

INSIGHT

VOL 2



**“INFRASTRUCTURE
DEVELOPMENT:
CHANGING FACE
OF INDIA”**



SHARE ... From CMD's Desk

India's GDP grew by 7.6% in 2015-16, putting it ahead of China as fastest growing economy. As the successive governments have been targeting double digit growth, the issue of infrastructure deficit is bound to attract prime attention. Recently, the Union Transport Minister, Shri Nitin Gadkari said, "infrastructure sector has the potential to boost the country's GDP growth by up to 3%".

In a way, the infrastructure development in the country has not been able to keep pace with the growing economy, which in turn has been impediment to rate of growth. India's overall infrastructure was ranked 81st, out of 140 economies (World Economic Forum's Global competitiveness Report 2015-16). To bridge this evident gap, the investment share in infrastructure has been steadily growing YoY. From 23.3% in 2007, it reached 32.5% in 2015.

We need the modernization of existing infrastructure facilities along with creating new infrastructure assets. Finance Minister, Mr. Arun Jaitley announced a record budgetary allocation (2016-17) of Rs. 2.21 lakh crores for infrastructure. Road sector alone received Rs. 97,000 crores, including allocation under PMGSY (Pradhan Mantri Gram Sadak Yojana). The general budget 2016-17 earmarked an amount of Rs. 3,205 crore for the development of 100 smart cities across the country by 2020, while nearly Rs. 4,091 crore for AMRUT.

Additionally, there has been series of announcements to revitalize different sub-sectors of infrastructure, such as action plan for revival of unserved and underserved airports to be drawn up in partnership with State Governments, and amendments to be made in Motor Vehicles Act to open up the road transport sector in the passenger segment. Therefore, the intent of policy makers is clear regarding the revamp of entire sector.

However, the challenges in infrastructure projects are complex. It all starts with the mobilization of funds, followed by problems in land clearance and other statutory approvals, implantation issues and economic viability of the projects. Many important projects get stalled in the middle, resulting in loss for all the involved parties and long pending dispute resolutions. As per the report by Statistics Ministry (Dec, 2016), the cost overrun of 329 projects was Rs. 1.47 lakh crores. Major reasons are delay in execution and approvals holding the progress.

Policy makers and all other stakeholders need to collectively work to address these issues in a manner that the risk allocations are appropriate, the approvals are centralized, policy environment has certainty and ease of operation is ensured.

Infrastructure has this unique characteristic of having multiplier effect on overall economy, employment generation, poverty alleviation and creating a sustainable source of income over a long time horizon. In addition to the physical infrastructure, there is similar requirement of focusing on the social infrastructure. Inclusive growth can be achieved through direct planned intervention in rural sector, water, sanitation and health. Housing for All Plan of Action (HFOPA) is one such program that should exhibit highly positive impact in coming years.

I am pleased to present the second issue of our newsletter, centered on infrastructure scenario of India. More than anything else, it is our earnest effort to reach out to you and draw the attention of all the relevant stakeholders on few pertinent aspects.

Wishing you a very meaningful and blissful year ahead.

Sincerely,
Pradeep Misra
Chairman & Managing Director - REPL

FINANCING OPTIONS FOR INFRA PROJECTS



Mr. Nitin Gadkari, Minister of Road Transport and Highways, and Shipping has said, "The government's target of Rs. 25 trillion (US\$ 376.53 billion) investment in infrastructure over a period of three years, which will include Rs. 8 trillion (US\$ 120.49 billion) for developing 27 industrial clusters and an additional Rs. 5 trillion (US\$ 75.30 billion) for road, railway and port connectivity projects."

