR Nagara / Byatarayanapura AEE	BBMP	Division 4	9/11/2021
366	Kengeri Division EE BBMP BBMP Department Works	Ward No: 130 Improvement of Roads and Sewers in the Suburban and Suburbs of Ambedkar Nagar Urban Area (130-20-000023)	BBMP Yalahanka-Yashvanthpura AEE	BBMP	Division 3	29/9/2021
367	RR Nagara, EE BBMP BBMP Department Works	Drainage Construction & Development Works (129-20-000041) in the vicinity of Sukanda Katte Cross Road, Mallatahalli Amadha, 2nd Main Road, Jnanabharathi Appendix II-1392, Ward No/ 129	BBMP RR Nagara / Byatarayanapura AEE	BBMP	Division 4	10/11/2021
368	RR Nagara, EE BBMP BBMP Department Works	Sewerage Construction and Development Works (129-20-000045) in the area surrounding Ward No/ 129 Jnanabharathi Appendix-II No/ 1396, 10th Main Road, 7th and 8th	BBMP RR Nagara / Byatarayanapura AEE	BBMP	Division 4	10/11/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
		Main Road and NGEF/				
369	Kengeri Division EE BBMP BBMP Department Works	Ward No: 130 in Maruthinagar Sy No/ 17 Roads and Sewerage Works (130-20-000078) in Sonnenahalli & surrounding area	BBMP Yalahanka- Yashvanthpura AEE	BBMP	Division 3	22/9/2021
370	Kengeri Division EE BBMP BBMP Department Works	Ward No: 130 KPSC Project Left Behind Roads & Sewers Works (130-20-000068)	BBMP Yalahanka- Yashvanthpura AEE	BBMP	Division 3	22/9/2021
371	RR Nagara, EE BBMP BBMP Department Works	Drainage Construction & Development Works (129-20-000044) in the area surrounding the 11th Cross Road and Cross Road NGEF Project No/ 1395 of Jnanabharathi Appendix-II No/ 1395 of Ward No/ 129	BBMP RR Nagara / Byatarayanapur a AEE	BBMP	Division 4	10/11/2021
372	Chickpet Div EE BBMP BBMP Department Works	Development of Water Supply through Pipeline in the area of Ward No/118 (118-19-000008)	BBMP South Zone	BBMP	Division 3	22/9/2021
373	Chickpet Div EE BBMP BBMP Department Works	Drainage and Foot Path Development Works (119-19-000008) around	BBMP South Zone	BBMP	Division 3	22/9/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
		Dharmaraya Temple in Ward No/119				
374	EE Vijayanagara South BBMP Department Works	Statue of Nadaprabhu Kempegowder at Bapujinagar, Mysore Road, Ward No/ 134 (134-18-000020)	BBMP South Zone	BBMP	Division 3	18/9/2021
375	Kengeri Division EE BBMP BBMP Department Works	Ward No: 40 Vidyarathi Urban West and surrounding area RCC drainage and cover slabs (040-18-000029)	BBMP Yalahanka-Yashvanthpura AEE	BBMP	Division 3	24/9/2021
376	BTM Layout, EE, BBMP BBMP Department Works	Providing CC Camera (146-17-000036) in garbage block area of Ward No/146	BBMP South Zone	BBMP	Division 3	23/9/2021
377	EE, Project South BBMP BBMP Department of Works	Providing Senior Citizen Gym Equipment (181-17-000017) at Bendray Park, Kumar Swamy Layout in Ward No/181 (181-17-000017)	BBMP South Zone	BBMP	Division 3	17/9/2021
378	Malleswram Division EE BBMP BBMP Department Works	Extension of existing bridge at Ward No/36, Jayaram slum/ (036-15-000022)	BBMP West Zone	BBMP	Division 2	16/10/2021
379	BTM Layout, EE, BBMP BBMP Department Works	Secondary Rain Water Sewer Excavation Works (172-18-000025) in Ward No/172 Madiwala	BBMP South Zone	BBMP	Division 3	23/9/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
380	Kengeri Division EE BBMP BBMP Department Works	Ward No: 130, Road and Sewerage Works at Jagjyothi & Basaveshwara Building (130-17-000038)	BBMP RR Nagara / Byatarayanapura AEE	BBMP	Division 4	27/9/2021
381	Kengeri Division EE BBMP BBMP Department Works	Ward No: 159 Emergency Grant (Grants) in Kengeri (159-17-000014)	BBMP RR Nagara / Byatarayanapura AEE	BBMP	Division 4	29/9/2021
382	RD&PR Dept Rural Development and Panchayat Raj Water Supply Project	Construction of Regular Phase-3 Water Purification Unit at Ijjala Village, Nanjangud Taluk	Mysore	Mysore	Mysore	4/10/2021
383	Bengaluru Urban DC Works of Rural Development and Panchayat Department	Bangalore Rural District Panchayat Office Old Building KG Roosta Jalamrita Project on the first floor of Bangalore Building and Interior Renovation & Furniture Works for SPRC Office/	Bangalore City	Bangalore	Bangalore	
384	Mysore CEO, ZP Works for Rural Development and Panchayat Department	Th/ Road rehabilitation in Ningsepoudanuundi village of Narasipura taluk	Mysore (Central)	Mysore	Mysore	5/10/2021
385	Mysore CEO, ZP Works for Rural Development and Panchayat Department	Th/ Road reconstruction in Narasipura taluk Tumbala village	Mysore (Central)	Mysore	Mysore	5/10/2021
386	Mysore CEO, ZP Works for Rural Development and Panchayat Department	Th/ Road reconstruction in Kupya village of Narasipura taluk	Mysore (Central)	Mysore	Mysore	5/10/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
387	Mysore CEO, ZP Works for Rural Development and Panchayat Department	Th/ Road rehabilitation at Narasipura Taluk Hittuvalli village	Mysore (Central)	Mysore	Mysore	5/10/2021
388	Mysore CEO, ZP Works for Rural Development and Panchayat Department	Th/ Road reconstruction in Rangasamudra village of Narasipura taluk	Mysore (Central)	Mysore	Mysore	5/10/2021
389	Mysore CEO, ZP Works for Rural Development and Panchayat Department	Road reconstruction work in Rangacharihundi village in Narasipura Taluk	Mysore (Central)	Mysore	Mysore	5/10/2021
390	Raichur DC Revenue Department Works	Sri Ramalingeshwara Devasthanam Jodhdodar Workshop in Mudgal village of Lingasugur Taluk/ (2019-20)	Lingasagur	Gulbarga	Raichur	4/10/2021
391	Director Agriculture Department araidieph/	Farmer Contact Center Building at Khanapur Village, Khanapur Taluk, Belgaum District (RIDF-23)	Belgaum	Belgaum	Belgaum	24/9/2021
392	Lalbagh Executive Engineer, Bangalore BDA	Supply and construction of solid compound wall in Milk Rameshwara small horticultural garden adjacent to YMCA Compound Wall (CH 133/0 MTS to 415/0 MTS) in Chitradurga district/	BDA	BBMP	Division 2	15/10/2021
393	Karnataka Handloom Development Corporation	Attachment of pavers and other works in the premises of	Dharwad	Belgaum	Dharwad	20/9/2021

