

Government of Nepal
Ministry of Physical Planning and Works
KATHMANDU-TERAI FAST-TRACK ROAD PROJECT
Singhadurbar, Kathmandu

PROJECT OVERVIEW

JUNE 2010

ABBREVIATIONS

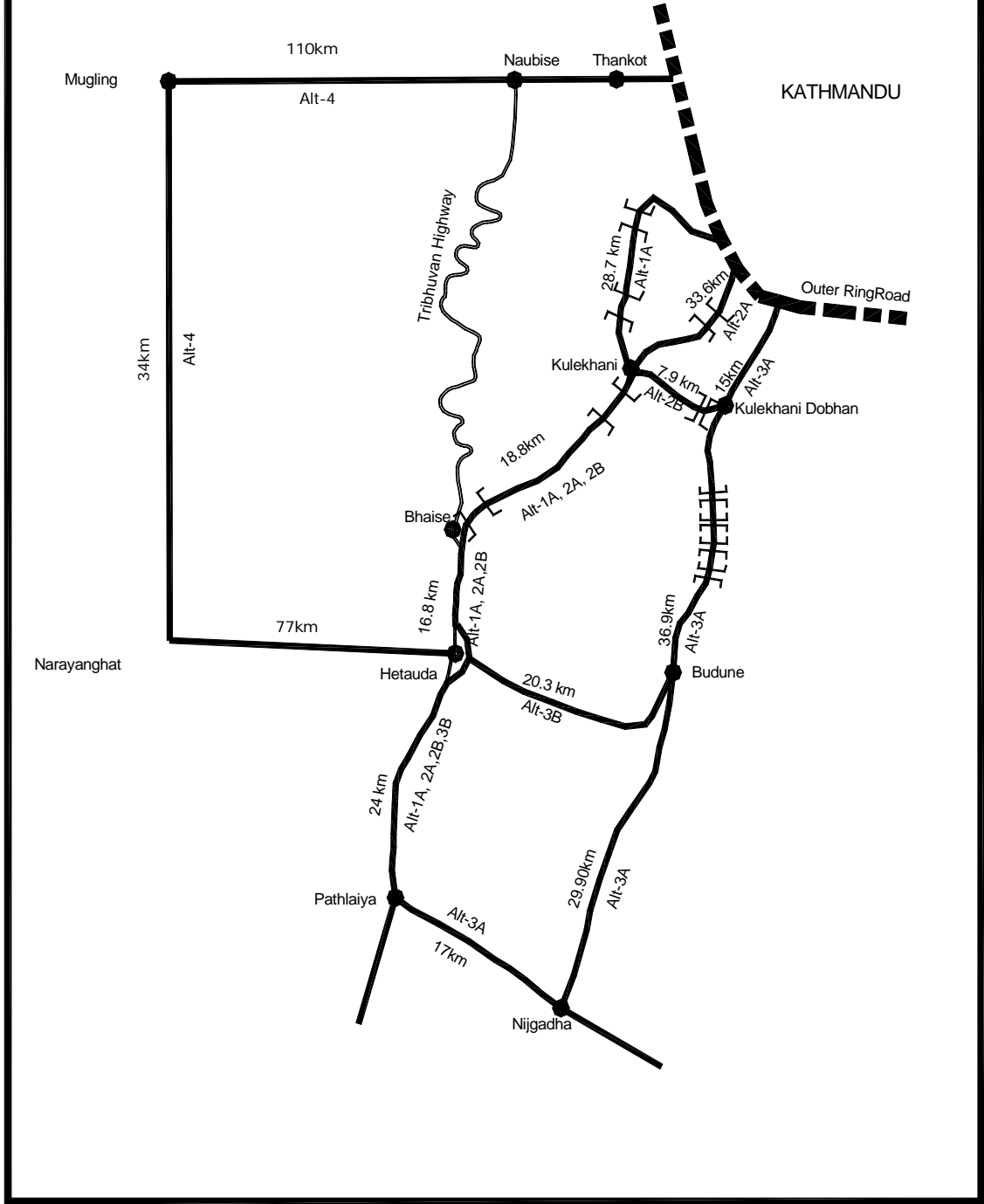
ADB	Asian Development Bank
BOT	Build Operate & Transfer
CSP	Country Strategy and Program
DIFID	Department for International Development (UK)
DoR	Department of Roads
DoTM	Department of Transport Management
EA	Executing Agency
EIA	Environment Impact Assessment
EIRR	Economic Internal Rate of Return
EPA	Environmental Protection Act
EWB	East West Highway
FS	Feasibility Study (referring to May 2008 reports of Consultants)
FY	Fiscal Year
GAM	Goal Achievement Method
GDP	Gross Domestic Product
HB	Highway Board
HDM	Highway Development & Management System
HQ	Headquarters
GoN	Government of Nepal
IEE	Initial Environmental Examination
IP	Indigenous Peoples
IRC	Indian Road Congress
ISA	Initial Social Assessment
JHPC	Japan Highway Public Corporation
MCA	Multi Criteria Analysis
MoF	Ministry of Finance
MPPW	Ministry of Physical Planning and Works
NGO	Non Governmental Organization
NH	National Highway
NPC	National Planning Commission
NPV	Net Present Value
NRM	Nepal Resident Mission
NRs.	Nepalese Rupees
NTP	National Transport Policy
OD (O&D)	Origin and Destination Survey
O&M	Operations and Maintenance
PCU	Passenger Car Unit
PIP	Priority Investment Plan
PMO	Project management Office
PPMS	Project Performance Monitoring System
PPTA	Project Preparation Technical Assistance

