

VOLUME 4 – CHAPTER 2

SCOPE OF LAND ACQUISITION AND RESETTLEMENT IMPACTS

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2 SCOPE OF LAND ACQUISITION & RESETTLEMENT IMPACTS

2.1 TYPE AND SCOPE OF LAND ACQUISITION

2.1.1 Project Lands and Land Parcel Areas (LPA) and Impacts

The NT2 Project Land areas are of various shapes and sizes and the Project has identified - for the purposes of analysis and compensation - a total of 66 LPAs. These LPAs include the previously numbered 58 Project Lands identified in the Concession Agreement (CA). However, the number of LPAs used in this PL-RAP is larger because:

- the CA did not incorporate all spoils areas (these are now recognized as separate LPAs); and
- many of the CA Project Lands have been subdivided into sub-parcels (labelled a), b) etc) , which are now recognized as individual LPA

As shown in Table 2-3, of these 66 Land Parcel Areas, there are 28 which have no PAP impacts and 38 which have some level of PAP impact.

Of these 38 LPA which have PAP impact, five are exclusively for spoil, the location of which is still under investigation. Thus, a survey of impacts or PAP is not yet possible in these areas.

Thus, there are 33 LPA for which the construction site location and size is known with reasonable certainty and for which surveys of impacts and PAP have been conducted.

The location of these LPAs is generally defined as within the 58 Project Lands as mapped in the Concession Agreement (see figures 2-1 and 2-2 below). The total Project Land areas as defined in the Concession Agreement, however, are not necessarily the final land areas that will be actually required for the construction and eventual operation of the Project. Rather, they define the maximum area within which the Project may choose to design or construct infrastructure, or have right of way.

2.1.2 Project Land Categories and Duration

The Concession Agreement defines three Categories of Project Lands to be leased by the GoL to NTPC (otherwise termed 'handed over') and these are based on the exclusivity of the occupancy rights granted to the Company, as follows:

- **Category 1:** Land which must be handed over to NTPC for the exclusive occupancy and use by NTPC
- **Category 2:** Land in which NTPC and other parties will have co-existent rights, but in which NTPC has the dominant or primary right as required

In terms of impacts and the need for compensation, Category 1 Project Lands are obviously the most important. However, some Category 2 Project Lands include access roads which will be established on PAP land and assets. That is, while the construction site is a road belonging to the GOL, with access for all (Category 2 land), the PAP must relinquish their land and assets along the alignment of the road, and are thus fully impacted.

Thus, in this PL-RP, the categorization of lands as either Category 1 or Category 2 is not used. Rather, the actual impact on people is the primary concern, irrespective of CA land category.

Similarly, the CA defines the duration for which the company may require a particular Project Land parcel:

- **Preliminary Construction Phase (PCP):** That period prior to Financial Close in which Preliminary Construction Activities (PCA) are being undertaken
- **Construction Phase (CP):** a period of 3 to 4.5 years (depending on the duration of construction activities within any particular LPA), starting from Financial Close and finishing at the conclusion of the construction with respect each LPA, but certainly before COD
- **Operating Phase (OP):** Commencing at COD and for the Project Concession Period (25 years).

In theory, if a LPA is required only for the Construction Phase, then that Project Land should be handed back to either GOL or the original owner and user in its original state, and the impacts experienced may

therefore be "temporary". However, in many cases, it will not be possible to hand back the land to the original users in its original state. Thus, from the point of view of the PAP, the impact is not temporary but permanent. In this case the asset has been permanently transformed.

Thus, for the purposes of this PL-RP, the duration of land requirement as specified in the CA is not used or considered, as it is often not relevant to PAPs (but rather to the the NTPC and GOL). Instead, an assessment is made on a case by case (LPA by LPA) basis as to whether the impact on the PAP is either permanent or of such a long duration as to warrant permanent compensation.

Table 2-1: Summary of land and assets that will be impacted by NT2 Project Lands

Land/asset category		Loss	
		No. assets and land parcels	Area (ha)
<u>Fixed assets</u>			
1	houses	308	n/a
2	farm buildings	35	n/a
3	other buildings	62	n/a
	Total	387	n/a
<u>Productive land/assets</u>			
1	fish ponds	41	2.48
2	Gardens	515	172.97
3	Bamboo	83	24.16
4	paddy rice fields	246	87.22
5	irrigated paddy rice fields	40	24.3
6	current shifting cultivation upland	82	51.91
	Total	1007	363.04
<u>Community land/assets</u>			
1	3 yr fallow shifting cultivation fields	114	217.18
2	Wetlands/swamp	30	3.93
3	Grassland	103	32.91
4	forest (disturbed)	107	1035.12
5	forest (little disturbed)	48	1216.85
6	village area/grounds	16	44.74
	Total	416	2527.08

Table 2-2: Summary of Project Lands PAP in each general area of the project

Area of Project	Number of Villages	Number of Households	No. of People	Households Relocating ^(d)
• Khamkerd area	11	19	114	0
• Plateau (Nakai area) ^(a)	5	218	1,308	218
• Gnommalart area	22	425	2,550	35
• Mahaxai area	5	26	156	2
• Transmission Lines	36	53	31	53
Subtotal	79	741	4,159	308

(a): overlap here, as 1 village is affected by both Project Lands and Reservoir Inundation.

Figure 2-1: Project Lands as mapped in the Concession Agreement of October 2002 (northern area). (grouping specific to this RAP)

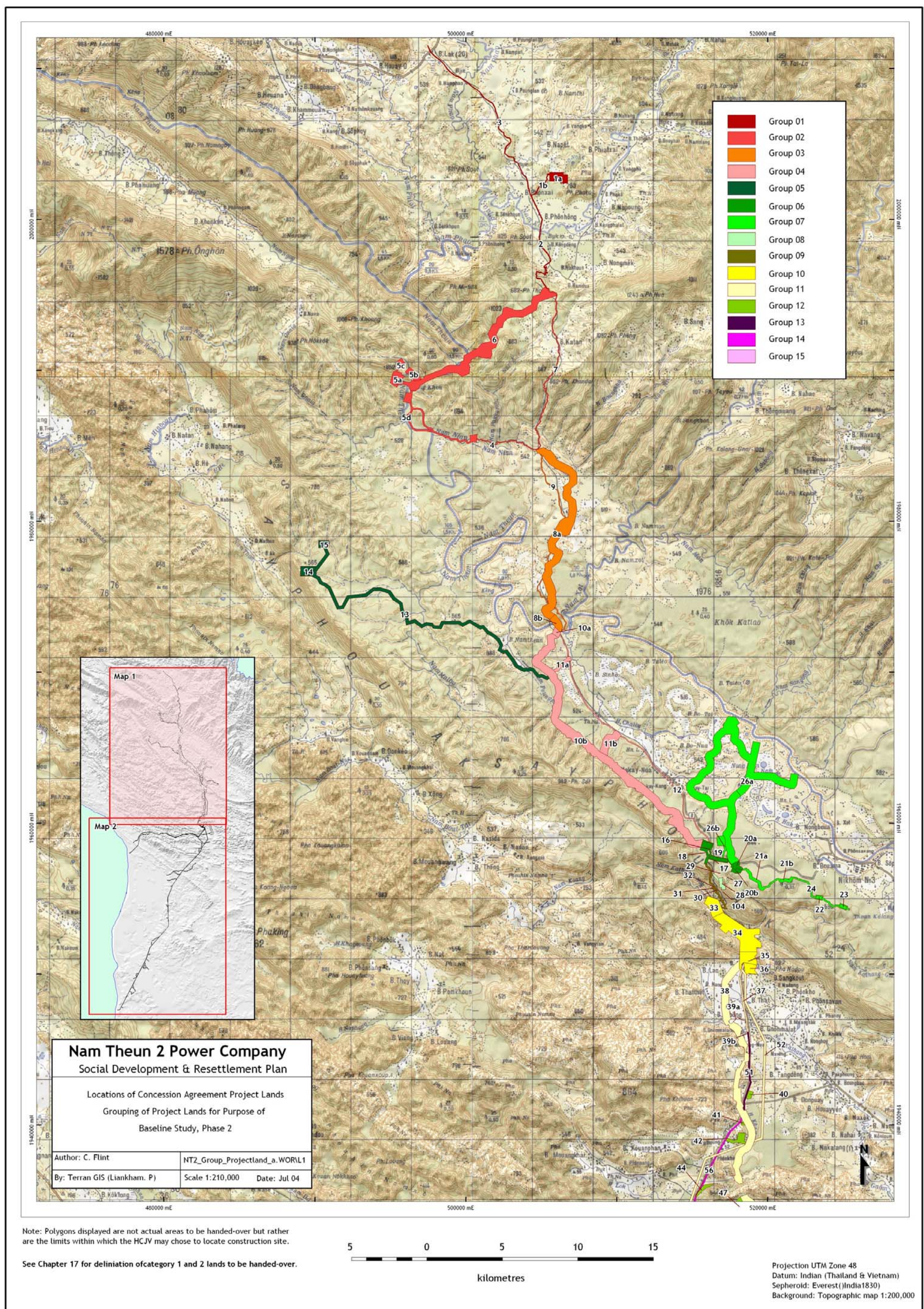


Figure 2-2: Project Lands as mapped in the Concession Agreement of October 2002 (southern area). (grouping specific to this RAP).

