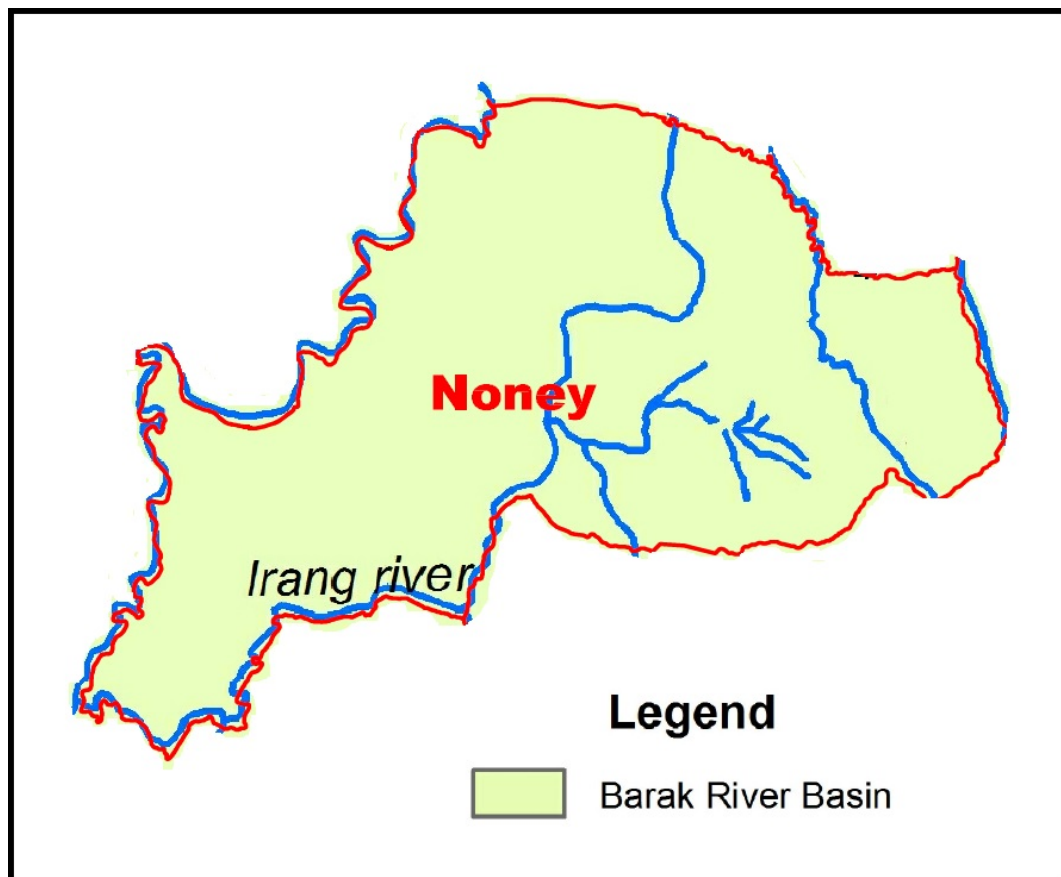


DISTRICT SURVEY REPORT FOR NONEY DISTRICT (MANIPUR STATE) FOR

- A. SAND MINING OR RIVER BED MINING**
 - B. MINERALS OTHER THAN SAND MINING OR RIVER BED MINING
(PEBBLE FOR CRUSHING/OPENCAST SURFACE MINING)**
- (Revision 00)**



Prepared under

- A] Appendix –X of MoEFCC, GoI notification S.O. 141(E) dated 15.1.2016
- B] Sustainable Sand Mining Guidelines
- C] MoEFCC, GoI notification S.O. 3611(E) dated 25.07.2018
- D] Enforcement & Monitoring Guidelines, January 2020, MoEFCC, GoI

Declaration

In compliance to the notifications, guidelines issued by Ministry of Environment, Forest & Climate Change, Government of India, New Delhi, District Survey Report (Rev. 00) for Noney district is prepared and published.

Place : Noney

Date :

District Collector, Noney

**Secretary (Water Resources Department)
Govt. of Manipur, Imphal West, Manipur**

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Amendments to DSR

[illegible]

Compliance to Enforcement and Monitoring Guidelines January 2020 (District Survey Report)

4.1/Page 13	Preparation of District Survey Report	
1	Preparation of District Survey Report	DSR is prepared as per format S.O. 3611(E) dated 25.07.2018
2	Publication of District Survey Report	Draft District Survey Report in Rev. 00 is published on -----with publication in daily ----- dated for comments from public at for comments.
3	Development of inventory of river bed material and other sources in the district.	Inventory of sand reaches are listed at Annexure II-, inventory of other sand sources will be listed at Annexure II.
4	District Survey Report be prepared in such a way that it is not only identifies the mineral bearing area but also defines mining and no mining zones considering environmental and social factors.	1] All sensitive areas like sanctuaries, ESA,ESZ,monuments are identified,listed and mapped separately for the district to decide for no mining and mining areas. 2]High Flood Levels with flood line is marked for all rivers in the district. 3]Details of irrigation structures in tabular and marked over district map is provided. 4]Peak stream velocities with siltation is mapped for all rivers. 5] River inventory is tabulated and mapped for the district. 6]Villages of district are mapped on District Geological Map to identify geological importance of the village. During evaluation of each of proposal, these information lead to identify for no mining zone for the district.
5	Identification of sources of Sand and M-sand , De silting Locations, river type perennial or non perennial, village, tahsil , agriculture/non agricultural land, m-sand plant etc.	Annexure I-VII as per E & F guidelines are published as a part of District Survey Report focusing these sources for this year. Desilting of ponds,sand over agricultural land is not available in the district at this stage.
6	Defining the sources of Sand for identification of the potential area, entire river stretch needs to be recorded and area of aggradation/deposition needs to be ascertain by comparing the level difference between outside river bed OGL and Water Level.	River stretches flowing across the district is surveyed for OGL (Original Ground Level) and it is apart of DSR which can be used as master OGL data sheet for the river.

7	Boundary Pillars needs to be erected after identification of an area of aggradation and deposition outside bank of river at safe location for future survey.	During survey of river stretch, future reference points are marked by GPS coordinates.
8	Identifying mining and no mining zone shall follow sensitivity.	No mining zones are part of DSR as an information.
9	Demand and Supply for river bed material through market survey	Demand and supply of minor mineral is predicted.
10	Cluster situation shall be examined.	No cluster is formed for the district.
11	Mining outside river bed area on Patta/Khatedari land be granted when there is possibility of replenishment of material. For govt. projects mining could be allowed on Patta/Kahatedari land but mining should be done by Govt. agencies and material shall not be used for sale.	No such land is available in the district.
12	State Govt. should define transportation route from mining lease considering maximum production from mines as at this stage the size of mining leases, their location , the quantity of mineral that can be mined safely	Designated route for transportation of sand from sand ghat will be fixed with implementation of EMP for transportation route. Data will be incorporated at Annexure IV-VII in DSR as per format defined in E & F guidelines on finalization of leases.
13	List of recommended sites in the format Annexure-II, Details of Cluster in Annexure-III and transportation route in Annexure IV needs to be provided.	Information as per Annexure-I-VII defined in E & F guidelines will be enclosed as a part of District Survey Report on finalization of minor leases.
14	Public Consultation	An advertisement of publication of Draft DSR is made dated ----- for comments for 30 days for public at large. DSR will be finalized on after 30 days incorporating suggestions from public at large as per Annexure V-VII as per e & mguidelines.