PRC	People's Republic of China
PSP	Public Sector Participation
RBN	Roads Board Nepal
RoW	Right of Way
RP	Resettlement Plan
RTA	Road Transport Authority
RTU	Road and Traffic Unit (DoR)
RUC	Road User Cost
SA	Social Assessment
SASEC	South Asia Sub-regional Economic Cooperation
SEIA	Summary Environmental Assessment
SIA	Southern International Airport
SIEE	Summary Initial Environmental Examination
SRN	Strategic Road Network
TA	Technical Assistance
TAR	Tibet Autonomous Region of PRC
TYIPD	Three Year Interim Development Plan
VDC	Village Development Council
VOC	Vehicle Operating Cost
VPD	Vehicles per Day
WACC	Weighted Average Cost of Capital
UNDP	United Nations Development Program
VOT	Value of Time
WB	World Bank
WTO	World Trade Organization

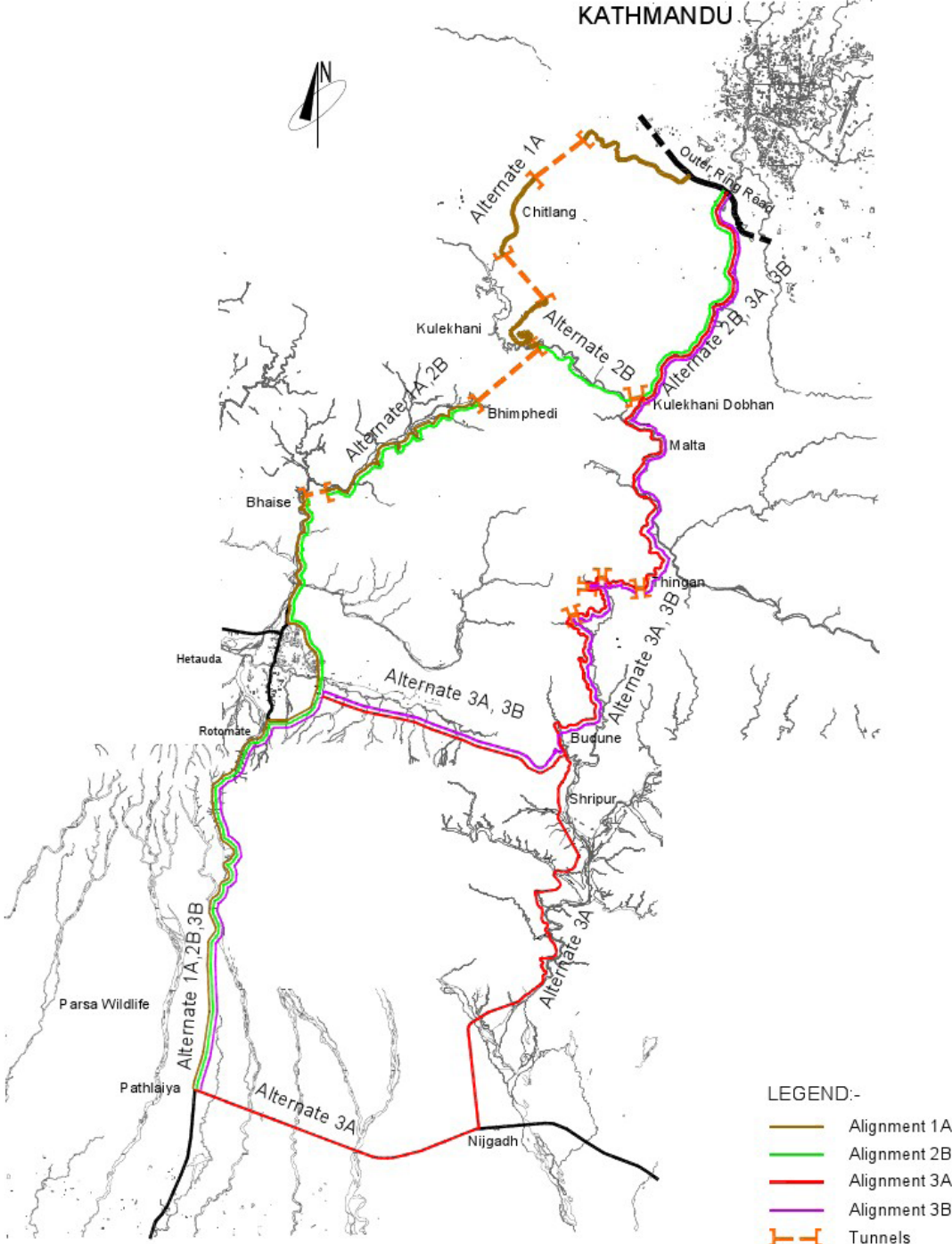
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Schematic Plan of Alternative Routes