Apparently there is a need for increasing the sources of funding. Funding in infrastructure is typified by non-recourse or limited recourse funding, large scale investment, long gestation period, high initial capital, low operating cost, repayments from the revenues generated from the project. Largely the Government has been the sole financier and responsible for implementation, operations and maintenance of these projects. However, to plug-in the gaps of fund availability through public sources, following are the options that need to be further encouraged for participation -

- **Public Private Partnership (PPP)**
- **Bank Financing**
- **India Infrastructure Finance Company Ltd. (IIFCL)**
- **Infrastructure Financing Companies (IFC)**
- **Foreign Direct Investment (FDI)**
- **Foreign Institutional Investment (FII)**
- **Infrastructure Bonds**
- **Takeout Financing**

Most of these funding sources have not resulted in desired level of participation, because of the combination of various practical, operational and provisions related issues. For instance, the bank credit comes with issues to asset liability mismatch, as infrastructure requires long term funding and the banks offer only short term basis. This was the reason, IIFCL was formed to provide long term debt financing. It provides 20% of the project costs through either direct lending or refinancing banks and financial institutions. Only recently 100% FDI is permitted under the Automatic Route in Development of townships, Housing, Built up infrastructure and Construction Development Projects but does not include real estate business.



Shravan Kumar Govil
CEO- RFAPL

(18 years' experience in Fund Raising & Project Management.
B.E.- Electrical & MBA - Finance & Marketing)

PRIVATE PARTICIPATION IN INFRASTRUCTURE



It is an accepted reality that the overhauling of infrastructure sector is a daunting task. It cannot be accomplished with the public intervention alone. There is need of aggressive private participation.

It is natural that the public investment in the infrastructure so far has been dominant, which still is the prevailing situation. Policy makers have been consistently emphasizing the private sector investment in infrastructure projects through PPP. However, it is interesting to note that in 2010, the share of public sector investment was 51.3%, which actually rose to 59.3% in 2015. One reason could be that the rate of growth of overall public expenditure superseded the rate of growth of private investments. Nonetheless, there is definitely a gap between the policy guideline and the actual result in attracting the private participation. It needs to be addressed.

In addition to the domestic private participation, foreign investments also need to be looked into. The foreign institutions enter into any market or sector, with their funds having certain pre-decided time horizons and expected returns. It is imperative that they look for certainty in policy environment, both present and future. Otherwise, the risk of getting stuck in project can result to time overrun and cost escalation. This has been a big deterrent both for the domestic and foreign private investments in Indian infrastructure.

The government has already announced a series of steps to revitalize PPP. We need to see how these actually unfold over a period of time. The policies and announcements such as, Public Utility (Resolution of Disputes) Bill; Guidelines for renegotiation of PPP Concession Agreements; new credit rating system for infrastructure projects, etc.

It is notable that RBI has relaxed External Commercial Borrowing (ECB) guidelines in consultation with the government after 'taking into account prevailing external funding sources, particularly for long-term lending and the critical needs of infrastructure sector of the country'.

There are other certain implementation related issues restricting the private participation, which we need to look into separately.

Hybrid Annuity Model (HAM) in PPP

Traditionally, the government has been adopting three models for private participation, viz. PPP Annuity, PPP Toll and EPC (Engineering, Procurement and Construction). For overcoming the limitation of these models, HAM is introduced, which is mix of BOT (Build Operate & Transfer) and EPC.

i. BOT Annuity Model

A developer builds the highway, operates it for a specified duration and transfers it back to the government. The government starts payment to the developer after the launch of commercial operation of the project.

ii. BOT Toll Model

A road developer constructs the road and he is allowed to recover his investment through toll collection, generally over a period of 30 years. There is no government payment to the developer.

iii. EPC Model

The cost is completely borne by the government. The private sector's participation is minimum and is limited to the provision of engineering expertise.

iv. The Hybrid Annuity Model (HAM)

The government will contribute to 40% of project cost in first five years through annual payments (annuity). The remaining payment will be made on the basis of assets created and the performance. Under HAM, Revenue collection would be the responsibility of the NHAI. It gives enough liquidity to the developer and the financial risk is shared. Government's policy is that the HAM will be used in stalled projects where other models are not applicable.