DISTRICT SURVEY REPORT FOR NONEY DISTRICT

PART –A

FOR SAND MINING OR RIVER BED MINING

Prepared under

A] Appendix –X of MoEFCC, Gol notification S.O. 141(E) dated 15.1.2016

B] Sustainable Sand Mining Guidelines

C] MoEFCC, Gol notification S.O. 3611(E) dated 25.07.2018

D]Enforcement & Monitoring Guidelines, January 2020, MoEFCC, Gol

1.0 Introduction :

Hon'ble Supreme Court of India vide its judgement dated February 27,2012 and further relief amendment dated April 16,2012 directed all state, union territories and ministry of Environment and Forest, Govt. of India, New Delhi to screen mining of minor minerals leases within the purview of EIA notification 2006 and made requirement of environmental clearance to minor minerals less than 5 ha compulsory.

Ministry of Environment & Forest , Gol vide its office Memorandum L-11011/47/2011.IA.II(M) dated 18.05.2012 directed mass to comply Ho'ble Supreme Court decision.

Further streamlining of environmental clearance procedures, MOEFCC, Gol amended EIA notification 2006 vide S.O. 141(E) dated 15.01.2016 where procedure for preparation of District Survey Report (DSR) for minor minerals has been prescribed.

Further the procedure for preparation of DSR and format is amended vide MOEFCC notification S.O. 3611(E) dated 25.07.2018.

The subjected DSR is defined at " Appendix -X (See Paragraph 7(iii)(a)" of the notification S.O.141(E)dated 15.01.2016 and S.O. 3611(E) dated 25.07.2018.

This District survey report comply the environmental & monitoring guidelines issued by MoEFCC, Gol, New Delhi published in January 2020.

Accordingly this document is prepared by Secretary,Water Resources,State of Manipur on behalf of District Collector of Noney. Secretary, Water Resources,State of Manipur is empowered to change,modify and amend the District Survey Report for District of Thoubal

This District Survey Report will be utilized for assessing the minor minerals proposals of the district for grant of minor mineral leases, their feasibility and for grant of environmental clearances by the designated authorities.

Brief Introduction of Noney district :

Noney District is bounded by Senapati District to the East, Jiribam district to West, Tamenglong to the North and Churachanpur of Manipur to the South. The District had been part of Manipur West District before 1972. It is the farthest District from the state capital, Imphal and the District HQ. Tamenglong itself is also the farthest District HQ of Noney being 147 Kms from the state Capital.

When India attained independence in 1947, Tamenglong the parent District was not connected by motorable roads. The first motorable road constructed in Tamenglong District connected the capital of Manipur which was 75 miles long i.e. The main rivers flowing in the District are Barak(Ahu), Irang, Makhru(Makhu), Iring, ljei(Aga) and Apah rivers etc. Barak(Ahu) is the biggest river. Till now, the water of this river are not utilized for irrigation or power production.

Rare species like hornbill, hoolock gibbon, slow loris etc are found in the forest. Bamboo, cane etc grow abundantly in the forest. Medicinal herbs are also available in the forests. The region is known for its biodiversity.

The topography of the district is generally hilly with steep slopes with a small valley. The hill ranges generally run in the north to south direction. Four major rivers running through the district are Barak, Irang, Leimatak, Tuipi. These rivers play an important role in the economic life of the people not only by providing fertile valley and fishes, but also making it feasible to take up important hydel project.

Annual Rainfall in Noney district is above 2000mm in the months from April to October. Generally the main soils found in the district are Red loamy soil, Red sandy soil and Red gravelly soil.

Noney District is a new district in Manipur, India, created by bifurcating erstwhile Tamenglong District vide notification No. 408 dated 08.12.2016 by Govt. of Manipur.

Noney, also known as Longmai, is a town located in the western part of Manipur, India. It is 63 kilometres (39 mi) west of Imphal, the capital of the state of Manipur. Its population is almost entirely made up of Rongmei Naga. Previously known as a village, recently has been declared as one of the new district headquarters of Manipur and is separated from the existing Tamenglong District and now comprises Haochong, Khoupum, Nungba and the Longmai subdivision.

Though the area is often known by the name "Noney" leaders of the land preferred the name "Longmai". Which mean, Luang-range and mai-widow (the widow ranges) derive from its geographical features. Despite the vast land they have, their great, great grandfathers started their life in a place called Napthiat Lauboot (located inside Longmai) usually known by the name " old Longmai village". A place situated on top of the mountain, approximately 2.3 km away from Noney bazaar. People don't live there anymore, but it is remembered and preserved till today in respect of their elders who had lived there. Elders would tell stories of being there and how people slowly, bit by bit move downward, toward the river Aga Duithuak (Aga river), until finally they completely vacate the old place. They all moved out of the old place, but all of them didn't settle in one area. Some moved further downward, some closer to the old place. Due to this settlement, the village got divided into 6 parts. The parts are usually known by numbers. The number assigned to the parts and their names are as follows:

Longmai 1: PLZ/Gangbangbut Longmai

2: Longmai 2

Longmai 3: Longmai 3,

Longmai 4: Peaceland.

Longmai 5: Namthan,

Longmai Bazaar, (spring valley, happy colony)

The old Longmai village is known as Number 1 but when the last group of people living in the old village moved downward below Number 2, the new place is also known by the name "Number 1". In the list above the Number 1 is the new place below number 2. The lowest or the settlement nearest to the river Aga is the present bazaar area. People from all over Longmai and from nearby villages such as Khumji, Nungtek, Makhuam would come down to this place to

sell their agricultural goods. For the last few years, many people from nearby villages come here, not only for commercial purposes but also for education and medical purposes. In Noney, most of the population belongs to Scheduled Tribe populations. These constitute 60.69%, while Scheduled Castes account for 0.13% of the total population.

The following are the sub-divisions in Noney district:

- Longmai
- Nungba
- Khoupum
- Haochong

Drainage

Earlier being the part of Tamanglong district, drainage pattern for the Noney district is dominated by rivers flowing from Tamanglong district. Hence here it is important to relate and describe drainage pattern of Tamanglong and Noney district combinedly. The Barak river and its tributaries such as the Jiri river and the Makru river in the west and the Irang river with her tributary like Leimatak river, etc., in the east drain the entire regions of the districts. It is rising from the Liyai Khunou village of the Paomata sub division of Senapati district and flows towards south – west. More than half of the total length of the Barak river flowing in Manipur runs in the district. The upper portion of this river flowing in the district forms state boundary of Nagaland and Manipur states for about 35 kms. This river also forms district boundary of Churachandpur and Tamenglong districts (nearly 25 kms.) and then flows towards south and after meeting the Tuivai river at Tipaimukh, it is turned towards north. The Jiri river rises from the height of 1,953 metres above the mean sea level near Thenbung village of Assam state and flows towards south and meets the Barak river at Jirimukh. It forms the state boundary between Assam and Manipur of nearly 85 kms long. After joining the Jiri river, the Barak river turns towards west and runs upto Sylhet district of Bangladesh as the Surma river and joins with the Bhramaputra river at Comilla district of Bangladesh. The Makru river rises from the Thingdoi Peak (2,080 metres) situated in the north – western corner of the district and flows towards south and join the Barak river at the boundary of Churachandpur and Tamenglong districts. The length of this river is about 80 kms. The Irang river starts from Sintongbung range (near Shogyangjang Kuki village – 2,249 metres) and flows towards south along the Imphal Tamenglong districts. A small stream called Noaki rising from the Koubru (2,561 metres) hill of senapati district flows towards north and divide the two districts of Senapati and Tamenglong and meets the Irang river near Thengjeng. The Irang river is then flowing southwards parallel to the highway upto Songpram and then cross the National Highway 53 at Tingjang and further turns westwards from Vantungbung and forms district boundary of Churachandpur and Tamenglong joins the Barak river near Gailon village. The length of the Irang river from the source to joining point is about 160 kms. The Leimatak river rises from the Mount Mamun Lhang (1,699 metres) of the Churachandpur district and flows towards north and falls to the

Irang river near Tamlok village . Major portions of this river courses (about 33 kms) run in the south – eastern regions of Tamenglong district. The Irang river , a branch of the Irang river starts from the Nurathen village about 1,100 metres height and flows southwards. After crossing the National highway 53, it turns towards west along with the highway and again turns towards south and joins the Leimatak river near Tamok village running about 30 kms. The Tupui river starts from the Jouzangtek village (about 1,00 metres) and after running about 28 kms northwards falls into the Irang river at Noney. This river crosses the NH 53 and flows along the highway for about 10 kms .The Yai river rises from the Koubru range (2,348) and flows towards south. After running about 27 kms, it empties itself into Tupui river at Tupui village.