FEASIBILITY ALIGNMENT ALTERNATIVES



1.0 BACKGROUND

Nepal is a predominantly mountainous situated between India and the Tibet Autonomous Region of China. As a landlocked country with limited navigable water courses, Nepal has to rely mostly on road transport for moving passenger and freight traffic. Road network development is challenging and expensive due to terrain conditions characterized by fragile mountains, often very steep and crossed by numerous rivers of different sizes. This has resulted in slow and inequitable distribution of road lengths across the country. As a consequence, road density is low and a number of remote regions in the country are still unconnected to the national road network.

Moreover, road links of national significance and offering notable economic returns are also limited. Currently, the main access and trade corridor in Nepal is the East-West Highway (EWH) that runs across Terai. A number of road links exist in the hill areas, and a lot less in the higher mountainous regions, but these offer more access benefits than economic returns. Numerous reports and recent government policies have emphasized that both access and economic considerations can be built into road network development process by planning North-South oriented road links across the country so that economic potential of different agro pockets of the country can be best utilized by linking them with wider markets in the Terai and beyond.

It is in this economic context that the government has prioritized and taken forward the proposition to establish direct “fast track” high speed links between Kathmandu and other major cities serving as gateways to key markets in Nepal and India. Accordingly, the Government of Nepal (GON) requested and received support from the ADB to engage a technical assistance (TA) team to carry out feasibility studies and preliminary design of a preferred alignment from Kathmandu to Pathlaiya. The TA report of May 2008 following series of studies in 2007/2008 and additional reviews and studies thereafter form the basis for taking forward Kathmandu Terai Fast Track Road Project (hereinafter referred to as KTFTRP).

2.0 THE RATIONALE: EXISTING ACCESS SCENARIO

The existing road access between the Terai and Kathmandu is constrained by long hours of driving along often convoluted and ill maintained road network. The network of roads currently serving this purpose comprises the Tribhuvan Highway (TRP) from Birgunj, a dry port near the Indian border, north to Hetauda, then west to Narayanghat, north to Mugling and then east on the Prithvi Highway (PRM) to Naubise and the Tribhuvan Highway to Kathmandu. This corridor is connected to the east Terai and eastern Nepal via the E-W Highway at Pathlaiya, between Birgunj and Hetauda. The length of the existing road from Pathlaiya to Kathmandu is stated in the feasibility study as being 256km, taking from 5 to 8 hours depending on vehicle type and conditions. At present, the majority of traffic that links Terai with Kathmandu uses this route.

The only alternative link that connects Kathmandu Valley to Hetauda is the one that is the continuation of the TRP via Bhaise, Bhimpedi, Kulekhani and Sisneri. This route offers notably shorter option with 91km long link, but its winding alignment and basic stage allows only convoys of local traffic and jeeps that connects Kathmandu to Hetauda in about 3 to 4 hours.

It is in this context that the Government of Nepal is taking forward an initiative for development of Kathmandu Terai Fast Track Road Project to be developed with private participation on Build, Operate and Transfer (the BOT) basis and executed through Ministry of Physical Planning and Works.

3.0 THE PURPOSE OF THE FAST TRACK

The purpose of the Project is to improve access between Kathmandu and the Terai ultimately connecting Kathmandu with the Indian border with a high class road (“fast track”) for considerable savings in both travel time and costs.

The need for a Fast Track type of investments have been propelled by the increased level and nature of trade experienced in Nepal and in the region. In the last few decades international level trade has gradually increased and Nepal now trades not only with India and PRC but, through India, with other countries.

The Birgunj – Kathmandu- Kodari corridor is the only corridor currently available for transit traffic from India to PRC (TAR) and the Birgunj dry port is the main entry/exit for goods to/from Nepal and India and beyond. The existing route is long and subject to frequent disruption during the monsoon season. Therefore, a new high class connection from Pathlaiya to Kathmandu will have significant benefits for bilateral, international and transit trade flows.