Harish Sharma

V.P. Infrastructure Business Development

(Nearly 25 years' experience in Engineering & Infrastructure sector. B.E- Civil from University of Mysore, M.Sc from BITS Pilani, MBA- NIMS University)



IMPLEMENTATION CHALLENGES IN LARGE SCALE PROJECTS

By the very nature of scale and duration, large scale projects face certain inherent challenges, which naturally influence the investment decisions. We need to examine a few of them and try to see how it is impacting the overall pace in the sector.

Long delays in infrastructure projects have become more of less a standard norm. As per a study (2016) of ASSOCHAM, almost 33.5% of the projects are delayed due to land acquisition problem, followed by non-environmental clearance (21.5%), environment clearance (13.3%), lack of finance (12.6%) and unfavorable market. We can infer here that the majority of the reasons are related to the policy and approvals by the authorities. If there is greater clarity and facilitating environment, the implementation issue can be addressed to a large extent.

As per the Finance Minister himself, "in the road sector, there were more than 70 languishing projects at the beginning of the year (2016) due to legacy factors. Aggregate length of these projects was 8,300 km involving Rs. 100,000 crore investments. However, nearly 85% of these projects have been put back on track". This is in relation to one sector only, the aggregate projects in entire infrastructure sector will be much higher.



Beyond macro-issues mentioned above, implementation challenges in big infrastructure projects at ground level need to be closely examined. Some of the factors adversely affecting the scheduled completion are -

- **Lack of viable and contingent project implementation plans**
- **Delay in tendering and evaluation of bids**
- **Failing on Timely Preparation of DPRs**
- **Insufficient/Inadequate details in DPR requiring supplementary DPR at times**
- **Establishing and staffing the Project Management Units (PMUs)**
- **Inadequate Monitoring and Evaluation Mechanism**
- **Renegotiation of contracts after being awarded**
- **Delay in issuance of drawings/clearance by other agencies**



S.K. Roy
Sr. V.P. PMC, REPL

(Nearly 40 years' experience in PMC & Construction Management. B.E.Civil, and P.G.Diploma from IIT Delhi)





WAY AHEAD FOR INFRASTRUCTURE REVAMP

The vast gap in infrastructure status and required level obviously brings in equal quantum of opportunity in the sector. The speed with which, we spot the new large scale projects getting on the ground, seriousness of policy makers and the increasing interest of the private sector, will definitely transport the Indian infrastructure to altogether different levels. Public and Private sectors have their own inherent strong areas, which needs to be leveraged. At this juncture, it becomes even more important to look at the fundamental corrections that the sector requires without any further delay. Combination of reform on these areas will create better investment climate for infrastructure in India.



Ashok Kumar Verma
CEO- International Business, REPL
 (Over 30 years' experience in Hydro Power, Infrastructure Development & Real Estate. B.E. from REC Srinagar)

Policy Stability – There is a need of single window system for various approvals and clearances. A proper Regulatory Authority can be created which coordinates and controls the approval from different governed agencies, both central and state. The Authority can also ensure time bound and transparent enforcement of the contracts. The independent nature of such authority will also reduce related to any political uncertainty as well. Existing bodies like Cabinet Committee for Investment (CCI) need to play more proactive roles.

Proportionate Attention to all Subsectors – Within larger domain of infrastructure sector, there are few sub sectors like roads and aviation have received much higher attention as compared to the sectors like ports and energy. More act of balancing may be required in resource allocation as all infrastructure growths are interlinked.

Proper Project Selection & Structuring – The project must be selected and structured on thorough viability analysis. For the PPP projects, proper dispute resolution mechanism needs to be put in place. In developing the contract terms, safeguarding the interest of private players against extraneous circumstances will build confidence. The projects must be reasonably viable, taking all risks in account.

Project structuring need to have greater emphasis on cost recovery model.

Efficient Project Management – Right from the bid stage, through planning, design and execution, there needs to be greater role of private players in project management aspects. The scale of projects inter alia brings in the complexity. The availability of skilled manpower needs to be jointly addressed by the government and private players.

Speedy Implementation of Projects – Once the project is rolled out, accountability should be set against the pre-defined time bound milestones. Any time overrun must be dealt with utmost priority and government or the apex Authority must intervene to remove the roadblocks. Any time overrun will inevitably result in cost overrun and hence the negative impact on financial viability.