Climate

The district enjoys on the whole a very pleasant climate throughout the year. The temperature is neither very hot nor very cold. The seasons can be conveniently classified into spring, rainy season, autumn and winter. By far March and October are the most pleasant months of the year. April and May are hot seasons. Temperatures rise from March onwards and day temperatures are highest in April and May. From the month of October the temperature begins to go down and by the beginning of November winter season starts and continues upto the end of February. December and January are the coldest months of the year. Climatic condition of a region is one of the major factors, which can influence directly or indirectly human occupancy ,effects its distribution of population / settlements and their socio - economic conditions .The temperature of the district varied from 26⁰ C to 36⁰C and from 0⁰C to 11⁰C as measured.

Natural Economic Resources

Apart from the building material such as sandstones, clay, pebble and gravel, no other mineral of economic significance has been found in the district. Hard, bedded and massive sand stone of Disang Formation and Barail Group are extensively used for road construction and as building material. Suitable earths and alluvium along the river banks provide material for local brick making. Pebbles are crushed to use as aggregates.

The evergreen forests give the district a sylvan look. The important trees found in the district are Pine (Uchan), Albizzia spp.(Khok), Castanopsis spp. (S a h i) , M e d u s f e r r e a (U t h o u) , M a g n i f e r a i n d i c a (H e i n o u) , P h o e b a H e r i n i s i a n a (Uningthou), Albizzia Lebbek (Uyel), etc. Some teak and Oak are also found in the western foot hills of the district. Evergreen forests mixed with multi bamboos are seen in the southern portion of these forests. Moubi (local name) bamboo's are abundantly grown but also some medicinal plants, wild fruits ,wild variety of fruits and edible mushrooms like Uyel, Kanglayel, Uchina, etc. are abundantly available in these forest areas

The economy of the district is basically agrarian with paddy as major crop. 76 percent of the total area under paddy cultivation in the district is under jhum The district has hardly any industrial activity except for a small number of registered small industrial units.

Poultry and livestock farming is an important economic activity of the people in his hill

district. The livestock and poultry production in the district is fairly high. The major livestock include goat, cattle buffalo and pigs.

The district is good producer of oranges in Manipur. The district is suitable for all kinds of horticulture crops such as oranges, papaya, royal chillies, pineapples and also lime, coconut, mango, litchi, etc. which are grown in large area of the district. Tea and coffee plantation have been to be successful on a small scale. As there are no processing and marketing facilities, farmers process their tea at home for local consumption

Forestry

Noney District falls in the Category of Manipur valley region. Reserve Forest Cover 2.59 sq. km. Major Forest products are Teak, Timber other than Teak, Fire wood etc. The process of regularization of land grants and effecting relevant changes in the basic records of survey and settlement are somewhat protracted and time consuming. Therefore the information based on records is in some cases at least, likely to be different when compared with the actual field situation.

Details of Notified Reserve forest in district

SL	District	Name of the Reserved forests	Area covered (sq. km.)	Total Area in the district (sq. km.)
1	Noney (Forest Division Noney)	(i) Laimaton	2.59	2.59

Source: Statistical Booklet of Manipur Forest, 2018

Minerals and mining

Apart from building materials such as sandstones, clay, pebble and gravel, no other mineral of economic important has been found the Noney district. Hard, bedded and massive sand stone of Disang Formation and Barail Group are extensively used for road construction and building material. Suitable earths and alluvium along the river banks is being used as raw material for local brick manufacturing. The occurrence of evaporate and salt springs in the Disang Formation has been reported from several places. Thin coal streaks and powdery coal are present in the sandstone of Barail Group at several places.

Soil and Cropping pattern

Hill soil like red laterite is found throughout the district. Sandy soil is also in the river gorges. Soils are highly eroded due to wide practice of traditional Shifting / small Jhuming cultivation. Single cropping pattern is adopted in the regions with either Kharif and Rabi crops. No land Revenue act is applied in the district. The economy of the district is basically agrarian with paddy as major crop. 76 percent of the total area under paddy cultivation in the district is under

jhum. The district is good producer of oranges in Manipur. The district is suitable for all kinds of horticulture crops such as oranges, papaya, royal chillies, pineapples and also lime, coconut, mango, litchi, etc. which are grown in large area of the district. Tea and coffee plantation have been to be successful on a small scale. As there are no processing and marketing facilities, farmers process their tea at home for local consumption

Agriculture

Most of the people of this District are engaged in agricultural activities. According to Census 2011, percentage of the total workers engaged as cultivators is 74.48 and as agricultural labourers is 2.15 percent in the District. Together they constitute 76.63 percent of the total workers of the District.

The following are the sub-divisions in Noney district:

- Longmai
- Nungba
- Khoupum
- Haochong

*Info: Notification Govt. of Manipur

Salient Features of Noney District :

Details of the Area				
District & State		Noney & Manipur		
Subdivision & Taluka (Circles)		4 Nos.		
Villages		57 villages		
Area of district		1604 Sq. Km		
Minerals in district		Sandstone, Alluvium ,Clay		
Category		‘B’		
Geographical Co-ordinates		LATITUDE [N]	LONGITUDE [E]	
		24 ⁰ 29'N and 24 ⁰ 50'N	93 ⁰ 13' E to 93 ⁰ 26'E	
Accessibility				
Road Connectivity		SH Tamenglong to Nungba,Jiribam to Nungba, Nungba to Thalon,Nungba to Bishnupur and NH37 to Imphal		
Rail Connectivity		Not Available		
Airport		Bir Tikendrajit International Airport (Nearest Airport)		
General Climatic Conditions				
Wind Pattern during study period		Northwest- Southeast		
Maximum Temperature	Summer : 28 – 30 ⁰ C			
	Winter : 11 – 0 ⁰ C			
Minimum Temperature	Summer : 28 – 30 ⁰ C			
	Winter : 11 – 0 ⁰ C			
Average Annual Rainfall (mm)		2000 mm		
Details of the Project				
Elevation		Its average elevation is about 770 m above the sea level.		
Historical / Important Places				
Archaeological/Historical/Ancient Monuments within district	No archeological /historical places are notified.			
	Noney District:			
	Sl. No.	Historical Site/Monument	Year of Protection	Location

	1	Nil		
Names of the national park, sanctuary Biosphere reserve, Tiger Reserve, Elephant reserve, Forest (RF/PF/Unclassified)	No ESZ or Biosphere is notified in the district Zeilad wild life sanctuary is at northern cutting edge of Noney district falling in southern part of Tamenglong district. It is notified vide MoEFCC, Govt of India S.O. S.O. 3309 dated 20.10.2016			

