Project Report on

Pipavav Rail Corporation Limited – A Case Study

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PIPAVAV RAIL CORPORATION LIMITED
A CASE STUDY

Conducted By

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(During the course from 06.05.2013 to 14.06.2013) on

PUBLIC PRIVATE PARTNERSHIP (PPP) IN INFRASTRUCTURE SECTOR

at

The Indian Railways Institute of Transport Management, Lucknow

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DECLARATION

"I declare that the Project Report on "PIPAVAV RAIL CORPORATION LIMITED - A CASE STUDY" is submitted by me on completion of course on PUBLIC PRIVATE PARTNERSHIP (PPP) IN INFRASTRUCTURE SECTOR to the Indian Railways Institute of Transport Management, Lucknow. My report may be used by Indian Railways/IRITM for official purposes."

Date: 14.06.2013 (Signature)

Place: RAJKOT

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PIPAVAV RAILWAY COPORATION LIMITED – A CASE STUDY

Pipavav Railway Corporation Limited was created as a special purpose vehicle (SPV) in Janauray-2000. The project of Pipavav Railway Corporation Limited was carried out on PPP format by Ministry of Railway (MOR) and Gujarat Pipavav Port Limited (GPPL).

1. The Pipavav Port

The port of Pipavav is located at the entrance to the Gulf of Khambhat in the Saurashtra region of Gujarat. It was situated between the major posts of Kandla and Jawaharlal Nehru. Its geographical location and relative nearness to the extended hinterland made it ideal to service Rajasthan, Madhya Pradesh, Haryana, Punjab, Delhi, Jammu and Kashmir, Uttar Pradesh, Uttaranchal and Himachal Pradesh.

In 1992, the Government of Gujarat (GOG), through the Gujarat Maritime Board (GMB), decided to develop a port at Pipavav as an all weather facility for handling bulk, liquid and container cargo. This was to be done through a Public Private

Partnership (PPP) with Seaking Infrastructure Limited (SKIL). The Managing Director of SKIL, a habitual entrepreneur, had been pushing the GOG to develop this port, which had a natural deep draft (11 meters) and was well 'harboured' behind a set of three islands.
A private sector company called Gujarat Pipavav Port Limited (GPPL) was incorporated as a joint venture between GMB and SKIL. Pipavav port was India's first public port to be developed and operated by a private sector company.

Cargo handling operations started at the port in 1996. The port had to its credit (i) a continuous dry cargo berth of 725 meters (counted as three berths) for handling bulk, break bulk and containerized cargo (commissioned in March 1999), (ii) a dedicated liquid cargo jetty of 325 meters connected via pipeline to a liquid storage area of 303 acres, and (iii) a modern ship dismantling yard. The port was handling container and dry bulk ships up to 45,000 Dead Weight Tons (DWT). The cargo handled at the port was Liquefied Petroleum Gas (LPG) and other petroleum product, liquid chemicals, edible oils, containers, coal, cement, fertilizers, oil cakes, and iron and steel. The traffic at the port was 0.7 million tons (mt) in 1999-00 and 1.9 mt in 2000-01. Given the traffic arising till September 2001, the estimate for 2001-02 was lower at 1.5 mt. The new private port at Mundra operated by the aggressive Adani Group, expected to serve the same hinterland, was beginning to make a dent. The primary traffic in this region was coal and coke imports and steel imports and exports. Since the capacity of Mundra Port was far higher than the current traffic, the port offered and attractive turnaround time of about 16-20 hours compared to about 3-5 days (72-120 hours) at other Indian major ports.

There was no rail connectivity to the port, though GPPL and GOG had been writing to the Ministry of Railways (MOR) for the same. The nearest railway station was Rajula City, which was 14 Kms away. The immediate connectivity for moving cargo was provided by constructing a four-lane road between the port and Rajula City. The cargo from Pipavav port, destined to the northern northwest hinterland moved from Rajula City to Sabarmati (Ahmedabad) over meter gauge (MG) and then was transshipped from MG to BG for further haulage. This transshipment, besides being time consuming, caused a big financial drain due to its inherent problems of wagon detentions and pilferage. Further, road haulage did not quite satisfy the evacuation capacities needed for the port.

2. Gujarat Pipavav Port Limited

GPPL manages Pipavav, the first private port in the country. Its equity was being held by SKIL (38%), Port of Singapore Authority (PSA) (25%), Maersk (13.5%), Industrial Development Bank of India (IDI) (14.5%), Commonwealth Development Corporation (CDC) (6%) and Unit Trust of India (UTI) (3%).
While GPPL had started as a joint venture between GMB and SKIL in 1992, GMB divested its entire equity in favour of SKIL in 1998, as part of its port privatization policy. Over a period, GPPL, driven by SKIL, brought in other equity investors.

GPPL had entered into strategic tie-ups, first with PSA and then with Maersk, with a view to bring world class port operations expertise to Pipavav.

SKIL was a premier infrastructure company that had built the first private port in the country, besides a modern ship-dismantling yard at Pipavav. It was currently setting up India's first private sector integrated Special Economic Zone at Positra near Dwarka. PSA was the operator of the Port of Singapore, which was the largest container-handling port in the world. Maersk was the largest container-shipping liner in the world and its participation in GPPL was expected to contribute enormously to the evolution of Pipavav as the container hub of the region. Maersk joined GPPL in June-2001. IDBI offered a range of financial products to service the needs of industries in the country. CDC was Government of UK company promoting infrastructure investments in Commonwealth countries. UTI was the largest mutual funds organization in the country.

3. Scope of the Project

In 1992, MOR had begun converting MG rails routes to BG under 'Project Unigauge'. Most of the MG rail routes in the northern part of Gujarat were converted to BG, while those in the southern part, where no major port or industries existed, were left as MG due to insufficient traffic.

