Shailesh Kanani

Tel: 022 - 4040 3800 Ext: 321

E-mail: shailesh.kanani@angeltrade.com

Aniruddha Mate

Tel: 022 - 4040 3800 Ext: 335

E-mail: aniruddha.mate@angeltrade.com

Executive Summary

The '*Wh*' of Road Development

We attended the two day, Fourth Annual Conference on ***'Road Development in India: Increasing Speed, Regaining Momentum'*** *recently held in Delhi wherein a multitude of stakeholders discussed the emerging opportunities in the Road Infrastructure Sector.*

20km a day - What!

National Highways Authority of India's (NHAI) past track record has not been very impressive having achieved a mere 5-6km/day over FY2005-09, which is much below the set target of 20km/day. Moreover, in the past, NHAI took on an average three years to award a contract and another three years for the construction to get completed. Against this backdrop, we believe that the target appears to be quite ambitious.

Why?

There are various factors that necessitate increase in the total length of the country's National Highways (NH) including increase in the number of vehicles plying on the roads, rapid urbanisation, retail revolution, etc. The economic losses to the national exchequer due to sub-standard and inadequate roads are estimated to be more than Rs20,000cr per annum.

How?

Procedural and financial/ bidding-related matters are slowly and steadily being taken care of or are under serious consideration by NHAI for eg. *Standardisation of Documents, Selection of Consultants, Land Acquisition, Clause 3.5.2, etc.* Our interaction with the different managements indicated that they are optimistic about implementation of the Road Development plans post the recent changes in guard at the Centre and Ministry.

The Stake-holders' perspective

Developers: The Implementers

The issues between the NHAI and developers on various aspects have been the most long drawn out. A factor, which was a major block to the development of the Road Segment, has been the differences in the estimated project cost by the NHAI and the one estimated by the developer. Shifting of utilities and cumbersome clearances required was another issue hampering timely execution of the Road projects even after the concession agreement having the requisite State support agreements. Road projects generally have a long gestation period owing to which players are faced with another unavoidable risk of Policy changes. Such risks are practically inconceivable to price in and could hence render a significant blow to the interest of the developers and lenders.

Project Financiers: The Enablers

Project financiers are an important link in the entire scheme of things. Apart from the developers being bogged down by various problems, this leg of the entire chain faces the major issue of there being not enough bankable projects in the pipeline. Concerns have been raised over the traffic projections provided by the Consultants. It may be noted that the Project Financiers are the maximum risk takers in a Road Project even though the Developers provide guarantee. Other limitations highlighted include lack of project management skills in India.

What still needs to be done?

Our interaction with different stake holders reveals that still a lot needs to be done to reach anywhere near the set target of 20km/day. Some of the common suggestions were relating to *Addressing Legal issues on priority basis, Active Secondary Bond Market, Long-term funds need of the hour, ECBs without restrictions, IIFCL to play a bigger role and Securitisation of Tolls.*

Our take: Set for Buoyant times

Did we ever have doubts about the Profitability of the Roads Sector? No. The Roads Sector is inter-linked with the general economic growth of the country and in the long term, with the economy expected to be on a roll (India has averaged 8-9% growth over the last 4-5 years), more and more investors feel emboldened to bet on the Roads Sector. Importantly, traffic projections on most of the roads have been in line with the economic cycle.

The government is also focusing on nurturing a profitable partnership with the Private Sector to bridge the investment and knowledge gaps in Road infrastructure. Clearly, the way ahead appears well-defined and innovative partnerships are in the offing. Road Infrastructure however, entails huge investments, and while Returns are high, the projects have long gestation periods.

To conclude: We believe that the Sector is on fast track owing to: 1) Political will; 2) Structural Changes; and 3) Buoyant Capital Markets (boosts confidence levels that fund raising is still an option). We are gung ho on the Sector as in the recent past not a single Road project failed to achieve financial closure. This reflects the increasing readiness and confidence of the financiers to fund Road Projects. Going ahead, we expect both domestic as well as international funds to flow into the Sector to capitalise on the upcoming lucrative opportunities in the Sector. Finally, we believe that the proposed structural, financial and procedural changes will help achieve the aggressive target of constructing 20km/day as against 5-6km/day achieved during FY2005-09. However, we have been conservative and not factored in such a scenario while valuing the companies in our coverage. Hence, there exists an upside risk to our recommendation.

We expect infrastructure companies skewed towards the Road Segment like L&T, IRB Infra, IVRCL Infra, NCC, HCC, Madhucon Projects and Sadbhav Engineering to be major beneficiaries of the proposed changes going ahead. We believe that the Sector offers tremendous *'Infusion-Dilution Opportunity'*, which we believe will lead to companies trading at 2.0-2.5x P/BV in the longer run owing to higher growth opportunities, thus providing huge upside from current levels. However, due to the sharp rally in these stocks and consequent outperformance of the Sector in CY2009, we have adopted a selective approach. We prefer companies that provide a decent blend of growth opportunities and attractive valuations. **Our Top Picks in the Sector are Madhucon Projects and IVRCL Infra.**

Across Construction Companies

Company	Reco	CMP (Rs)	Target Price (Rs)	Upside (%)	Mkt Cap. (Rs cr)	Order Book (Rs cr)	Exposure to Road Seg (%)	No. of BOT Assets (Roads)	Road Proj. Cap. (Rs cr)	FY2011E EPS (Rs)	FY2011E P/E (x)	*Adj. FY2011E P/E (x)
HCC	**Neutral**	112	-	-	3,400	13,700	14	3	1,348	4.3	26.1	11.1
IVRCL Infra	**Accumulate**	360	399	11	4,801	15,100	5	3	1,161	24.1	14.9	12.4
Madhucon Proj	**Buy**	215	305	42	792	4,865	35	4	1,648	25.7	8.4	4.5
NCC	**Neutral**	133	-	-	3,053	14,439	9	5	2,503	10.2	13.1	10.0
Patel Engg	**Buy**	422	545	29	2,521	7,350	12	2	1,043	36.8	11.5	8.7
Punj Lloyd	**Accumulate**	264	289	9	8,756	30,436	29	-	-	20.5	12.9	12.3
Sadbhav Engg	**Neutral**	793	-	-	991	4,339	69	4	1,914	62.1	12.8	10.3
Simplex Infra	**Neutral**	429	-	-	2,121	10,012	18	-	-	35.7	12.0	12.0

*Source: Company, Angel Research; Note: *Adjusted for value of investments in BOT, Real Estate and other companies; Refer snapshot of major companies in the Road Segment in the Companies' Section*

20km a day - What!

Till date, of the planned 54,500km of National Highways to be developed, around 11,746km roads have been completed

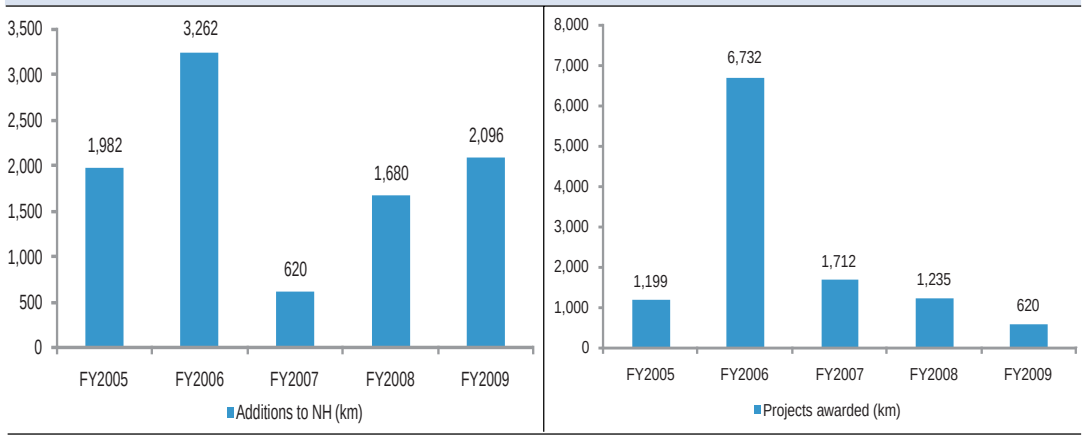
The National Highway Authority of India (NHAI) launched the seven-phase integrated National Highways Development Program (NHDP) in 2001 to develop the country's roads to the tune of 54,500km till FY2016, at an average of 10km/day. Currently, NH constitute a length of around 70,000km or a mere 2% of the country's total road network.

Till-date, of the planned 54,500km of National Highways to be developed, around 11,746km roads have been completed, 5,782km are at construction stage and road contracts to the extent of 36,972km are expected to be awarded over next the three-four years, at an average of 12,324km per year, considering a construction period of 910days, to achieve the target of 20km/day.