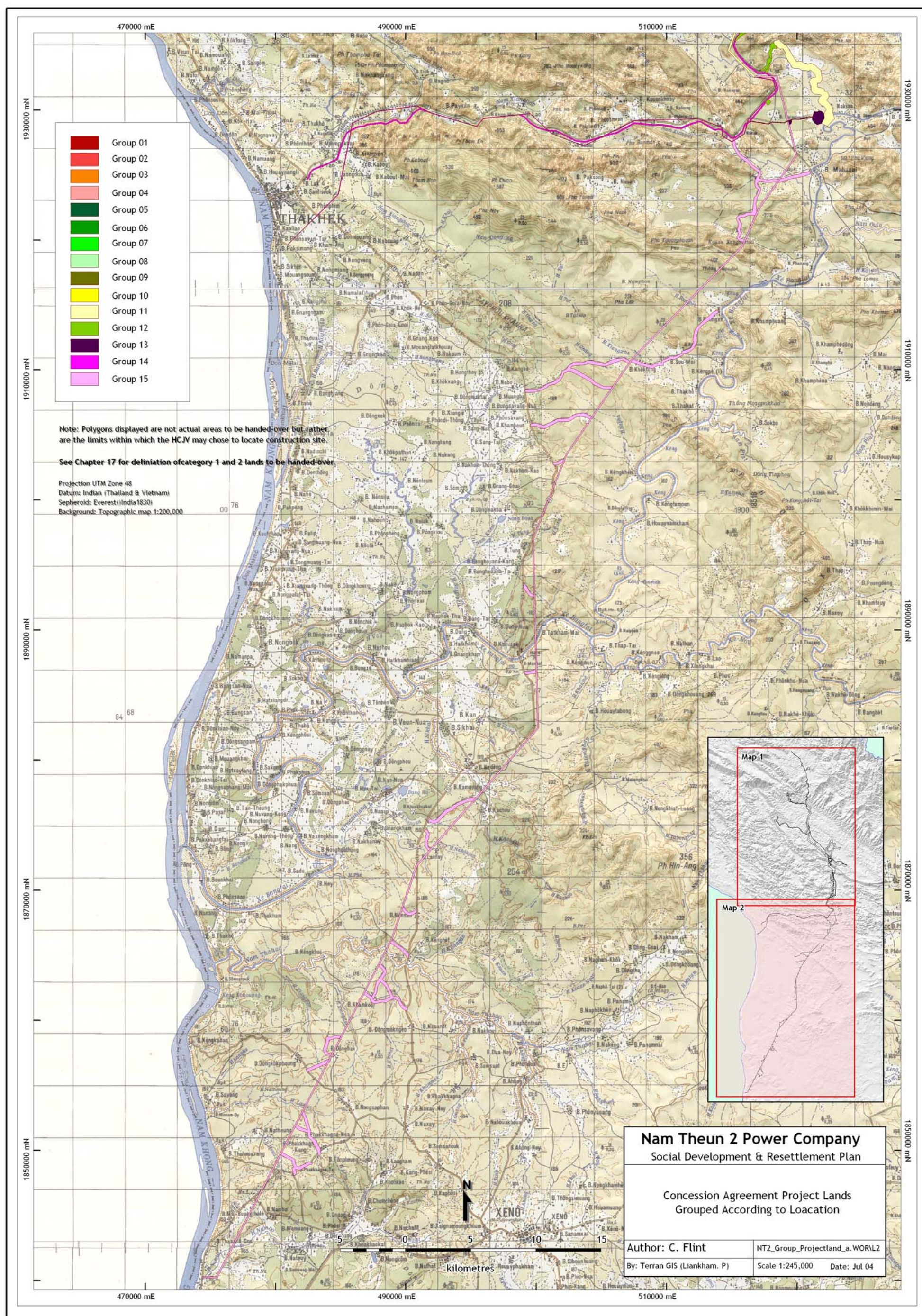


Table 2-3: Summary of Impacts Project Lands on PAP and community assets, for each Land Parcel Area

					Infrastructure and related lands				Agricultural/Productive Land Assets												Community and/or GOL Land and Assets																	
Project Land Parcel Area					Houses		Farm buildings		Other buildings		Rainfed paddy		Irrigated paddy		Gardens		Fishponds		Bamboo		Upland field		Upland fallow		Grassland		For. (disturbed)		For. (little dist.)		Village area		Wetland/swamp		Other			
LPA	Description	PAP Impact	PCA	Comment	no. PAPs	area (ha)	no. PAPs	area (ha)	no. PAPs	area (ha)	no. PAPs	area (ha)	no. PAPs	area (ha)	no. PAPs	area (ha)	no. PAPs	area (ha)	no. PAPs	area (ha)	no. PAPs	area (ha)	no. PAPs	area (ha)	no. assets	Area (ha)	no. assets	Area (ha)	no. assets	Area (ha)	no. assets	Area (ha)	no. assets	Area (ha)	no. assets	Area (ha)		
Group 1					0		0		0		3	4.65	0	0	15	8.69	0	0	0	0	0	0	0	0	0	0	1	0.79	0	0	0	0	0	0	1	1.90		
1a	Phou Pha Phet Quarry	medium	Y	existing	0		0		0		3	4.65	0	0	15	8.69	0	0	0	0	0	0	0	0	0	1	0.79	0	0	0	0	0	0	1	1.90			
1b	Phou Pha Phet Quarry access	none	Y		0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
2	Road 8b (existing) - middle	none	Y		0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
3	Road 8b (existing) - north	none	Y		0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Group 2					0		0		0		8	1.17	0	0	13	6.96	0	0	0	0	1	0.98	0	0	0	0	6	3	8	126.61	0	0	0	0	4	46.80		
4	Dam site access (existing)	none	Y	forest	0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	40.70	0	0	0	0	0	0	1	12.60		
5a	Dam site and work camp	none	Y		0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	25.30	0	0	0	0	0	1	14.80			
5b	Nakai Dam sand quarry	none			0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	19.70	0	0	0	0	1	3.70			
5c	Nakai Dam sandstone quarry	none			0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	21.53	0	0	0	0	1	15.70			
5d	Nakai Dam sandstone quarry	none		forest	0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6	Nakai Dam access road (existing)	low	Y		0		0		0		2	0.13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	Nakai Dam access road (new)	low			0		0		0		6	1.04	0	0	13	6.96	0	0	0	0	1	0.98	0	0	0	6	3.35	4	19.38	0	0	0	0	0	0	0		
7	Road 8b (existing) - south	none	Y		0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Group 3					0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	30.60	0	0	0	0	0	0	0	0	0		
8	Road 8b (new)	none		GOL forest	0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	1	30.60	0	0	0	0	0	0	0	0		
9	Road 8b (existing)	none	Y		0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0			
Group 4					4		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	62.60	0	0	0	0	0	0	0	0	0		
10a	Ban Signo camp, access, bridge	low	Y	RA forest	4		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8.85	0	0	0	0	0	0	0	0	0			
10b	Road 8b (new)	low-forest		RA forest	0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	47.20	0	0	0	0	0	0	0	0	0			
11a	Access to new Rd 8b (existing)	low-forest		RA forest	0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2.60	0	0	0	0	0	0	0	0	0			
11b	Access to new Rd 8b (existing)	low-forest		RA forest	0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3.95	0	0	0	0	0	0	0	0	0			
12	Road 8b (existing)	none	Y		0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0			
Group 5					0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	93.00	1	58.50	0	0	0	0	0	0	0	0		
13	Access - SDs 13A/14A (existing)	none			0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
14/15	Saddle Dam 13A and 14 A	none			0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	2	93	1	58.50	0	0	0	0	0	0	0	0	0		
Group 6					214	4	49	28	1.71	0	56	3	15	1	3	0	39	27.48	32	58.97	8	2.10	19	53.54	0	0	14	59.27	7	1.21	23	3.99						
16	Road 8b (in Oudomsouk)	medium			39	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	14.87	0	0	0	0	0	0			
17	Access around SDs 1A/2B (new)	medium			15	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	23.65	0	0	0	0	0	0			
18	Saddle Dam 12 B	high			123	0	7	13	0.36	0	40	1.67	13	1.42	3	0	12	5.82	12	14.26	4	1.54	3	2.73	0	0	6	12.95	7	1.21	12	1.07						
19	Saddle Dams 1A & 2 B	high			30	0	14	0	0	0	9	0	0	0	0	0	0	0	6	7.93	0	0	4	3.85	0	0	4	5.66	0	0	11	0.63						
20a	Intake Structure & SD 4A	low			4	4	5	0	0	0	4	0.70	0	0	0	0	0	0	0	0.00	1	0.20	1	2.75	0	0	1	2.05	0	0	0	0	0	2				
20b	Nakai town camp	low			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10.68	0	0	0	0	0	0	0	0	0				
26a	Headrace Channel	low		inundation zone	0	0	0	3	1.10	0	0	0	0	0	0	0	20	19.92	0	0	0	0	9	32.74	0	0	0	0	0	0	0	0	0	0	0			
	Spoil areas	low		To be defined	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
26b	Headrace Channel const. camp	low			3	0	1	12	0.25	0	3	0	2	0.04	0	0	7	1.74	14	36.78	3	0	1	0.78	0	0	1	0.08	0	0	0	0	0	0	0	0		
Group 7					0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	2	1	7	36.51	0	0	1	10.63	0	0	0	0	0	0	0	0
21a/b, 22, 23, 24	Existing track, New road & SDs 5, 6, 7, 8A, 9A, 10A and 11a	low-forest		RA forest	0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	2	1	7	36.51	0	0	1	10.63	0	0	0	0	0	0	0	0
Group 8					0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	31.90	0	0	0	0	0	0	0	0	
27	S shaft access from Nakai (new)	low-forest	Y	RA forest	0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1.70	0	0	0	0	0	0	0	0		
28	Surge Shaft	low-forest	Y	RA forest	0		0		0		0	0	0	0	0	0																						

2.1.3 Source of Data

The data provided in Table 2-3 is derived from either:

- Phase 1 of the Baseline Studies – desktop study, supplemented by socio-economic data gathered in the field, for those LPA where Phase 2 of the Baseline Studies is underway or not yet sufficiently complete, or for where no PAP impact has been previously identified: LPA 1b, 2-4, 5a-d, 7, 8, 9, 10b, 11a, 11b, 12-19, 21a/b, 22-24, 26a/b, 27-32, 37, 38a-d, 39a/b, 41-42, 44, 46-48, 49a/b, 51-56 and 58.
- Phase 2 of the Baseline Studies – land and asset registration and livelihood assessments conducted in the field for those LPA where a PAP impact has been identified: LPA 1a, 6 (in progress), 10a (in progress), 20a, 20b, 16, 17, 18, 19, 33, 34, 35, 36, 38 and 40. Phase 2 of the Baseline Study has been partially completed (for the major impacts of) LPAs 16, 17, 18, 19, 38a, 38b and 52a, and this information is included in Table 2-3.

2.2 DESCRIPTION OF PRELIMINARY CONSTRUCTION ACTIVITIES (PCA)

Of the 38 LPAs with PAP impact, nine are included in the PCA program.

The PCA program is a program of activities agreed to by GOL, NTPC and the HC that are to be carried out prior to FC in order to ensure the timely implementation of the construction program. Many PCAs are limited to further survey and design work and others are limited to the upgrading of existing roads, for which there is no project impact. However, nine (9) PCAs require the acquisition and handover of LPA to NTPC/HC. These LPAs that have been, or will be handed over to the HC prior to the FC are listed in Table 2-4.