When the GOG decided to develop an all weather port at Pipavav, it proposed that the 251 kms MG stretch from Surendranagar (the closet BG railway station in the north-bound direction) to Rajula City should be upgraded to BG and a 14 km fresh railway line should be laid from Rajula City to Pipavav port. After repeated requests, provisions to this effect were made in the annual rail budget presented in 1997. However, there was no follow-up of the same.

MOR was cash strapped and did not have enough funds to invest in this project. Moreover, since it was a Central authority, it had to consider railway development in India as a whole. This segment was not on its list of priorities. Apart from low freight volumes, the MG link from Rajula City to Surendranagar carried n average of two passenger trains, each way, daily. Some fright started moving after the port of Pipavav started operations.

In order to understand the financial viability of the project, GPPL asked AF Ferguson (AFF) to carry out an independent traffic study in 1998 on their behalf. In 1999, RITES took up the project for a techno-economic feasibility study on behalf of MOR. Based on the two studies, GPPL and MOR decided to carry out the railway project on PPP format.

4. Formation of Pipavav Railway Corporation Limited

In January 2000 PRCL was created as a special purpose vehicle (SPV) registered under the Companies ct 1956 to pursue the project further.

4.1 MOU between MOR and GPPL

This Memorandum of Understanding is executed at Rail Bhavan, New Delhi on 20th January 2000.

BETWEEN

The President of India acting through the Executive Director (perspective Planning) of the Ministry of Railways (hereinafter called MOR) of the part

AND

Gujarat Pipavav Port Limited, a company incorporated in India having its registered office at B-1, Maharaja Palace, University Road, Navrangpura, Ahmedabad – 380 009, India (hereinafter referred to as GPPL which expression shall include its successors and permitted assigns) of the other part.

WHEREAS

1. GPPL, a public limited company, is engaged in the development, management and operations of the Port of Pipavav, located at Taluka Rajula, Amreli, on the West Coast of India and south coast of India.
2. MOR is desirous of inviting GPPL, together with other investors to set up a Joint Venture company, to implement the broad gauge link between Surendranagar and the Port of Pipavav.
3. Ministry of Railways and GPPL have agreed in principle for the formation of a Special Purpose Vehicle (SPV) for the purpose of executing the Surendranagar-Pipavav broad gauge link.

Based on the above, without prejudice, the following terms of principle have been agreed upon for entering into a formal agreement.

1. The object of the alliance between MOR and GPPL is to implement the Broad Gauge Rail Link connectivity between Surendranagar and the Port of Pipavav together with the rail yard facility at Pipavav.
2. The allianced shall be in the form of a Special Purpose Vehicle (SPV) is a joint venture company between

Ministry of railways and its Public Sector Undertakings (PSUs)

AND

GPPL (and others to be specified)

3. Upon incorporation, the SPV shall be bound by the Companies Act, 1956 and shall abide by all the rules and regulations stipulated therein.
4. The SPV shall undertake the proposed project of implementing the Broad Gauge rail link connectivity between Surendranagar and the Port of Pipavav.
5. Tentative project cost is Rs. 270 Crores (Rs. Two Hundred Seventy Crores). Any cost over-run, over and above the project cost of Rs. 270 Crores shall be on account of the SPV. The SPV will also provide for replacement of assets.

6. The project shall be funded in the following pattern

- 66 2/3% of the Project Cost shall be funded through a share holding Equity.
- 33 1/3% of the Project Cost shall be funded through Debt.

Equity holding pattern:

i. Ministry of Railways and its PSUs	:	50%
ii. GPPL and (others)	:	50%

Note: The amount already spent by the Indian Railways on the proposed Broad Gauge Rail Connectivity will be reckoned towards the equity contribution of MOR.

7. There will be equal number of Directors in the Board of in the Board of SPV representing Indian Railways and its PSUs on the one hand and GPPL and others on the other, with the Chairmanship remaining with Indian railways.

8. The land, station buildings, MG formation, bridges and all other existing assets of the MG system will continue to be the property of IR. These assets will be made available to the SPV on lease at a pre-specified rental after considering the capital-at-charge at historical cost.

9. Subject to the above and upon entering into a detailed agreement between GPPL (and others) and MOR (and its PSUs) through GM/WR, the SPV shall be responsible for carrying out the proposed project.

10. The construction activities shall be awarded to by the SPV on turnkey basis in keeping with the technical specifications of Railways. Upon completion, the work will require necessary certification by Commissioner of Railway Safety as per extant rules and procedures.

11. MOR will guarantee to the SPV timely provision of sufficient number of rakes and wagons for the efficient movement of cargo to and from Surendranagar and the Port or Pipavav (GPPL). Similarly, the Port of Pipavav will guarantee to the SPV a minimum of 1 mt of traffic on the first year, 2 mt of traffic for the second year and 3 mt of traffic from third year onwards. Suitable penal clauses for non-compliance of guarantees will be incorporated in the detailed agreement.

12. The operations and maintenance of the board gauge rail link between Pipavav and Surendranagar shall remain the responsibility of the Ministry of Railways. Ministry of Railways will, however, be fully compensated for such services based on an agreed methodology.

13. IR will collect earnings from the traffic originating and terminating on this time, and the due share of the SPV will be apportioned to it after defraying the operation and maintenance costs.

14. Apart from the traffic guaranteed by GPPL, Indian Railways will be entitled to run existing and additional freight and existing passenger services for which the SPV will receive its due apportionment. However, introduction of

new passenger trains will require prior consultation with and consent of the SPV.

15. Indian Railways will be entitled to provide rail connections along the length of the line, in tune with their future expansion plans.