2.0 Overview of Mining Activity in the district :

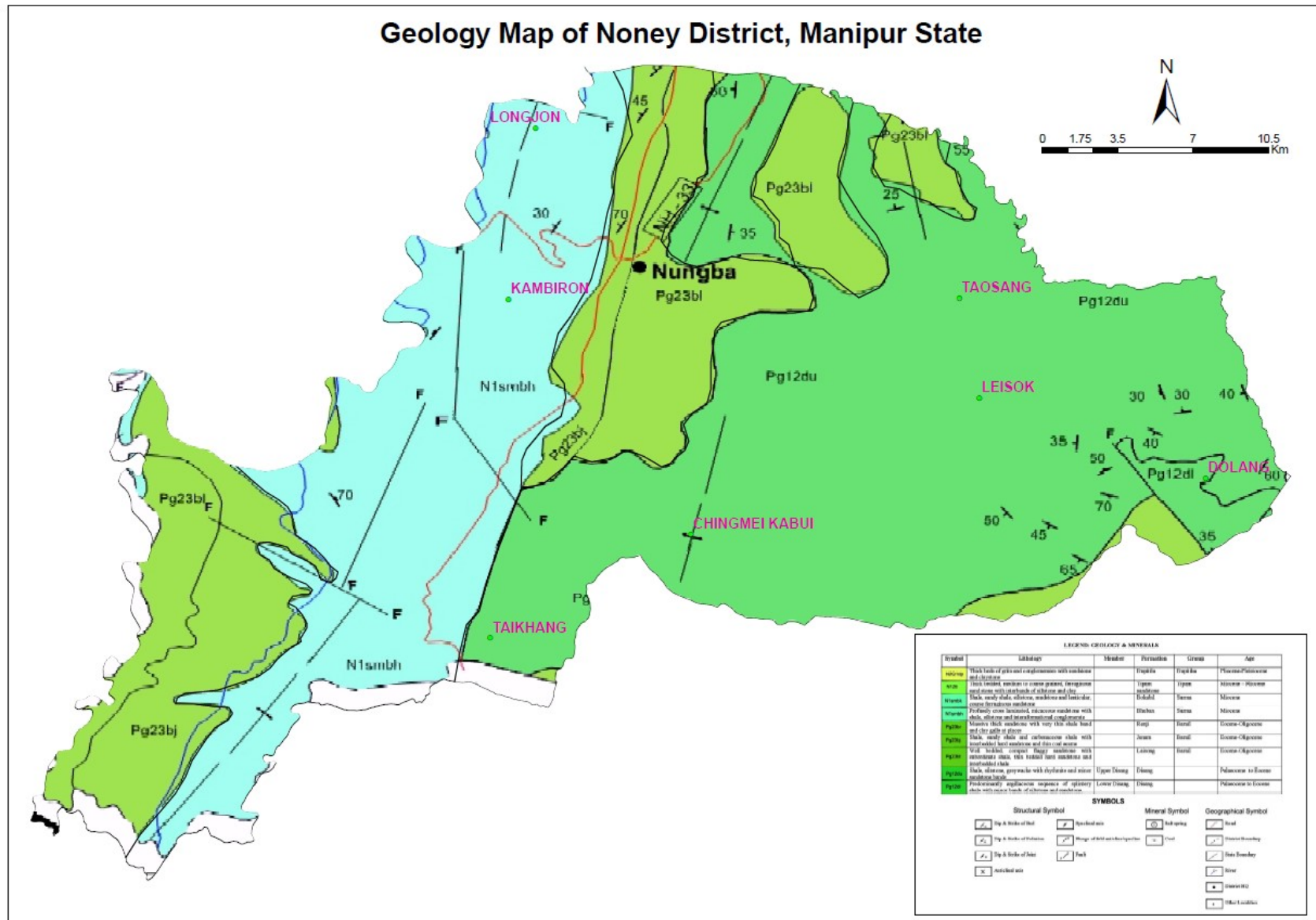
Noney district is rich in minor minerals such as building stone and sand. Mining activity is proposed to be one of the main revenue source for the district.

District has to allot new mining leases based on potentials and applications. There are no temporary permits working within the district as per information recorded in the district mining committee in the month of March 2020. (Source info. District Collector, Noney)

There are potential locations of sand leases over Imphal, Rodak, Thoubal, Irang rivers where sand/pebble deposition are allowed from replenishment and other safety point of view in the district. (Source info. District Collector, Noney).

Villages marked on the district geological map is as below :

Geology Map of Noney District, Manipur State



3.0 List of the Mining Leases in the district with Location, area and period of validity :

As per the Manipur Minor Mineral Concession Rules, 2012 of Government of Manipur and amendments there of , Sand leases and permits are identified for mineable depth considering impact of sand scooping on ground water availability and stream. Directorate of Commerce & Industries, Government of Manipur and his competent officer will complete further procedures for auction/allotment of sand leases as defined in Chapter IV & V of Manipur Minor Mineral Concession Rules, 2012 of Government of Manipur and amendments there of .

Directorate of Commerce & Industries, Government of Manipur is the holder for these sand concession leases for auction/allotment of leases. After auction of these Mineral Concession Leases for period specified as Manipur Minor Mineral Concession Rules, 2012 of Government of Manipur and amendments there of, all rights to comply the terms and conditions for scooping of sand from sand leases are transferred to Successful Bidder/allottee.

Noney district is rich in minor minerals such as building stone and sand. Mining activity is proposed to be one of the main revenue source for the district.

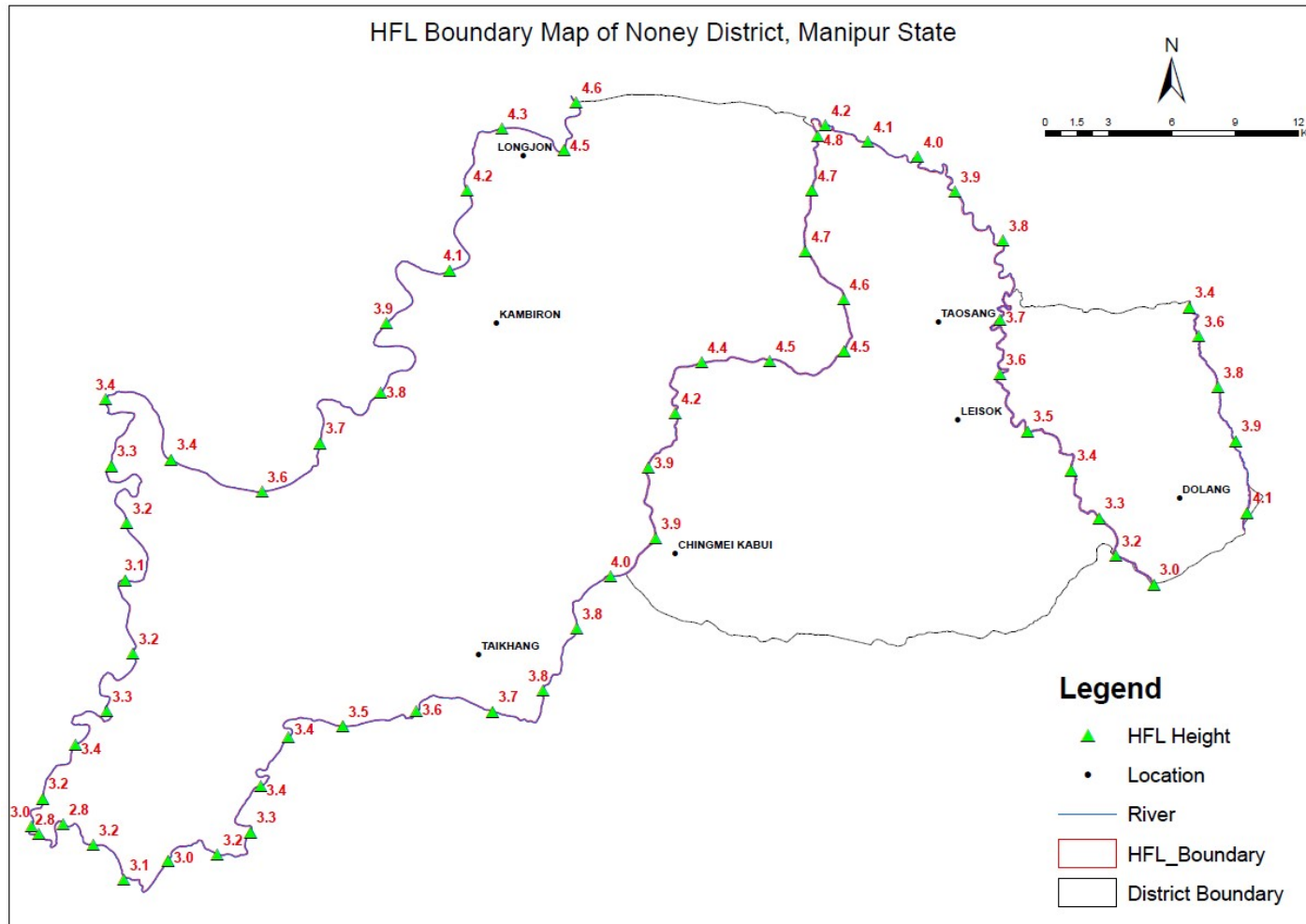
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There are potential locations of sand leases over Imphal, Rodak, Thoubal,Irang rivers where sand/pebble deposition are allowed from replenishment and other safety point of view in the district. (Source info. District Collector, Noney).