Table 2-4: Description of PCA LPAs

PCA LPA	Description of LPA	PCA Activity	Total No. of PAP ¹	No. PAP receiving PC ²
1a	“Phou Phako” (Pha Phet) Quarry	Works during the Preliminary Construction Phase comprise: <ul style="list-style-type: none"> - Establishment of a quarry and associated crushing plant for the production of aggregates for construction works - Production of 50,000 cubic metres of aggregate 	17	14
6	Nakai Dam access road (and additional, alternative temporary access to the dam site from Ban Phon Sa-at)	During the Preliminary Construction Phase, works are limited to the creation of an alternative route (to the access from Ban Nam Niam) to the dam site utilising an existing track from Road 8b near the village of Ban Phon Sa-at. The works comprise: <ul style="list-style-type: none"> - Clearing and grubbing (where required) - Surface shaving and repairing by laterite (where required) - Drainage culverts cleaning/extension and/or installation (where required) in order to drain surface runoff effectively - Installation of concrete pipes to replace log bridges (where required) A permanent access road (along a different alignment) will be constructed during the Construction Phase.	2	0
10a	“Ban Signo” (Ban Thalang) Bridge area	During the Preliminary Construction Phase construction works comprise: <ul style="list-style-type: none"> - Construction of a contractor’s camp (for approximately 150 personnel) - Construction of a temporary braced steel bridge structure tied to the existing, low level bridge across the Nam Theun - Construction of the foundations for the new Ban Signo Bridge, located some 200 m downstream of the existing bridge, comprising piling and construction of reinforced 	4	0

PCA LPA	Description of LPA	PCA Activity	Total No. of PAP ¹	No. PAP receiving PC ²
		concrete footings		
20a	Intake Structure and Saddle Dam 4A	<p>During the Preliminary Construction Phase construction works comprise:</p> <ul style="list-style-type: none"> - Excavation of the Headrace Channel, with an approximate length of 357 m. - Excavation of the Intake, with a length of 41.23 m - Installation of permanent and temporary rock supports with shotcrete, wire mesh, stabilisation bolts, dowels, weep holes and riprap along the excavated slope surface - Installation of ground support - Concreting of berms and channel bottom - Construction of Saddle Dam 4A on the west bank of the intake with selected fill material and riprap protection on the upstream slope - Construction of a 1.8 m high fence at the rear of the intake and along both sides of channel - Construction of any necessary access roads to the excavation sites and spoil dumps - Preparation of spoil dump and removal of excavated material to the spoil dump and fill areas - Dewatering 	5	4
20b	Intake Structure Construction Camp	Preliminary Construction Phase activities comprise construction of a contractor's camp (for approximately 400 personnel)	0	0
33	Nam Theun 2 Power Station, Switchyards and Tailrace Channel	<p>Preliminary Construction Phase activities comprise:</p> <ul style="list-style-type: none"> - Access Tunnel portal excavation - Existing Exploratory Adit upgrade - Access Tunnel excavation - Drainage Tunnel excavation - Power Station excavation (above EL 183) - Power Station excavation (below EL 183) - Tailrace Channel excavation - Construction of the Switchyard embankment 	46	0
34	Regulating Pond area	Preliminary Construction Phase activities are limited to the utilisation of selected portions of this LPA for the installation of workshops, etc. associated with PCA occurring at the Power Station, Switchyard and Tailrace Channel site and for use as spoil disposal areas.	342	9
36	Residence Nam Theun (operator's village)	<p>Preliminary Construction Phase activities comprise:</p> <ul style="list-style-type: none"> - Construction of the Residence Nam Theun platform - Construction of Residence Nam Theun (Phase 1), comprising construction of water treatment plant and distribution network, sewerage treatment plant and collection network, solid waste disposal facility, temporary power supply, guard house and security fence, HC and administration offices, hospital, housing and school 	16	1
40	Contractor's Main Construction Camp	Preliminary Construction Phase activities comprise construction of a contractor's camp (for approximately 750 personnel)	17	9

1: Entire number of PAP identified within the LPA (not the number of PAP impacted by PCA works)

2: As at 25 January, 2005 - generally speaking, this is the number of PAP impacted by PCA works, however, as construction progresses, the need for Provisional Compensation is being reassessed.

2.3 DESCRIPTION AND SUMMARY OF PROJECT LANDS IMPACTS

The following sections give a short summary of the types of impacts that will result in each Project Land and a summary of the proposed mitigations that have been proposed to reduce or manage impacts. Maps of each of the individual LPA are given in Annex 2.

2.3.1 Project Land 1a

LPA 1a	Description: Phou Pha Phet Quarry				
Description: Phou Pha Phet Quarry (Project limestone aggregate source). Previously referred to as the Phou Phako Quarry		Location: located off Road 8b, 10 km south of Lak Sao township, Khamkeut District, Bolikhamxay			
Primary Land Use Type: upland crop gardens, rainfed rice fields, grass and shrub land, disturbed, sparse forest		Villages and Buildings: none			
General Disturbance: <ul style="list-style-type: none"> loss of section of the limestone outcrop, and construction of a platform for crushing plant, aggregate storage, etc. Blasting and crushing of the limestone outcrop Crushing of rock to gain aggregate Storage of aggregate 		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets*	Area (ha)	No. PAP Assets	Area (ha)
		1	0.79	18	13.34
Potential Social Impacts: <ul style="list-style-type: none"> Increased noise and dust due to blasting and operation of heavy equipment Permanent transformation of land Permanent loss of section of Phou Pha Phet limestone outcrop 		Potential Social Mitigation Measures: <ul style="list-style-type: none"> Heavy equipment fitted with silencers, dust suppression Scheduled blasting program Rental of paddy land around blast zone Compensation for permanent loss of land and assets 			

* community assets generally refers to land or forest parcels uses by the whole, or sections of the community

2.3.2 Project Land 1b

LPA 1b	Phou Pha Phet Quarry access (existing)				
Description: the existing access road to the Phou Pha Phet limestone quarry from road 8b (approx. 2 km in length)		Location: leading off Road 8b, 10 km south of Lak Sao township, Khamkeut District, Bolikhamxay			
Primary Land Use Type: existing access route, adjacent to the alignment of an irrigation canal.		Villages and Buildings: none			
General Disturbance: <ul style="list-style-type: none"> Selective widening, resurfacing and installation of drainage structures for existing road alignment not expected to result in any disturbance. 		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		0	0	0	0
Potential Social Impacts: <ul style="list-style-type: none"> Disrupted access along existing access routes Increased noise and dust due to operation of heavy equipment slight road widening and upgrading will not result in any loss of land and assets 		Potential Social Mitigation Measures: <ul style="list-style-type: none"> contractor to station road control points at both ends of road, and give priority to local traffic Heavy equipment fitted with silencers, dust suppression 			

2.3.3 Project Land 2

PLA 2	Road 8b				
Description: Upgrade of the existing Road 8b, from the turnoff to the Phu Pha Phet Quarry, to the turnoff to the dam site, located at Ban Phónkéo (approx. 8.2 km)		Location: Road 8b, Khamkeut District, Bolikhamxay			
Primary Land Use Type : road		Villages and Buildings: none			
General Disturbance: <ul style="list-style-type: none"> Selective widening, resurfacing and installation of drainage structures for existing road alignment not expected to result in any disturbance. Road used by aggregate haulage trucks, from quarry to Damsite. 		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		0	0	0	0
Potential Social Impacts: <ul style="list-style-type: none"> Large increase of heavy traffic along the road Dust 		Potential Social Mitigation Measures: <ul style="list-style-type: none"> Contractors drivers trained in road safety (HC responsibility) traffic awareness programs provided to villages road watering (HC responsibility) 			

2.3.4 Project Land 3

PLA 3	Road 8b				
Description: Upgrade of the existing Road 8b, from Lak Sao District township to the turnoff to Phu Pha Phet Quarry (approx. 13.6 km)		Location: Road 8b, Khamkeut District, Bolikhamxay			
Primary Land Use Type : road		Villages and Buildings: none			
General Disturbance: <ul style="list-style-type: none">Selective widening, resurfacing and installation of drainage structures for existing road alignment not expected to result in any disturbance.Use of road to supply equipment to construction sites, etc.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		0	0	0	0
Potential Social Impacts: <ul style="list-style-type: none">Some increase in heavy traffic along the road and some increased potential for dust		Potential Social Mitigation Measures: <ul style="list-style-type: none">Contractors drivers trained in road safety (HC responsibility)traffic awareness programs provided to villages			

2.3.5 Project Land 4

PLA 4	Dam Site Access				
Description: Upgrade of existing track into a temporary access road, from Ban Nian on Road 8b to the dam site, via Ban Sop Hia (approx. 10.8 km)		Location: leading off Road 8b from Nam Nian, Khamkeut District, Bolikhamxay			
Primary Land Use Type : road		Villages and Buildings: none			
General Disturbance: <ul style="list-style-type: none">Selective widening, resurfacing and installation of drainage structures for existing road alignment not expected to result in any disturbance.Use of road to supply equipment to construction sites, etc.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		0	0	0	0
Potential Social Impacts: <ul style="list-style-type: none">increase in heavy traffic along the roaddust		Potential Social Mitigation Measures: <ul style="list-style-type: none">Contractors drivers trained in road safety (HC responsibility)Traffic awareness programs provided to villages.road watering (HC responsibility)			

2.3.6 Project Lands 5a, 5b, 5c & 5d

PLA 5a	Nakai Dam Main Site				
PLA 5b	Nakai Dam Sand Quarry (downstream of dam)				
PLA 5c	Nakai Dam Sandstone Quarry (downstream)				
PLA 5d	Nakai Dam Sandstone Quarry (upstream)				
Description: Nam Theun 2 Hydroelectric Project Dam site and associated potential sources of sand and sandstone within the dam site environs		Location : Nakai Dam main site and environs on the Nam Theun, Bolikhamxay and Khammouane Provinces			
Primary Land Use Type : State owned forest		Villages and Buildings: none			
General Disturbance: <ul style="list-style-type: none">Clearance of forest for dam construction and related activities		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		4	107.23	0	0
Potential Social Impacts: <ul style="list-style-type: none">Loss of state/GOL forestImpact on cultural sites		Potential Social Mitigation Measures: <ul style="list-style-type: none">clearance of forests by GOLmitigation and/or relocation of any cultural sites			

2.3.7 Project Land 6

PLA 6	Additional, Temporary Dam Site Access (along existing alignment) & Permanent Dam Site Access Road				
Description: a temporary access is to be upgraded along the alignment of an existing access to provide access to the dam site during the 2004-5 dry season. After this period access for construction at the dam site will be provided via the Nam Nian (LPA 4) route. The alignment of the permanent access to the dam site will also be constructed within LPA 6 (each of these routes are to be approx. 14.5 km in length).		Location: Temporary access leads to the dam site from Ban Phon Sa-at, while the permanent access will lead from Ban Phónkéo. Both in Khamkeut District, Bolikhamxay			
Primary Land Use Type: Forest. Limited upland gardens and paddy fields		Villages and Buildings: none			
General Disturbance: <ul style="list-style-type: none">▪ Clearing of road alignments, installation of drainage structures▪ Use of road by aggregate haulage trucks, and trucks supplying equipment to construction sites, etc.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		10	22.73	22	9.11
Potential Social Impacts: <ul style="list-style-type: none">▪ Possibly some small loss of PAP land or other livelihood assets, but alignment not yet known, and impacts yet known▪ Possible traffic and dust hazards for those few villagers who may use the road		Potential Social Mitigation Measures: <ul style="list-style-type: none">▪ If impacted, full compensation to impacted PAP land and or other livelihood assets.▪ Traffic awareness programs provided to villages▪ Dust control for locals not necessary, as very few locals will use these roads.			