NHAI's past track record has not been very impressive having achieved a mere 5-6km/ day over FY2005-09, which is much below the set revised target of 20km/day

It may be noted here that NHAI's past track record has not been very impressive having achieved a mere 5-6km/day over FY2005-09, which is much below the set revised target of 20km/day. Moreover, it has taken NHAI an average of three years to award a contract, post which it takes another three years for the construction to get completed. Projects awarded every year also paint a dismal picture of an average of 2,300km per year over the last five years. Against this backdrop, we believe that the target appears to be quite ambitious.

Exhibit 1: NHAI - Dismal Track Record



Source: NHAI, Angel Research

NHAI has drawn up working plans for the next three years and expects to award projects of around 13,000km in FY2010E

Nonetheless, on its part, NHAI gauging the situation has drawn up working plans for the next three years and expects to award projects of around 13,000km in FY2010E.

Why?

Infrastructure development plays a crucial role in the economic development of any country, especially for a developing country like India, which averaged 8-9% growth over the last 4-5 years. To lend further push to this economic growth trajectory, the Eleventh Five-Year Plan has chalked up an outlay of US $500bn for the Infrastructure Sector of which the Road Sector accounts for almost 14-15%. Such a substantial outlay coupled with renewed stress being laid on the country's Road infrastructure development, particularly after the UPA Government took charge post the recently held General Elections, highlights the intensity of the cause on hand. Moreover, the government intends to expedite development of the country's Road infrastructure via the

public-private partnership (PPP) route. There are various factors that necessitate increase in the total length of the country's NH including increase in the number of vehicles plying on the roads, rapid urbanisation, retail revolution, etc.

The country's vehicular fleet increased at 9.4% CAGR over 2001-09, while the country's NH network posted an abysmal 2.4% CAGR

The country's vehicular fleet increased at 9.4% CAGR over 2001-09, while the country's NH network posted an abysmal 2.4% CAGR over the mentioned period. This, we believe, adequately highlights the demand-supply mismatch and points at the urgency to scale up the country's Road network. Going ahead, the country's vehicular traffic is set to post a CAGR of 8-10% over the next five years, which once again highlights the urgent need to focus on setting up an adequate Road infrastructure in the country.

Further, deteriorating state of the NH has been having a cascading effect on the user end. Logistics cost is an important metric, which quantifies the cascading effect of inadequate Road infrastructure, as a percentage of GDP. In a rapidly developing economy like India with logistic dependent industries (like Retail) still at a nascent stage, timely and efficient movement of goods at reasonable costs is very crucial. Hence, any increase in these costs has a direct impact on profitability and results in loss of international competitiveness. Thus, India's spend on logistics accounts for 13-15% of GDP, which is much higher than the developed nations.

Also, while commercial vehicles in India average 250-300km per day, their counterparts in the developed countries cover more than double the distance. Key reason for the former is the relatively high level of inefficiency in the system and inadequate road infrastructure resulting in lower average trucking speed. The economic losses to the national exchequer due to sub-standard and inadequate roads are estimated to be more than Rs20,000cr per annum.

How?

Our interaction with different managements indicated that they are optimistic about implementation of the Road development plans post the change in guard at the Centre and Ministry

Soon after Kamal Nath took charge of the Ministry of Road, Transport and Highways (MoRTH), meetings were held with over 50 road developers to sort out the issues affecting the Sector and draw up a workable road map to beef up the country's Road infrastructure. Procedural and financial/ bidding-related matters also came up for discussion. Our interaction with different managements indicated that they are optimistic about implementation of the Road development plans post the recent change in guard at the Centre and Ministry.

While we believe that the target of building 20km/day is ambitious considering NHAI's past track record, however, the Ministry/NHAI have proposed/ushered in a number of changes at different levels to achieve the set target.

Model Concession Agreement (MCA) Revamped

The new MCA seeks to allocate risk to the party best suited to manage and mitigate it

- **Standardisation of Documents:** The new MCA has been adequately amended to reflect the learnings and experience of the previous five years and has drawn up a clearer risk-sharing agreement between the private operators and the government as well as longer risk sharing over a period of time. However, increasingly a greater share of the development risks is being passed on to the private sector. The NHAI is entrusted with the duties of State support agreements, inter-Ministerial co-ordination, land acquisition and associated activities such as utilities shifting or environment clearances. The objective is to allocate risk to the party best suited to manage and mitigate it replacing the earlier policy of concessionaire bearing the maximum risk. This kind of segregation of duties and standardisation is expected to result in greater participation from different stake holders.

Higher weightage has been given to Technical knowledge and experience while selecting Consultants

- **Selection of Consultants:** Assurance of independent and competent advice is critical as consultants are often encumbered by conflict of interests. Further, since the earlier Detailed Project Reports (DPRs) prepared by consultants were largely selected on the basis of financial consideration, the quality of estimates was found to be severely lacking. Therefore, the criteria for selection of Consultants have also changed and higher weightage (around 80%, which is in line with world practice) has been given to the Technical knowledge and experience. Accordingly, the Request for Proposals (RFPs) have been issued for technical (for feasibility report), legal (for contract) and financial consultants (for structuring and transaction support).

NHAI has decided to award the Letter of Award (LoA) only after it is in possession of 80% of the land required for the project

- **Land Acquisition:** In Road construction, land acquisition is important and has primarily been responsible for NHAI's dismal performance over the last five years. Issues surrounding land acquisition have resulted in project cost overruns as NHAI has had to compensate the developers for idle machinery, interest costs, etc. Hence, NHAI is currently in the process of setting up 150 land acquisition wings at the State-level and special arbitration cells to reduce inordinate delays due to land acquisition problems. Further, to expedite the road construction process, NHAI has decided to award the Letter of Award (LoA) only after it is in possession of 80% (as against 50% earlier) of the land required for the project. The balance 20% would also be handed over to the contractor before financial closure of the project.

The Crossholding Clause seeks to prevent conflict of interests between bidders

- **Conflict of Interest:** At present, the Crossholding Clause seeks to prevent conflict of interests between bidders and bars parties from bidding for a project in case of a common shareholder with higher than 5% ownership through direct or indirect holding. Consider: Even if one company of a consortium has over 5% stake in any of the partners in a competing consortium it is considered as conflict of interest. This was depleting the field of competent bidders owing to which the Ministry has decided to increase it by 10%. Accordingly, consortiums for a project will not be disqualified if they have a common shareholder with below 15% stake.

- **Clause 3.5.2:** Clause 3.5.2 (cap on number of bidders for financial bidding) in MCA, which has been a major bone of contention with the contractors, has now been done away via the special exemption taken by NHAI.

The technical criteria of having completed projects worth 200% of the total project cost in the last five years, is under the scanner

- **Technical criteria:** The technical criteria of having completed projects worth 200% of the total project cost in the last five years, is under the scanner. It is expected to get rolled back to the old norm of 100%, which we believe will ensure larger participation.

The Termination Clause is seen as negative and a risk by developers

■ **Termination Clause:** The Termination clause in the MCA says if the target traffic on a BOT toll road exceeds 20% in any year, then the excess revenue would go to the safety fund (under the government control), and in case the trend continued for three consecutive years, the concession would be terminated. This is considered to be a negative and a risk by developers. They hold that once this clause is deleted there would be greater participation by the bidders, which is the need of the hour. Therefore, there exists good chance of this clause getting scrapped for future projects.

■ **Exit Clause:** Existing norms disallow the lead partner in an SPV to sell his stake even post the project construction . The lead partner has to hold minimum 51% stake during construction and a minimum 26% stake post construction and end of the concession period of the project thereby blocking the developer's equity component. It is now recommended that the lead partner should be allowed to exit the SPV so that it can allocate resources for future infrastructure development.

Funding the development - Necessity is the mother of invention

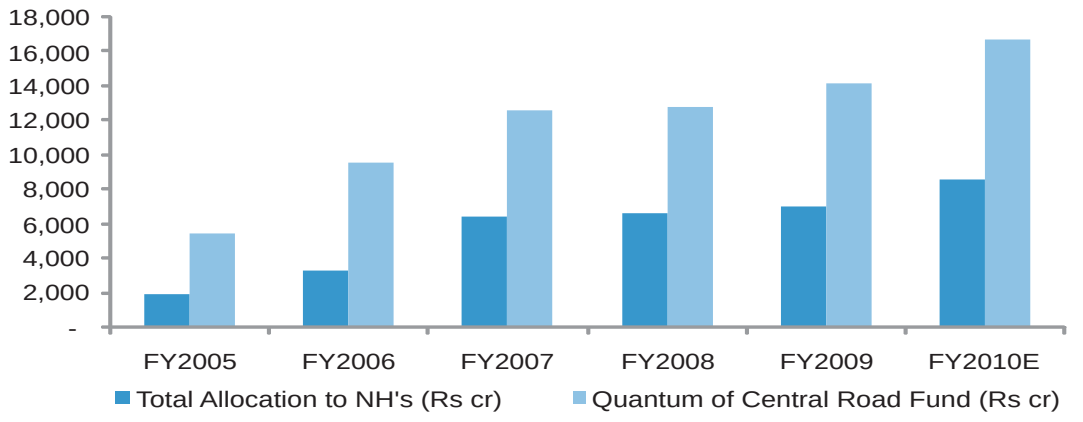
Mechanisms proposed are co-related to the increasing traffic intensity, are beneficial for the maintenance of Highways and the PPP would facilitate faster and better creation of new road infrastructure

Funding is vital for infrastructure projects particularly in a resource constrained country like India. In Road projects, funds are essentially required for the creation of new road infrastructure and maintenance of existing road infrastructure. The Government of India (GoI) has set up some innovative funding vehicles depending on the objectives. For new road infrastructure, instruments like Capital Gains Tax exemption bonds and increasing participation from private players (by setting up projects on Toll basis) have been proposed, whereas for maintenance of the existing and upcoming road infrastructure, CRF and Revenue-sharing agreements with the asset developers have been devised. We believe that the mechanisms proposed are directly co-related with the increasing traffic intensity and would be beneficial in the maintenance of Highways, while private participation would facilitate faster and better creation of new road infrastructure due to their expertise. Different sources of funding are discussed here:

■ **Central Road Fund**

Levy of Rs2/litre cess on Petrol and High Speed Diesel (HSD) comprises the Central Road Fund (CRF), which primarily meets the requirements of the Operation & Maintenance of NH's and State Roads and development of Rural Roads in varying proportions. Over the years, CRF collection has been increasing and is would play a crucial role going ahead on higher consumption of Petrol and HSD.

