Name of Project :-Widening and strengthening of existing carriageway from km. 265/200 to km. 266/200 and from km 273/002 to km 287/905 of NH-56 under NH division Vadodara in the state of Gujarat.

Cost benefits analysis Area is 7.283 ha.

As per cost (Conservation) Rules 2 00 3, Rules 6, Form 'A' S. N o. 1 (v) and guidelines (Under Forest Act 1980.)

S.NO.	Parameters	Description
1	Loss of value of timber fuel wood and minor forest produce on an annual basis, including loss of man hours per annum of people who derived livelihood and wages from the harvest of these commodities.	The area is bears very poor tree growth and there is no felling of trees involved as well as no collection of Minor Forest produce in the area. Therefore, loss of value of timber and fuel wood per hectare negligible. Hence, question of harvesting of forest crop does not arise.
2	Loss of animal husbandry productivity, including loss of fodder.	The land proposed for diversion for development of varamkheda to Madhya pradesh border NH-56 KM 273/00 to 287/905 road side notified as protected forest no loss of agriculture and animal husbandary production due to diversion of forest land shall take place.
3	Cost of human resettlement	The alignment has been made to any adverse impact on human settlements, therefore, impact is very low and tiger no displacement of people. As such the loss on this account is 'NIL'
4	Loss of public facilities and administrative infrastructure (Roads, building, schools, dispensaries, electric lines, railways etc.) on forest land, or which would require forest land if these facilities were diverted due to the project.	The existing roads, are not going to be affected due to the project and therefore the loss on this account will be 'NIL'. On the contrary the road infrastructure will be substantially enriched due to this project.
5	Environmental losses: (soil erosion, effect on hydrological cycle, wildlife habitual, microclimate upsetting of ecological balance).	As a thumb rule the environmental value of one hectare in class 4 forest area. The proposed forest area is declared as road side PF land by Government of Gujarat.
		Hence the environmental loss for 7.283 ha over a period of 50 Environmental Loss for 50 years: 7.283 x 670000 = 48.80 Lacs. Environmental Loss for 1 year: 48.80 = 0.976 lacs 50 Environmental Loss per year & per ha.: 0.976 = 0.13 lacs 7.283 Therefore, environmental loss per year per hect. will be Rs. 0.13 lacs. And Environment Loss for 30 years will be Rs. 0.13 x 30 years = 4.0 lacs. This is much less as compared to the benefits due to
6	Suffering to oustees	the project. Since there are no oustees, because of the proposed project, the social cost of rehabilitation of oustees is NIL.

Therefore, the total loss of forest, as per the approved parameters, works out to as under:

Parameter No.	Discription	Loss (in Lacs)
5	Environmental losses: (Soil erosion, effect on hydrological cycle, Wildlife	4.00
	habitat, microclimate upsetting of ecological balance	