16. In case of a national emergency, the exigencies of the national requirement will take precedence over everything else.

17. Public Tariff Rates as notified by the Indian Railways/CONCOR will be charged for traffic on this line. However, the SPV and the Indian Railway may by mutual consent quote special rates in specific cases which may be approved an notified by Indian Railways.

18. The SPV shall protect and safeguard all the assets of Indian Railways.

19. Any further changes in the MOU necessary to ensure the smooth functioning of the SPV may be made by mutual consent.

20. MOR and GPPL shall make all efforts on signing this Memorandum of Understanding for finalizing the terms and conditions of the final agreement within a stipulated timeframe. Each party will nominate a negotiating team for the purpose.

21. Both parties also agree not to divulge this intention to any third party and to maintain strict confidentiality on the subject whatsoever, till finalization of the final agreement.

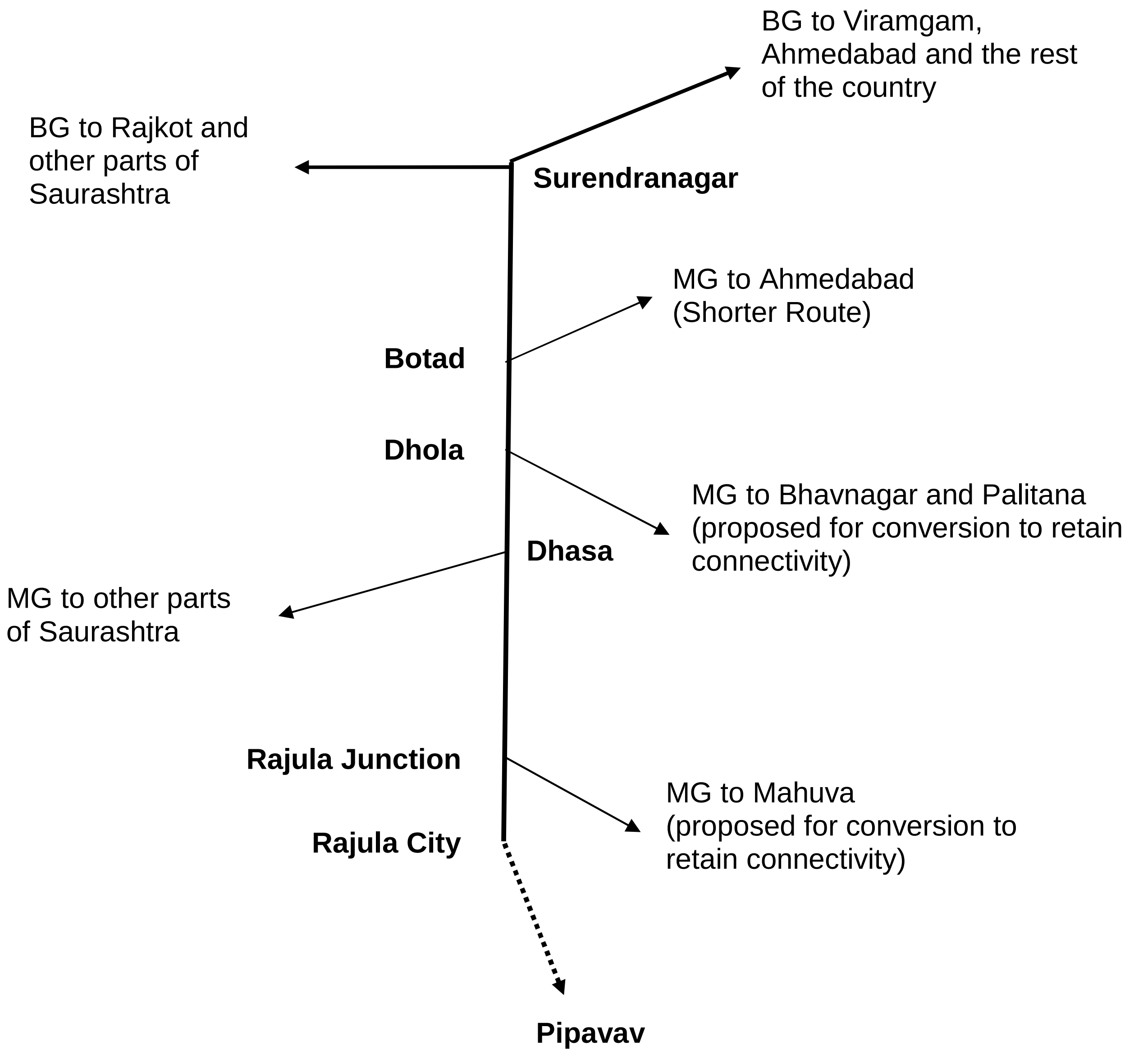
22. It is hereby agreed and understood between the parties hereto that this MOU is being entered into on the basis of good faith and on the bonafide intention of giving effect to the object/terms of this memorandum of understanding.

23. This Memorandum of Understanding shall come into effect after due approval of the concerned agencies of the Government of India and on the date it is executed by the parties hereto and shall terminate upon the execution of the final Agreement.

24. In witness whereof the parties hereto have by their duly authorized representatives executed this Memorandum of Understanding on the date and year first above written.

4.2 Project Map

The scope included construction, operation and management of the BG rail link from Surendranagar to Pipavav.