The realization of a Fast Track is expected to promote sustainable economic growth and poverty reduction in Nepal as a whole and the project area in particular. It will achieve this by (i) improving the road transport network by building a new high class direct North South Connection from Kathmandu to the Terai and (ii) Improving trade linkages with India and improving the Asian Highway network (iii) Improving transport conditions for trade from Nepal to other countries through India, (iv) reducing transport operating costs, in particular, fuel savings, and (v) with ongoing improvements to the Arniko Highway, improving transit trade to India and PRC.

4.0 SALIENT FEATURES OF THE PROJECT

Road Standard and Design Speed: The new road will be built as a high class road to international standards. It is planned to be constructed to Asian Highway design for a Class I road. Traffic volumes indicate that the road will need to be four lanes from Kathmandu to Shripur by 2018. Currently, preliminary design has been carried out for both two and four lanes.

Road Access: The Fast Track will enable vehicles to travel quickly and safely. This is to be ensured by limiting interaction between through traffic and local traffic and pedestrians. Access to the Fast Track is designed to be only at interchanges, located near traffic generation centers, and that local traffic, including tractors, pedestrians, bicycles and animals will not be allowed on the highway except where the highway makes use of the existing road (e.g. Nijgadh to Pathlaiya).

Toll System: Operation and maintenance costs and debt servicing will be covered through a tolling system that uses open toll plazas. Suggested tolls range from NR 800 for a car to NR 1,800 for a heavy bus or truck.

Costs: Based on the preliminary costs the estimated cost for the four lane option is NR 67,478 million (\$ 922 million equivalent) in March 2008 prices, including, land, design, supervision and physical and price contingencies but not including any interest during construction.

Provision of tunnels and high bridges: Possible alignments for fast track include use of tunnels (for example, a 1.35km tunnel is envisaged in most feasible alignment) and a number of high bridges to ensure smooth ride along the fast track. These structures, when built, are unique for Nepal for the purpose they are built.

Economic and Financial Analyses: Based on the preliminary costs the Economic Rate of Return (EIRR) of the four lane option is 30.92 percent. The financing plan for the project is not yet decided but, assuming that the project would be fully funded by an international loan (approximating a BOT operation), then the Financial Rate of Return (FIRR), using the suggested tolls is 14.6 percent pre-tax, about 13.6 percent after normal business taxes, and 12.9 percent if income tax is levied.

Organization: A possible organizational system for the new road is based on establishing a corporatized road management company to construct and operate the road or to oversee any BOT operation.

Capacity Building: The construction and operation of this high class road will require technical and operational skills that are not yet at present in Nepal. These skills would include tunnel design and construction, operation and maintenance, toll system operation and management of private sector involvement in infrastructure projects. The project implementation would therefore require that an extensive training program be initiated to develop these skills during construction and before the project opens.

Summary of project features:

The Project broadly comprises three sections:

- a. Kathmandu-Nijgadh - Main Component which forms core Fast Track Road.
- b. Hetauda Connector (Budune-Hetauda) which shall be a new construction link of 2 lane design
- c. Nijgadh – Pathlaiya Section which is part of an existing East West Highway and will be upgraded by the Project to 4 lane status.

Within this broader framework, key project characteristics of the Fast Track include:

(i) Alignment sections

Khokana-Thingan section runs along the Bagmati river and Thingan Nijghad section runs along the Simat Khola / Bakaiya Khola. Main interventions within the Project shall include:

- Naikap – Khokana. New construction of 6.5 km long 4 lane (part of Outer Ring Road)
- Khokana-Nijghad, new construction of 76.2 km long 4 lane road
- Upgrading of Nijgadh to Pathlaiya section of East West Highway from existing 2 lane to 4 lane.
- Hetauda Connector (Budune to Hetauda) shall be a new construction of 2 lane design

(ii) Width of the road

- Four lanes: Carriageway width – 14 m
- Formation width – 22 m (Flat & Rolling) 20.5 m (Hill & steep slope)
- Right of way : 50 m – flat terrain; 100m (Average) – other areas

(iii) No. of bridges :

- i) Major bridges with more than 50 m span – 40 nos;
- II) other – 80 nos

(iv) Tunnel :

One tunnel at Thingan, length – 1.3 km

(v) Interchanges :

- i) First phase – Outer Ringroad (Sano Khokana), Hetauda junction (Budune), Sripur and Nijghad
- II) Second phase – Besitole-Malta in Lalitpur and Kulekhani connector in Makwanpur

(vi) Traffic forecast (2014) : PCU average daily traffic

Kathmandu – 10223, Budune – 6515, Nijghad – 6366

(vii) Design speed :

Minimum – 60 km/h, average – 80 km/h

(viii) Toll locations:

At Outer Ring Road in Kathmandu and at Nijghad.