Advance Technology for Efficiency – There is need for a consolidated and conscious initiative to constantly introduce new technology in implementation process, be it engineering, design or construction. An independent institution may look into such requirements on infrastructure projects and facilitate skill & technology transfer.

ADVANCING IMPACT OF BIM IN ACE INDUSTRY: LARGE PROJECTS IN PURVIEW



RIBA Royal Institute of British Architect, defines BIM as "digital representation of physical and functional characteristics of a facility creating a shared knowledge resource for information about it forming a reliable basis for decisions during its life cycle, from earliest concept to demolition." The US National Building Information Model Standard Project Committee also has a similar definition for BIM.

Fundamentally, BIM is a software driven interface, which provides the project delivery team with a 3D virtual visualization of the look and feel of the building that is to be constructed. Traditional building design was largely reliant upon two-dimensional technical drawings (plans, elevations, sections, etc.). Building information modeling extends this beyond 3D, augmenting the three primary spatial dimensions (width, height and depth) with time as the fourth dimension (4D), cost as the fifth (5D), Estimation as the sixth (6D) and Facility Management as seventh (7D).

Large scale infrastructure projects are absolute necessity for meeting the demand of vast country like ours. We need large projects with superior infrastructure but these projects need multi core investments. Errors here also cost crores. To execute these large projects of Architectural Engineering Construction (AEC) companies face a number of challenges. These projects are executed by a team of professionals – architects, structural engineers, service engineers, various consultants & contractors who may not necessarily be working out of one location. Also, these large projects have long gestation periods, which sometime get executed in multiple phases. During the course, team compositions also change. All these result in loss of information in the

transition and lot of reworking and redesigning.

This calls for a single interface to which all parties should have equal ownership. Any additions or alterations to the design would pass through the modelling software for acceptance and integration into the original plans. Here, BIM works as a lifesaver. There are benefits of using BIM for both the client and the construction team. From the perspective of containing risk, BIM has the capacity to minimize errors as a result of incorrect or miscommunicated information through the early identification of any potential clashes. As the design information is more readily accessible, there is a greater degree of quality control over the contract as the modelling allows the project team to visualize the impact of any amendments to the design. This in turn allows for closer monitoring and control of costs. Participants in the building process are constantly challenged to deliver successful projects despite tight budgets, limited manpower, accelerated schedules, and limited or conflicting information. BIM aids in collision detection at the initial stage, identifying the exact location of discrepancies.

Building information modeling extends beyond 3D, augmenting the three primary spatial dimensions (width, height and depth) with time as the fourth dimension (4D), cost as the fifth (5D), Estimation as the sixth (6D) and Facility Management as seventh (7D).

We, the REPL Group have been in the ACE industry since 1992 providing consultancy in Architecture, Services,

Structure, MEP, PMC, etc. This requires different departments to work on the same project, so coordinating on one platform i.e. BIM prevents miscommunication and loss of information and aids problem detection from design stage only. It has aided the group to save huge man-hours and crores of rupees for its clients. Our different team are on BIM and successfully delivering projects. We also as BIM enthusiasts feel there should be prescribed BIM standards in our country just like followed in many countries across the world. Each country has its own standards depending on their local conditions. This aids in pre-fabrication, evaluating combined performance of materials and components, etc.

We have taken a step further in our BIM journey, RIPL has become reselling partners with Graphisoft whose flagship product ArchiCAD is a name synonymous with BIM. Graphisoft had been developing BIM solutions for longer than its competitors, experts regard ArchiCAD as "one of the most mature BIM solutions on the market". The problem with BIM implementation in India is unavailability of trained manpower and training centers to train and handhold. So we have started training programs and training centers to increase the adoptability of BIM. We strongly feel BIM has a great future in our industry

Soumya Das
Director- RIPL



(B ARCH, CET BBSR; M PLAN (Environment), SPA Delhi; Strategic Management, IIM Calcutta)



One of the finest examples of Public Private Partnership in infrastructure sector, the Yamuna Expressway was conceived by U.P. Govt. in 2001. This led to the formation of Taj Expressway Authority (TEA), subsequently known as Yamuna Expressway Authority (YEA). The expressway was inaugurated in August 2012.