List of the Mineral Concession Leases for sand & Stone with location, area and period of validity is tabled below.

Not allotted till date by district administration of Noney.

Location of Sand Leases along the Rivers in the district are marked as :



4.0 Detail of Royalty/Revenue received in last four years from Sand Scooping activity:

Financial Year	Revenue in Rs. Lakhs
F.Y. 2015-16	Nil
F.Y. 2016-17	Nil
F.Y. 2017-18	Nil
F.Y. 2018-19	Nil
F.Y. 2019-20	Nil
F.Y. 2020-21	Nil

(Being no mining activity is continued since last Six years)

5.0 Details of Production of Sand or Bajri or minor mineral in last four Years

Financial Year	Scooping of River Bed Sand in Cum.	Scooping of River Bed Sand in Tonnes
F.Y. 2015-16	0	0
F.Y. 2016-17	0	0
F.Y. 2017-18	0	0
F.Y. 2018-19	0	0
F.Y. 2019-20	0	0
F.Y. 2020-21	0	0

6.0 Process of Deposition of Sediments in the rivers of the District :

Sand/Pebbles are replenishable. Due to sparse rainfall over the last few years the river flows to an average height but flows to its maximum height only during and just after monsoon season. Mining of Building Grade sand from the river bed will not have any impact on the ground water body in the area. During heavy rains the floodwaters overflow the bank and inundate the fields and dry regions. The floods have its own ways of depositing sand not only at the bank but also on the dry surface region. Added to the deposition of sand on the river basin by stratification through lateral deposition of sands on the land surface is by Differential Lateral Deposition (DLD). The later grade is coarse, medium and fine sand to mud and soil beyond. In this soil, agricultural operation goes on from the bank to the cultivated land surface.

The yearly deposition of sand is by natural filling during flood season with slight variation depending upon the amount of river flow, the quantity of water flowing and the amount of sand load carried during the river flow. The deposition pattern will be monitored every year & measurements will be carried out as soon as the monsoon comes to an end.

Deposition rate for the year 2020-21 is monitored, calculated and mapped with the help of technical consultant. Data for gauging of stream is mapped and enclosed below. Data for Siltation is mapped and enclosed ..

Based on siltation rate and survey every year sand ghats are proposed for scooping of sand and auctioned as per the State Government Policy empowered under rule 15 of Mines and Minerals (Development and Regulation) Act 1957 and amendments thereof.

Sediment refers to the conglomerate of materials, organic and inorganic, that can be carried away by water, wind or ice. While the term is often used to indicate soil-based, mineral matter (e.g. clay, silt, pebbles and sand), decomposing organic substances and inorganic biogenic material are also considered sediment. Most mineral sediment comes from erosion and weathering, while organic sediment is typically detritus and decomposing material such as algae.



Sediment particles come in different sizes and can be inorganic or organic in origin.

These particulates are typically small, with clay defined as particles less than 0.00195 mm in diameter, and coarse sand reaching up only to 1.5 mm in diameter. However, during a flood or other high flow event, even large rocks can be classified as sediment as they are carried downstream. Sediment is a naturally occurring element in many bodies of water, though it can be influenced by anthropogenic factors.

In an aquatic environment, sediment can either be suspended (floating in the water column) or bedded (settled on the bottom of a body of water)

In other words water flow tries to scour its surface whenever it flows in the channel. Silt or gravels even larger boulders are detached from its bed or banks. The moving water sweeps these detached particles in downstream along its flow. Silting and scouring is not very uncommon and must be avoided by proper designs. It reduces supply level of water. The channel section gets reduced by silt and reduces discharging capacity. Sediments seriously threaten various projects due to silt carried out by rivers up to point of interceptions. Sediment is also threatening denudation of forests. Sediment is a major obstruction on the flow line. It shortens longevity of channel. It causes soil erosion. Therefore data base must be needed for policy making and planning.

Sediments are calculated as sediment load. There are three types of sediments

Coarse Sediments	Particle size above 0.2mm	Water sample passing through 100/72 mesh sieve (BSS). Residue over sieve is washed, dried and weighed. It gives coarse sediments in gm/lit
Medium Sediments	Particle size ranging 0.075mm-0.2mm	After removal of coarse sediments residual water passed through 200 mesh sieve (BSS), we get medium sediments
Fine Sediments	Particle size less than 0.075mm	Filtrate and washing residue allowed to settle for 12hrs. About 5-10 % alum solution is added to hasten coagulation of colloidal silt. Using Whatman Paper no 02 filter paper, residue is filtered, dried and weighed. We will get fine sediments in gm/lit

Co relation between Siltation & Sediment Load

Siltation is deposition by fine particulate terrestrial clastic material, with a particle size dominated by silt or clay. It refers both to the increased concentration of suspended sediments, and to the increased accumulation (temporary or permanent) of fine sediments on bottoms where they are undesirable. Siltation is most often caused by soil erosion or sediment spill.

Sometimes siltation is called *sediment pollution*.

The total Sediment load includes all particles moving as bedload, suspended load, and wash load

Bedload

Bedload is the portion of sediment transport that rolls, slides or bounces along the bottom of a waterway. This sediment is not truly suspended, as it sustains intermittent contact with the streambed, and the movement is neither uniform nor continuous . Bedload occurs when the force of the water flow is strong enough to overcome the weight and cohesion of the sediment. While the particles are pushed along, they typically do not move as fast as the water around them, as the flow rate is not great enough to fully suspend them. Bedload transport can occur during low flows (smaller particles) or at high flows (for larger particles). Approximately 5-20% of total sediment transport is bedload . In situations where the flow rate is strong enough, some of the smaller bedload particles can be pushed up into the water column and become suspended.