2.3.8 Project Land 7

PLA 7	Road 8b				
Description: Upgrading of existing road 8b, from Ban Phónkéo dam site turnoff to Ban Nam Nian (approx. 12.6 km in length)		Location: Road 8b, Khamkeut District, Bolikhamxay			
Primary Land Use Type: road		Villages and Buildings: none			
General Disturbance: <ul style="list-style-type: none">Selective widening, resurfacing and installation of drainage structures for existing road alignment not expected to result in any disturbanceUse of road mainly by smaller vehicles		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		0	0	0	0
Potential Social Impacts: <ul style="list-style-type: none">Some increase in heavy traffic along the road and some dust		Potential Social Mitigation Measures: <ul style="list-style-type: none">Not applicable			

2.3.9 Project Land 8

PLA 9	New Road 8b				
Description : Construction of a new road to link Ban Nam Nian to Ban Thalang, although part of the alignment is along the existing alignment of Road 8b (approximately 15.5 km in length)		Location: Khamkeut District, Bolikhamxay			
Primary Land Use Type : road		Villages and Buildings: None			
General Disturbance: <ul style="list-style-type: none">In areas where old road is not used (LPA 9), clearance of land and forest, or widening, resurfacing and installation of drainage structures for existing road alignment, not expected to result in any disturbance.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		1	30.6	0	0
Potential Social Impacts: <ul style="list-style-type: none">Some increase in heavy traffic along the roadSome dust		Potential Social Mitigation Measures: <ul style="list-style-type: none">Not required, as there are very limited impacted land and assets and very few local villagers use this road			

2.3.10 Project Land 9

PLA 8a	Road 8b				
Description : Upgrading of existing road 8b, from Ban Nam Nian to Ban Thalang (approximately 15.5 km in length)		Location: Road 8b, Khamkeut District, Bolikhamxay			
Primary Land Use Type : road		Villages and Buildings: none			
General Disturbance: <ul style="list-style-type: none">Selective widening, resurfacing and installation of drainage structures for existing road alignment not expected to result in any disturbance.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		0	0	0	0
Potential Social Impacts: <ul style="list-style-type: none">Some increase in heavy traffic along the roadsome dust		Potential Social Mitigation Measures: <ul style="list-style-type: none">Not required, as there are no impacted land or assets and very few local villagers use this road			

2.3.11 Project Land 10a

PLA 10a	Ban Thalang Camp & Bridge				
Description: construction of a temporary bridge over the Nam Theun, construction of a new, permanent bridge over the Nam Theun and establishment of a construction camp for approximately 200 construction personnel (for a period of approximately 2 years)		Location : Ban Thalang, on the Nam Theun, Nakai Plateau Part of plateau resettlement village.			
Primary Land Use Type : located at the periphery of Ban Thalang, disturbed forest		Villages and Buildings: Ban Thalang			
General Disturbance: <ul style="list-style-type: none">▪ Potential disturbance to village as a result of construction of access to construction camp (may require temporary – until resettlement – location of up to four households)▪ disturbance associated with construction camp and works close to the village		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		1	8.85	4	not app.
Potential Social Impacts: <ul style="list-style-type: none">▪ some limited dwelling may be impacted▪ some impacts on village forest		Potential Social Mitigation Measures: <ul style="list-style-type: none">▪ Provisional compensation for any losses (as permanent compensation will be village relocation and development of plateau livelihoods)			

2.3.12 Project Land 10b

PLA 10b	New Road 8b				
Description : Construction of a new Road 8b connecting Ban Thalang with Ban Oudomsouk (Nakai District centre)		Location: Resettlement Area, Nakai District			
Primary Land Use Type: forest/degraded forest		Villages and Buildings: none			
General Disturbance: <ul style="list-style-type: none">▪ Clear cut logging of new road alignment, approximately 20 m in width▪ Construction of new, permanent road with culverts, cuttings, etc.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		1	47.20	0	0
Potential Social Impacts: <ul style="list-style-type: none">▪ Loss of timber and NTFP resources in the Resettlement Area forests▪ Some impact on local access routes, cattle grazing, etc.		Potential Social Mitigation Measures: either: <ul style="list-style-type: none">▪ allocate logging and use rights to all timber to the NPVFA; or▪ cash compensation to villagers for lost future harvesting of the timber			

2.3.13 Project Land 11a & 11b

PLA 11a	Access to new Road 8B				
Description : Upgrading of two tracks into access roads, connecting old Road 8b to the construction area of new Road 8b in the section between Ban Thalang and Ban Oudomsouk (each access is approx. 1.5 km in length)		Location: Resettlement Area, Nakai District			
Primary Land Use Type : track, degraded forest		Villages and Buildings: none			
General Disturbance: <ul style="list-style-type: none"> Limited disturbance of degraded forest Some clearance of a few good timber trees 		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		2	6.55	0	0
Potential Social Impacts: <ul style="list-style-type: none"> Loss of timber and NTFP resources in the Resettlement Area forests Limited impact on local access, cattle grazing, etc. 		Potential Social Mitigation Measures: either: <ul style="list-style-type: none"> allocate logging and use rights to all timber to the NPVFA; or cash compensation to villagers for lost future harvesting of the timber 			

2.3.14 Project Land 12

PLA 12	Road 8b				
Description : Upgrading of the existing Road 8b from Ban Oudomsouk to Ban Thalang		Location: Nakai Plateau (partly within the future inundation zone), Nakai District			
Primary Land Use Type : road		Villages and Buildings: none			
General Disturbance: <ul style="list-style-type: none"> Selective widening, resurfacing and installation of drainage structures for existing road alignment not expected to result in any disturbance. 		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		0	0	0	0
Potential Social Impacts: <ul style="list-style-type: none"> Large increase of heavy traffic along the road Dust 		Potential Social Mitigation Measures: <ul style="list-style-type: none"> Contractors drivers trained in road safety (HC responsibility) traffic awareness programs provided to villages road watering (HC responsibility) in village areas 			

2.3.15 Project Land 13

PLA 13	Access to Saddle Dams 13A/14A				
Description : Upgrading of existing track from Ban Thalang end of the Plateau to the Saddle Dam construction site (approx. 23 km)		Location : through future reservoir impoundment zone to the north western edge of future reservoir (Nam Malou embankment), Nakai District			
Primary Land Use Type : road		Villages and Buildings: none			
General Disturbance: <ul style="list-style-type: none"> Selective widening, resurfacing and installation of drainage structures for existing road alignment not expected to result in any disturbance. 		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		0	0	0	0
Potential Social Impacts: <ul style="list-style-type: none"> very limited increase in heavy traffic along the road some dust, but very few villagers use road 		Potential Social Mitigation Measures: <ul style="list-style-type: none"> Not required, as no impacted land or assets and very few local villagers use this road 			

2.3.16 Project Lands 14 & 15

PLA 14	Saddle dam 13A and 14A				
Description : Construction of saddle dams at slightly lower sections of the edge of the plateau		Location : north western edge of future reservoir (Nam Malou embayment.			
Primary Land Use Type : saddle dam		Villages and Buildings: None			
General Disturbance: <ul style="list-style-type: none"> clearing of area of forest to construct saddle dams 		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		3	151.5	0	0
Potential Social Impacts: <ul style="list-style-type: none"> none 		Potential Social Mitigation Measures: <ul style="list-style-type: none"> not applicable 			

2.3.17 Project Land 16

LPA 16	Access around Saddle Dam 12B				
Description: part of this access comprises the existing Road 8B through Ban Oudomsouk. A new section of road will be required to gain access around the construction site of Saddle Dam 12B.		Location: Oudomsouk town, Nakai Plateau			
Primary Land Use Type: Village land, houses, a school		Villages and Buildings: Ban Oudomsouk			
General Disturbance: upgrade of existing Road 8B alignment will result in only some slight disturbance (general construction activity associated with slight widening of road and installation of drainage structures). However, the bypass road around Saddle Dam 12B will cause moderate disturbance of buildings, gardens and public space.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets*	Area (ha)
		1	14.87	49	not app.
Potential Social Impacts: <ul style="list-style-type: none"> Disrupted access along Route 8B and within the township of Oudomsouk Increased noise and dust due to operation of heavy equipment Temporary and permanent loss of land and assets 		Potential Social Mitigation Measures: <ul style="list-style-type: none"> Road diversion and upgrade Heavy equipment fitted with silencers; dust suppression Compensation for temporary or permanent loss of land and assets 			

* Buildings, including government buildings

2.3.18 Project Land 17

LPA 19	Access around Saddle Dams 1A & 2 B				
Description: Area required to (a) access the Construction of Saddle Dams 1A and 2B, and (b) to provide temporary access around the construction site		Location: Oudomsouk, Nakai Plateau			
Primary Land Use Type: Village areas, houses and buildings, barren land, conservation forest.		Villages and Buildings: Oudomsouk			
General Disturbance: The construction of Saddle Dams 1A and 2B will require the temporary realignment of the road across the crest of the dams, which may require some removal of structures along the access road alignment.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		1	23.65	27	not app.
Potential Social Impacts: <ul style="list-style-type: none"> Disrupted access along existing road and other non-vehicular access routes Increased noise and dust due to operation of heavy equipment Temporary or Permanent loss of land and assets 		Potential Social Mitigation Measures: <ul style="list-style-type: none"> Road diversion and upgrade Heavy equipment fitted with silencers; dust suppression Compensation for loss of land and fixed assets 			