YEIDA played key role in acquisition of land for construction of highway and area development. The project implementation had its own problems related to land acquisition, which called for judiciary intervention.

The 6-lane (extendable to 8 lanes) expressway, makes an excellent connectivity between NCR and Agra, and also opens the space for exponential development along the entire corridor. It connects the major townships & commercial centers on the eastern side of Yamuna. The corridor also enabled development of Formula-1 Race Track. In coming years, we should be witnessing larger impact on the regional economy due to this one single project.

Fact Sheet • Distance-165 kms • Project Cost-Rs. 13,000 crore
• Starting Date-Dec, 2007 • Completion Date-Aug, 2012

CHARANKA SOLAR POWER, GUJARAT

With an aim of making India a solar hub, Gujarat Power Corporation Limited (GPCL) developed the Solar Park in Gujarat. This was an ardent initiative taken by the Government of Gujarat in order to harness Clean and Green Energy.



Spread across 5,384 Acre, the Charanka Park was planned with modern-age infrastructure and provisions to harness rain water. Apart from this, the Park has a capacity to generate 100 MW of Wind Power, making it the biggest solar-wind hybrid park in the world. The Park consists of large concentration/cluster of Solar Power generating units at single location.

With a total development cost of Rs. 4500 crores, the project was commissioned on 31st Dec, 2011. The Solar Park has helped in saving around 9 lakh metric ton of coal, which has further resulted in reducing carbon emissions. It has also opened employment opportunities for more than 1,000 people on permanent basis.

Fact Sheet • Launch Date-30th Dec, 2010 • Power Generation Capacity-500 MW
• Present Installed Capacity-214 MW

BANIHAL – QAZIGUND TUNNEL, J&K

The Banihal – Qazigund tunnel is Indian's longest railway tunnel that runs across the Pir Panjal mountain range. Being the longest transportation passage in India and second longest in Asia, the tunnel links the Kashmir Valley with Jammu region.

The Tunnel was commissioned on 26th June, 2013 and the commercial runs started from 27th June, 2013. It is part of the 202 km Udhampur - Srinagar - Baramulla rail link project undertaken by the Northern Railways. The tunnel was developed as a part of the Indian Government's aim to offer Jammu and Kashmir with a reliable link to the rest of the country.

This tunnel is completely water-proof and is equipped with fire fighting systems across the entire length. Apart from the above, the tunnel is also less prone to snow avalanche as it is a lower elevation.



Fact Sheet • Distance-11.215 km • Width-8.40 m
• Height-7.39 m • Estimated Cost-Rs. 1,700 crore

DELHI – MUMBAI INDUSTRIAL CORRIDOR

Delhi-Mumbai Industrial Corridor (DMIC) is one of the largest infrastructure projects in the world. The plan for the project is to develop high-tech industrial zone that spreads across six large investment regions. The project would comprise of world class infrastructure such as high speed transportation both by rail and road, modern airports, special economic regions, logistic parks, transshipment hubs, etc.

DMICDC (Delhi Mumbai Industrial Corridor Development Corporation) is the nodal agency managing the development of the DMIC. The final project concept was presented in 2007.

The main objective of the project is to develop DMIC as a Global Manufacturing and Trading Hub. The project would also comprise of infrastructure linkages like power plants, assured water supply, high capacity transportation and logistics facilities as well as softer interventions like skill development programme for generating employment for the local population.

Fact Sheet • Length-1500 kms • Project Cost-US\$ 90 billion
• Completion Date-Dec, 2019



NAVI MUMBAI INTERNATIONAL AIRPORT

The Navi Mumbai International Airport (NMIA) is purportedly one of the world's biggest 'Greenfield' international airports that would offer state-of-the-art passenger facilities and cargos. The airport has been planned in Navi Mumbai as the region is speculated to cater to the future growth in population, business and commercial activities.