The project was divided into two segments: (i) conversion of the existing MG to BG from Surendranagar to Rajula City (251 Kms) and (ii) extension of the above line from Rajula City to Pipavav port. The conversion segment included five stretches: (i) Surendranagar to Botad, 77.2 Kms, (ii) Botad to Dhola, 42.9 Kms, (iii) Dhola to Dhasa, 26.0 Kms, (iv) Dhasa to Rajula Junction, 95.6 Kms and (v) Rajula Junction to Rajula City, 9.2 Kms. New BG Railway line from Rajula City to PPSP (14 Kms)

4.3 Estimated Project Cost

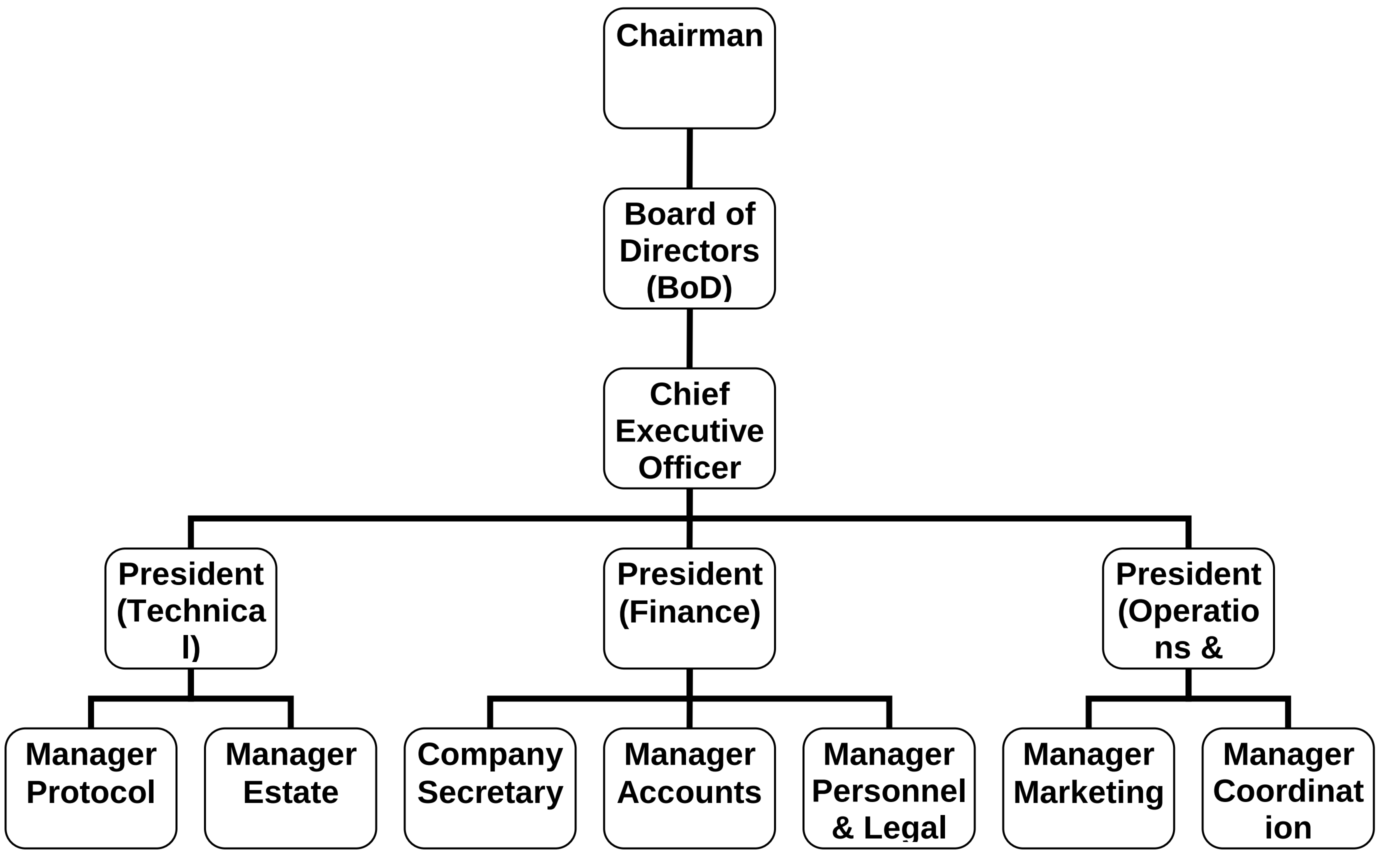
The project cost as estimated by RITES amounted to Rs. 2,700 million, The revised cost at 2001 prices was Rs. 3,210 million. This figure was arrived after accounting for the lease of railway assets to the SPV.

Based on Preliminary Engineering Survey of WR (Base time of cost is January 1997)	
Item	**Cost (In Millions)**
Civil Works	-
Land	
Civil works – formation	161.70
Civil works – permanent way	1,710.21
Civil works – bridges	327.70
Civil works – stations and buildings	51.96
Equipment, plant and machinery	1.48
Dismantling charges	20.59
Subtotal	2,273.64
Add: General charges @ 6% / 8.5%	136.42
Credit for released material (CRRM)	(538.17)
Total civil Works Cost	**1,871.89**
Mechanical Works	
Signaling and telecommunications	372.46
Electrical	37.82
Mechanical	59.58
Tie tamping machine	50.00
Accident relief wagon	30.00
Total Mechanical Works Cost	**549.86**
Cost of project (1997 prices)	**2,421.75**
Inflation for three calendar years @ 5% per annum = 15.75%	381.43
Cost of project (2000 prices)	**2,803.17**
Apportionment of cost	
Civil works	2,166.71
Mechanical works	636.46
Total Cost	**2,803.17**
5% contingency and EPC margins	140.16
Pre-operative expenses and preliminary expenses	29.35
Interest during construction	236.60
Total Project Cost	**3,209.28**

As per the MOU, the roe of the SPV was defined to: (i) obtain the concession for the railway line from Surendranagar to Pipavav, (ii) take all existing assets of MOR connected to the railway line on lease, (iii) arrange for the funding to cover the entire conversion and upgradation of the existing systems as well as the debt servicing, (iv(select an entity to construct the new railway line between Rajula

City and Pipavav and upgrade the existing line between Rajula City and Surendranagar as per the Research, Designs and Standards Organization (RDSO) standard, and (v) enter into operations and maintenance (O&M) agreements with the Western Railways (WR), a zonal railway under MOR, for the railway line.