2.3.19 Project Land 18

LPA 18	Saddle Dam 12 B				
Description: Encompasses Saddle Dam 12B and associated earthworks. A new section of Road 8B will be constructed to pass over the crest of Saddle Dam 12B. Lowland areas behind the Dam will be utilised for a drainage channel to channel runoff off the Plateau.		Location: Oudomsouk town, Nakai Plateau			
Primary Land Use Type: Village areas, houses and buildings, barren/village land		Villages and Buildings: Partially encompasses the town of Oudomsouk. Includes 123 houses and 7 other buildings.			
General Disturbance: Areas used for construction of Saddle Dam 12B (to height 12.5 m) will be extensively disturbed (i.e. complete loss of vegetation),		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		32	32.69	211*	9.44
Potential Social Impacts: <ul style="list-style-type: none">▪ Disrupted access along Route 8B and other access routes▪ Increased noise and dust due to operation of heavy equipment▪ Loss of housing land		Potential Social Mitigation Measures: <ul style="list-style-type: none">▪ Road diversion and upgrade▪ Heavy equipment fitted with silencers, dust suppression▪ Compensation for loss of productive land and fixed assets			

* Includes buildings, including government buildings

2.3.20 Project Land 19

LPA 19	Saddle Dams 1A & 2 B			
Description: Construction of Saddle Dams 1A and 2B, and the relocated access road across the top of the saddle dams.		Location: Oudomsouk town, Nakai Plateau.		
Primary Land Use Type: Village areas, previous years shifting cultivation, barren land and disturbed forest.		Villages and Buildings: Partially encompasses the town of Oudomsouk. The Area encompasses 39 houses and 14 other buildings.		
General Disturbance: Areas used for construction of Saddle Dams 1A and 2B, including realignment of the road across the crest of the dams, will be extensively disturbed (i.e. complete loss of vegetation). Upgrade of existing road alignment will result in moderate disturbance (i.e. road widening and the installation of drainage structures).	PAP Impacted Assets			
	Community Assets		Household Land/Assets	
	No. Assets	Area (ha)	No. PAP Assets*	Area (ha)
	14	17.44	53	not app.
Potential Social Impacts: <ul style="list-style-type: none">Disrupted access along existing roadIncreased noise and dust due to operation of heavy equipmentPermanent loss of land and assets (houses, other buildings and gardens)		Potential Social Mitigation Measures: <ul style="list-style-type: none">Road diversion and upgradeHeavy equipment fitted with silencers; dust suppressionCompensation for Permanent loss of land and assets		

* Includes buildings, including some government buildings

2.3.21 Project Land 20a

LPA 20a	Intake Structure & SD 4A				
Description: Construction of the Power Conduit Water Intake Structure and Saddle Dam 4A.		Location: Oudomsouk, Nakai Plateau.			
Primary Land Use Type: village area and housing land, degraded forest, sawmill and associated buildings.		Villages and Buildings: Oudomsouk			
General Disturbance: Areas used for construction of the Intake Structure and Saddle Dam 4A will be extensively disturbed.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		3	5	17	0.70
Potential Social Impacts: <ul style="list-style-type: none">Disrupted access along existing roadIncreased noise and dust due to operation of heavy equipmentPermanent loss of land and assets		Potential Social Mitigation Measures: <ul style="list-style-type: none">Road diversion and upgradeHeavy equipment fitted with silencers; dust suppressionCompensation for loss of land and assets			

2.3.22 Project Land 20b

LPA 20b	Nakai town camp				
Description: The Construction Camp Area to house workers on the intake structures		Location: Oudomsouk town.			
Primary Land Use Type: Disturbed forest and previous years shifting cultivation.		Villages and Buildings: No houses or other buildings identified.			
General Disturbance: Moderate disturbance (light earthworks and vegetation removal) resulting from establishment of the Construction Camp. Disturbance will be temporary.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		1	10.68	0	0
Potential Social Impacts: <ul style="list-style-type: none">▪ Disrupted access along existing road▪ Increased noise and dust due to operation of heavy equipment▪ Temporary loss of land, and permanent loss of assets (gardens)▪ Social tensions arising from establishment of Work Camp and influx of construction workers		Potential Social Mitigation Measures: <ul style="list-style-type: none">▪ Road diversion and upgrade▪ Heavy equipment fitted with silencers; dust suppression▪ Compensation for temporary or permanent loss of land and assets▪ Source labour locally			

2.3.23 Project Land 26a

LPA 26a	Headrace Channel				
Description: The Headrace Channel will be excavated to carry water from the Reservoir to the Intake Structure. Once constructed, the area will form part of the reservoir		Location: starting at cont 1.5 east of Oudomsouk centre, it runs north to and then into the Plateau to the Nam Theun river.			
Primary Land Use Type: Shifting cultivation, gardens, some paddy, degraded forest.		Villages and Buildings: none			
General Disturbance: Moderate disturbance (light earthworks and selective vegetation removal) resulting from establishment of the Construction Camp and access road. Disturbance will be temporary.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		9	32.74	23	21.01
Potential Social Impacts: <ul style="list-style-type: none">▪ Disrupted access along non-vehicular access routes▪ Increased noise and dust due to operation of heavy equipment▪ Temporary or permanent loss of land and assets (houses, fishponds, gardens and rain-fed rice fields)▪ Social tensions arising from establishment of Work Camp and influx of construction workers		Potential Social Mitigation Measures: <ul style="list-style-type: none">▪ Diversion of non-vehicular access routes▪ Heavy equipment fitted with silencers; dust suppression▪ Compensation for loss of land and assets▪ Source labour locally			

2.3.24 Project Land 26b

LPA 26b	Headrace Channel Construction Camp				
Description: site for a construction camp for workers working on the Headrace Channel		Location: 1 km north east of Oudomsouk.			
Primary Land Use Type: Shifting cultivation, gardens, some paddy, degraded forest.		Villages and Buildings: Oudomsouk			
General Disturbance: Moderate disturbance (light earthworks and selective vegetation removal) resulting from establishment of the Construction Camp and access road. Disturbance will be temporary.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		19	38	28	2.08
Potential Social Impacts: <ul style="list-style-type: none">▪ Disrupted access along non-vehicular access routes▪ Increased noise and dust due to operation of heavy equipment▪ Temporary or permanent loss of land and assets (houses, fishponds, gardens and rain-fed rice fields)▪ Social tensions arising from establishment of Work Camp and influx of construction workers		Potential Social Mitigation Measures: <ul style="list-style-type: none">▪ Diversion of non-vehicular access routes▪ Heavy equipment fitted with silencers; dust suppression▪ Compensation for loss of land and assets▪ Source labour locally			

2.3.25 Project Lands 21a, 21b, 22, 23, 24

LPA 21a, etc.	New Road, Existing Road & Saddle Dams 5, 6, 7, 8A, 9A, 10A and 11A				
Description: A linear road feature which follows the crest of the divide between the Nam Theun and the Nam Katang and which at specific points along the road (of lower elevation) saddle dams will be constructed. The road will be maintained throughout the operation to give access to these saddle dams. This road will also be the main road connecting to resettlement villages in the south east half of the Resettlement Area.		Location : Road leading east south-east of Oudomsouk town, to the south-east area of the plateau (Resettlement Area)			
Primary land use type: shifting cultivation and disturbed forest.		Villages and buildings: none			
General disturbance: Selective widening of the old road, clearing in section where the new road alignment and saddle dams are to be constructed.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		8	47.13	2	1.45
Potential Social Impacts : <ul style="list-style-type: none"> temporary disrupted access along access routes loss of any Resettlement Area forests and trees 		Potential Social Mitigation Measures: <ul style="list-style-type: none"> Diversion of non-vehicular access routes For timber loss, either allocate logging and use rights to timber to the NPVFA or cash compensation to villagers for lost future harvesting of the timber. 			

2.3.26 Project Land 27

PLA 27	Surge Shaft Access from Nakai Plateau				
Description: Surge Shaft Access road from the Intake Area to surge shaft area		Location: Resettlement Area forest, south-southeast of Oudomsouk town.			
Primary land use Type: Forest little disturbed and forest disturbed.		Villages and buildings: No house or other buildings identified.			
General disturbance : Total disturbance of the forest - clearing - to make new and/or improved vehicular access road.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		1	1.70	0	0
Potential Social Impacts: <ul style="list-style-type: none"> Loss of timber and NTFP resources in the Resettlement Area forests (future revenue for resettlers). Some impact on local access routes, cattle grazing etc 		Potential Social Mitigation Measures: either: <ul style="list-style-type: none"> allocate logging and use rights to all timber to the NPVFA; or cash compensation to villagers for lost future harvesting of the timber 			

2.3.27 Project Land 28

LPA 28	Surge Shaft				
Description: Area around the Surge shaft installation [the Surge Shaft is a concrete-lined, vertical shaft, with a diameter ranging from 80-90 m at ground surface to 8.8 m at depth 125m).		Location: Resettlement Area forest south-southeast of Oudomsouk town.			
Primary Land use type: Forest little disturbed.		Villages and buildings: no houses or other buildings identified.			
General Disturbance: Extensive disturbance (i.e. complete loss of vegetation) associated with the provision of vehicular access for equipment, construction site, and spoil handling.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		1	21.6	0	0
Potential Social Impacts: <ul style="list-style-type: none"> Loss of timber and NTFP resources in the Resettlement Area forests (future revenue for resettlers). Some impact on local access routes, cattle grazing etc 		Potential Social Mitigation Measures: either: <ul style="list-style-type: none"> allocate logging and use rights to all timber to the NPVFA; or cash compensation to villagers for lost future harvesting of the timber 			

2.3.28 Project Land 29

PLA 29	Surge Shaft Access (below)				
Description: surge shaft access road from road 8b		Location: surge shaft access road from road 8b, located 3-4 km south of Oudomsouk.			
Primary Land use type: Forest little disturbed.		Villages and buildings: no houses or other buildings identified.			
General Disturbance: Extensive disturbance (i.e. complete loss of vegetation) associated with the provision of vehicular access for equipment, construction site, and spoil handling.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		1	8.6	0	0
Potential Social Impacts: <ul style="list-style-type: none"> Loss of timber and NTFP resources in the Resettlement Area forests (future revenue for resettlers). Some impact on local access routes, cattle grazing etc 		Potential Social Mitigation Measures: either: <ul style="list-style-type: none"> allocate logging and use rights to all timber to the NPVFA; or cash compensation to villagers for lost future harvesting of the timber 			

2.3.29 Project Land 30

LPA 30	Access Portal and Access road				
Description : Encompasses the Access Portal to the Headrace Tunnel, Work Platform and access road from Road 8B to the work platform		Location: Next to Road 8b, between Power station and Oudomsouk.			
Primary Land Use Type: disturbed forest		Villages and buildings: no houses or other buildings identified.			
General Disturbance: Areas used to establish a Work Platform and Access Portal will be extensively disturbed.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		1	1.49	0	0
Potential Social Impacts: <ul style="list-style-type: none"> Increased noise and dust due to operation of heavy equipment Ground vibrations from blasting Safety of road use due to blasting 		Potential Social Mitigation Measures : <ul style="list-style-type: none"> Heavy equipment fitted with silencers ; dust suppression Strict management of blast procedures 			

