SALIENT –FEATURES

1.	Name of the project	Lower Goi Irrigation Project
2.	General	
2.1	River Basin	
	a) Name	Narmada River Basin
	b) District	Barwani
	c) State	Madhya Pradesh
	d) Country	India
2.2	Name of	
	a) River	Goi
	b) Tributary of	Narmada
	c) State	Madhya Pradesh
	d) District	Barwani
	i) Reservoir	Barwani
	ii) Head work	Barwani
	iii) Command area	Barwani
	iv) Power House	(No) Irrigation project
	e) Taluka/ Tehsil	
	i) Reservoir	Barwani
	ii) Head work	Barwani
	iii) Command area	Barwani, Raipur and Thikri
	iv) Power House	N. A.
	f) Village near the Headwork	Panchpulla
2.3	Location of :	
2.3.1	Headworks	
	a) Longitude	74^0 55’30”
	b) Latitude	21^0 54’ 30”
2.3.2	Project area reference to Degree sheets	46J/16,46N/4, 46K/13, 46 0/1, and 46 02
2.4	access to the project Name	Distance from the project site
	a) Airport	Indore 165 KMS
	b) Rail Head	Indore Junction 160 km
	c) Road head	Barwani 21 kms
	d) River head	No.
	e) Sea port	No.

2.5	Estimated life of the project	100 years
2.6	Type of project (irrigation/multipurpose)	Irrigation
3.1	Irrigation (ha)	
	Flow By – By Lift/By Flow	By flow
	a) Gross command area (CGA)	206 16 ha
	b) Culturable command area (CCA)	13670 ha
	C) Area under Irrigation (break up)	
	i) Kharif	8531 ha
	ii) Rabi	9331 ha
	iii) Hot weather	Nill
	iv) Two seasonal	Nil
	v) Perennial	Nil
	vi) Gross irrigated area (GIA)	17888 ha
	(VII) Intensity of irrigation GIA/CCA/100	17888/13670X100 = 130%
	D) Cost per hectare of gross Area irrigated	Rs 92201
	e)Cost per 1000 Cum or gross/live storage	Rs. 11519 (gross) Rs 14694 (live)
	f)Cost per 1000 Cum of Water delivered at the canal Head/outlet	Rs 13593
	Power	Nil (purely irrigation project)
	a) Installed capacity (M w)	Nil
	b) Film Power (Mw) load Factor percent	Nil
3.2	c) Seasonal (Maximum) Power (Mw)	Nil
	c) Annual energy (Mw)	
	d) Annual energy (M kwh)	Nil
	i) Seasonal	Nil
	ii) Seasonal	Nil
	iii) Total	Nil
	Cost per Kw Installed	Nil
	Cost per Kwh at the bar	Nil

3.3	Flood control	
	a) Area protected from floods (ha)	Nil
	b) Population protected from flood (N)	Nil
	Average annual flood damage (Rs. Million)	Nil
	i)Without projected	Nil
	ii) With project (anticipated The river downstream (Cumed)	Nil
	d) Safe carrying capacity of the river downstream (Cumec)	Nil
	I) Without project	14000
	II) With project	14000
3.4	Navigation	
	a) Length of the navigable reach	Nil
	b) Minimum draft	Nil
	c) Total tonnage of goods to be carried annually	Nil
	e) Expected passenger traffic (annual)	
3.5	**Water Suppy**	
3.5.1	Domestic	
	a) Name of town/villages served	Raipur
	b)Size of population served	16730
	c) Quantum of water made Available (1000 Cum)	425 T. Cum.
	d) Quantum of water per Capita (litre)	90 litre
3.5.2 Quantum of water for Industrial use (1000 Cum)		5575

3.6	Project performance	Period simulation	No. of failure
	a) Irrigation	21	3
	b) Power	N. A.	
	c) Flood control	N. A	
	d) Water	28	Nil
	e) Navigation	N.A	