Exhibit 2: Increasing quantum of CRF



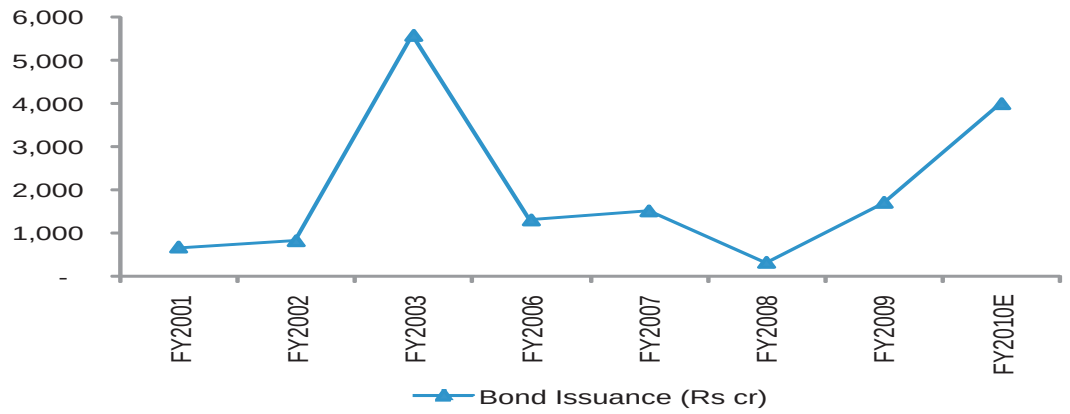
Source: Annual Reports-NHAI, Angel Research

■ Capital Gains Tax Exemption Bonds

These bonds not only provide exemption to the investors, but also provides NHAI with funds at cheaper rates (current coupon rate of bonds is 6.25%)

Certain provisions of the Indian Income Tax Act extend exemptions for investing in NHAI Capital Gains Tax Exemption Bonds. Over the years, these Bonds have substantially supported the development of NH's. These bonds not only provide exemption to the investors, but also provides NHAI with funds at cheaper rates (current coupon rate of bonds is 6.25%). Further, to ensure commitment of funds over a longer tenure, these bonds have a lock-in of three years. We believe that NHAI will be able to raise funds to the tune of Rs4,000cr in FY2010E to fund its different highway projects as against Rs1,700cr raised in FY2009.

Exhibit 3: NHAI Bonds - A Dual advantage



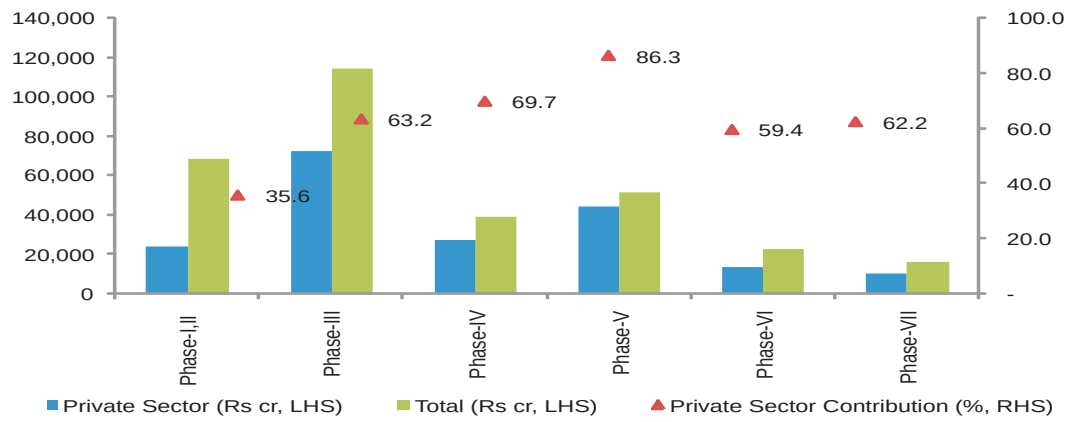
Source: NHAI, Angel Research

■ Private Sector investments

Expansion plans are based on increasing participation by the Private Sector which is expected to contribute Rs1,72,500cr over the next three-four years

The 2005 Financing Plan had pegged Rs2,20,000cr to develop 54,500km of Roads in the country. However, following the surge in raw material prices and interest rates (since the 2005 estimates), the amount stands increased at around Rs3,30,000cr (as per the modified 2009 prices). It may be noted here that the expansion plans are based on increasing participation by the Private Sector. Overall, the Private Sector is expected to contribute Rs1,72,500cr over the next three-four years.

Exhibit 4: Increasing private player participation



Source: NHAI, Angel Research

Other Measures

- **Rationalisation in building Roads:** In recent years NHAI has also built four-lane highways, where traffic over the next decade would only require two lanes. As a result, investment of over Rs5cr/km will remain idle. Pertinently, the same money could have been utilised to upgrade several thousand kms of road across the country. Such absurdities are also getting addressed and taken up critically by Kamal Nath.

For projects to be on Toll, minimum vehicular traffic should be 15,000/day

In line with this, it has been decided to rationalise the entire process of building roads wherein all projects would not be under Toll-based system, ie. for projects to be on Toll, minimum vehicular traffic should be 15,000/day. In case of roads having lower vehicular traffic than this, it would be given either on BOT Annuity or EPC basis, which would ensure that there are enough bidders for the project and the development does not take a hit due to uncalled for reasons.

The Stake-holders' perspective

A major deterrent to the development of the Road Segment has been the differences in the estimated project cost by NHAI and the developers' estimates

There's absolutely no doubt that there exist enormous opportunities waiting to be grabbed in the Indian Infrastructure space particularly the Road Segment. However, several impediments are hindering conversion of the plans into action. Here we present perspective of the different stake holders of the Road Segment.

- **Developers: The Implementers**

➢ The tussle between the NHAI and developers on various aspects has been the most long drawn out. A major deterrent to the development of the Road Segment has been the differences in the estimated project cost by the NHAI and the developers' estimates. Since NHAI's estimates are based on the DPRs prepared before 2006 and 2007, it grossly underestimates current project cost estimates. To mention a classic example: Project cost of Soma Enterprises' Panipat-Jalandar Road project according to the NHAI was around Rs2,700cr while project cost as per the developer was approximately Rs4,518cr, ie. 67% higher than NHAI's estimated project cost. One of the reasons pointed out by the developer was the outdated DPRs prepared by consultants. This diffierence in NHAI's estimated project cost and the actual project cost has led to lukewarm response from the developers as projects become economically unviable even after 40% VGF (which is much lower than the actual project cost).

The government has increased the project costs by 10% if the DPR was completed post 2007 and by 20% for projects where the DPR was completed before 2007

However, this issue seems to be almost resolved as the government has increased the project costs by 10% if the DPR was completed post 2007 and by 20% for projects where the DPR was completed before 2007. As a result, the viability gap funding (VGF) would increase in turn improving the project feasibility. Further, in a move to attract Private Sector bidders, NHAI also restructured the cost of about 35 projects across the country through elimination of flyovers and service lanes. This has resulted in a dramatic reduction in costs. For example, the cost of developing the Belgaum-Dharwad Highway has declined by almost 40% from the original estimate to Rs480cr.

Average normal clearance required 20-25 signatures from various authorities

- Shifting of utilities and cumbersome clearances required was another issue hampering timely execution of the Road projects even after the concession agreement having the requisite State support agreements. The remark made on the Bureaucracy was that an average normal clearance required 20-25 signatures from various authorities.