2.3.30 Project Land 31

LPA 31	Access Portal Spoil Area				
Description: Area will be used as a spoil deposit to accept spoil from the excavation of the access portal tunnel		Location: Next to road 8b, between Power station and Oudomsouk.			
Primary Land Use Type: little disturbed and disturbed forest.		Villages and buildings: no houses or other buildings identified.			
General Disturbance : Extensive disturbance - complete loss of forest - due it the establishment of a 155,000 m ³ spoil deposition area.		PAP Impacted Assets			
		Community GOL Assets:		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		2	3.37	0	0
Potential Social Impacts : <ul style="list-style-type: none"> Increased noise and dust due to operation of heavy equipment Traffic - trucks crossing from access portal to spoil site 		Potential Social Mitigation Measures: <ul style="list-style-type: none"> Heavy equipment fitted with silencers, dust suppression traffic management 			

2.3.31 Project Land 32

PLA 32	Road 8B				
Description : the length of the existing Road 8B from the Power Station to Oudomsouk (approx. 5 km) will be permanently upgraded.		Location: from the power station at the base of the nakai Plateau to Oudomsouk (southern edge of saddle dam 12B).			
Primary Land Use Type : Current Road.		Villages and buildings : none			
General Disturbance : upgrade of road 8B will involve relatively minor disturbance E16. The existing alignment will largely be used.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		0	0	0	0
Potential Social Impacts : ▪ None		Potential Social Mitigation Measures : ▪ not applicable			

2.3.32 Project Land 33

LPA 33	Power Station, etc.				
Description: Permanent features to be constructed in this area include the Power Station and associated substations, the Tailrace Channel, the beginning of the 500kV and 115kV transmission lines, and a portion of Route 8B crossing the Tailrace Channel. Facilities will be provided for approximately 200 construction personnel who will be based at this site for construction activities.		Location: Foot of the Phu Ark ridge (at the Bottom of the Nakai Plateau) beside Road 8b. Gnommalat District			
Primary Land Use Type: Riverside crop and tree gardens Upland gardens and plantations, NTFP gardens, disturbed and little-disturbed forest, a few paddy rice fields.		Villages and Buildings: 1 building			
General Disturbance: Complete loss of land, crops and vegetation due to creation of a construction platform (from spoils) and other construction required for the establishment of a platform for the required construction works and installations.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		11	68.86	55	31.52
Potential Social Impacts: <ul style="list-style-type: none">▪ Permanent loss of productive land▪ Loss of fisheries and river amenity▪ Loss of NTFPs▪ Increased noise and dust due to operation of heavy equipment▪ Social tensions arising from establishment of Work Camps and influx of construction workers		Potential Social Mitigation Measures: <ul style="list-style-type: none">▪ Compensation - preferably livelihood restoration - for loss of land, for loss of fisheries and loss of NTFPs;▪ Heavy equipment fitted with silencers; dust suppression;▪ Where possible, source labour locally			

2.3.33 Project Land 34

LPA 34	Regulating Pond				
Description: Three sub-areas: (a) Work and storage area platforms created by spoil deposition; (b) The first portion of the 115kV and 500kV transmission lines - on the right bank of the regulating pond (c) the relocated section of Route 8B. (d) during the Operating Phase, the lower/middle of the area will be occupied by the Regulating Pond.		Location: At the foot of Phu Ark ridge, between LPA 33 and LPA 35. Gnommalat District.			
Primary Land Use Type: vegetable and crop gardens, rainfed paddy fields, fruit tree and bamboo gardens, shifting cultivation areas, NTFP areas, and forest.		Villages and Buildings: 14 farm buildings			
General Disturbance: Complete loss of land, crops and vegetation due to creation of platforms, the road, and the inundation of the pond.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		35	243.18	354	103.48
Potential Social Impacts: <ul style="list-style-type: none">▪ Permanent loss of productive land▪ Loss of fisheries and river amenity▪ Loss of NTFPs▪ Disrupted access along Route 8B and increased noise and dust due to operation of heavy equipment▪ Social tensions arising from establishment of Work Camps and influx of construction workers		Potential Social Mitigation Measures: <ul style="list-style-type: none">▪ Compensation - preferably livelihood restoration - for loss of land, for loss of fisheries and loss of NTFPs▪ Heavy equipment fitted with silencers; dust suppression▪ Monitor river amenity▪ Traffic safety and awareness program for both truck drivers and villages			

2.3.34 Project Land 35

LPA 35	Regulating Dam				
Description: Permanent works areas include the Regulating Dam (crest length 360 m, crest elevation 180 m), a section of relocated Route 8B, and a section of the 115kV and 500kV transmission lines. A portion of this area will also be used for spoil deposition.		Location: Gnommalat District			
Primary Land Use Type: vegetable and crop gardens, rainfed paddy fields, fruit tree and bamboo gardens, shifting cultivation areas, NTFP areas and forest.		Villages and Buildings: Partially encompasses the village of Ban Sangkeo. The Area encompasses 10 houses and a number of farm and other buildings.			
General Disturbance: Extensive disturbance - complete loss of vegetation and assets.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		10	32.23	162	50.55
Potential Social Impacts: <ul style="list-style-type: none">Permanent loss of productive landLoss of fisheries and river amenityLoss of NTFPsDisrupted access along Route 8B and increased noise and dust due to operation of heavy equipmentSocial tensions arising from establishment of Work Camps and influx of construction workers		Potential Social Mitigation Measures: <ul style="list-style-type: none">Compensation - preferably livelihood restoration - for loss of land, for loss of fisheries and loss of NTFPs;Heavy equipment fitted with silencers; dust suppression;Monitor river amenityTraffic safety and awareness program for both truck drivers and villages			

2.3.35 Project Land 36

LPA 36	Residence Nam Theun				
Description : The “Residence Nam Theun” (operator’s village) will comprise housing and other facilities and will initially house both NTPC and HC staff, and eventually the permanent NTPC staff managing the power station operation, etc.		Location: Residence Nam Theun located just next to Ban Keovilay, and approximately 4 km north of Gnommalath District centre.			
Primary Land Use Type: Disturbed forest, previous years and current shifting cultivation.		Villages and Buildings: encompasses an area adjacent to Ban Sangkeo			
General Disturbance: Extensive disturbance – nearly complete loss of vegetation.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		3	0.16	7	18.06
Potential Social Impacts: <ul style="list-style-type: none">▪ Loss of land and assets▪ Loss of community forest		Potential Social Mitigation Measures: <ul style="list-style-type: none">▪ Compensation for loss of land and assets▪ Compensation for loss of fuel wood and NTFPs			

2.3.36 Project Land 37

PLA 37	Road 8B				
Description: Approximately 5 km of the existing Road 8B alignment, to be upgraded between the Gnommalat District centre and the Regulating Dam.		Location: Between the Gnommalat District centre to Regulating Dam			
Primary Land Use Type: current road, surrounded by rainfed and irrigated rice fields.		Villages and Buildings: none			
General Disturbance: selective widening, resurfacing and installation of drainage structures for existing Road 8B alignment.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		0	0	0	0
Potential Social Impacts: <ul style="list-style-type: none">▪ Disrupted access along existing Route 8B▪ Increased dust due to operation of heavy, traffic▪ Possible Temporary and permanent loss of some land and assets		Potential Social Mitigation Measures: <ul style="list-style-type: none">▪ Road diversion and upgrade▪ Heavy equipment fitted with silencers; dust suppression▪ Compensation for any loss or disturbance			

2.3.37 Project Land 38a

LPA 38a	Downstream Channel (Northern Section)				
Description: Approximately 6 km of the Downstream Channel including the Nam Gnom Siphon. The Channel is 70 m wide at surface, with normal water level just above natural ground. Area may include spoil deposit sites.		Location: Traverses the Gnommalat rice plain from the Regulating Dam to the centre line of the Nam Gnom and adjacent to the village of Ban Gnommalat			
Primary Land Use Type: Rainfed and irrigated rice fields		Villages and Buildings: 19 houses and 1 other building associated with the following villages: Ban Phonkham and B. Thong Mang.			
General Disturbance: Extensive disturbance - complete loss of land and vegetation. Disturbance will include establishment of 1.8 m high security fence.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		32	6.22	121	39.68
Potential Social Impacts: <ul style="list-style-type: none">Disrupted east-west accessPermanent loss of land and assets (houses, farm buildings, other buildings irrigated canals, irrigated rice fields, fishponds, gardens and rain-fed rice fields)		Potential Social Mitigation Measures: <ul style="list-style-type: none">Road diversion and upgrade, build bridges across channelCompensation for loss of land and assetsMaintain water flows in surrounding irrigation canals			

2.3.38 Project Land 39a

PLA 39a	Access to DS Channel (LPA 38a)				
Description: Upgrading of an existing road, so construction equipment and vehicles can access the DC construction site.		Location: northern Gnommalat District town			
Primary Land Use Type: Existing road, surround by houses and rice fields.		Villages and Buildings: Depending on the widening required, could impact houses and other buildings.			
General Disturbance: Moderate disturbance (i.e. earthworks) associated with the widening of the existing access track in village areas and alongside irrigated rice fields.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		Requirement for this LPA being confirmed			
Potential Social Impacts: <ul style="list-style-type: none"> Disrupted access along existing track traffic impacts on local villagers Increased dust due to traffic Possible loss of fixed assets and productive lands 		Potential Social Mitigation Measures: <ul style="list-style-type: none"> provision of alternative access route Heavy equipment fitted with silencers; dust suppression Compensation for loss of land and assets traffic control 			

2.3.39 Project Land 38b

LPA 38b	Downstream Channel (Mid-north Section)				
Description: Encompasses approximately 5 km of the Downstream Channel including an Aeration Weir, from Nam Gnom to the crossing with (under) Road 12. Area may include spoil deposit sites.		Location: Section “b” of the Downstream Channel extends south from the Nam Gnom near the village of Ban Gnommalat, to Route 12, adjacent to the Route 8B junction			
Primary Land Use Type: Rainfed and irrigated rice fields, shifting cultivation, secondary forest, wetland and a creek.		Villages and Buildings: no structures impacted			
General Disturbance: Extensive disturbance (i.e. complete loss of land and vegetation) resulting from excavation of the Channel, siphon and the construction of levee banks and spoil areas. Disturbance will include establishment of 1.8 m high security fence.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		55	19.4	318	74.45
Potential Social Impacts: <ul style="list-style-type: none"> Disrupted east-west access Disrupted use of irrigation system Loss of fisheries in wetlands and creek Permanent loss of land and assets possible localised flooding 		Potential Social Mitigation Measures: <ul style="list-style-type: none"> Compensation for loss of land and assets Maintain water flows in surrounding irrigation canals Restore east-west access Compensate for loss of fisheries 			