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No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
	Bangalore - KHDC Karnataka Handloom Development Corporation	Priyadarshini weaver house in Vidyanagar, Hubli/				
394	Karnataka State Co- Operative Marketing Federation (KSCMF) Karnataka Cooperative Poultry mahamandalani/ Works	Karnataka Co- operative Kukkuta Mahamandali Ni/ Installation of 8 feet high compound wall, (10x8) height gate and (4x8) height small gate to the premises of Mysore Training Center	Mysore (Central)	Mysore	Mysore	4/10/2021
395	Chitradurga DC Mines and Geology Works	Chitradurga Ta Construction of Anganwadi 'A' building in Meghahalli village	Chitradurga	Chitradurga	Chitradurga	12/10/2021
396	Commissioner Irrigation Dept (Central) essipi and tiespi	Madamenarela S/T/ Concrete Road Construction in Colony (CNL = 2018/19)	Chikkamagaluru	Mysore	C/ Mangalore	25/10/2021
397	Bengaluru- Rural CEO ZP KNNL- Kaveri Irrigation Corporation Limited Works	SCR Colony in ST Colony, Bellary District Siruguppa Taluk Nagarahalu Village	Bellary	Chitradurga	Bellary	6/10/2021
398	Mysore CEO, ZP Kannada and Culture Department	Mysore Taluk Hosihundi Village Open to Zakori High School	Mysore	Mysore	Mysore	4/10/2021
399	Commissioner Mujarai Dept Mujarai Works	Woodwork, Steelwork and Granite painting in old building rooms of Karnataka Sanskrit University/	Bangalore City	Bangalore	Bangalore	12/10/2021