Suspended Load

While there is often overlap, the suspended load and suspended sediment are not the same thing. Suspended sediment are any particles found in the water column, whether the water is flowing or not. The suspended load, on the other hand, is the amount of sediment carried downstream within the water column by the water flow. Suspended loads require moving water, as the water flow creates small upward currents (turbulence) that keep the particles above the bed . The size of the particles that can be carried as suspended load is dependent on the flow rate . Larger particles are more likely to fall through the upward currents to the bottom, unless the flow rate increases, increasing the turbulence at the streambed. In addition, suspended sediment will not necessarily remain suspended if the flow rate slows.

Wash Load

The wash load is a subset of the suspended load. This load is comprised of the finest suspended sediment (typically less than 0.00195 mm in diameter). The wash load is differentiated from the suspended load because it will not settle to the bottom of a waterway during a low or no flow period. Instead, these particles remain in permanent suspension as they are small enough to bounce off water molecules and stay afloat. However, during flow periods, the wash load and suspended load are indistinguishable.

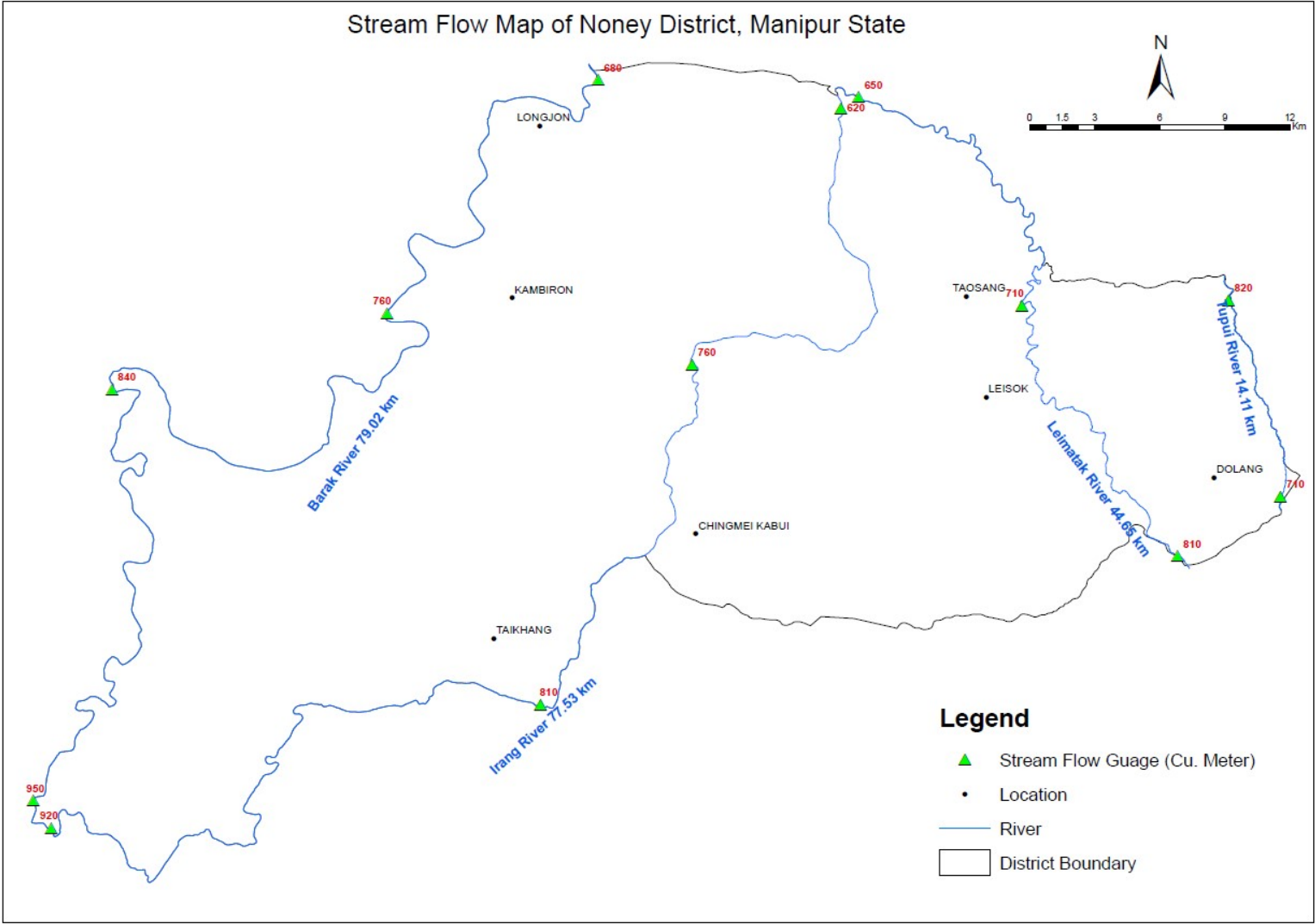
Turbidity in lakes and slow moving rivers is typically due the wash load. When the flow rate increases (increasing the suspended load and overall sediment transport), turbidity also increases. While turbidity cannot be used to estimate sediment transport, it can approximate suspended sediment concentrations at a specific location.

River Dynamics (Physical)

Imphal, Rodak, Irang Rivers are in the matured stage of development running in wide serpentine course. The river meanders with convex & concave shape. The river in its course impinges on convex side. The concave side abounds with sand grain. The mining operation is most profitable on the concave side.

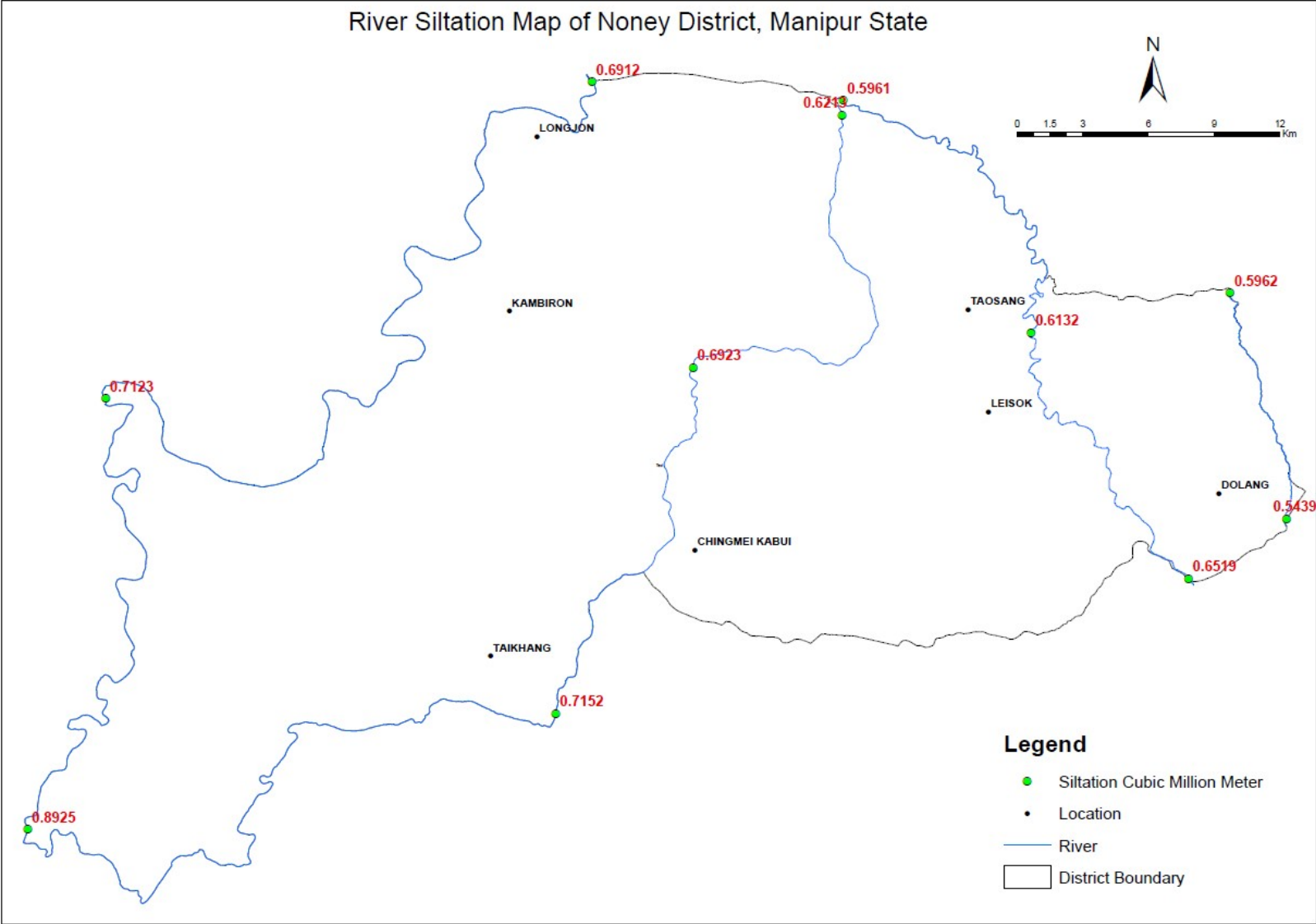
There is yearly deposition of sand/pebbles as the amount of sand excavated gets redeposit in the pits by natural filing during flood season with slight variation depending upon the amount of river flow, the quantity of water flowing and the amount of sand load carried during the river flow. The deposition pattern will be monitored every year & measurements will be carried out as soon as the monsoon comes to an end and fresh excavation will be carried.