5.0 TIMELINE OF PROJECT ACTIVITIES AND STUDIES

Feasibility Study Phase I : [April 2007 to July 2007]

Phase I included the feasibility study of various alignments for the fast track road with recommendations to GoN and ADB for the most suitable design and alignment, the financial implications of the various alignments, the social and environmental impacts of the alignments and standards and the operational and maintenance requirements for each alignment analyzed. The results of Phase I of the study were reported in full in the Phase I Draft Final Report.

Six alternatives explored in Phase I activities

Alternative 1A: KTM (Khatrichhap), Mahadevsthan, Chandragiri Range, Chitlan Valley, Kulekhani tunnel, Chisapani Tunnel, Bhimphedi, Hetauda bypass, Ratomate, Pathlaiya

Alternative-2A: Outer Ring Road, nearby Pharping, Humane, Tunnel,,Lamabagar, Chisapani Tunnel, Bhimphedi, Hetauda bypass, Ratomate, Pathlaiya

Alternative-2B: Outer Ring Road, Kulekhani- Bagmati Confluence, Chisapani Tunnel, Bhimphedi, Hetauda bypass, Ratomate, Pathlaiya

Alternative -3A (preferred alignment): Outer Ring Road (Khokana), Kulekhani- Bagmati Confluence, Thingan, Budune, Shripur Chhatiwan, Nijgadh, Pathlaiya

Alternative 3B: Outer Ring Road, Kulekhani- Bagmati Confluence, Thingan, Budune, Ratomate, Pathlaiya

Alternative-4: Thankot, Naubise, Munglin, Narayanghat, Hetauda, Ratomate Pathlaiya

Feasibility Study Phase II: [October 2007 to May 2008]

Phase II of the study included the preliminary design of the selected alignment and the remaining scope of work set out above. Following the endorsement from MPPW, work started in November 2007 on more detail topographic and geotechnical surveys of the preferred alignment, the route from Kathmandu to the E-W highway using the Bagmati and then through Thingan, Budune and Nijgadh, with a connection from Budune to Hetauda (see Map XX).

Invitation of Eoi from Private Sector

On 3 June 2008 the Ministry of Physical Planning and Works (MOPPW) published a call for expressions of interest (EOI) to prequalify firms for the design, construction and operation of the toll road on the basis of a Public Private Partnership (PPP). Three firms expressed interest in the project. Only two of these were subsequently deemed responsive to the EOI call and shortlisted for the proposal stage.

Assessment of PPP Process by Castalia (WB) 2008

As a result of concerns expressed in various quarters about the project the GON and the World Bank (WB) requested Castalia Ltd., a firm which designs and develops public private partnerships to improve infrastructure service delivery, to advise if and how a PPP structure for the project can be achieved. Castalia reviewed the FS outputs and the current legal, regulatory and institutional frameworks in Nepal in the context of PPP. In December 2008 they presented a report addressing the key issues and containing strategy alternatives and associated action plan for the GON to enter into a PPP for the implementation of the project.

Technical Assistance from ADB to support preparedness for the Project

A TA has been put in place with the financial assistance from the Asian Development Bank [7135-NEP: *Enhancing Project Readiness for North-South Fast Track Road Connectivity (PPP)*] to support MPPW in implementing the Fast Tack project. A series of

activities including reviews of the Feasibility Study (FS) documents of May 2008 and additional studies have been supported under the TA. Highway Engineer and Traffic Experts have been engaged to provide additional perspectives and explore alternatives to improve design and increase cost-effectiveness of the proposed investment.

6.0 SUMMARY OF KEY ISSUES IN PROJECT DESIGN

a. FS Preferred alignment and project coverage

FS findings and recommendations

Among the six alternatives explored and deliberated in the FS, the preferred alignment is 3A (see Section 5 above) which is that following the Bagmati river valley and continuing south to the existing Simat Khola road and then on to join the EWH to east of Pathlaiya. The links from Simat Khola to Hetauda (*Hetauda Connector*) and from Nijgadh to Pathlaiya on the EWH would be upgraded.

Additional views from subsequent studies

The choice of alignment 3A was made in Phase I of the FS i.e. prior to actual undertaking of the preliminary design works accomplished in Phase II of the FS. Subsequent studies have shown, as will be discussed later, there exists prospects for other alternative alignments becoming more cost effective and consequently most attractive in meeting Fast Track objectives. For example, cost estimates of one of the two potential original alignments prepared as a basis for comparison showed that two lane option on Alternative 2B may offer the lowest cost solution (*Martin J Fox, Highway/Structure Engineer, ADB TA 7135-NEP, May 2010*).