The recent increase in the MAT rate from 10% to 15% has negatively impacted profitability of many existing and under construction Road BOT projects

- Road projects generally have long gestation period owing to which the players are faced with another unavoidable risk of Policy changes. For instance, the recent increase in the MAT rate from 10% to 15% has negatively impacted profitability of many existing and under construction Road BOT projects. Such risks are practically inconceivable to price in and could hence render a significant blow to the interest of developers and lenders. Similarly, tax implications of the New Direct Tax Code on the developers remain unclear leading to lot of uncertainty.

- **Project Financiers: The Enablers**

Project financiers are an important link in the entire scheme of things. Apart from the developers being bogged down by various problems, this leg of the entire chain faces the major issue of absence of enough bankable projects in the pipeline. Concerns have been raised over the traffic projections provided by the Consultants. It may be noted that the Project Financiers are the maximum risk takers in a Road Project even though the Developers provide guarantee. Other limitations highlighted include lack of project management skills in India.

What still needs to be done?

- **Addressing Legal issues on priority basis**

Disputes between NHAI and the contractors have seen over Rs10,000cr of the latter's money getting stuck in legal wrangles, which has delayed project completion

Currently addressing of disputes is a sticky and prolonged process due to the poor regulatory framework. Disputes get referred to the Dispute Resolution Board (DRB) and thereafter to the Dispute Adjudication Board (DAB). But, these Boards are not empowered bodies. The next few stages include an Arbitration Tribunal (taken up by the High Court) for further decision. Pertinently, the Golden quadrilateral (GQ) contracts encounter higher number of legal issues - out of the total (128) contracts awarded nearly 66% were under dispute. This results in enormous time and cost overruns.

Disputes between NHAI and the contractors have seen over Rs10,000cr of the latter's money getting stuck in legal wrangles, which has delayed project completion. Almost 90% of the arbitration cases have been won by the contractors, but NHAI has not accepted them and challenged them in court.

Overall, some changes in these procedures is urgently warranted wherein once a case is won at least the money should be released to the contractor and later the matter could be taken up with the higher authorities for final approval. Also, we believe that if the disputes have to finally be resolved through arbitration/adjudication in the High Court, the role of DRB/DAB appears to be redundant and costs incurred thereof could be avoided. Thus, these procedures need to be simplified so that there are savings in the transaction costs as well as time.

- **Active Secondary Bond Market**

An active Secondary Debt Bond market needs to be in place to tap cash from Corporates as well as provide access to the substantial Retail saving. Lack of the same is proving to be a major impediment in accessing significant long-term capital required for the Road PPPs.

- **Long-term funds need of the hour**

There is a need for Pension funds and Insurance companies (currently restricted) to provide long-term capital

Since the Road projects have long gestation periods, funding requirements of these projects are long term in nature. However, banks are reluctant to finance such long-term projects as they have to maintain their Asset-Liability equilibrium. Therefore, there is a need for Pension funds and Insurance companies (currently restricted) to provide long-term capital to build world class Road infrastructure in the country.

- **ECB without restrictions**

ECB's are comparatively cheaper than domestic borrowing

Interest cost plays a vital role in the viability of projects. Access to funds at cheaper rates could lower the total project cost and reduce dependency of the project on VGF. We believe that opening up the External Commercial Borrowing (ECB) window for the Road Sector with minimum restrictions could go a long way in bridging the financing deficit gap and at a lower cost, as ECB is comparatively cheaper than domestic borrowing.

- **IIFCL to play a bigger role**

Indian developers are not able to avail the benefits of reduction in risks as a securitisation market for road projects is currently not active

IIFCL is shackled by limitations like funding cost which is as high as the banks, concessionaire is required to repay 60% of the funded amount within the first 10 years and is not accessible to NBFC's like IDFC, IL&FS, etc. IIFCL to play a bigger role in building roads these restrictions should be done away with.

- **Securitisation of Tolls**

In an infrastructure project, there exist risks at the various stages of implementation of the project. Maximum risks that the players bear are at the pre-concession stage (when the project has just been awarded). This stage entails numerous risks including winning the concession with proper agreements, financial closure, construction risks, timely completion, business risks, etc. However, as the project nears completion each risk is mitigated. Once the project is commissioned with an established Revenue stream and Profits, risks reduce considerably. However, currently this reduction in risk is not enjoyed by Indian developers as a securitisation market for road projects is currently not active.

Our take: Set for Buoyant times

In the long run, with the economy on a roll (India has averaged 8-9% growth over the last 2-3 years), more and more investors feel emboldened to bet on the Roads Sector

Did we ever have doubts about the Profitability of the Roads Sector? No. The Roads Sector is inter-linked with the general economic growth of the country. Importantly, traffic projections on most of the roads have been in line with the economic cycle. In the long run, with the economy on a roll (India has averaged 8-9% growth over the last 4-5 years), more and more investors feel emboldened to bet on the Roads Sector.

Political consensus is a necessity for infrastructure development in India

Investment in Road infrastructure has been the focal point in recent years, as the government has ultimately recognised the fact that inadequate infrastructure has been constraining growth and deterring foreign players from investing in the country. The *"Global Competitiveness Report 2007-08"* by the World Bank points at the "Inadequate supply of Infrastructure", which is the most problematic factor for doing business in India, and which sums up the crucial role that infrastructure plays in ushering growth hereon. Thus, political consensus is a necessity for infrastructure development in India as until and unless the need is severely felt by the government, major fund flows will not materialise in the form of grants/allocations. However, as has been seen in the recent past, we believe that the government has no other option but to continue its focus on infrastructure development in the country particularly the Road Segment. The same is also facilitated by the change in guard at the Ministry.

Investment in Road Infrastructure entails substantial investments, and while Returns are also high, investors will have to accept the long gestation periods involved

We believe there exist significant opportunities in the Road Sector, which can provide investors a platform to grow and expand in the Indian economy. The government is also focusing on nurturing the profitable partnership with the private sector to bridge the investment and knowledge gaps in the Road infrastructure. However, investment in Road Infrastructure entails substantial investments, and while Returns are also high, investors will have to accept the long gestation periods involved. Thus, it is clear that the way ahead is through well-defined and innovative partnerships. In fact, Prime Minister, Manmohan Singh, has repeatedly called for *"Innovative public-private partnerships to explore new pathways to make the Infrastructure ambitions a realisable goal".*

We are gung ho on the Sector as in the recent past not a single Road project failed to achieve financial closure

To conclude: We believe that the Sector is on fast track owing to: 1) Political will; 2) Structural Changes; and 3) Buoyant Capital Markets (boosts confidence levels that fund raising is still an option). We are gung ho on the Sector as in the recent past not a single Road project failed to achieve financial closure. This reflects the increasing readiness and confidence of the financiers to fund Road Projects. An important musing by a participant at the Seminar was that funds are available (with Rs28,00,000cr being the size of Banking Industry, which is expected to grow at 20% per annum and with capital markets buoyant, the government could raise money through dilution of stake in the PSUs), but an effective mechanism and instruments need to be in place to tap the resources as well as good bankable projects, which could infuse confidence in the lenders. Going ahead, we expect both domestic as well as international funds to flow into the Sector to capitalise on the upcoming lucrative opportunities in the Sector. Finally, we believe that the proposed structural, financial and procedural changes will help achieve the aggressive target of constructing 20km/day as against 5-6km/day achieved during FY2005- 09. However, we have been conservative and not factored in such a scenario while valuing the companies in our coverage. Hence, there exists an upside risk to our recommendation.

We prefer companies that provide a decent blend of growth opportunities and attractive valuations

We expect infrastructure companies skewed towards the Road Segment like L&T, IRB Infra, IVRCL Infra, Nagarjuna Constructions, Hindustan Construction, Madhucon Projects and Sadbhav Engineering to be major beneficiaries of the proposed changes going ahead. Overall, we expect substantial growth opportunities coming up for the Road Infrastructure Sector and such growth would ensure higher RoEs for the players in the Sector. It should also be noted here that the Sector offers tremendous *'Infusion-Dilution Opportunity',* which we believe will lead to companies trading at 2.0-2.5x P/BV in the longer run owing to higher growth opportunities, thus providing huge upside from current levels. We are currently conservatively valuing BOT assets of these companies at 1.0-1.5x P/BV.