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date
400	Works of Chitradurga DC Social Welfare Department	RMC City of Chitradurga In the Yard clerk's colony, C/C/ Road Construction Works/	Chitradurga	Chitradurga	Chitradurga	
401	Works of Chitradurga DC Social Welfare Department	The Kavadigarahatti Muruga Math from the Chitradurga assembly constituency to the Garehatti, CC/ Road continued work/	Chitradurga	Chitradurga	Chitradurga	11/10/2021

Table 69: Substituted works visited in place of selected sample works

No.	Department	Work	Subdivision	Zone	Division	Field Visit Date	Remarks
1	RD&PR Dept Rural Development and Panchayat Raj Gram Panchayat Works	Gram Panchayat Building Ajjavara	Mangalore	Mysore	Mangalore	26/10/2021	Since the main work is not executed, hence substituted visit for Gram Panchayat was done in village Addodi
2	BBMP BRAHT BANGALORE Municipal Policy MLA GOK	Uttarahalli main road which falls under the Rajarajeshwar Nagar Zone, repairing the ORR and Jalahalli main roads	BBMP RR Nagara / Byatarayanapura AEE	BBMP	Division 4		
3	RD&PR Dept Under Rural Development and Panchayat	Construction of Clean Water Plant at Ibrahimpura Village, Shahapur	Yadagiri	Gulbarga	Yadagir	24/9/2021	Since the main work is not executed, substituted

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No	Department	Work	Subdivision	Zone	Division	Field Visit Date	Remarks
	Raj SCP / TSP Scheme Works (No/ 1129)	Taluk, Yadagiri District/ (SCP / TSP)					visit for Clean Water Plant was done in village Lingeri
4	Karnataka Rural Water Supply & Sanitation Agency under the SCP / TSP Scheme Works (No/ 1129)	Construction of Clean Drinking Water Units under SC / ST Scheme in Vaddanalli Village, Yadagiri Taluk/ (Additional No/ 198)	Yadagiri	Gulbarga	Yadagir	24/9/2021	Since the main work is not executed, substituted visit for Clean Drinking Water units was done in village Kalabelagundi
5	Karnataka Rural Water Supply & Sanitation Agency under the SCP / TSP Scheme Works (No/ 1129)	Construction of Clean Drinking Water Project under SC / ST Project in Marakal Village, Shahapur Taluk, Yadagiri District/ (Additional No/ 198)	Yadagiri	Gulbarga	Yadagir	25/9/2021	Since no one was available for showing the asset hence AEE showed Clean Drinking Water units as a substitute in village Yeddahalli
6	Karnataka Rural Water Supply & Sanitation Agency under the SCP / TSP Scheme Works (No/ 1129)	Construction of Clean Drinking Water Units under SC / ST Project in Gudura Village, Yadagiri Taluk/ (Additional No/ 198)	Yadagiri	Gulbarga	Yadagir	24/9/2021	Since the main work is not executed, substituted visit for Clean Drinking Water units was done in