Similarly, broader picture on the scope of the Fast Track are also changing with further analysis. It is clearer that traffic demand for the southern section of the project road from Bunde to Nijgadh is associated solely with the SIA and that Hetauda connector would have to be considered as a public road. In this context, *the Fast Track project is that from Kathmandu to Bunde (52km), with the southern section associated with the SIA and the Hetauda connector a public road (Cameron Harvey, Traffic Expert, ADB TA 7135-NEP, May 2010)*.

b. Overall standards, design and structures

FS findings and recommendations

The proposed corridor would initially be a two-lane road, upgraded when traffic volumes warrant it to a four-lane road of Class 1 Asian Highway standard. The alternatives were presented in four groupings:

- Two lane with passing lane;
- Four lane;
- Two lane with passing lane, Hetauda – Pathlaiya 4 lane; and
- Rail connection.

Traffic forecasts show that a 2-lane design is initially well within the capacity until 2018 when widening to four lanes will be required thereafter.

High bridges and tunnels constitute key design, skill and cost challenges for the proposed Fast Track. Construction of the tunnel represents around 5% of the estimated total construction cost. Tunnelling is a high risk operation and often results in large cost overruns and this is important in the cost of the proposed 1.35 km long tunnel between Km 29+900 and Km 31+250 or other tunnels of different sizes that may be essential with other design and alternate alignment options. There are seven major bridges with overall lengths up to 327 m, main span lengths of up to 136 m, and heights over 100 metres. These structures are major bridges in any project context. Nepal has no previous construction history of such bridge and its remote and difficult terrain additional threats.

It is considered that much more detailed geological mapping and investigation is needed to properly define the design parameters of the proposed tunnel as well as bridges. With the absence of tunnel building experience in Nepal for traffic, a range of problems might be encountered. Additional geotechnical work, in the form of both seismic and drilling, will be necessary to permit detailed design of the tunnel and bridges to be carried out.

Significantly, the FS and subsequent studies alert that by reviewing the alignment the need for major structures, which make up 57% of the cost, may be reduced. Similarly, design of the bridges, which are part of the structural cost, may be revisited for alternative designs or replacement structures helping to reduce the cost of bridge component from 41% to 30%.

Additional views from subsequent studies

Following revised traffic studies (see below), the results indicate that the project road is not likely to require an upgrade from 2-lane to 4-lanes by 2036 (*Part 2 Report Cameron Harvey, Traffic Expert, ADB TA 7135-NEP, May 2010*).

Noting that the bulk of the cost constitutes of structures and tunnel proposed in the Preliminary Design, additional geotechnical and geological mapping work should be carried out on the proposed alignment to give confidence in the estimated cost at a preliminary engineering level.

Fluctuations in cost could be in either direction for different aspects of review. Unit rates used in the FS to estimate the costs may be too low as they derive from unit rates used in People's Republic of China where costs are lower than in Nepal. FS also has some design inconsistencies due to hurried nature of work and recommends carrying out an additional study of 6 months to upgrade the design to complete preliminary design level.

It is recommended that three of the original alignments (2B, 3A, and 3B) be re-examined and various combinations of road geometry, tunnels, and major structures be studied to arrive at an optimum solution for the project irrespective of which alignment is finally chosen (*Part I of the report by Martin J Fox, Highway/Structure Engineer, ADB TA 7135-NEP, May 2010*).

c. Existing and projected traffic levels

FS findings and recommendations

Traffic on the existing highway is heavy in places (9,800 pcu per day south of Hetauda¹) and has a high proportion of long distance heavy goods and passenger vehicles. Over fifty percent of vehicle drivers make trips to or from Kathmandu, with trips of 200 km or more, while agriculture and food accounts for 27 percent of all road freight, fuel 25 percent and cement 15 percent.

The resulting traffic forecasts give an average of about 8,600 pcus on opening in 2014, on the new road between Kathmandu and Pathlaiya on the East West Highway (EWH) rising to an average of 32,000 pcus in 2034. These are initially well within the capacity of a two lane road as designed; after 2018, however, widening to four lanes will be required.

Between 2008 and 2014 the annual growth rate on the existing road is estimated to be 6.5 percent, from 2014 and 2024 the annual growth rate on the new road is estimated to be about 7 percent, dropping to 6 percent between 2024 and 2034.

The FS concluded that the project would result in a saving of 152 kilometres and over four hours of travel time with average traffic on the project road rising from about 9,000 passenger car units (pcus) per day in 2014, the assumed opening year, to over 34,000 pcus per day in 2024.