Evaluation of Benefit from Forests

Parameters			ription		
Increase in productivity attributable to the specific project.	traffic movement, of 80km/hour for r commercial nodes commercial, agricu employment gener	reducing trave notor vehicles for multiple d litural, tourism ration, capacit	I time to half by Project also ai evelopment ma Sectors resulti by building as we	y achieving sy ms at creatio ninly in indust ng in to ell as connect	n of rial, ivity
Benefits to economy	and maintenance of 35%. It will provide important cities lil pradesh). Traffic a	of vehicles will e safe and fast ke Dahod (in C nd Tourism of	be reduced at a er transport link Gujarat) and Alin area will be up	about k between rajpur (in Ma lifted	dhya
No. of population benefited	center area will be expressway.	benefited due	to constructio	n of this	th
Employment potential	operation of this e along the corridor Rs. 6.98 Crores thr Maintenance i) Skilled Semiskilled 25	ough employn During Constructio 300	d construction of nent generation Dur	of various 4 n ns as under: ring	
			out as under:		
	Unskilled Total	100 300 650	1,25,000 30,000)	iv)
	M.D. Skilled 50	700	35,000 35,000	ii)	i)
	Increase in productivity attributable to the specific project. Benefits to economy No. of population benefited	Increase in productivity attributable to the specific project. Implementation of traffic movement, of 80km/hour for rommercial nodes commercial, agriculation of the proposed and maintenance of 35%. It will provide important cities lill pradesh). Traffic approximately 209 100.00 lacs No. of population benefited Employment potential More local people operation of this ealong the corridor Rs. 6.98 Crores the Maintenance i) Skilled Semiskilled 10 Total Total Total Total During construm.D. i) Skilled Semiskilled Unskilled Total b) During mainted M.D. Skilled 56 Semiskilled 56 Semiskilled 57 Skilled 56 Semiskilled 57	Increase in productivity attributable to the specific project. Implementation of entire project traffic movement, reducing trave of 80km/hour for motor vehicles commercial nodes for multiple dicommercial nodes for multiple dicommercial, agricultural, tourism employment generation, capaciti between Three state Rajasthan sind pradesh state. Benefits to economy Due to the proposed project 40% and maintenance of vehicles will 35%. It will provide safe and fast important cities like Dahod (in 0 pradesh). Traffic and Tourism of approximately 20%. The above be 100.00 lacs No. of population benefited Employment potential Employment potential More local people will be benefited due expressway. The above benefit in term of rup More local people will be benefited operation of this expressway and along the corridor Rs. 6.98 Crores through employn Maintenance During Construction; Skilled 300 Semiskilled 250 Unskilled 100 Total 650 This further per hector per year (a) During construction: M.D. I) Skilled 300 Semiskilled 250 500 Unskilled 100 300 Total 650 b) During maintenance: M.D. Skilled 50 700 Semiskilled 50 700 Semiskilled 50 700 Semiskilled 50 700 Semiskilled 50 700	Increase in productivity attributable to the specific project. Implementation of entire project will ensure fast traffic movement, reducing travel time to half by of 80km/hour for motor vehicles. Project also all commercial nodes for multiple development may commercial, agricultural, tourism sectors resulting employment generation, capacity building as we between Three state Rajasthan state, Gujarat Stypradesh state. Benefits to economy Due to the proposed project 40% travel time will and maintenance of vehicles will be reduced at 35%. It will provide safe and faster transport lini important cities like Dahod (in Gujarat) and Alippradesh). Traffic and Tourism of area will be up approximately 20%. The above benefit in term of 100.00 lacs No. of population benefited Entire population of the project corridor and procenter area will be benefited due to construction expressway. The above benefit in term of rupees is about 50 More local people will be benefited during consoperation of this expressway and construction along the corridor Rs. 6.98 Crores through employment generation Maintenance During During Construction Maintenance During During construction: M.D. Rate/d Semiskilled So O O O Semiskilled So O O O O Semiskilled So O O O O O O O O O O O O O O O O O O	Increase in productivity attributable to the specific project. Implementation of entire project will ensure fast and safe roze of 80km/hour for motor vehicles. Project also aims at creation of 80km/hour for motor vehicles. Project also aims at creation of 80km/hour for motor vehicles. Project also aims at creation of 80km/hour for motor vehicles. Project also aims at creation of 80km/hour for motor vehicles. Project also aims at creation of 80km/hour for motor vehicles. Project also aims at creation of 80km/hour for motor vehicles. Project also aims at creation of 80km/hour for motor should be approximately a commercial, agricultural, tourism sectors resulting in to employment generation, capacity building as well as connect between Three state Rajasthan state , Gujarat State and Mad pradesh is the state of the same and maintenance of vehicles will be reduced at about 35%. It will provide safe and faster transport link between important cities like Dahod (in Gujarat) and Aliraipur (in Ma pradesh). Traffic and Tourism of area will be uplifted approximately 20%. The above benefit in term of rupees is alout 50.00 lacs Entire population of the project corridor and proposed grow center area will be benefited due to construction of this expressway. The above benefit in term of rupees is about 50.00 lacs More local people will be benefited during construction as w operation of this expressway and construction of various 4 n along the corridor Rs. 6.98 Correst through employment generations as under: Maintenance During During Construction Maintenance i) Skilled 300 70 2,10,000 Semiskilled 100 300 30,000 Total 650 220 This further per hector per year out as under: a) During construction: M.D. Rate/d Amount Skilled 50 700 35,000 ii) Skilled 50 700 35,000 ii) Skilled 50 700 35,000 ii)

5	Cost of acquisition of facility on non-forest land wherever feasible	The demand forest land and road side PF forest and so, no non- forest land required.ernment land)
6	Loss of (a) agriculture and (b) Animal husbandry production due to diversion of forest land.	a) Loss of agriculture – NIL Loss of animal husbandry will be Nil.
7	Cost of rehabilitating The displaced persons as different from compensatory amounts given for displacement.	Since there is no displacement of persons due to the proposed Project, the cost of rehabilitation is NIL.
8	Cost of supply of free fuel- Wood to workers residing in or near forest area during the period of construction.	No workers will be allowed to live in Forest area and also use forest products for fuel and others
A	Total benefits as per above parameters are Parameters No. s 2. Benefit to economy 3. Population benefit 4. Employment potential 5. Cost of acquisition of facility on non-forest 6. Loss of (a) agriculture and (b) animal husba to diversion of forest land. 7. Cost of supply of free fuel-wood to workers area during the period of construction.	andry production due
В	Total loss of forest as per parameters are Therefore, the total loss of forest, as per the a Parameters No. 5. Environmental losses: (Soil erosion, effect of cycle, wildlife habitat, microclimate upsetting Therefore, benefits/ cost ratio works out as ur 154.65 Cost 4 Cost Benefit Ratio: 1: 39	Loss (in Rs) on hydrological of ecological balance 400000

Note: This is as per guidelines of Gol.

1.d Total Population Benefited

i) Employment Numbers during construction and Operation: (DIRECT BENEFITS):

Sr. No	Description	Construction	Operation
1	Skilled	300	50
2	Semiskilled	250	70
3	Unskiled	100	100
	Total	650	220

1.e Employment Generation

Construction Stage:

Sr. No	Description	Numbers
31.140	Skilled	300
2	Semiskilled	250
3	Unskiled	100
	Total	650

Maintenance:

Sr. No	Description	Numbers
1	Skilled	50
2	Semiskilled	70
	Unskiled	100
	Total	220

In addition to this huge number of travelers will be benefited by saving time and cost of travel. Besides, the valuable resource of fuel will be saved substantially.

Deputy Executive Engineer
National Highway Sub Division
Dahod

Executive Engineer
National Highway Division
Vadodara