4.4 Organizational structure of PRCL.



Field Staff
Civil Engineering 3
Operations & Marketing 4
Accounts 2

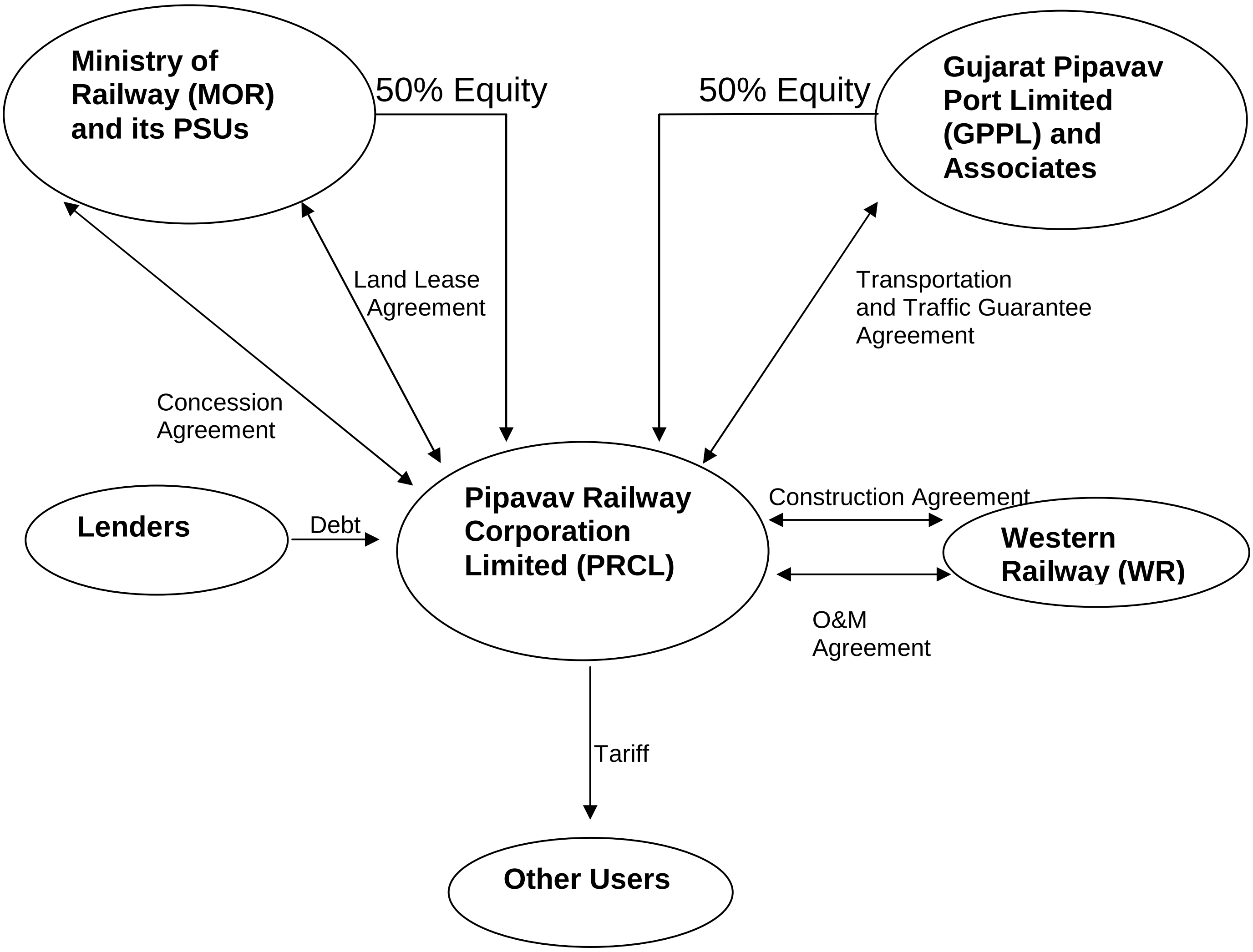
Secretarial Staff
Attached to BoD 3
Attached to Functions 6

Group 'D' Staff
Messenger 3
Driver 5
Security guard 5

The Chairman, Chief Executive Officer (CEO), and over 80 percent of the other positions had been filled. Most of the executives including the CEO were on deputation from MOR. The corporate office was in New Delhi, the field office was in Ahmedabad.

PRCL would have a debt-to-equity ratio of 1:2. The equity was to be split equally between the two parties (MOR & GPPL). PRCL was responsible for mobilizing resources through equity and debt and undertake the implementation of the project, under the proposed long term Concession Agreement (CA) as a private railway. The debt component had to be raised through borrowings from Indian financial institutions / commercial banks. It was in this regard that PRCL had approached ABC bank.

4.5 Project Structure



5. Traffic Potential and Market Assessment

The project route from Surendranagar to Rajula City constituted an important part of the railway network in the western region. The railway line capacity on the prevalent MG sections varied from nine to 21 trains each way per day, shared by both freight and passenger traffic. Post conversion to BG, the railway line capacity was expected to be 21 trains each way per day with an average payload in excess of 2,000 tons per trains as compared to 1,000 tons on the MG system.