Additional views from subsequent studies

Traffic studies have now been modelled with 2016 as the base year when the Fast Track is likely to be operational.

Following the outcomes of the initial analysis, two additional scenarios were modelled. The three modelled scenarios were:

- Scenario 1: The original project road alignment without the proposed Southern International Airport (SIA).
- Scenario 2: The project road without the Hetauda connector and including the SIA.
- Scenario 3: The original project road alignment with the SIA.

These are all considered High scenarios as they include all potential traffic that would use the project road based on cost savings.

Based on Scenario 1 High, estimated total vehicles in 2036 is about 16,000 made up of 63% trucks, 26% LV and 11% buses. For scenario 2 and 3 respectively, total traffic on the project road for the High scenarios has been estimated at between 4,600 and 5,300 vehicles in 2016 and 15,300 to 17,300 vehicles in 2036. Based on Scenario 1 High and the

¹ Pcu are equivalent “passenger car units” for each vehicle type, and are used to determine the capacity of the new road. For traffic on the existing highway network and on the new road, one vehicle is approximately equal to 1.8 pcu.

revised modelling and data, traffic forecast on the proposed project road for the 20 year time horizon is 38% lower than that outlined in the FS in PCU terms at 24,100 per day.

The studies subsequent to FS have the traffic growth revised down slightly suggesting reduced growth between 2007 and 2009 of less than 1% compared to historic growth in the area between 2001 and 2009 in the order to 7%. Traffic used for this study is still relatively high however at 5.6% for LV and HV and 6.4% for buses. Total traffic on the project road for the High scenarios has been estimated at between 4,600 and 5,300 vehicles in 2016 and 15,300 to 17,300 vehicles in 2036. This is for scenario 2 and 3 respectively. The figures still include the traffic generated by the proposed SIA that has been based on the FS in the absence and any more recent data.

d. Toll rates and consumer choices

FS findings and recommendations

FS provides for a toll system to pay for the maintenance and operation costs and to provide debt servicing without drawing on additional Government budgets. Two toll plazas are proposed in the FS, one at the north of the project road south of the proposed connection with the also proposed Outer Ring Road and one at the southern end of the corridor prior to the interchange with the EWH at Nijgadh.

The proposed system is an open system whereby a toll is paid on entering and leaving the toll plaza with trips entering or exiting at the Hetauda Connector only paying once if they pass the proposed toll plazas. Suggested tolls range from NR 800 for a car to NR 1,800 for a heavy bus or truck. Traffic travelling to and from Kathmandu and Hetauda would pay approximately 65-70 percent of the toll levied on traffic travelling to/from Kathmandu to Nijgadh. Traffic travelling from Shripur interchange to Hetauda would not be tolled, nor would traffic travelling only on the upgraded East West Highway.

Additional views from subsequent studies

Traffic modelling identified carried out subsequent to FS demonstrate that the level of traffic forecast for the proposed project road is not sensitive to the toll level. Similarly, an assessment of local traffic between towns such as Kulekhani and Kathmandu has identified that this traffic would not use the proposed project road.

It should be noted that the base toll recommended in the FS is relatively high when compared to toll roads internationally and in particular in the region. The proposed high level of toll are justified based on savings in perceived vehicle operating costs (savings in fuel costs), this implication is that people use the new route and pay the proposed toll even with no saving or even an increase in the distance travelled.

With the knowledge that traffic demand for the southern section of the project road from Bunde to Nijgadh is associated solely with the SIA and that Hetauda connector is envisaged as a public road, it would be more appropriate to locate one toll plaza at the Kathmandu end of the corridor. This has a number of consequences:

- All traffic would use the southern section of the project road except that going to Hetauda.
- Those from Hetauda will pay the same toll as those going to Nijgadh, Birgunj and the south.
- The Fast Track project is that from Kathmandu to Budune (52km), with the southern section associated with the SIA and the Hetauda connector a public road.

e. Total cost and possible financing modalities

The final cost of the Fast Track is still subject to additional studies. It is very likely that an alternative route and/or alignment might offer cost savings. The extent of these savings cannot be properly quantified until either a preliminary engineering study is carried out on one or more of the other alternative routes and/or decisions on structures and tunnels on the chosen alignment (Alternative 3A) are made. For example, it is possible that the cost per linear metre of the bridge could be reduced by up to 30%.

The following table shows increase in estimated cost of the project since March 2008.