2.3.40 Project Land 39b

PLA 39b	Access to Downstream Channel				
Description: The widening and upgrade of an existing road to enable equipment and haulage trucks to access the DC construction site.		Location: Southern-central Gnommalat District centre			
Primary Land Use Type: current road, surrounded by village areas, houses, paddy fields and temple		Villages and Buildings: need to remove buildings depends on the need for road widening			
General Disturbance: Moderate disturbance associated with the widening of the existing access track in village areas, which may require acquisition of land, removal of some foxed structures.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		Requirement for this LPA being confirmed			
Potential Social Impacts: <ul style="list-style-type: none"> Disrupted access along existing road Increased noise and dust due to operation of heavy equipment Temporary disturbance of land and assets Possible loss of housing land, houses, some paddy 		Potential Social Mitigation Measures: <ul style="list-style-type: none"> Provision of alternative access road Heavy equipment fitted with silencers; dust suppression Compensation for disturbance and/or loss of land and assets 			

2.3.41 Project Land 40

LPA 40	Contractor's main camp				
Description: Encompasses an area for a Construction Phase camp to house up to 700 construction personnel.		Location: junction of Road 8B and Road 12.			
Primary Land Use Type: This area has been proposed as the site of a new Gnommalat District Centre. Presently degraded forest and shrub land, grassland, some paddy and gardens		Villages and Buildings: 6 houses located around the periphery (but outside) of the camp area.			
General Disturbance: Vegetation removal, establishment of a platform and roads, accommodation, etc.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	No. Assets
		1	12.47	21	6.03
Potential Social Impacts: <ul style="list-style-type: none">Permanent loss of land and assetsSocial tensions arising from establishment of Work Camp and influx of construction workers		Potential Social Mitigation Measures: <ul style="list-style-type: none">Compensation for loss of land and assetsSource labour locallyImplement the Camp Followers management Plan			

2.3.42 Project Land 41

LPA 41	Work Area				
Description: a work camp adjacent to the Downstream Channel		Location: adjacent to Road 8b			
Primary Land Use Type: shifting cultivation, grassland, paddy fields		Villages and Buildings: no houses or other buildings identified			
General Disturbance: Moderate disturbance (light earthworks and selective vegetation removal) resulting from establishment of the construction Phase Work Area. Disturbance will be temporary.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		5	2.86	8	2.24
Potential Social Impacts: <ul style="list-style-type: none">Likely to be very small impact.		Potential Social Mitigation Measures: <ul style="list-style-type: none">Compensation for loss of land and assetsImplement the Camp Followers management Plan			

2.3.43 Project Land 42

PLA 42	Phou Phathoung Quarry & Access				
Description: Project aggregate source for the areas downstream of the Power houses, including downstream channel. Facilities will include an access route, and processing and storage facilities.		Location: adjacent to road 12, 2-3 km south of the Road 8B/Road 12 junction.			
Primary Land Use Type: rock outcrops, paddy fields, gardens and barren land. The karst is also a fisheries and source of domestic water for local villagers.		Villages and Buildings: none			
General Disturbance: existing quarry site - loss of land and amenity as a result of additional construction activities		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		23	25.87	37	3.57
Potential Social Impacts: <ul style="list-style-type: none">Noise and dust due to blasting, processing and aggregate and traffic of haulage trucksPermanent loss of landPermanent loss of fisheriespermanent loss of domestic water supply		Potential Social Mitigation Measures: <ul style="list-style-type: none">Heavy equipment fitted with silencersdust suppressionCompensation for loss of land and fisheriesprovision of alternative water supply			

2.3.44 Project Land 44

LPA 44	Construction camp area				
Description: Potential construction camp area		Location: adjacent to route 12, 2-3 km west of the Downstream Channel Tunnel section.			
Primary Land Use Type: Secondary forest, grazing and s.		Villages and Buildings: No houses or other buildings identified.			
General disturbance: potentially disturbance to areas utilised for upland fields, limited rainfed rice fields.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		6	21.17	3	0.47
Potential Social Impacts: <ul style="list-style-type: none">▪ Temporary or permanent loss of land.▪ Social tensions arising from establishment of Work Camp and influx of construction workers.		Potential Social Mitigation Measures: <ul style="list-style-type: none">▪ Compensation for loss of land and assets▪ Source Labour locally▪ Implement camp follower management plan			

2.3.45 Project Land 38c

LPA 38c	Downstream Channel (Mid-south Section)				
Description: Encompasses approximately 5 km of the Downstream Channel (width 100 m) and potential spoil deposits areas. Includes an emergency spillway with a capacity greater than 100 m ³ /second immediately upstream of the Downstream Tunnel.		Location: Section “c” of the Downstream Channel extends south from Route 12 to the Downstream Channel Tunnel.			
Primary Land Use Type: Some few paddy, disturbed forest and shifting cultivation fields, wetland/river		Villages and Buildings: No houses identified.			
General Disturbance: disturbance (i.e. complete loss of land and vegetation) resulting from excavation of the Channel, Tunnel and the construction of levee banks and spoil areas. Will include establishment of a security fence.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		35	64.74	19	10.09
Potential Social Impacts: <ul style="list-style-type: none">Disrupted east-west accessLoss of amenity/usefulness of the Nam PhitPermanent loss of land and assetsSocial tensions arising from establishment of temporary Work Camp and influx of construction workers		Potential Social Mitigation Measures: <ul style="list-style-type: none">Compensation for loss of land and assetsCompensation program for loss of fisheries (part of the downstream compensation and livelihoods rehabilitation program).			

2.3.46 Project Land 46

LPA 46	Construction Camp Area				
Description: Potential construction camp area		Location: adjacent to route 12, 2-3 km south of the Downstream Channel Tunnel section.			
Primary Land Use Type: Secondary forest, grazing lands, limited agriculture		Villages and Buildings: No houses or other buildings identified.			
General disturbance: potentially disturbance to areas utilised for upland fields, limited rainfed rice fields		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		5	24.39	6	1.57
Potential Social Impacts: <ul style="list-style-type: none">Temporary or permanent loss of landSocial tensions arising from establishment of Work Camp and influx of construction workers		Potential Social Mitigation Measures: <ul style="list-style-type: none">Compensation for loss of land and assetsSource Labour locallyImplement camp follower management plan			

2.3.47 Project Land 47

LPA 47	Access to Downstream Channel				
Description: Encompasses a construction phase access road to be constructed to provide access from Road 12 to the Downstream side of the Downstream Channel Tunnel		Location: leading from Road 12 12, 2-3 km south of the Downstream Channel Tunnel section.			
Primary Land Use Type: degraded forest, primary wetland forest.		Villages and Buildings: none			
General Disturbance: clearance of vegetation along the alignment of the access road		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		1	4.40	2	0.04
Potential Social Impacts: <ul style="list-style-type: none">Possible loss of small parcel of paddy fieldsnoise due to operation of work equipment		Potential Social Mitigation Measures: <ul style="list-style-type: none">Compensation for loss of landHeavy equipment fitted with silencers			

2.3.48 Project Land 48

LPA 48	Construction Camp Area				
Description: Potential construction camp area		Location : adjacent to route 12, 2 km north of route 12 turn-off to Mahaxai.			
Primary Land Use Type : upland fields		Villages and Buildings:			
General Disturbance: potentially disturbance to areas utilised for upland fields, limited rainfed rice fields		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		5	7.07	6	2.55
Potential Social Impacts: <ul style="list-style-type: none">▪ Temporary or permanent loss of land▪ Social tensions arising from establishment of Work Camp and influx of construction workers		Potential Social Mitigation Measures: <ul style="list-style-type: none">▪ Compensation for loss of land and assets▪ Source Labour locally▪ Implement camp follower management plan			

2.3.49 Project Land 38d

PLA 38d	Downstream Channel D				
Description: Approximately 8 km of the downstream channel (width 100 m) and potential spoil deposits. Includes the concrete-lined tunnel section, which is approximately 1 km long and diameter of 9.5m, and outfall at the XBF confluence area.		Location: section “d” of the Downstream Channel extends south from the Tunnel to the XBF confluence via the Nam Phit.			
Primary Land Use Type: Wetland forest and river (Nam Phit)		Villages and Buildings: no houses or other buildings identified.			
General Disturbance: canalisation of the Nan Phit river and surrounding wetland into the Downstream Channel will result in the loss of the Nam Phit as a seasonal river, and loss of this amenity (except for the peak wet season period)		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		22	133.38	2	0.29
Potential Social Impacts: <ul style="list-style-type: none">loss of fisheries of the Nam Phit river and wetlandloss if riverbank gardens on the Nam Phitsome loss of other NTFPs from the Nam Phit wetland		Potential Social Mitigation Measures: <ul style="list-style-type: none">Compensation for loss of land and assetsCompensation program for loss of fisheries (part of the downstream compensation and livelihood restoration program)			

2.3.50 Project Land 49a

PLA 49a	Access to Downstream Channel			
Description: An existing access between Road 12 and the Xe Bang Fai confluence area	Location: partially following the Road 12 turnoff to Mahaxai, between Road 12 and the XBF confluence area.			
Primary Land Use Type: current roads and track	Villages and Buildings: none			
General Disturbance: selective widening, resurfacing and installation of drainage structures for existing road alignment. Extensive disturbance (complete loss of vegetation) for new road alignment, if required.	PAP Impacted Assets			
	Community Assets		Household Land/Assets	
	No. Assets	Area (ha)	No. PAP Assets	Area (ha)
	0	0	0	0
Potential Social Impacts: <ul style="list-style-type: none">Disrupted access along access routesIncreased noise and dust due to operation of heavy equipment	Potential Social Mitigation Measures: <ul style="list-style-type: none">Heavy equipment fitted with silencers, dust suppression			

2.3.51 Project Land 49b

PLA 49b	Work area and access to XBF			
Description: A work camp and work area/platform for teams working on the lower Downstream Channel and confluence with the Xe Bang Fai.	Location: near the mouth of the Nam Phit			
Primary Land Use Type: paddy fields, wetland forest, degraded forest.	Villages and Buildings: none			
General Disturbance: Work area will require clearing of vegetation or assets in the area.	PAP Impacted Assets			
	Community Assets		Household Land/Assets	
	No. Assets	Area (ha)	No. PAP Assets	Area (ha)
	1	46.92	14	8.95
Potential Social Impacts: <ul style="list-style-type: none">▪ Temporary or permanent loss of land▪ Social tensions arising from establishment of Work Camp and influx of construction workers	Potential Social Mitigation Measures: <ul style="list-style-type: none">▪ Compensation for loss of land and assets▪ Source Labour locally▪ Implement camp follower management plan			