However, due to the sharp rally in these stocks and consequent outperformance of the Sector in CY2009, we have adopted a selective approach. We prefer companies that provide a decent blend of growth opportunities and attractive valuations. **Our Top Picks in the Sector are Madhucon Projects and IVRCL Infra.**

Exhibit 5: Across Construction Companies

Company	Reco	CMP (Rs)	Target Price (Rs)	Upside (%)	Mkt Cap. (Rs cr)	Order Book (Rs cr)	Exposure to Road Seg (%)	No. of BOT Assets (Roads)	Road Proj. Cap. (Rs cr)	FY2011E EPS (Rs)	FY2011E P/E (x)	*Adj. FY2011E P/E (x)
HCC	**Neutral**	112	-	-	3,400	13,700	14	3	1,348	4.3	26.1	11.1
IVRCL Infra	**Accumulate**	360	399	11	4,801	15,100	5	3	1,161	24.1	14.9	12.4
Madhucon Proj	**Buy**	215	305	42	792	4,865	35	4	1,648	25.7	8.4	4.5
NCC	**Neutral**	133	-	-	3,053	14,439	9	5	2,503	10.2	13.1	10.0
Patel Engg	**Buy**	422	545	29	2,521	7,350	12	2	1,043	36.8	11.5	8.7
Punj Lloyd	**Accumulate**	264	289	9	8,756	30,436	29	-	-	20.5	12.9	12.3
Sadbhav Engg	**Neutral**	793	-	-	991	4,339	69	4	1,914	62.1	12.8	10.3
Simplex Infra	**Neutral**	429	-	-	2,121	10,012	18	-	-	35.7	12.0	12.0

*Source: Company, Angel Research; Note: *Adjusted for value of investments in BOT, Real Estate and other companies; Refer snapshot of major companies in the Road Segment in the Companies' Section*

Companies

BUY

Price	**Rs215**
Target Price	**Rs305**
Investment Period	**12 Months**

Stock Info

Sector	Construction
Market Cap (Rs cr)	792
Beta	0.7
52 WK High / Low	295/42
Avg. Daily Volume	32,740
Face Value (Rs)	2
BSE Sensex	15,781
Nifty	4,688
BSE Code	531497
NSE Code	MADHUCON
Reuters Code	MAPR.BO
Bloomberg Code	MDHPJ@IN

Shareholding Pattern (%)

Promoters	57.7
MF/Banks/Indian FIs	20.5
FII/ NRIs/ OCBs	14.3
Indian Public/others	7.5

Abs.	3m	1yr	3yr
Sensex (%)	11.8	10.4	36.4
MPL (%)	53.9	(23.7)	(3.4)

Shailesh Kanani

Tel: 022 - 4040 3800 Ext: 321

E-mail: shailesh.kanani@angeltrade.com

Aniruddha Mate

Tel: 022 - 4040 3800 Ext: 335

E-mail: aniruddha.mate@angeltrade.com

Projected to gain big

Madhucon Projects (MPL), a mid-sized Infrastructure player, is diversified across the verticals of Roads, Irrigation, Power, Coal and Real Estate. We believe that MPL has a good mix of assets, which are yielding consistent Returns, Cash flows and would facilitate it to continue investing in the high-growth businesses of Real Estate, Power and Coal going ahead. MPL plans to dilute its stake in Madhucon Infra, a wholly-owned subsidiary, which has Road, Power and Coal assets. This would strengthen MPL's financial muscle and create value for shareholders. We believe that the company is headed in the right direction and any progress on this front would act as a positive catalyst for the stock price. We have valued MPL on SOTP methodology wherein we have assigned 8x multiple (earlier 6x) for its Core Construction business on FY2011E EPS, investments in Road and Power business at 1.0x P/BV and real estate land at discount to prevailing land price. ***MPL remains our Top Pick in the Sector and we reiterate a Buy on the stock, with a revised SOTP Target Price of Rs305.***

- **Robust Top-line growth, Margin expansion to boost Earnings:** We estimate MPL to report an Earnings CAGR of 38.9% over FY2009-11E owing to robust Top-line growth and Margin expansion in turn leading to an improvement in Return Ratios.

- **BOT Segment - Time to re-invest:** MPL has four Road (Toll) BOT projects in its Asset portfolio with a total project capitalisation of Rs1,648cr. Once all the company's BOT projects (total 4) get operational, we expect Cash flows to receive a boost by around Rs180cr per year (average collection of Rs45-50lakh expected per day) post which MPL will once again start scouting for new opportunities in the Segment.

- **Watch out for Re-rating:** We prefer MPL to other Mid-Cap Construction stocks on account of the following: 1) Cooling commodity prices, which we believe would benefit MPL as it has orders with fixed price contracts; 2) Despite the recent run up in the stock, there exists a substantial valuation arbitrage between MPL and its peers; 3) MPL is one of the biggest beneficiaries of the improving liquidity scenario as it has an attractive portfolio of offerings; and 4) Certain catalyst/triggers (Power and Coal business) are still not priced in.

Key Financials

Y/E March (Rs cr)	FY2008	FY2009	FY2010E	FY2011E
Net Sales	**738**	**1,036**	**1,383**	**1,770**
% chg	*44.7*	*40.3*	*33.5*	*28.0*
Net Profit	**47.3**	**49.3**	**70.8**	**95.1**
% chg	*13.4*	*4.2*	*43.7*	*34.3*
FDEPS (Rs)	**12.8**	**13.3**	**19.1**	**25.7**
EBITDA Margin (%)	14.5	11.4	11.6	12.1
P/E (x)	16.8	16.1	11.2	8.4
RoE (%)	9.6	9.2	11.8	13.8
RoCE (%)	10.5	9.5	9.6	10.8
P/BV (x)	1.6	1.5	1.3	1.2
EV/Sales (x)	1.2	0.9	0.9	0.8
EV/EBITDA (x)	8.3	8.1	8.0	6.8

Source: Company, Angel Research

ACCUMULATE

Price	**Rs360**
Target Price	**Rs399**
Investment Period	**12 Months**

Stock Info

Sector	Construction
Market Cap (Rs cr)	4,801
Beta	1.7
52 WK High / Low	392/57
Avg. Daily Volume	849,485
Face Value (Rs)	2
BSE Sensex	15,781
Nifty	4,688
BSE Code	530773
NSE Code	IVRCLINFRA
Reuters Code	IVRC.BO
Bloomberg Code	IVRC@IN

Shareholding Pattern (%)

Promoters	9.7
MF/Banks/Indian FIs	33.0
FII/ NRIs/ OCBs	48.4
Indian Public/others	8.9

Abs.	3m	1yr	3yr
Sensex (%)	11.8	10.4	36.4
IVRCL (%)	24.6	13.9	56.1

Shailesh Kanani

Tel: 022 - 4040 3800 Ext: 321

E-mail: shailesh.kanani@angeltrade.com

Aniruddha Mate

Tel: 022 - 4040 3800 Ext: 335

E-mail: aniruddha.mate@angeltrade.com

On Road to greater heights

IVRCL Infrastructure has a diversified business model and primarily focuses on the Irrigation Segment, which fetches high Margins and has high Asset Turnover. Going ahead, management has guided to scout for opportunities in the Road Segment (the company has consciously kept away from the Road-based PPP model post bagging three Road BOT project in FY2005-06). We believe that this step by the company is in the right direction owing to: 1) Its Strong Balance Sheet; 2) Post changes in the MCA, Roads are expected to be on fast track over the next 12-18months; and 3) Substantial opportunities arising in the Sector along with improving risk reward ratio. We have valued IVRCL on SOTP methodology wherein we have assigned 14x multiple for its Core Construction business on FY2011E EPS, investments in Road BOT is at 1.5x P/BV and the stake in subsidiaries at current market cap giving a 20% holding company discount. ***IVRCL remains our Top pick in the Sector. We maintain an Accumulate on the stock, with an SOTP Target Price of Rs399.***

- **Robust Order Book ensures Revenue visibility:** IVRCL has a robust Order Book of Rs15,081cr primarily comprising projects from the Irrigation (44.2%), Water (21.8%), Buildings (20.4%), Power (8.8%) and Transportation (4.8%) Segments. We expect IVRCL to post 27.5% CAGR in Revenues over FY2009-11E on the back of its strong execution capability and robust Order Book position.

- **Irrigation to remain significant contributor to overall Revenues:** Irrigation is a major focus area of the Andhra Pradesh (AP) government. In line with this, the AP government has chalked out a substantial Rs18,000cr outlay for Irrigation projects in FY2010E. We believe that IVRCL stands to be a major beneficiary of the same on account of having a strong presence in the Segment. Therefore, we expect Irrigation to remain a high contributor to the company's Top-line going ahead as well.

- **BOT projects approaching completion ensures Cash flows:** IVRCL's Road BOT Assets portfolio (three projects) is approaching completion and is expected to contribute around Rs230cr per year. We believe that with the company's Road BOT projects getting operational (leading to cash inflows) and the experience gained thereby will enable IVRCL to secure more orders in the space and drive its future growth.