4 Hydrology

4.1 Catchmant

4.1.1 Catchment area at Headwork site (Km^2)

a) Gross 1119.66

b) Intercepted

i) By existing project 130.295

ii) By proposed project 46.471

cUnintercepted 943.00

4.1.2 Catchment area

a) Rainfed 1119.66

b) Snowfed Nil

4.2 Procipitation and period of Record 943.00 mm (1961 to 1989)

4.2.1 Catchment

	Rainfall weighted (mm)		Snowfall (mm)
	Annual	Monsoon June-Ovt	Annual
a) Average	783.64	704.38	Nil
b) Maximum	1210.87	1202.49	Nil
c) Minimum	441.44	423.91	Nil

4.3 **Annual yiel** : Calculated at The proposed site (M. cum), Period of record 1931 to1986

	Gross	Net
a) Maximum	611.84	515.30
b) Minimum	12.94	10.90
c) Average	252.54	213.54
d) Dependable (Percent) (for net CA)	Annual	
i) 50	182.95	June-Oct (M. Cum)

ii) 75 141.44 171.04

	III) 90	84.10			
	IV) 98	13.69			
			112.00		
			86.01		
4.4	**Climatic data**				
4.4.1	**Names of stations and Period** (record 1936 to 1956)	**Khandwa** Max	Min	**Alirajpur** Max	Min
	1) Air temperature (^{0}C)	54.4	1.2	44.9	0.0
	2) Humidity (%)	92	10	93	10
4.5	**Committed utilization**	Major		medium	Minor
	a) Upstream projects				
	1) Projects completed	Nil		Nil	8 Nos.
	2) Projects under Construction	Nil		Nil	7 Nos.
	3) Future projects	Nil		Nil	4 Nos.
	b) Down stream				
	1) Projects completed	Nil		Nil	Nil
	2) Projects under consideration	Nil		Nil	Nil
	3) Future projects	Nil		Nil	Nil
4.5.1	Proposed utilization by the project (Percent)	Kharif		64.20	
		Rabi		72.45	
		Total		136.65	
4.6	**Floods near the headwork site**	**As per local enquiry**			
4.6.1	**Historical period of Record**	**(1920-2001)**			
	Location	Panchpulla			
	a) Maximum water level	275 m (Appx.)			
	b) Maximum discharge	14000 (Appx)			
	c) Year of occurrence	1973			
4.6.2	**Observed period of record** (1988 to 1990)				
	Location	Panchpulla			

		a) Maximum water level	271.20 m
		b) Maximum water Discharge level	5800 Cu.m
		c) Year of occurrence Date	19" August, 1989
	4.6.3	**Standard project flood (cumec.)**	14000
	4.6.4	**Maximum probable flood (cumec.)**	14000
	4.6.5	**Flood**	
		frequency	Magnitude (Cumec)
		a) 50 Years	50 Years
		b) 100 Years	-
		c) 1000 Years	-
	4.6.6	**Design flood (cumed)**	
		a) Dam	Nill
		b) Weir/Barrage	14000
		c) Flood control works/ construction diversion	
	4.6.7	**River flow (Minimum observed)**	
		a) Water level (El-m)	260.00M
		b) Discharge (Cumec)	0.21 Cumed
		c) Months of 'Nill' flow	Feb to May
5.0		**Reservir**	
5.1		**Water level**	
		a) Maximum water level	301.00
		b) Full reservoir level	300.00
		c) Minimum draw down level	285.50
		d) Dead storage level	285.50
5.2		**Free Board (m)**	2.6.0m
		irrigation/80-6	
5.3		Wave height	2.23 M
5.4		**Live storage**	112.24 M. Cum.
5.5		**Capacity (M. Cum.) at**	
		a) Maximum water level	157.12
		b) Full reservoir level	143.18
		c) Minimum draw down level	30.94
		d) Dead storage level	30.94

5.6	**Flood absorption capacity** (M.Cum)			
	a) Below FRL	Not Considered		
	b) Below FRL&MWL	13.94 M. Cum		
5.7	**Sedimentation** after	Year 50		Year 100
	a) above MDDL	15.61		45.90
	b) Below MDDL	22.83		30.94
	c) Encroachment of live storage (percent)	15.25		44.85
5.8	**Assumed annual losses through evaporation from the reservoir**			
	a) Quantum average (M.Cum)	20.59		
	b) Depth (M)	2.19		
6.0	**Submergence**			
6.1	Land and property submerged		level	
		Maximum		Minimum
	a) Village affected (No.)			
	i) Full	Nil		Nil
	ii) Partial	9		9
	b) Land affected (Ha)			
	i) Gross	1328		1279
	ii) Culturable	553		726
	iii) Irrigated	853		726
	c) Building/House (Nos.)		Level	
		Maximum		full reservoir
	i) Private	904		904
	ii) Communities	6		6
	d) Wells (Nos.)	273		273
	e) Road/Rall (kms)	450		4.60
	f) Transportation lines	Nil		Nil
	g) Trees	3984		3973