2.3.52 Project Land 51

PLA 51	Road 8b				
Description : encompasses approximately 5 km of the existing route 8b alignment		Location: existing Road 8b, alignment from the junction with the Road 12 to the village of Gnommalat.			
Primary Land Use Type: existing road		Villages and Buildings: none			
General Disturbance: Some areas/stretches may require selective widening. Road will be resurfaced and drainage structures installed.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		0	0	0	0
Potential Social Impacts: ▪ none		Potential Social Mitigation Measures: ▪ not applicable			

2.3.53 Transmissions Lines

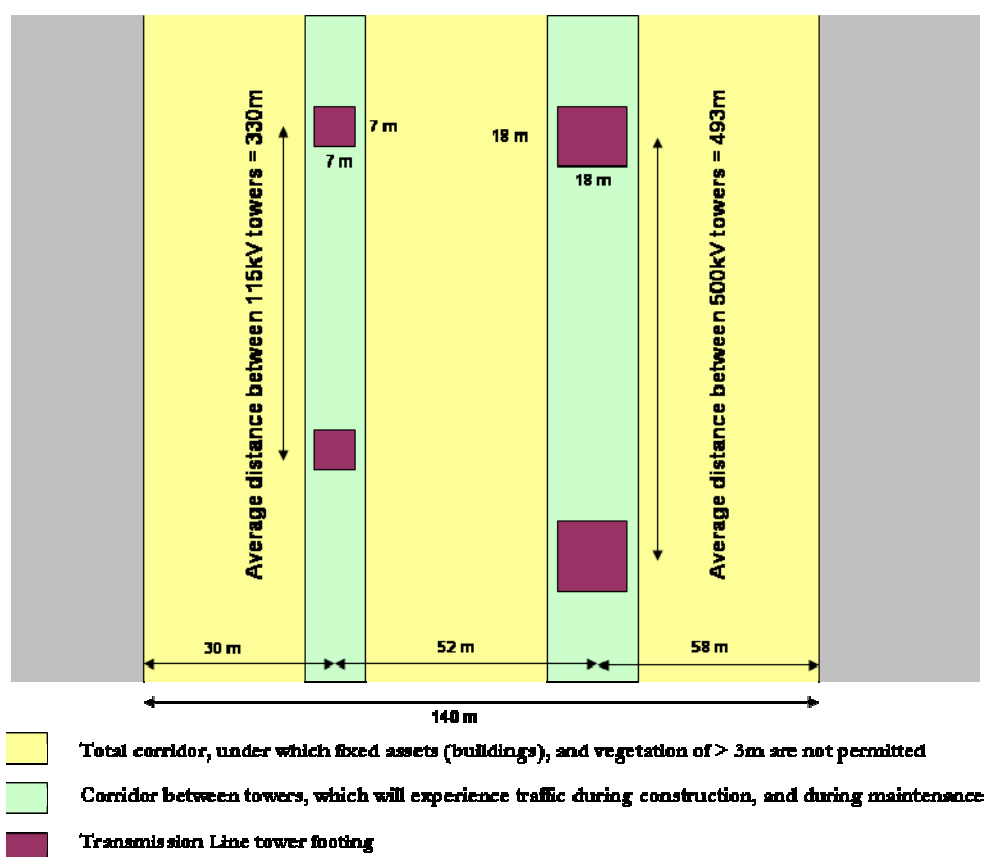
There are three main impacts, and one minor impact of the TL corridors, as follows:

- All fixed assets below the Transmission Line corridor will be removed;
- Restrictions on the height of vegetation, and thus loss of crops or plantations above 3 m; and
- The only land that will be permanently and fully required is that required for the excavation and building of Transmission Line tower footings - otherwise, general public access for uses involving cultivation and the raising of livestock will be permitted.

Minor impacts can be expected during the construction of the towers and the stringing of the power lines. However, this will be undertaken in the dry season, when no crops are grown and this disturbance will be minimal, if any.

The configuration of the Transmission Lines in LPA 52a (where they run in parallel), is shown diagrammatically in Figure 2-3 below, while impacts are elaborated on in the tables following.

Figure 2-3: Schematic Overview of Transmission Line Dimensions



Project Land 52

Project Land 52

LPA 52	115 kV and 500 kV Transmission Lines				
Description: The Transmission Lines run in parallel for approximately 28 km. The first sections of the TL runs thru LPA 33, 34 & 35. The width of the corridor for this section is 140 m.		Location: From the Power Station to the Nam Phit			
Primary Land Use Type(s): rainfed and irrigated paddy fields, village and housing land, degraded forest.		Villages and Buildings: A total of 36 households have been identified as being impacted by the Transmission Lines within LPA 52.			
General Disturbance: all fixed structures above 2 m to be moved, and crops, plantations or forest cut, in a 140 m wide strip. Small square area of land will be required for tower footings. Land will be disturbed during stringing, but this is to undertaken during the dry season		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		31	256.09	76	11.6
Potential Social Impacts: <ul style="list-style-type: none">Fixed structures (buildings) above 2 m must be movedproductive assets or crops above 2 m must be cutforest over 2 m must be cut- small land areas required for footings will be acquired		Potential Social Mitigation Measures: <ul style="list-style-type: none">compensation for livelihood impactsCompensation for temporary or permanent loss of land and assets			

Project Land 53: 115 kV Transmission Line

The 115 kV Transmission Line continues from the point of divergence with the 500 kV Transmission Line for approximately a further 2 km, in a generally south-easterly direction, to a point in the immediate vicinity of a 115 kV substation to be built at Mahaxai. The Project's 115 kV Transmission Line terminates at this location. The width of the Project Land corridor for this segment of the Transmission Lines is 40 m. The route of the 115 kV Transmission Line (including the initial 27 km segment incorporated within LPA 33, 34, 35 and 52) is summarised below.

Station (km)	Angle Point No.	Characteristics
23+700-28+500	20 – 22	Flat land with small bushes and bamboo trees experiencing 1 to 2 months flooding annually.
28+000-29+222	19 – 20	Flat land with paddy fields.

Footings for the 115 kV Transmission Line will range from 5.5 x 5.5 m to 8.5 x 8.5 m. The average spacing between towers is to be 330 m.

Project Land 54: 500 kV Transmission Line

The 500 kV Transmission Line, from the point of divergence with the 115 kV Transmission Line, continues in a generally southerly direction for a further 112 km to an interconnection facility at the Mekong River crossing point, north of the city of Savannakhet. The width of the Project Lands corridor for this stretch of the Transmission Lines is 100 m.

Impacts associated with the construction of the 500 kv Transmission Lines from Mahaxai to Savannakhet have been assessed based on a GPS survey conducted in mid-2002, in which rudimentary land use information and obstacles (i.e. structures, including houses) were identified. In November 2004 an aerial reconnaissance of the Transmission Lines alignment identified no significant changes to the information gathered during the GPS survey. A more comprehensive survey commenced in December 2004, to confirm, by theodolite, the alignment of the Transmission Lines and to install additional concrete markers every 500 m along the axis of each of the lines.

Station (km)	Angle Point No.	Characteristics
28+000-34+500	11 - 12	Hilly terrain covered with dense forest. Some areas are paddy fields.
34+500-37+000	10 - 11	Flat land with scattered bush. In the middle of this stretch some areas are likely to be swamp.
37+000-42+200	9 - 10	Hilly terrain covered with dense forest.
42+200-43+000	9	Limestone ridge.
43+000-45+000	8 - 9	Mountainous area of laterite covered by dense forest.
45+000-137+500	1 - 8	Hilly terrain covered with dense forest alternating with flat areas covered with scattered bush and paddy fields. Between kilometre 127 and 129 is an area likely to be swamp.

LPA 54	500 kV Transmission Line			
Description: The 500 kV Transmission Line runs a total of 138 km in length (112 km within LPA 54). The corridor for the 500 kV T/L is 100 m wide.		Location: the 500 kV T/L extends from the Nam Theun 2 Power Station (initially through LPA 33, 34, 35 & 52) to a crossing point over the Mekong river north of the city of Savannakhet.		
Primary Land Use Type(s): forest, degraded forest, rainfed and some irrigated paddy fields, some village and housing land.		Villages and Buildings: 17 houses identified as being impacted (all are in LPA 54)		
General Disturbance: All fixed structures to be moved and any vegetation higher than 2 m is to be removed. Other crops and grazing will be allowed to continue. Small areas required for the footings of the towers, typically 18 x 18 m for the 500 kV T/L. Some land will be disturbed during construction, but this is to occur during the dry season, to minimise the impact on crops.		PAP Impacted Assets		
		Community Assets		Household Land/Assets
		No. Assets	Area (ha)	No. PAP Assets
		33	930.56	34
Potential Social Impacts:		Potential Social Mitigation Measures:		
<ul style="list-style-type: none"> Fixed structures (buildings) will be removed from the Transmission Line corridor productive assets or crops above 3 m must be cut forest over 3 m must be cut small land areas required for footings will be acquired 		<ul style="list-style-type: none"> Compensation for livelihood impacts Compensation for temporary or permanent loss of land and assets 		

2.3.54 Project Land 55

PLA 55	Access to Transmission Lines				
Description: Access to the Transmission Line alignments, utilising existing roads and tracks		Location:			
Primary Land Use Type: Existing road alignments through a variety of land cover types. May be some need for additional access, yet to be identified.		Villages and Buildings: no direct impact on buildings anticipated			
General Disturbance: Potential for limited disturbance along the access road alignments or along any other access which may be required.		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		0	0	0	0
Potential Social Impacts: <ul style="list-style-type: none"> Some increase in heavy traffic along the road some dust 		Potential Social Mitigation Measures: <ul style="list-style-type: none"> Compensation for any unanticipated livelihood impacts 			

2.3.55 Project Land 58

PLA 58	Sub-station (500 KV) at Savannakhet				
Description: Likely to be existing substation site		Location: vicinity of the city of Savannakhet			
Primary Land Use Type: not applicable		Villages and Buildings: none			
General Disturbance: none		PAP Impacted Assets			
		Community Assets		Household Land/Assets	
		No. Assets	Area (ha)	No. PAP Assets	Area (ha)
		0	0	0	0
Potential Social Impacts: not applicable		Potential Social Mitigation Measures: not applicable			

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