NRs (million)	Original estimate (2008)	Local cost increase	Foreign cost increase	Updated estimate (2010)
Two lane	36,864	6,503	2,808	46,175
Four lane	57,091	10,021	4,322	71,434
USD (million)				
Two lane	582	92	40	650
Four lane	903	141	61	1,006

The above figures do not include the effect of any optimisation. Estimates of cost savings on the two lane road, Alternative 3A, for a range of optimising activities are shown in the following table (all in Nepal Rupees and adjusted to 2010 values):

Cost saving measure	Reduction in cost	Updated estimated cost
Estimate from Final Report as updated in this report to 2010 values		46,175
<i>less</i>		
a. Delete section from Km 52 to Nijgadh	7,421	
b. Delete upgrading of EWH between Nijgadh and Pathlaiya	1,938	
c. Leave existing highway between Hetauda and Pathlaiya to a subsequent stage	0	
d. Delete long high bridges in section Km 29 to 45, replace with tunnels 3km, and 3 x 1.5km, saving in road length of 4 km	2,694	
e. Earthworks, drainage etc. for two lanes only, estimate 5% saving in Subgrade works and culverts	373	
f. Downgrade interchanges to only two lanes, ordinary junctions, estimate 25% savings	62	
Total savings	12,488	
Estimated reduced cost		33,687

The estimated reduced cost at March 2010 rates is USD 474 million, a reduction of USD 176 million. A similar exercise for the four lane option resulted in an estimated cost of NRS 59,816 million, or USD 983 million at March 2010 rates.

7.0 CURRENT STATUS OF KEY ACTIVITIES

a. Opening of the track:

Official opening of the initial track took place on 9th November, 2009 with the inauguration by Honourable Deputy Prime Minister and Minister of Physical Planning and Works at Budune of Makwanpur district. Nepal Army now undertakes the track opening function with the receipt of funds from MoPPW. First installment of Rupees 100 million was disbursed on September 16, 2009 while Rupees ninety seven and a half million was forwarded as second installment on March 10, 2010. The Army has engaged in requisite clearing of the area after completion of due processes with the Ministry of Forest.

b. Public Notice on land acquisition access

Public notice was made on 18 February 2010 through newspapers on controlled entry access to the Fast Track except at the designated interchanges. The notice also informed the public about the different widths of land that shall be acquired for the Fast Track.

c. Environment Impact Assessment (EIA) process

While most VDCs along the proposed corridor have sent their letter in conformity with the EIA process, Project is liaising with the VDC of Sano Khokana for their consent to undertake Project activities in their VDC. It is possible that the Project will need to explore other alternative solutions.

d. Land acquisition process

Land acquisition will need to take place along Kathmandu Nijgadh main component and Budune Hetauda Connector. Out of six VDCs of Makwanpur district along the main component, process for acquisition in the four VDCs (i.e. Thingan, Aambhanjyang, Hatia and Phaparbari) has moved forward with a public notice published by CDO Office, Makwanpur District on 20th and 21st May 2010. Public Notice in remaining two VDCs (i.e. Sisneri and Epa Aamchowk) are expected to be out very soon.

e. Publication of general public notice

Following the decision of Government of Nepal to re-invite bidders to express their interest through a new Expression of Interest (EoI), the MoPPW has made a general public notice on 6th May and 22nd June 2010 to disseminate updated status of the project to the interested private parties as an advanced preparation to EoI, planned to be published at the end of this fiscal year.

f. Re-invitation for the EoI

Following the decision of Government of Nepal to re-invite bidder to express their interest through a new Expression of Interest (EoI), the MoPPW intends to make a public notice to this effect due within this FY.

g. Review and updated reports on Traffic Data, cost estimates, and revised Fast Track sections

A number of review missions have been in place and expert studies carried out over the past few months to review and revise/update Fast Track reports and findings from earlier reports. The review recently carried out and reports received include:

- i. Review of Feasibility Study and Preliminary Engineering Reports, Mission by Highway/Structure Engineer, May 2010.
- ii. Revised Draft Report on Traffic, Mission by Traffic Expert, TA 7135-NEP, May 2010

9.0 PROSPECTS FOR CHANGES IN SCOPE AND COSTS

It is important to note that subsequent to major Feasibility Study in 2007/08, Project design and scope is going through a series of technical reviews with some additional expert reviews and studies likely in the near future. Furthermore, detailed geotechnical investigations have not been carried out for all possible major structure sites. This will need to be carried out. This is bound to have implications on final alignment within agreed corridor, and on cost when full range of structural requirements and available design options are clearer.

It is also possible that design standards, particularly the choice between 4-lane or 2-lane will be affected when final traffic volume are known.

Similarly, the scope of activities within the Project, such as coverage of the link road to SIA may be subject to further reviews.

The information included in this brief on scope, design and costs are therefore tentative and could change when full extent of technical and cost information are available from additional studies.

The Government of Nepal is fully committed to undertake the Project within the broader framework described in earlier sections and this is reflected in the ongoing track opening activities and with additional detailed technical studies that the Government is supporting to further strengthen our knowledge of the project area.