Key Financials (Standalone)

Y/E March (Rs cr)	FY2008	FY2009	FY2010E	FY2011E
Net Sales	**3,703**	**4,882**	**6,426**	**7,933**
% chg	*55.6*	*31.8*	*31.6*	*23.5*
Net Profit	**215.0**	**226.3**	**290.2**	**335.3**
% chg	*52.0*	*5.3*	*28.3*	*15.5*
FDEPS (Rs)	**15.5**	**16.3**	**20.9**	**24.1**
EBITDA Margin (%)	9.9	8.6	9.5	9.2
P/E (x)	23.2	22.1	17.2	14.9
RoE (%)	14.7	13.2	14.4	14.2
RoCE (%)	14.6	12.7	15.5	15.0
P/BV (x)	3.0	2.6	2.3	2.0
EV/Sales (x)	1.5	1.3	1.0	0.9
EV/EBITDA (x)	15.6	14.6	10.8	9.9

Source: Company, Angel Research

NEUTRAL

Price	**Rs793**
Target Price	**-**
Investment Period	**-**

Stock Info

Sector	Construction
Market Cap (Rs cr)	991
Beta	0.6
52 WK High / Low	845/220
Avg. Daily Volume	7,496
Face Value (Rs)	10
BSE Sensex	15,781
Nifty	4,688
BSE Code	532710
NSE Code	SADBHAV
Reuters Code	SADE.BO
Bloomberg Code	SADE@IN

Shareholding Pattern (%)

Promoters	47.6
MF/Banks/Indian FIs	24.8
FII/ NRIs/ OCBs	24.0
Indian Public/others	3.6

Abs.	3m	1yr	3yr
Sensex (%)	11.8	10.4	36.4
SEL (%)	22.2	(1.9)	107.3

Shailesh Kanani

Tel: 022 - 4040 3800 Ext: 321

E-mail: shailesh.kanani@angeltrade.com

Aniruddha Mate

Tel: 022 - 4040 3800 Ext: 335

E-mail: aniruddha.mate@angeltrade.com

Strategically transformed; but fully valued for now

Sadbhav Engineering (SEL), a mid-sized infrastructure company, over the years has transformed from being a pure contractor to becoming an asset owner. SEL's current Road BOT portfolio - five on Toll basis and one on Annuity basis - and lion's share of its Order Book from the Road Segment highlights its prowess to capitalise on the opportunities that abound in the Road space. At Rs793, the stock is trading at 12.8x FY2011E EPS and 2.0x FY2011E P/BV. We have valued the stock on SOTP methodology wherein we have assigned a Target multiple of 10x to its Core Construction business on FY2011E EPS, valued its BOT Assets portfolio at 1x Book Value and have arrived at a Fair Value of Rs774. ***On account of the recent run up in the stock price, we recommend a Neutral view on the stock.***

- **Diversifying Business Model…** SEL has primarily been a contractor with a dominant presence in the Road Segment. However, over the years, the company has been diversifying its business model and has entered the BOT space. The company is now also exploring opportunities in the Mining Excavation Segment, which according to management is likely to witness substantial activity going ahead. We believe that this diversification will help SEL strengthen its business model and insulate itself from any potential slowdown.

- **…To include higher Margin businesses:** We believe that SEL's diversification would also lead to an uptick in Operating Margins as mining excavation is a high-Margin business.

- **Strong Order Book:** SEL operates in the three Infrastructure sub-Segments of Roads, Irrigation and Mining Excavation, which contribute 69.0%, 16.3% and 14.7% respectively, to its outstanding Order Book of Rs4,338cr (3.2x FY2010E Revenues) and ensure Revenue visibility for the next few years.

- **BOT stake sale/Rights issue - A short-term trigger:** SEL proposes to raise funds to the tune of Rs125cr via a Rights Issue to meet funding requirements of its expansion plans, and all the approvals are in place. We believe that if the company assigns any discount to the Rights price from the market price at the time of the Issue then it could prove to be a short-term trigger for the SEL stock. We believe that the company could also raise money via a stake sale in its BOT SPVs riding high on the buoyant capital markets and in turn create value for its shareholders.

Key Financials (Standalone)

Y/E March (Rs cr)	FY2008	FY2009	FY2010E	FY2011E
Net Sales	**895**	**1,063**	**1,342**	**1,584**
% chg	*84.1*	*18.4*	*26.5*	*17.6*
Adj. Net Profit	**48.9**	**55.7**	**65.2**	**77.7**
% chg	*83.8*	*13.9*	*17.2*	*19.1*
FDEPS (Rs)	**39.1**	**44.5**	**52.2**	**62.1**
EBITDA Margin (%)	11.2	10.4	10.4	10.7
P/E (x)	20.3	17.8	15.2	12.8
RoE (%)	24.5	20.1	16.8	16.6
RoCE (%)	25.6	18.7	18.6	18.7
P/BV (x)	3.5	2.9	2.3	2.0
EV/Sales (x)	1.3	1.1	0.9	0.7
EV/EBITDA (x)	11.3	10.5	8.2	6.9

Source: Company, Angel Research

NOT RATED

Price	**Rs217**
Target Price	**-**
Investment Period	**-**

Stock Info

Sector	Infrastructure
Market Cap (Rs cr)	7,220
Beta	0.6
52 WK High / Low	227/65
Avg. Daily Volume	562386
Face Value (Rs)	10
BSE Sensex	15,781
Nifty	4,668
BSE Code	532947
NSE Code	IRB
Reuters Code	IRBI.BO
Bloomberg Code	IRB@IN

Shareholding Pattern (%)

Promoters	73.9
MF/Banks/Indian FIs	10.4
FII/ NRIs/ OCBs	11.1
Indian Public/others	4.6

Abs.	3m	1yr	3yr #
Sensex (%)	11.8	10.4	(10.6)
IRB (%)	55.1	42.4	14.8

 # Since listing on February 25, 2008

Shailesh Kanani

Tel: 022 - 4040 3800 Ext: 321

E-mail: shailesh.kanani@angeltrade.com

Aniruddha Mate

Tel: 022 - 4040 3800 Ext: 335

E-mail: aniruddha.mate@angeltrade.com

In the Reckoning

IRB Infrastructure, a leading Road Infrastructure player, has a robust portfolio of 16 Road BOT projects, which are at different stages of implementation. IRB primarily operates in the two segments of Road BOT and in-house Construction projects. IRB has nine projects that are operational and generating strong Cash flows, three are under construction and four (most of them recently bagged) yet to achieve financial closure. The company boasts of a Construction Order Book (around Rs10,000cr) comprising both EPC and O&M contracts. The government is focused on the Road Segment on account of which we believe IRB is well placed to emerge a major beneficiary of the same going ahead. ***The stock is not under our coverage and hence Not Rated.***

- **Early mover advantage:** IRB is one of the earliest entrants in the Toll Road ownership space in India. Since FY1999, IRB has been investing in and operating Toll Roads in the country. IRB has a track record of timely execution of projects, which we believe is the most crucial factor affecting the Profitability matrix of the project. We believe that on account of this expertise the company enjoys an edge over competition in bidding and securing newer projects particularly with the Segment throwing up vast opportunities.

- **Superior Integrated Developer Model:** IRB is a good blend of Asset ownership business - Capital intensive, high Margin, steady Cash flow - and Construction Services business - Moderate Assets and cyclical in nature. Thus, IRB offers a complete gamut of services in the Road Infrastructure space under one roof.

- **Proven ability of raising Debt at competitive rates:** IRB has consistently demonstrated its ability to achieve high financial leverage and at reasonable costs. For instance, even amidst tight liquidity conditions (last quarter of CY2008), IRB was able to achieve financial closure for one of its BOT projects. We believe that Interest cost plays a pivotal role in the PPP model and lends a boost to the company's Bottom-line apart from providing it an edge over peers particularly at times of stiff competition.

Key Financials (Consolidated)

Y/E March (Rs cr)	FY2006*	FY2007	FY2008	FY2009
Net Sales	**8**	**305**	**733**	**992**
% chg	-	*3,721.5*	*139.7*	*35.4*
Net Profit	**8.2**	**29.8**	**126.6**	**177.2**
% chg	-	*263.2*	*325.1*	*40.0*
FDEPS (Rs)	**0.2**	**0.9**	**3.8**	**5.3**
EBITDA Margin (%)	(19.4)	54.1	56.2	44.1
P/E (x)	880.6	242.5	57.0	40.7
RoE (%)	-	7.9	7.8	10.3
RoCE (%)	-	3.7	8.4	7.5
P/BV (x)	48.6	19.1	4.5	4.2
EV/Sales (x)	-	13.7	6.6	4.3
EV/EBITDA (x)	-	30.7	13.9	11.8

*Source: Company, Angel Research; * Standalone numbers*

Annexure I

Exhibit 1: Phasewise development of NHDP

Phase	Total Length (Km)	Approved Cost (Expenditure till 31.7.2009) (Rs cr)	Length Completed (km)	Length under Imp. (km)	Likely date of Completion
I GQ, part of EW-NS corridors, Port connectivity & others	7,498	30,300 (35,657)	7,227	265	Substantially completed
II 4/6-laning North South- East West Corridor, Others	6,647	34,339 (32,327)	3,451	2,444	Dec 2010
III 4/6-laning links from network to capital etc.	12,109	80,626 (9,786)	937	2,155	Dec 2013
IV 2 - laning with paved shoulders	20,000	27,800	-	-	Dec 2016
V 6-laning of GQ and High density corridors	6,500	41,210 (1,643)	131	899	Dec 2013
VI Expressways	1,000	16,680 (NIL)	-	-	Dec 2016
VII Ring Roads, Bypasses and flyovers and other structures	700km of ring roads/ bypass + flyovers etc.	16,680 (NIL)	-	19	Dec 2015