No	Department	Work	Subdivision	Zone	Division	Field Visit Date	Remarks
							village Yellari
7	Karnataka Rural Water Supply & Sanitation Agency under the SCP / TSP Scheme Works (No/ 1129)	Construction of Purified Drinking Water Units under SC / ST Project in Pasupul Village, Yadagiri Taluk/ (Additional No/ 198)	Yadagiri	Gulbarga	Yadagir	24/9/2021	Since the main work is not executed, substituted visit for Purified Drinking Water units was done in village Mallahar
8	Karnataka Rural Water Supply & Sanitation Agency under the SCP / TSP Scheme Works (No/ 1129)	S/ of Yadagiri Taluk/ Construction of Clean Drinking Water Components under SC / ST Scheme in Hosalli Village/ (Additional No/ 198)	Yadagiri	Gulbarga	Yadagir	25/9/2021	Since the main work is not executed, substituted visit for Clean Drinking Water Components was done in village Honagere
9	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of a Clean Drinking Water Unit (50 LPH) for Girls' Hostel after the Matrak in Honnavar Town, Honnavar Taluk	Uttara Kannada (Karwar)	Belgaum	Karwar	27/10/2021	This work was dropped by KRIDL, so the substituted visit was done for road work in Mirajan Fort road.

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No	Department	Work	Subdivision	Zone	Division	Field Visit Date	Remarks
10	Yadgir CEO ZP Health Department works	Repairs to primary health center building at Madwara village in Yadagir taluk/	Yadagiri	Gulbarga	Yadagir	24/9/2021	Since the main work is not executed, substituted visit was done for Saidapura Hostel repair
11	RD&PR Dept Rural Development and Panchayati Raj Policy Commission RO Works (No/ 287)	Pure Drinking Water Unit, Padaar Palli, Ramanagar Taluk/	Ramanagara	Bangalore	Ramanagara	8/9/2021	As per instructions from AE / JE Laksmi, the main work was substituted with Jaipura Village Water Plant
12	Bidar DC Works for the Department of Social Welfare	Community Building Project at Raipalli village of Aura (B) Taluk in Beedra District/ (2017-18)	Bidar	Gulbarga	Bidar	21/9/2021	Since the main work is not executed, substituted visit for Community Building was done in village Dukandal
13	Works of Chitradurga DC Social Welfare Department	Chalakkere Taluk In Jannahalli Lambanihatti Village, Dr BR Ambedkar Building	Chalakkere - 1	Chitradurga	Chalakkere	13/10/2021	Since the main work is not executed due to local permissions, substituted visit for community hall was done in

No	Department	Work	Subdivision	Zone	Division	Field Visit Date	Remarks
							village Mucchukunte
14	Kengeri Division EE BBMP BBMP Department Works	Ward No: 130 Sewer Treatment Works (130-17-000029)	BBMP RR Nagara / Byatarayanapura AEE	BBMP	Division 4	29/9/2021	The main work is not identified, hence substituted visit was done for road work is provided as replacement
15	Thanda Development Corporation Bangalore/ Development works	Hollakere Taluk In the Muddupur Tanda, C/C/ Road Development Works	Chitradurga	Chitradurga	Chitradurga	12/10/2021	Since the main work is not executed due to political reasons, substituted visit for Tar Road was done in village Kattalehatti

Table 70: Detailed status of sample “Main” executed work not found when visited

No	Department	Work	Sub Division	Zone	Division	Field Visit Date	Remarks
1	Horticulture Department Horticulture Department Works	Requirements for the Horticulture Department of Balihala Village in Lingasaguru Taluk and water supply works	Lingasaguru	Gulbarga	Raichur	4/10/2021	As per the village GP member the work has not been executed and the team has also cross-checked

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No	Department	Work	Sub Division	Zone	Division	Field Visit Date	Remarks
2	BBMP BRAHT BANGALORE Municipal Policy BBMP Department Works	Interior Works at Ward No/ 77, Malleswaram, Bangalore One Center	BBMP West Zone	BBMP	Division 2	13/11/2021	Bangalore One centre is not operational
3	RD&PR Dept Rural Development and Panchayat Raj Water Supply Project	Clean Drinking Water Unit, Malohalli Village, Cd/ Periyaballapura Ta, Bangalore (Gr) District/	Bangalore Rural	Bangalore	Bangalore	20/10/2021	The RO unit is scrapped
4	Department of Tourism Special Development Program	Nanjangud Taluka Shree Gurumalleswara Dasoha Pattu Math Devanoor	Mysore	Mysore	Mysore	4/10/2021	Due to outstanding payment, work has not been completed
5	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Boys' Hostel in Government of India	Lingasagur	Gulbarga	Raichur	4/10/2021	Not received the RO plant
6	Karnataka Rural Water Supply & Sanitation Agency SCP & TSP	Implementation of Pure Drinking Water (100 LPH) of Government Matric East Girls Student Home in Nallamangala, Bangalore Rural District (100 LPH)	Bangalore Rural	Bangalore	Bangalore	22/10/2021	Not received