City and Industrial Development Corporation (CIDCO) is the nodal agency who proposed the development of a new airport at Navi Mumbai. The Airport project is being developed through Public Private Participation (PPP) on design, build, planning, operation and finance.

The airport will aid to the rapidly growing air travel needs of Mumbai Metropolitan Region. It has been estimated that in its first operational year 2017 the airport will absorb 10 million passengers annually. Furthermore, the capacity would surge to 25 million by 2020, 45 million in 2025 and 60 million passengers by 2030.

Fact Sheet • Area Allotted 2,320 hectares • Project Cost Rs. 2,358 crore
• Completion Date 2017

METRO PROJECTS IN INDIA

Indian infrastructure took new heights when the concept of metro came into existence. First rapid metro transit system in India was the Kolkata Metro, which started operations in 1984. Central Government approved proposal to implement metro rail systems in 50 cities. The majority of the planned projects will be established as 50:50 joint ventures between the Union and respective State Government. Metro rail lines in India are composed of both standard gauge and broad gauge. The Union Government is investing an estimated Rs. 5 lakh crore (US\$74 billion).



The Delhi Metro was India's first modern metro and the third rapid transit system in India, after the Kolkata Metro and Chennai Mass Rapid Transit System (Chennai MRTS). There are currently 8 operational metro systems in India. As of September 2016, India has 324 km of operational metro lines. A further 520 km of lines are under construction.

Fact Sheet • Cumulative Projected Cost Rs. 5 lakh crore • Starting Date 1984

CHENAB RIVER VALLEY BRIDGE

The Chenab River Valley Bridge is an under construction railway bridge, which is a part of Jammu-Udhampur-Srinagar-Baramulla Rail Line (JUSBRL) project, commenced by the Ministry of Indian Railways. Once constructed, it will be the tallest rail bridge in the world.

Commuting in and around the mountainous topography of Jammu and Kashmir had always been difficult for locals. In order to ease out this trouble, a better transportation facility was recognized by the Government of India. Thus, the Chenab Bridge was planned across the deep Chenab River with an aim to provide access to the Kashmir valley from Udhampur.

The project was expected to complete by March 2016. However, due to non-consensus on alignment and delay in finalization of designs and court cases, the target has been reset to August 2018.



Fact Sheet • Length 1,315 m • Project Cost Rs. 12bn (\$92m)
• Completion Date 2018

EASTERN FREEWAY – MUMBAI

Eastern Freeway in Mumbai is another brilliant example of infrastructure development. This Freeway connects P D'Mello Road in South Mumbai to the Eastern Express Highway (EEH) at Ghatkopar.

The Freeway was built by the Mumbai Metropolitan Region Development Authority (MMRDA) and funded by the Central Government through the Jawaharlal Nehru National Urban Renewal Mission (JnNURM). A 13.59 km stretch of the freeway, comprising two of three segments with one of the twin tunnels, from Orange Gate on P D'Mello Road up to Panjarpol, near RK Studios in Chembur, was opened to the public on 14th June, 2013. The second tunnel was opened on 12th April, 2014. The third and final segment from Panjarpol to Ghatkopar-Mankhurd Link Road (GMLR) was opened on 16th June, 2014.

On completion of the project, thousands of commuters, travelling from South Mumbai towards Thane-Nashik and Panvel-Pune will save time and fuel.

Fact Sheet • Project Cost Rs 1,436 crore • Distance 16.8 Km
• Stretch 13.59 Km

REPL INDICATIVE ONGOING PROJECTS:

INFRASTRUCTURE & PLANNING



SMART CITY – INDORE, M.P.

Indore Smart City proposal was selected by GOI for the first phase of implementation. The Indore Area Based Development (ABD) proposal spreads across a contiguous land parcel, comprising of a total area of 742 acres, having a population of 1.2 Lakhs. The earmarked area is proposed to be retrofitted with smart features/infrastructure wherein out of total proposed area, 164 acres of land will be redeveloped.