According to the 1998 AFF study, the estimate traffic of GPPL in the first year of PRCL's commercial operations (2003-04) was to be 11.22 mt. This was estimated to grow at a compounded annual growth rate (CAGR) of 13 percent to reach 13.55 mt in 2004-05, 15.86 my in 2005-06, 18.40 mt in 2006-07, and 20.67 my in

2007-08. The port capacity, which was already 18 mt, would be appropriately increased to handle the growth in traffic through a fourth dry cargo berth and step-wise increase in draft upto 16 meters.

The share of GPPL's traffic to use PRCL had been estimated at 51 percent in 2003-04, 52 percent in 2004-05, 53 percent in 2005-06 and 55 percent thereafter.

5.1 Traffic Projections for GPPL and PRCL

AFF's Traffic Projections for GPPL

mt

Commodity	2003-04	2004-05	2005-06	2006-07	2007-08
Container	3.40	4.54	5.60	6.89	8.03
Coal	3.65	4.13	4.90	5.51	6.21
Fertilizers	1.11	1.41	1.65	1.80	1.94
Cement/Clinker	0.53	0.54	0.55	0.56	0.56
Iron and Steel	1.49	1.63	1.77	1.92	2.08
Others	1.04	1.30	1.39	1.72	1.85
Total	**11.22**	**13.55**	**15.86**	**18.40**	**20.67**

AFF's Traffic Projections for PRCL

mt

Commodity	2003-04	2004-05	2005-06	2006-07	2007-08
Container	2.38	2.96	3.55	4.61	5.28
Coal	2.05	2.46	2.83	3.23	3.58
Fertilizers	0.65	0.87	1.12	1.27	1.36
Iron and Steel	0.02	0.04	0.05	0.08	0.12
Others	0.60	0.71	0.79	0.98	1.07
Total	**5.70**	**7.04**	**8.34**	**10.17**	**11.41**

PRCL's Traffic Projections for GPPL

mt

Commodity	2003-04	2004-05	2005-06	2006-07	2007-08
Bulk	1.97	2.75	3.62	4.16	5.09

Liquid	0.49	0.56	0.63	0.09	1.00
Containers	1.38	1.51	1.51	1.51	1.51
Total	**3.84**	**4.82**	**5.76**	**6.57**	**7.60**

The traffic projected by AFF for Pipavav port was viewed as optimistic by PRCL. They downsized the GPPL traffic to about 50 percent and then assumed a higher share by rail, based on the origin and destination of cargo and likelihood of movement by rail. Container cargo was expected to be a major source of revenue followed by bulk and liquid cargo, the 60 percent container traffic originating in the northern states of Delhi, Haryana and Punjab; a substantial portion was likely to shift to Pipavav on account of cost and time considerations. Liquid cargo was primarily expected to be LPG for which an independent terminal had already been set up at the port. A large number of oil companies had set up storage facilities for imported Petroleum, Oil and Lubricants (POL) products. The fact that oil companies had alternate arrangements at their disposal for transporting fuel had not been factored into the AFF report.

Based on the above assumptions by PRCL, the projected revenue and the estimated costs are shown in the table (for a debt/equity ratio 1:2).

5.2 Revenue/Cost Projection and Financial Analysis for PRCL

(Rs. In m)

Items	Years									
	2002-03	**2003-04**	**2004-05**	**2005-06**	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**	**2011-12**
Cost of providing service	534.47	617.82	677.15	744.85	822.41	870.81	922.87	978.97	1039.86	1107.08
O & M insurance	29.39	28.60	27.81	27.01	26.22	25.43	24.63	23.84	23.04	22.25
Expenses of SPV	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00
Total expenses	**618.86**	**701.42**	**759.96**	**826.86**	**903.63**	**951.24**	**1002.50**	**1057.81**	**1117.90**	**1184.33**
Gross earnings	**1050.65**	**1521.39**	**1765.04**	**2040.88**	**2352.26**	**2551.17**	**2763.73**	**2991.29**	**3237.11**	**3501.74**
Gross Profit	**431.79**	**819.97**	**1005.08**	**1214.02**	**1448.63**	**1599.93**	**1761.23**	**1933.48**	**2119.21**	**2317.41**
Interest on term loan	148.32	148.32	148.32	129.78	111.24	92.70	74.16	55.62	37.08	18.54
Depreciation	79.36	79.36	79.36	79.36	79.36	79.36	79.36	79.36	79.36	79.36
Operating Profit/Profit before tax	**204.11**	**592.29**	**777.40**	**1004.88**	**1258.03**	**1427.87**	**1607.71**	**1798.50**	**2002.77**	**2219.51**
Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Profit after tax	**204.11**	**592.29**	**777.40**	**1004.88**	**1258.03**	**1427.87**	**1607.71**	**1798.50**	**2002.77**	**2219.51**
Net cash accruals	283.47	671.65	856.76	1084.24	1337.39	1507.23	1687.07	1877.86	2082.13	2298.87
Cash available for debt servicing	431.79	819.97	1005.08	1214.02	1448.63	1599.93	1761.23	1933.48	2119.21	2317.41
Interest on term loan	148.32	148.32	148.32	129.78	111.24	92.70	74.16	55.62	37.08	18.54
Debt repayment	0.00	0.00	132.35	132.35	132.35	132.35	132.35	132.35	132.35	132.35
Debt service coverage ratio	2.91	5.53	3.58	4.63	5.95	7.11	8.53	10.28	12.50	15.35

For financial analysis, the interest rate on debt was assumed to be 14 percent with two years moratorium, and subsequent repayment of long term debt in eight years. Income tax holiday, as applied to infrastructure projects, had been considered. The profitability figures resulting in a four-year payback and debt service coverage rising from nearly 2.9 to 15.3 in ten years looked impressive.