No	Department	Work	Sub Division	Zone	Division	Field Visit Date	Remarks
7	Karnataka Rural Water Supply & Sanitation Agency Water Supply Project	Water Purification Unit (50L) for the Girls' Home of the Department of Tribal Welfare, Siruguppa Town	Bellary	Chitradurga	Bellary	7/10/2021	Filter was not working and sold as scrap
8	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Water Purification Unit (100L) for Boys VN Nilame of Bellary Town	Bellary	Chitradurga	Bellary	7/10/2021	The water unit has been scrapped and the order received from the Dept. This place has received the largest capacity water unit now
9	Karnataka Rural Water Supply & Sanitation Agency SCP & TSP	Implementation of a Pure Drinking Water Unit at Government Metric East Boys' Hostel in Periyaballapur Town, Bangalore Rural District	Bangalore Rural	Bangalore	Bangalore		The only boys premetric hostel in Doddaballapur has been already covered as part of other work, so this is unidentified.
10	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of Pure Drinking Water Unit (50 LPH) at Matric Post Girls' Hostel in Savannur Town	Haveri	Belgaum	Haveri	4/10/2021	Building shifting due to which RO not yet installed

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No	Department	Work	Sub Division	Zone	Division	Field Visit Date	Remarks
11	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Construction of Pure Drinking Water Unit (50 LPH) at Metric Student Hostel in Savannur Town	Haveri	Belgaum	Haveri	4/10/2021	Building shifting due to which RO not yet installed
12	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	200Lph Pure Drinking Water Unit at Scheduled Tribes (SC) Residential School in Muchakhandi Village, Bagalkot Taluk	Bagalkotte -1	Belgaum	Bagalkot	5/10/2021	Another RO unit was in use
13	EE Vijayanagara South BBMP Department Works	Water Supply and New Bore Vale Drilling (132-18-000007) at Agromar Building in Ward No/ 132	BBMP South Zone	BBMP	Division 3	18/9/2021	Not functional since 3 years
14	Bengaluru Rural DC Commercial Taxes Department	Electrical Transform Repair in the premises of the Commercial Taxes Office-2/	Bangalore Rural	Bangalore	Bangalore	21/10/2021	Cooperation issue (Commissioner's PA refused to cooperate for the survey)
15	Director Fisheries Department Fisheries Department Works	An additional work of fish production center in Hesaraghatta village in Bangalore city district/	Bangalore Rural	Bangalore	Bangalore	21/10/2021	User interview pending

No	Department	Work	Sub Division	Zone	Division	Field Visit Date	Remarks
16	Department of Youth and Sports Youth Service Works	Juggling house in Hoskote village in Nanjangud taluk	Mysore	Mysore	Mysore	4/10/2021	Due to outsourcing payment has not been completed
17	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (150 LPH) for Scheduled Tribes Welfare Department Ashram School in Gillesguru Village, Raichur Taluk/	Raichur	Gulbarga	Raichur	30/9/2021	This works has actually received the RO plant but the warden has shifted the RO from Sr No. 399 to 396. The shifted purifier has not been working past 6 months albeit warden changed the burnt motor once recently.
18	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (100 LPH) for Government Metric Pre-Residence in Gunjalli Village, Raichur Taluk	Raichur	Gulbarga	Raichur	30/09/2021	Not Installed
19	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation	Installation of Water Purification Unit (200 LPH) for Scheduled Castes Residential School in Devadurga Town	Raichur (PE)	Gulbarga	Raichur	1/10/2021	Not received