6.2	Submergence ratio (with reference to culturable command areas)-	9.89
6.3	Number of families affected	904
6.4	Number of persons affected	3616
7.0	Head works	
7.1	Dam	
7.1.1	Earth and Rockfill dam	Earthen
	a) Type of Dam (homogeneous/zonal/rock-fill)-	Homogeneous
	b) Length of Dam at top (M)	
	i) Right flank	476.50
	ii) Left flank	1750.50
	c) Top width (M)	7.50
	d) Maximum height above G.L (M)	43.80
	i) Right flank	41.30
	ii) Left flank	32.40
	e) Dyke (s)	Nil
	f) Type of cut off and Maximum depth (upstream Blanket/open Trench/diapthragm/grout Curtain combination of Alternatives)	Open trench 20.60 M.
7.1.2	Masonry and concrete dam (Non overflow section)	Nil
7.1.3	**Spillway (over flow section)**	
	a) Type of spill way	Ogee type

b)	Full reservoir level	300 m
c)	Maximum water level	301m
d)	Length	171 m
e)	Maximum height above the deepest foundation(s)	17m
f)	Crest level	288 m
g)	Number of gates	10
h)	Type of gate	Radial
i)	Size of gate (m)	13.5 x12.0
j)	Maximum discharge capacity at FRL	14000
K)	FLOOD LIFT	1.00 M
L)	Tail water level i) Maximum ii) Minimum	 279 m 261 m
m)	Type of energy dissipation arrangement	slotted roller bucket

8.0 Canal system

8.1 Main canal

8.1.1 Purpose of canal irrigation and water supply

8.1.2 Type

a)	Flow/lift	Flow
b)	Lined / unlined	Lined
c)	Discharging capacity of the channel above which lining is proposed	Not proposed
d)	Type of lining	C.C.

8.1.3 Main canal data

a)	Length	41.40 k.m including 5.7 km tunne and 0.6 km channel

b)	Full supply level at head	276.47 m
c)	Full supply depth at head	2.008 m
d)	Bed width at head	3.00 m
e)	Side slope at head	1. 5 : 1
f)	Bed slop range	1: 4000 to 1 : 2000
g)	Maximum discharging Capacity at head	10.60 Cumec.
h)	Total number of canal structures on main and branch canals	54
i)	Gross command area	20616 ha
j)	Culturable command area	13760 ha

8.1.4 Branch canal

a)	Number	4
b)	Total length	329

8.2 Efficiencies percent

a)	Paddy crops	55%
b)	Non Paddy Crops	42%
c)	Rabi crops	58%

9.0 TUNNEL

a)	Length	5700 m
b)	Shape	Horse Shoe
c)	Size (m)	2.60 m
d)	Thickness of lining	0.60 m
e)	Designed discharge	10.60 cumecs

	f) Invert level			
	i) Inlet	284.888 m		
	ii) Outlet	278.597 m		
10	Cost (Rs. In Crores)			
10.1	Cost of the project			
	Unit-I Head work	103.46		
	Unit – II Canal	61.47		
10.2	Allocated cost			
	Irrigation	164.93		
11	**Estimated Benefits/Revenue**			
	(annual)	Quantity	Value	Revenue
	a) Food production	68132 MT	51.06 Cr	58.42 Cr
	b) Fisheries	38.41 MT	11.52 Cr	4.60 Cr
12	**Benefit Cost Ratio**			
	a) B.C. ratio	1.89		
	b) No. of years when accumulated deficit is wiped out	10		

Source :DPR of Lower Goi Project, prepared by chief Engineer ISP (CANALS) NVDA, Sanawad.