Various corporates like Gujarat Heavy Chemicals Limited, Gujarat Siddhi Cement, Saurashtra Cement, Indian Rayon, Larsen & Turbo, Gujarat State Fertilizers and Chemicals Ltd. and MMTC Ltd were regular users of the port with very large and increasing volumes of traffic. With the addition of the new railway line, volume of traffic was expected to grow substantially due to cost advantages of the railways (according to a study by Tata Consulting Services (TCS), railways become relatively more attractive mode as compared to road for a distance longer than 300 km).

Port traffic in Gujarat had grown by a phenomenal 22 percent as compared to an overall growth of 10 percent for whole of India during the 1990-2000 period. Though this growth was not sustainable in the long run, the volume of traffic at any stage was expected to be well above that required for breakeven. In addition to the port cargo, PRCL also expected to handle traffic generated by entities located in the vicinity of Pipavav such as the Narmada Cement Limited (Jafrabad), Larsen & Turbo Cement Limited (Pipavav), Alang Shipbreaking Yard (Alang), Nirma Soda Ash Plant (Bhavnagar), and the Indian Steel Re-Rollers Association (havnagar). The conversion to BG and subsequent connectivity to Pipavav was also expected to increase the general industrial development of the area and result in a steady increase in the passenger traffic as well.

6. Agreements

Agreement	Organizations
MOU	MOR and GPPL
Shareholders Agreement	MOR, GPPL and PRCL
Concession Agreement	MOR and PRCL
Lease Agreement	MOR and PRCL
Construction Agreement	WR and PRCL
Transportation and Traffic Guarantee Agreement	MOR, GPPL and PRCL
O&M Agreement	WR and PRCL

In order to carry the project forward after signing of the MOU, a tripartite Shareholders Agreement (SA) was signed among MOR, GPPL and PRCL on March 28, 2001. This was followed by the CA between MOR and PRCL, and an assets Lease Agreement (LA), both of which were signed on June 28, 2001.

MOR and GPPL held the equity equally. As per the SA, GPPL had the right to divest a maximum of 24 percent out of its total shares i.e. 12 percent of the total company's share. MOR had the right to divest part of its shares to any of the Public Sector Undertakings under the control of MOR. Talks were on with Infrastructure Finance Company Gujarat Limited to give it a minor stake in the project. This transaction was more financial than strategic in nature. GPPL did not want to divest stake to any of the other interested parties. The SA also specified carious issues related to corporate governance, including that the Chairman would be appointed by MOR.

PRCL entered into a CA with MOR for a period of 33 years on 'Build Own Operate Transfer' basis for constructing, operating and maintaining the proposed BG railway line between Surendranagar and Pipavav. PRCL had to pay the lease rent of about Rs. 20 million per year and MOR would pay PRCL the proportionate revenue based on traffic moved, after deducting the O&M expenses.

As per the LA, MOR leased the assets on historical cost. The annual lease rent at historical costs was estimated to be substantially lower than the market costs. Though specified in the agreement, this matter was not favourably received by some of the senior officers of MOR. The different between market and historical costs provided a very big boost to the expected returns.

Four agreement including the MOU had thus been signed by October-2001. The overall project structure further envisaged a Construction Agreement, Transportation and Traffic Guarantee Agreement (TTGA), and O&M Agreement. Significant work in detailing these agreements had already taken place, though the concerned parties had yet to sign them.

6.1 Construction Agreement

During early 2001, GPPL was pushing for finalization of the construction agencies. As per an earlier approved budget proposal, WR had early started carrying out civil works for conversion which included modification, strengthening or rebuilding of bridges, earthwork in bank, cutting of associated drainage works, platforms etc. GPPL was exploring the possibility of engaging a private sector contractor. There were not many who had the expertise for jobs of this magnitude.

Since MOR wanted the passenger train operations to continue, there was a need to convert the adjoining MG links of Bhavnagar (Dhola-Bhavngar), Mahuva (Rajula Junction – Mahuva) and Palitana (Sihor (on the Dhola-Bhavnagar link) – Palitana) into BG. These conversions were to be undertaken by WR.

Given the above issues, PRCL decided to offer the construction job to WR, which had an organization in place. WR accepted and proposed that they would carry out the procurement of all materials required for the construction works except the rails and fastenings, sleepers and fittings, ballast, turnouts, cables and point machines, which were to be procured and supplied by PRCL to WR. This was to leverage the comparative strengths and flexibilities in procurement between the two organizations.

The construction of rail between the two destinations was expected to be complete within 12 months. Acquisition of land for laying the Pipavav and Rajula City BG rail was to be taken care of by WR. All engineering work was to be carried out according to specifications laid down by MOR and the RDSO. WR was responsible for getting safety certificates after the completion of construction work. It also had to ensure that the project railways had been designed, constructed and commissioned for initial train speed not below 60 Kmph, which would be raised to 100 Kmph within due course of time. Construction costs of various materials had been fixed beforehand. Any cost overrun, on account of increase in duties and taxes, was to be borne by PRCL, provided WR duly justified these using legal documents.

Due to poor road connectivity along entire stretch, the MG line would have to be kept running till l the heavy materials like rails, sleepers, ballast, cables etc had reached the designated sites.

Parties of the agreement - the President of India through Western Railway, GOI, Pipavav Railway Corporation Limited.

Main features of Construction agreement were as under,

According to construction agreement Western railway shall be responsible for: -

1. Construction Work
2. To prepare Design, Drawing and Engineering requirements for carrying out the construction work
3. To provide delivery schedule of material
4. To maintain existing MG services between Surendranagar and Rajula till the line is blocked for final completion.
5. To provide details regarding physical and financial progress of work to PRCL and Central project review board
6. To undertake the entire work according to the detailed cost estimate of Rs. 298.34 Crore.
7. To provide monthly statement to PRCL regarding fund requirement for construction of work to be taken in the subsequent work.
8. To obtain all the safety certificates.
9. Monitoring and supervision of contracts.
10. Obtain and maintained at the cost of PRCL all necessary assurance.
11. Procure all necessary and applicable permits.