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No	Department	Work	Sub Division	Zone	Division	Field Visit Date	Remarks
	Agency SCP / TSP grant						
20	RO Works for SC / ST Hostels (No/ 2142) under the Karnataka Rural Water Supply & Sanitation Agency SCP / TSP grant	Implementation of Water Purification Unit (250 LPH) for Post Graduate Boys' Hostel of Scheduled Tribes Welfare Department in Devadurga Town/	Raichur (PE)	Gulbarga	Raichur	1/10/2021	Not received
21	EE, Project South BBMP BBMP Department of Works	Multipurpose building (152-19-000020) on Tank Rock Road, adjacent to Indira Canteen, Ward No/ 152	BBMP South Zone	BBMP	Division 3	16/9/2021	Earlier budget was approved for ground floor, but later scope changed for 2nd & 3rd floor due to which it is not usable.
22	Chickpet Div EE BBMP BBMP Department Works	Indira Canteen Improvement Works (142-18-000024) at Kempegowda Nagar Road, Sunkenahalli, Ward No/ 142	BBMP South Zone	BBMP	Division 3	20/9/2021	The In charge did not cooperate
23	Commissioner Commercial Tax Dept, Bangalore Commercial Tax	Additional commissioner (ENF), PA, Visitors Room and Driver Room, B Block of Koramangala	Bangalore Rural	Bangalore	Bangalore	21/10/2021	

No	Department	Work	Sub Division	Zone	Division	Field Visit Date	Remarks
	Department of Works	Commercial Tax Office, Bangalore/					

Table 71: Detailed status of sample “CSR” projects visited

No	Work Name	Zone	Division	Subdivision	Visit Status	Field Visit Done
1	Community hall in Suyinagar village	Central zone	Bellary, Executive Engineer	Sandur, Assistant Executive Engineer	Done	7/10/2021
2	Toilet and Drinking Water System for Students and Students at the U. Rajapur School	Central zone	Bellary, Executive Engineer	Sandur, Assistant Executive Engineer	Done	7/10/2021
3	2 clean drinking water unit at Sandur town	Central zone	Bellary, Executive Engineer	Sandur, Assistant Executive Engineer	Done	7/10/2021
4	House Building for the Successful City of Sandur Taluk and the Village of Chorapur	Central zone	Bellary, Executive Engineer	Sandur, Assistant Executive Engineer	Done	7/10/2021
5	Sandur town of Sandur Construction of Gents toilet at 02,03,04 & 05 of Sandur town	Central zone	Bellary, Executive Engineer	Sandur, Assistant Executive Engineer	Work Visited- Not Done	7/10/2021
6	Sandur Construction of RO water Purifier Plant at Sandur	Central zone	Bellary, Executive Engineer	Sandur, Assistant Executive Engineer	Done	7/10/2021
7	Construction of Purified Drinking Water Unit at Government Engineering College, Deogiri Village, Haveri District (7/50 lakhs)	The Belgaum Zone	Haveri, Executive Engineer	Haveri, Assistant Executive Engineer,	Done	4/10/2021
8	Wing no/ Construction of Raichur Main Road from	Gulbarga Zone	Raichur, Executive Engineer	Lingasagur, Assistant Executive Engineer	Done	4/10/2021

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No	Work Name	Zone	Division	Subdivision	Visit Status	Field Visit Done
	Ramesh Bhajentri house to Thimmanna master house					
9	Construction of CC Road from Dhobi Ghata in Hinga Village to Tin Dara House on Kaddoni Road	Gulbarga Zone	Raichur, Executive Engineer	Lingasagur, Assistant Executive Engineer	Done	4/10/2021
10	Construction of CC Road from Raichur Main Road in Lingasagar Taluk Hatti Village to Bendoni Ambranna Home	Gulbarga Zone	Raichur, Executive Engineer	Lingasagur, Assistant Executive Engineer	Done	4/10/2021
11	Channarayapatnam Ta Construction of a three-room building at Damanimangala village high school	Mysore Zone	Hassan, Executive Engineer	Arasekere, Assistant Executive Engineer,	Done	6/10/2021
12	Arasekere in Hassan District C/N/C/ to Nandihalli village/ Road & Sewer Works	Mysore Zone	Hassan, Executive Engineer	Arasekere, Assistant Executive Engineer,	Done	6/10/2021
13	The CC at the Bageshpur Janata Colony in Arasikere, Hassan district/ Road & Sewer Works	Mysore Zone	Hassan, Executive Engineer	Arasekere, Assistant Executive Engineer,	Done	6/10/2021

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