Indore Smart City Development Limited (ISCDL) has appointed REPL and Knight Frank consortium to provide consultancy services for preparation of Area Based Development Master Plan/ detailed layout plan for earmarked area, preparation of detailed project reports (DPR) for various packages and project management consultancy (PMC) support.

REPL will assist the 'Authority' in various phases of project implementation, which will include the activities such as, preparation of DPR along with cost estimates, coordination with various appointed consultants, project prioritization & phasing, preparing capital investment plan, business plan and implementation roadmap, conducting feasibility study, bid process management for selection of implementing agencies, overall project management, etc. The total proposed cost for the smart city proposal is Rs. 5,099.60 crores.

PRADHAN MANTRI AWAS YOJANA – HOUSING FOR ALL (Urban), 140 Cities

Pradhan Mantri Awas Yojana has taken the lead from May 2015. The guidelines is known as Pradhan Mantri Awas Yojana-Housing for All (Urban) Scheme Guidelines 2015 (PMAY-HFA) (Modified in March 2016).

REPL's Planning Team is currently involved in the preparation of Housing for All Plan of Action (HFAPoA) of 128 cities of Uttar Pradesh under three clusters namely-Chitrakoot, Meerut and Moradabad. The clusters comprise of following number of cities: Chitrakoot - 23 cities, Meerut – 56 cities and Moradabad – 49 cities. HFAPoA of 10 cities of Rajasthan and 2 cities of Madhya Pradesh are also being prepared by REPL.

REPL is also preparing Detailed Project Reports (DPR) for the concerned authorities based on which the central grants will be released by the Central Government to the beneficiaries. Recently REPL's 11 DPRs for U.P state have been approved by Central Sanctioning and Monitoring Committee (CSMC).



STREET VENDING PLAN – JHANSI (MP) & BATHINDA (PUNJAB)

Under the National Urban Livelihood Mission (NULM), REPL is preparing Street Vending Plan for Municipal Corporations of Jhansi & Bathinda. As per REPL's survey in Jhansi, around 6,777 vendors operate in Jhansi Municipal Area, Cantonment area & Railway land; and approx. 5,715 street vendors of Bathinda required to be addressed.

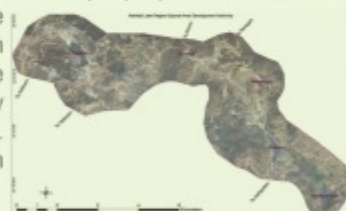


The tasks consisting of identifying the street vendors, GIS base mapping and surveys, capturing photo and bio-metric identity of vendors, preparing ID cards for vendors, preparing MIS software, vendor census survey, preparing de-duplication software, preparation of city street vending plan, management information system, preparing detailed implementation plan (DIP).

GIS MAPPING FOR 5 TOWNS IN UTTARAKHAND

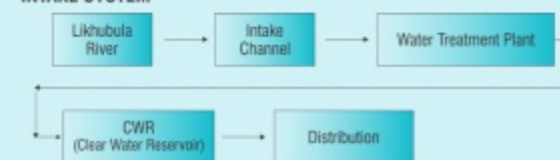
Rudrabhishek Infosystem Pvt. Ltd. (RIPL) is providing consultancy for Preparation of GIS Base map, composite sajra mosaic and existing land-use map for 5 towns i.e Nainital, Bhuwali, Mahargaon, Bhimtal and Naukuchiatal, which covers the area of 5000 hectares. The project is under the Nainital Lake Regional Special Area Development Authority (NLRSA), Nainital.

SOW includes aspects such as – procurement of satellite imagery; digital image interpretation; collection of all Khasra/sajra along with updation & verification; geo-reference and digitize all khasra maps; preparation of base map, existing land use map & contour map with 2.0m interval; and onsite training of town country planning department. Currently the project is in progress.