Source: NHAI

Angel Broking™
Service Truly Personalized

Fund Management & Investment Advisory	**(☎ 022 - 3952 4568)**	
P. Phani Sekhar	**Fund Manager - (PMS)**	**phani.sekhar@angeltrade.com**
Siddharth Bhamre	**Head - Derivatives and Investment Advisory**	**siddarth.bhamre@angeltrade.com**
Devang Mehta	**AVP - Investment Advisory**	**devang.mehta@angeltrade.com**
Research Team	**(☎ 022 - 3952 4568)**	
Hitesh Agrawal	**Head - Research**	**hitesh.agrawal@angeltrade.com**
Sarabjit Kour Nangra	**VP-Research, Pharmaceutical**	**sarabjit@angeltrade.com**
Vaibhav Agrawal	**VP-Research, Banking**	**vaibhav.agrawal@angeltrade.com**
Vaishali Jajoo	**Automobile**	**vaishali.jajoo@angeltrade.com**
Harit Shah	**IT, Telecom**	**harit.shah@angeltrade.com**
Deepak Pareek	**Oil & Gas**	**deepak.pareek@angeltrade.com**
Girish Solanki	**Power, Mid-cap**	**girish.solanki@angeltrade.com**
Shailesh Kanani	**Infrastructure, Real Estate**	**shailesh.kanani@angeltrade.com**
Anand Shah	**FMCG , Media**	**anand.shah@angeltrade.com**
Puneet Bambha	**Capital Goods, Engineering**	**puneet.bambha@angeltrade.com**
Sushant Dalmia	**Pharmaceutical**	**sushant.dalmia@angeltrade.com**
Param Desai	**Logistics**	**paramv.desai@angeltrade.com**
Sageraj Bariya	**Fertiliser, Mid-cap**	**sageraj.bariya@angeltrade.com**
Viraj Nadkarni	**Retail**	**virajm.nadkarni@angeltrade.com**
Amit Vora	**Research Associate (Oil & Gas)**	**amit.vora@angeltrade.com**
Laxmikant Waghmare	**Research Associate (Metals & Mining, Cement)**	**laxmikant.w@angeltrade.com**
V Srinivasan	**Research Associate (Power, Mid-cap)**	**v.srinivasan@angeltrade.com**
Aniruddha Mate	**Research Associate (Infra, Real Estate)**	**aniruddha.mate@angeltrade.com**
Shreya Gaunekar	**Research Associate (Automobile)**	**shreyap.gaunekar@angeltrade.com**
Jaya Agrawal	**Jr. Derivative Analyst**	**Jaya.agarwal@angeltrade.com**
Amit Bagaria	**PMS**	**amit.bagaria@angeltrade.com**
Sandeep Wagle	**Chief Technical Analyst**	**sandeep@angeltrade.com**
Ajit Joshi	**AVP Technical Advisory Services**	**ajit.joshi@angeltrade.com**
Brijesh Ail	**Manager - Technical Advisory Services**	**brijesh@angeltrade.com**
Vaishnavi Jagtap	**Sr. Technical Analyst**	**vaishnavi.jagtap@angeltrade.com**
Milan Sanghvi	**Sr. Technical Analyst**	**milan.sanghvi@angeltrade.com**
Mileen Vasudeo	**Technical Analyst**	**vasudeo.kamalakant@angeltrade.com**
Krunal Dayma	**Derivative Analyst - (TAS)**	**krunal.dayma@angeltrade.com**
Sanket Padhye	**AVP Mutual Fund**	**sanket.padhye@angeltrade.com**
Pramod Rathod	**Research Associate (MF)**	**pramod.rathod@angeltrade.com**
Poonam Jangid	**Research Associate (MF)**	**poonam.jangid@angeltrade.com**
Commodities Research Team		
Amar Singh	**Research Head (Commodities)**	**amar.singh@angeltrade.com**
Samson P	**Sr. Technical Analyst**	**samsonp@angeltrade.com**
Anuj Gupta	**Sr. Technical Analyst**	**anuj.gupta@angeltrade.com**
Girish Patki	**Sr. Technical Analyst**	**girish.patki@angeltrade.com**
Abhishek Chauhan	**Technical Analyst**	**abhishek .chauhan@angeltrade.com**
Parag Joshi	**Technical Analyst**	**parag.joshi@angeltrade.com**
Commodities Research Team (Fundamentals)		
Badruddin	**Sr. Research Analyst (Agri)**	**badruddin@angeltrade.com**
Mandar Pote	**Research Analyst (Energy Complex)**	**mandar.pote@angeltrade.com**
Reena Walia	**Research Analyst (Base Metals)**	**reena.walia@angeltrade.com**
Vedika Narvekar	**Research Analyst (Agri)**	**vedika.narvekar @angeltrade.com**
Nalini Rao	**Research Analyst (Agri)**	**nalini.rao@angeltrade.com**
Bharathi Shetty	**Research Editor**	**bharathi.shetty@angeltrade.com**
Dharmil Adhyaru	**Assistant Research Editor**	**dharmil.adhyaru@angeltrade.com**
Bharat Patil	**Production**	**bharat.patil@angeltrade.com**
Dilip Patel	**Production**	**dilipm.patel@angeltrade.com**

Research & Investment Advisory: Acme Plaza, 3rd Floor 'A' wing, M.V. Road, Opp Sangam Cinema, Andheri (E), Mumbai - 400 059

Disclaimer

This document is not for public distribution and has been furnished to you solely for your information and must not be reproduced or redistributed to any other person. Persons into whose possession this document may come are required to observe these restrictions.

Opinion expressed is our current opinion as of the date appearing on this material only. While we endeavor to update on a reasonable basis the information discussed in this material, there may be regulatory, compliance, or other reasons that prevent us from doing so. Prospective investors and others are cautioned that any forward-looking statements are not predictions and may be subject to change without notice. Our proprietary trading and investment businesses may make investment decisions that are inconsistent with the recommendations expressed herein.

The information in this document has been printed on the basis of publicly available information, internal data and other reliable sources believed to be true and are for general guidance only. While every effort is made to ensure the accuracy and completeness of information contained, the company takes no guarantee and assumes no liability for any errors or omissions of the information. No one can use the information as the basis for any claim, demand or cause of action.

Recipients of this material should rely on their own investigations and take their own professional advice. Each recipient of this document should make such investigations as it deems necessary to arrive at an independent evaluation of an investment in the securities of companies referred to in this document (including the merits and risks involved), and should consult their own advisors to determine the merits and risks of such an investment. Price and value of the investments referred to in this material may go up or down. Past performance is not a guide for future performance. Certain transactions - futures, options and other derivatives as well as non-investment grade securities - involve substantial risks and are not suitable for all investors. Reports based on technical analysis centers on studying charts of a stock's price movement and trading volume, as opposed to focusing on a company's fundamentals and as such, may not match with a report on a company's fundamentals.

We do not undertake to advise you as to any change of our views expressed in this document. While we would endeavor to update the information herein on a reasonable basis, Angel Broking, its subsidiaries and associated companies, their directors and employees are under no obligation to update or keep the information current. Also there may be regulatory, compliance, or other reasons that may prevent Angel Broking and affiliates from doing so. Prospective investors and others are cautioned that any forward-looking statements are not predictions and may be subject to change without notice. Angel Broking Limited and affiliates, including the analyst who has issued this report, may, on the date of this report, and from time to time, have long or short positions in, and buy or sell the securities of the companies mentioned herein or engage in any other transaction involving such securities and earn brokerage or compensation or act as advisor or have other potential conflict of interest with respect to company/ies mentioned herein or inconsistent with any recommendation and related information and opinions.

Angel Broking Limited and affiliates may seek to provide or have engaged in providing corporate finance, investment banking or other advisory services in a merger or specific transaction to the companies referred to in this report, as on the date of this report or in the past.