Stream Flow Guage Map for rivers in Noney district :



*cum/min

Siltation Map for rivers in Noney district :



7. General Profile of the district :

Noney District is bounded by Senapati District to the East, Jiribam district to West, Tamenglong to the North and Churachanpur of Manipur to the South. The District had been part of Manipur West District before 1972. It is the farthest District from the state capital, Imphal and the District HQ. Tamenglong itself is also the farthest District HQ of Noney being 147 Kms from the state Capital.

When India attained independence in 1947, Tamenglong the parent District was not connected by motorable roads. The first motorable road constructed in Tamenglong District connected the capital of Manipur which was 75 miles long i.e. The main rivers flowing in the District are Barak(Ahu), Irang, Makhru(Makhu), Iring, Ijei(Aga) and Apah rivers etc. Barak(Ahu) is the biggest river. Till now, the water of this river are not utilized for irrigation or power production.

Rare species like hornbill, hoolock gibbon, slow loris etc are found in the forest. Bamboo, cane etc grow abundantly in the forest. Medicinal herbs are also available in the forests. The region is known for its biodiversity.

The topography of the district is generally hilly with steep slopes with a small valley. The hill ranges generally run in the north to south direction. Four major rivers running through the district are Barak, Irang, Leimatak, Tuipi. These rivers play an important role in the economic life of the people not only by providing fertile valley and fishes, but also making it feasible to take up important hydel project.

Annual Rainfall in Noney district is above 2000mm in the months from April to October. Generally the main soils found in the district are Red loamy soil, Red sandy soil and Red gravelly soil.

Noney District is a new district in Manipur, India, created by bifurcating erstwhile Tamenglong District vide notification No. 408 dated 08.12.2016 by Govt. of Manipur.

Noney, also known as Longmai, is a town located in the western part of Manipur, India. It is 63 kilometres (39 mi) west of Imphal, the capital of the state of Manipur. Its population is almost entirely made up of Rongmei Naga. Previously known as a village, recently has been declared as one of the new district headquarters of Manipur and is separated from the existing Tamenglong District and now comprises Haochong, Khoupum, Nungba and the Longmai subdivision.

Though the area is often known by the name "Noney" leaders of the land preferred the name "Longmai". Which mean, Luang-range and mai-widow (the widow ranges) derive from its geographical features. Despite the vast land they have, their great, great grandfathers started their life in a place called Napthiat Lauboot (located inside Longmai) usually known by the name " old Longmai village". A place situated on top of the mountain, approximately 2.3 km away from Noney bazaar. People don't live there anymore, but it is remembered and preserved till today in respect of their elders who had lived there. Elders would tell stories of being there and how people slowly, bit by bit move downward, toward the river Aga Duithuak (Aga river), until finally they completely vacate the old place. They all moved out of the old place, but all of them didn't settle in one area. Some moved further downward, some closer to the old place. Due to this settlement, the village got divided into 6 parts. The parts are usually known by numbers. The number assigned to the parts and their names are as follows:

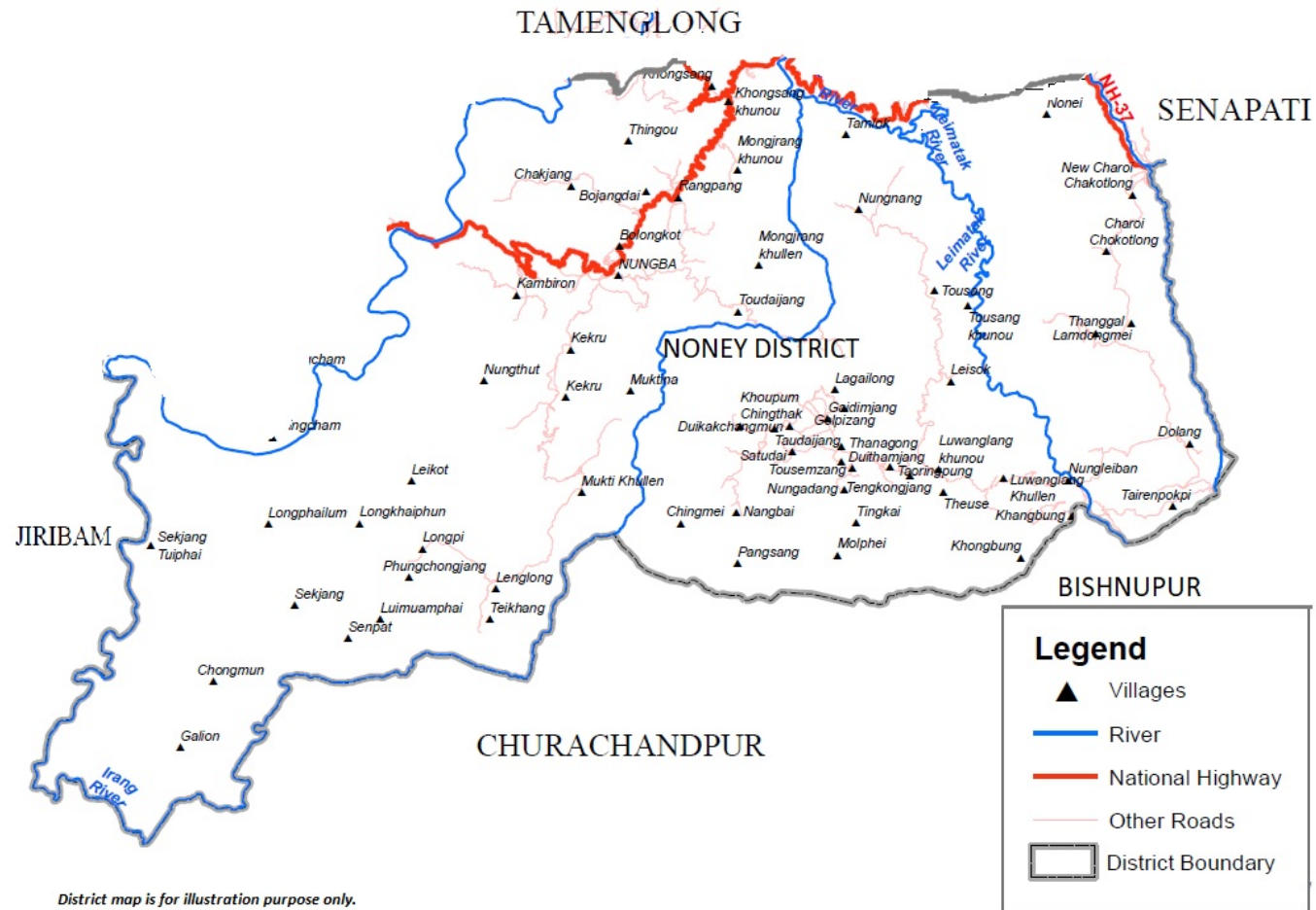
Longmai 1: PLZ/Gangbangbut Longmai
2: Longmai 2
Longmai 3: Longmai 3,
Longmai 4: Peaceland.
Longmai 5: Namthan,
Longmai Bazaar, (spring valley, happy colony)