According to construction agreement PRCL shall be responsible for: -

1. Procurement of rails, ballast, sleepers and S&T equipments
2. To bear cost of procurement commissioning additional capacity of Sabarmati Welding plant over and above its rated capacity of 10,000 welds per annum.
3. Assist WR in obtain licenses
4. To pay the monthly payment to Escrow account

6.2 Transportation and Traffic Guarantee Agreement

GPPL had to guarantee a minimum traffic of one mt in the first year, two mt in the second year, and three mt in the third year to PRCL as a part of the proposed TTGA. In the event of a failure to provide the guaranteed traffic, suitable penal provisions were made in the proposed contract. Similarly, WR had to make good the foregone contribution of traffic that could not move due to non supply of wagons within 10 days of placing the indent. There were lots of apprehensions by MOR on inclusion of this proposed liability of WR. It was however felt that the response time provided was large enough, based on empty wagon arisings in the region.

6.3 Operations and Maintenance Agreement

The O&M of the BG link was to be the responsibility of MOR through WR. WR had to guarantee to the SPV timely provision of sufficient number of rakes and wagons to transport cargo originating or terminating at the port. Suitable penal clauses for non compliance of guarantees had been incorporated in the agreement, i.e. if WR failed to provide adequate wagons or if the port failed to provide guarantee cargo. There were also service level norms, on which there were again concerns. Earlier versions did not have it. Towards the O&M costs to the railway, the SPV was to pay a fixed and a variable charge which was formulated to guarantee MOR a minimum amount from their operations.

MOR had to collect earnings from the traffic originating and terminating on this railway line and the share of the SPV (being worked out on cost plus basis) was to be apportioned to it after defraying the O&M costs.

Based on cost of living indices for its workers associated with the project, MOR had agreed to a cap on the O&M cost. The projected costs might go up with the indices indicating price rise but a ceiling had been fixed for this. As far as traffic flows were concerned, the project was found viable at 40 percent of the capacity originally estimated by the consultants.

7. Project Implementation

Implementation of the project could be split up into two stages: (i) preparatory and (ii) execution. The preparatory stage included site survey, collection of field data, preparation and approval of drawings, detailed engineering and cost estimation, preparation of documentation, etc. The execution stage commenced from the invitation of tenders followed by actual execution of works on the ground. Most of the preparatory work had already been performed by WR. Some of the civil works had already been initiated. A project schedule had been prepared.

The company had already placed orders for supply of ballast to six parties and the deliveries were expected to start from Nov.-2001. The entries railway related works such as new rails, ballast, and sleepers were expected to be completed y December 31, 2002. The project was supposed to go operational in early 2003. Railways had confirmed that they had already started working on the signaling systems for the project. The new line segment from Rajula City to Pipavav had some special features. Since it did not involve any alteration in an existing alignment, it was easier to implement. However, given that the route would pass through difficult marshy lands, more than 26 new bridges and embankments were planned. Land acquisition had not been an issue in either the conversion or the new line segments.

8. Financial Analysis

Based on the normal projections, a 32.54 percent internal rate of return (IRR) was expected. It was also recognized that there were sources of revenue other than the freight earnings. These could be (i) other goods earnings in the form of demurrage charges, wharfage charges, ground rent, etc and (ii) passenger earnings. The passenger component was due to operations of WR on the Pipavav railway line. Since these charges had not yet been fixed, the revenue accruing from this source had not been incorporated in the financial analysis. The cash flow analysis had also not included the loan repayments.

Sensitivity analysis for the project was carried out for the following scenarios: (i) 10 percent escalation in project cost due to increase in procurement price of materials or delay in implementation of the project, (ii) 10 percent reduction in earnings due to competition from the road services or unforeseen circumstances, and (iii) a combination of both the above factors. The IRR for the three cases was calculated as below:

Sr. No.	Scenario	IRR (%)
1	Normal case	32.54
2	Cost overrun by 10%	30.53
3	Reduction in earnings by 10%	30.30
4	Combination of 2 and 3	28.42

9. CURRENT FINANCIAL RESULTS (Rs. IN CRORE)

Year/ Particulars	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Contn. Tfc (MT)	0.14	0.78	1.04	1.25	0.91	0.69	1.26	2.33	4.19
BulkTraffic (MT)	0.26	0.09	0.54	0.88	0.98	1.08	1.78	2.05	2.64
TotalTraffic(MT)	**0.39**	**0.88**	**1.57**	**2.14**	**1.88**	**1.77**	**3.04**	**4.37**	**6.83**
Income from Tfc	5.16	9.30	18.97	40.79	42.99	37.74	59.43	89.56	151.28
Other Income	13.84	20.94	32.49	26.80	24.29	31.39	20.89	1.88	1.75
Gross Income	**19.00**	**30.24**	**51.56**	**67.59**	**67.28**	**69.13**	**80.32**	**91.44**	**153.03**
O& M Expenses	11.65	16.15	20.28	21.46	26.02	45.26	64.09	56.36	78.60
Admin. Cost	3.90	2.17	2.20	2.44	2.46	3.85	2.73	2.68	3.04
Lease Rent	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98
Gross Profit	**1.47**	**9.94**	**27.00**	**41.71**	**36.82**	**18.04**	**11.52**	**20.25**	**62.67**
Depreciation	14.06	13.90	14.60	14.71	14.40	14.39	14.69	14.91	14.48
Net Profit/Loss	**(32.96)**	**(24.73)**	**(4.20)**	**6.61**	**(1.35)**	**(23.83)**	**(18.03)**	**3.45**	**55.30**