AUGMENTATION OF WATER SUPPLY SCHEME – MALAWI (AFRICA)

INTAKE SYSTEM



Blantyre city is facing acute shortage of water. Total estimated demand for water there is as high as 120,000 cubic meters per day. Cumulative design capacity of existing water treatment plants is 96,000 cubic meter but they are able to produce only 78000 cubic meter water per day. Present water supply is planned to be augmented by Likhubula River, originating from Mulanje Mountain, around 60 km from the city.

REPL consultancy included - Study of topographical survey, detailed hydraulic design of pipeline for transmission of raw water for intake of Mulanje mountain, technical proposal of water treatment plant of required capacity near nguleedi turn off, BoQ, cost estimation for entire scheme including WTP and Detailed Project Report. The DPR prepared by REPL infrastructure team has already been approved. Total cost of the project is 23.5 million US\$.

NAMAMI GANGE – UTTARPARA, WEST BENGAL

Namami Gange, the flagship initiative of the Central Government, is the latest move to clean and protect the Ganges, the 'heritage' of the country. Uttarpara is a town in Serampore/ Srirampore subdivision, Hooghly District, West Bengal, India.

In the absence of proper sewerage system, all the waste water is drained into Hooghly River, only 20% of the total wastewater is diverted to the STP (Sewage Treatment Plant), rest of the 80% is not even tapped and diverted to STP. Around 75% of the households have flush or pour flush toilets connected to the septic tank and soakage pits and discharge grey water into the nearby drains, cleaning frequency of the pits varies with different individuals. Existing STP is also partially functional and inadequate, no utilization of treated wastewater, wastewater from other towns like Konnagar & Rishra is also being carried to this STP. REPL has proposed short term and long term plans to cater to the issues-

| Short term plans | Long term plans |
|---|-----------------------------|
| Interception and diversion of wastewater flowing in major drains/Nalas. | Sewage collection network |
| Online treatment of major drains/nalas | Sewage treatment plant |
| Sewage treatment plant. | Reuse of treated wastewater |

For more details visit: www.replurbanplanners.com

DEVELOPMENT PLAN FOR 5 TOWNS OF HIMACHAL PRADESH

REPL has got the opportunity to prepare the Development Plans for Dharamshala Planning Area, Bir-Billing, Manikaran, Naggar and Reckong Peo Special Area. At present there are 33 Planning Areas and 34 Special Areas notified under the provisions of the Himachal Pradesh Town & Country Planning Act, 1977. Against these Planning/Special Areas there are just 2 Interim Development Plans and 17 Development Plans approved and notified by the State Government. The Stages for the project are outlined below:



On the basis of site visits, data collection, revenue sheets collection from Divisional & Sub-Divisional TCP departments to superimpose the existing and proposed land use maps on revenue records, procurement of satellite image for the preparation of base map, REPL is preparing the Draft Development Plan (DDP) of all the 5 planning and special areas.

REPL IN PROGRESSION

Associations

REPL and Knight Frank Consortium gets consultancy assignment for the implementation of Indore Smart City project.

REPL & URaP Australia collaborate on Smart Cities Project REPL signed a MoU with Urban Research and Planning (URaP) to boost & leverage the strength of each other for the Smart City Mission in India.

REPL signs MoU with DIMTS for Infra Projects REPL collaborated with Delhi Integrated Multi-Modal Transit System Limited (DIMTS) for the Infrastructure projects planning & Implementation, exploring markets in India and overseas, including SAARC countries, Middle East, Africa and Europe.

MOU with IET, Lucknow Association with Institute of Engineering Technology (IET), Lucknow to promote, transfer & integrate knowledge & research at ground level.

RIPL Partners with Microsoft India Rudrabhishek Infosystem Pvt. Ltd. (RIPL) joins hands with Microsoft to sell varied Microsoft Offerings.

RIPL Joins hands with Graphisoft, Hungary It is to promote Graphisoft product "ArchiCAD", in Northern, Eastern & NE States of India.

REPL signs MoU with BJJY, China Proposed JV will work in the areas of Big Data & BIM and its application in Smart Cities and real estate projects.

celebrating
25th
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