Ratings (Returns) :	**Buy (Upside > 15%)**	**Accumulate (Upside upto 15%)**	**Neutral (5 to -5%)**
	Reduce (Downside upto 15%)	**Sell (Downside > 15%)**	

Angel Broking™
Service Truly Personalized

Corporate & Marketing Office	:	612, Acme Plaza, M.V. Road, Opp Sangam Cinema, Andheri (E), Mumbai - 400 059	Tel : (022) 3952 7100 / 4000 3600
NRI Helpdesk	:	e-mail : nri@angeltrade.com	Tel : (022) 4000 3622 / 4026 2700
Investment Advisory Helpdesk	:	e-mail : advisory@angeltrade.com	Tel : (022) 3958 4000
Commodities	:	e-mail : commodities@angeltrade.com	Tel : (022) 3081 7400
PMS	:	e-mail : pmshelpdesk@angeltrade.com	Tel: (022) 3953 2800
Feedback	:	e-mail : feedback@angeltrade.com	Tel : (022) 2835 5000

Regional Offices:

Ahmedabad - Tel: (079) 3941 3940
Bengaluru - Tel: (080) 3941 3940
Chennai - Tel: (044) 3941 3940
Cochin - Tel: (0484) 3941 394
Coimbatore - Tel: (0422) 3941 394
Hyderabad - Tel: (040) 3941 3940
Indore - Tel: (0731) 3941 394
Jaipur - Tel: (0141) 3941 394
Kanpur - Tel: (0512) 3941 394
Kolkata - Tel: (033) 3941 3940
Lucknow - Tel: (0522) 3941 394
Ludhiana - Tel: (0161) 3941 394
Nagpur - Tel: (0712) 3941 394
Nashik - Tel: (0253) 3941 394
Mumbai (Goregoan) Tel: (022) 2879 0411-15
Mumbai (Powai) - Tel: (022)3952 6500
New Delhi - Tel: (011) 3941 3940
Pune - Tel: (020) 3941 3940
Rajkot - Tel :(0281) 3941 394
Surat - Tel: (0261) 3941 394
Visakhapatnam - Tel :(0891) 3941 394

Private Client Group Offices:

Ahmedabad (C. G. Road) - Tel: (079) 3982 9934
Surat - Tel: (0261) 3071 600
Rajkot (Race course) - Tel: (0281) 2490 847

Sub - Broker Marketing:

Powai - Tel: (022) 3952 6500

Branch Offices:

Andheri (Lokhandwala) **-** Tel: (022) 2639 2626
Andheri (W) - Tel: (022) 2635 2345 / 6668 0021
Bandra (W) - Tel: (022) 2655 5560 / 70
Bandra (W) - Tel: (022) 6643 2694 - 99
Borivali (W) - Tel: (022) 3952 4787
Borivali (Punjabi Lane) **-** Tel: (022) 3951 5700.
Chembur (Swastik) - Tel: (022) 6703 0210 / 11 /12
Chembur - (Basant) - Tel:(022) 022) 6156 1111 / 01
Fort - Tel: (022) 3958 1887
Ghatkopar (E) - Tel: (022) 3955 8400/2510 1525
Kalbadevi - Tel: (022) 2243 5599 / 2242 5599
Kandivali (W) - Tel: (022) 2867 3800/2867 7032
Kandivali - Tel: (022) 4245 1300
Malad (E) - Tel: (022) 2880 4440
Malad (Natraj Market) - Tel:(022) 28803453 / 24
Masjid Bander - Tel: (022) 2345 5130 /1 / 8 / 42 /28
Mulund (W) - Tel: (022) 2562 2282
Nerul - Tel: (022) 2771 9012 - 17
Powai (E) - Tel: (022) 3952 5887
Sion - Tel: (022) 3952 7891
Thane (W) - Tel: (022) 2539 0786 / 0650 / 1
Vashi - Tel: (022) 2765 4749 / 2251
Vile Parle (W) - Tel: (022) 2610 2894 / 95
Wadala - Tel: (022) 2414 0607 / 08
Agra - Tel: (0562) 4037200
Ajmer - Tel: (0145) 3941 394
Alwar - Tel: (0144) 3941 394 / 99833 60006
Ahmeda. (Bapu Nagar) - Tel : (079) 3091 6900 - 02
Ahmedabad (C. G. Road) - Tel: (079) 4021 4023
Ahmeda. (Gurukul) - Tel: (079) 3011 0800 / 01
Ahmedabad (Kalupur) - Tel: (079) 3041 4000 / 01
Ahmedabad (Maninagar) - Tel: (079) 3981 7430 / 1
Ahmeda. (Ramdevnagar) - Tel : (079) 4024 3842 / 43
Ahmedabad (Sabarmati) - Tel : (079) 3091 6100 / 01
Ahmedabad (Satellite) - Tel: (079) 4000 1000
Ahmedabad (Shahibaug) -Tel: (079)3091 6800 / 01
Amreli - Tel: (02792) 228 800/231039-42
Amritsar - Tel: (0183) 3941 394
Anand - Tel : (02692) 398 400 / 3
Ankleshwar - Tel: (02646) 398 200
Baroda - Tel: (0265) 6635 100 / 2226 103
Baroda (Akota) - Tel: (0265) 2355 258 / 6499 286
Baroda (Manjalpur) - Tel: (0265) 6454280-3
Bengaluru - Tel: (080) 4072 0800 - 29
Bhavnagar - Tel: (0278) 3941 394
Bhavnagar (Shastrinagar)- Mobile: 92275 32302
Bhilwara - (01482) 398 350
Bhopal - Tel :(0755) 3941 394
Bikaner - Tel: (0151) 3941 394 / 98281 03988
Chandigarh - Tel: (0172) 3092 700
Deesa - Mobile: 97250 01160
Erode - Tel: (0424) 3982 600
Faridabad - Tel: (0129) 3984 000
Gajuwaka - Tel: (0891) 3987 100 - 30
Gandhinagar - Tel: (079) 4010 1010 - 31
Gandhidham - Tel: (02836) 237 135
Gondal - Tel: (02825) 398 200
Ghaziabad - Tel: (0120) 3980 800
Gurgaon - Tel: (0124) 3050 700
Himatnagar - Tel: (02772) 241 008 / 241 346
Hyderabad - A S Rao Nagar Tel: (040) 4222 2070-5
Hubli - Tel: (0836) 4267 500 - 22
Indore - Tel: (0731) 3049 400
Indore - Tel: (0731) 4238 600
Jaipur - (Rajapark) Tel: (0141) 3057 900 / 99833 40004
Jalgaon - Tel: (0257) 2234 832
Jamnagar(Indraprashta) - Tel: (0288) 3941 394
Jamnagar (Cross Word) - Tel: (0288) 2751 118
Jamnagar (Moti Khawdi) - Tel: (0288) 2846 026
Jamnagar(Madhav Plaza) - Tel: (0288) 2665 708
Jodhpur - Tel: (0291) 3941 394 / 99280 24321
Junagadh - Tel : (0285) 3941 3940
Keshod - Tel: (02871) 234 027 / 233 967
Kolhapur - Tel: (0231) 6632 000
Kolkata (N. S. Rd) - Tel: (033) 3982 5050
Kolkata (P. A. Shah Rd) - Tel: (033) 3001 5100
Kota - Tel : (0744) 3941 394
Madurai Tel: (0452) 3941 394
Mangalore - Tel: (0824) 3982 140
Mansarovar - Tel:(0141) 3057 700/99836 74600
Mehsana - Tel: (02762) 645 291 / 92
Mysore - Tel: (0821) 4004 200 - 30
Nadiad - Tel : (0268) - 2527 230 / 34
Nagaur - Tel: (01582) 244 648
Nashik - Tel: (0253) 3011 500 / 1 / 11
New Delhi (Bhikaji Cama) - Tel: (011) 41659711
New Delhi (Lawrence Rd.) - Tel: (011) 3262 8699 / 8799
New Delhi (Pitampura) - Tel: (011) 4751 8100
New Delhi (Nehru Place) - Tel: (011) 3982 0900
New Delhi (Preet Vihar) - Tel: (011) 4310 6400
Noida - Tel : (0120) 4639 900 / 1 / 9
Palanpur - Tel: (02742) 308 060 - 63
Patan - Tel: (02766) 222 306
Porbandar - Tel : (0286) 3941 394
Porbandar (Kuber Life Style) - Mob.-98242 53737
Pune - (Pentagon) Tel : (020) 3093 4400 / 3052 3217
Pune (Aundh) - Tel: (020) 4104 1900
Pune (Camp) - Tel: (020) 3092 1800
Pune - (kalyani Nagar) Tel: (020) 6620 6591 / 6620 6595
Pune (Kothrud) Tel: (020) 4104 5400
Rajamundhry - Tel: (0883) 3941 394
Rajkot (Ardella) Tel.: (0281) 2926 568
Rajkot (University Rd.) - Tel: (0281) 2331 418
Rajkot - (Bhakti Nagar) Tel: (0281) 2361 935
Rajkot - (Indira circle) Tel : 99258 84848
Rajkot (Orbit Plaza) - Tel: (0281) 3983 485
Rajkot (Pedak Rd) - Tel: (0281) 3985 100
Rajkot (Ring Road)- Mobile: 99245 99393
Rajkot (Star Chambers) - Tel : (0281)3981 200
Rajkot - (Star Chambers) - Tel : (0281) 2225 401-3
Salem - Tel: (0427) 3941 394
Secunderabad - Tel : (040) 3093 2600
Surat (Mahidharpura) - Tel: (0261) 3092 900
Surat - (Parle Point) - Tel : (0261) 3091 400
Surat (Ring Road) - Tel : (0261) 3071 600
Surendranagar - Tel : (02752) 223305
Tirupur - (0421) 4302 800
Udaipur - (0294) 3941 394
Valsad - Tel - (02632) 645 344 / 45
Vapi - Tel: (0260) 3941 394
Varachha - (0261) 3091 500
Varanasi - Tel: (0542) 2221 129, 3058 066
Vijayawada - Tel :(0866) 3984 600
Warangal - Tel: (0870) 3982 200

Central Support & Registered Office:G-1, Akruti Trade Centre, Road No. 7, MIDC Marol, Andheri (E), Mumbai - 400 093 Tel : 2835 8800 / 3083 7700