The old Longmai village is known as Number 1 but when the last group of people living in the old village moved downward below Number 2, the new place is also known by the name "Number 1". In the list above the Number 1 is the new place below number 2. The lowest or the settlement nearest to the river Aga is the present bazaar area. People from all over Longmai and from nearby villages such as Khumji, Nungtek, Makhuam would come down to this place to sell their agricultural goods. For the last few years, many people from nearby villages come here, not only for commercial purposes but also for education and medical purposes. In Noney, most of the population belongs to Scheduled Tribe populations. These constitute 60.69%, while Scheduled Castes account for 0.13% of the total population.

The following are the sub-divisions in Noney district:

- Longmai
- Nungba
- Khoupum
- Haochong

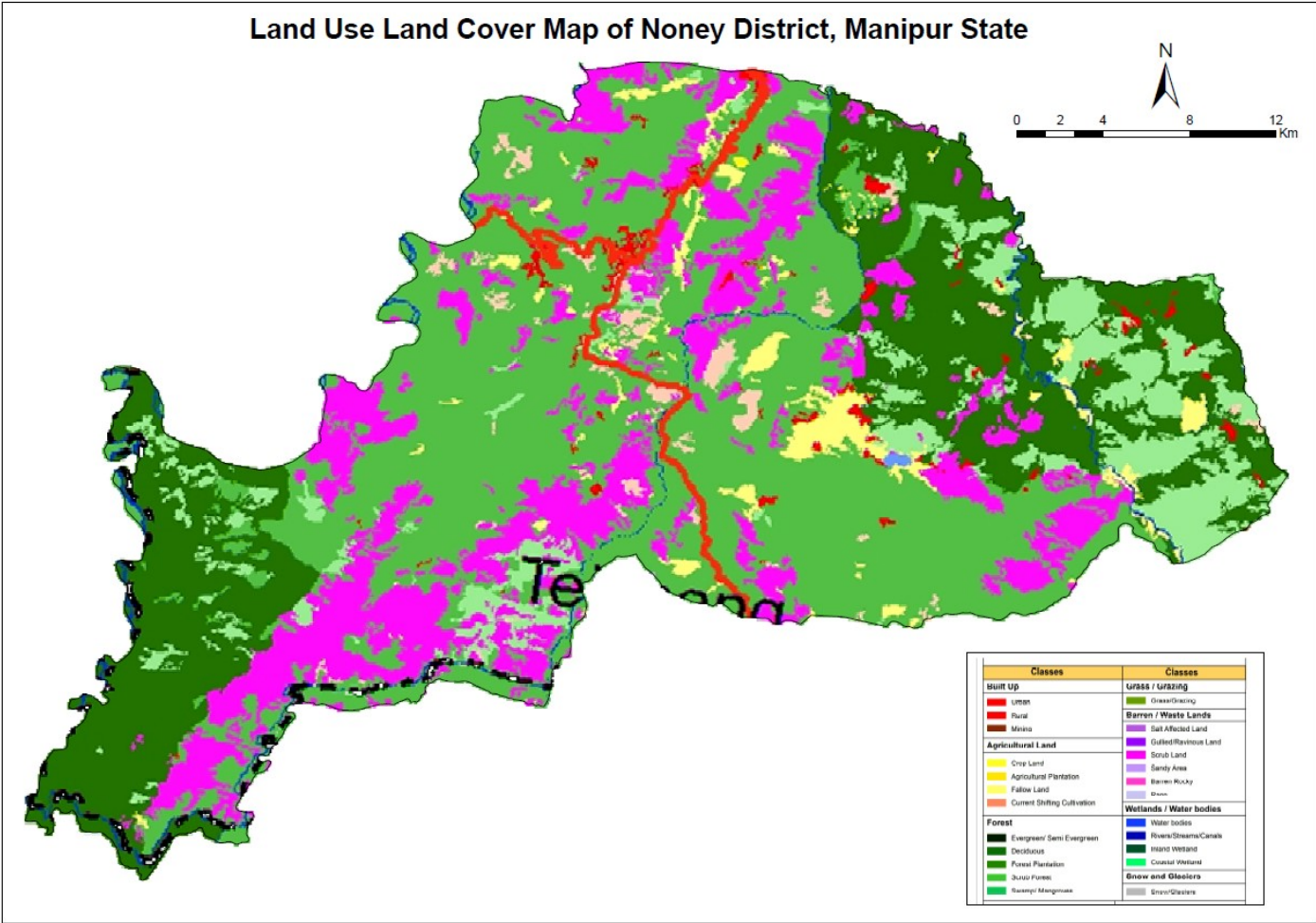
Location Map of District :



*This map is for illustration purpose only.

8.0 Land Utilization Pattern in the District : Forest, Agriculture, Horticulture, Mining etc:

Land Use Map for Noney district is as below:



Area Statistics of Land Use in Noney District, Manipur		
Sr. No.	Land Use Class	Area (Ha)
1	Crop Land	6238.37
2	Deciduous	63189.4
3	Evergreen/ Semi Evergreen	36136.6
4	Rivers/Streams/Canals	3583.8
5	Scrub Forest	12727.1
6	Scrub Land	33310.5
7	Urban	5213.9
	Total Area	160400

Irrigation

Irrigation	Area (% Cultivable)
Net Irrigated area	0.55
Gross irrigated area	0.94
Rainfed area	98.51

Agriculture Crops:

Major field crops cultivated (Kharif)	Area in ('000ha) by Rainfed /Irrigated	Major field crops cultivated (Rabi)	Irrigation
Rice	12.45	Rice	-
Maize	1.0	Maize	-
Sugarcane	1.09	Sugarcane	-
Potato	-	Potato	1.2
Pulses	0.36	Pulses	0.99
Wheat	-	Wheat	0.98
Oilseeds	0.19	Oilseeds	2.9

Source Agriculture Plan Noney

Horticulture :

Horticulture Crops (Fruits)	Area in ('000ha)
Fruits (Pineapple, Banana, Orange, Passion)	1.651

fruit and Others)	
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Horticulture Crops (Vegetables)/Others	Area in ('000ha)
Vegetables (Cabbage, Cauliflower, Tomato, Pea)	3.08

Source Agriculture Plan Noney

Mining :

Area under Mining	Area in ha
River Bed Sand/Pebble/Stone	0.00 (Mine Lease is not allotted yet)

Mineral Concession Leases yet to allot/yet to issue letter of intent to applicants

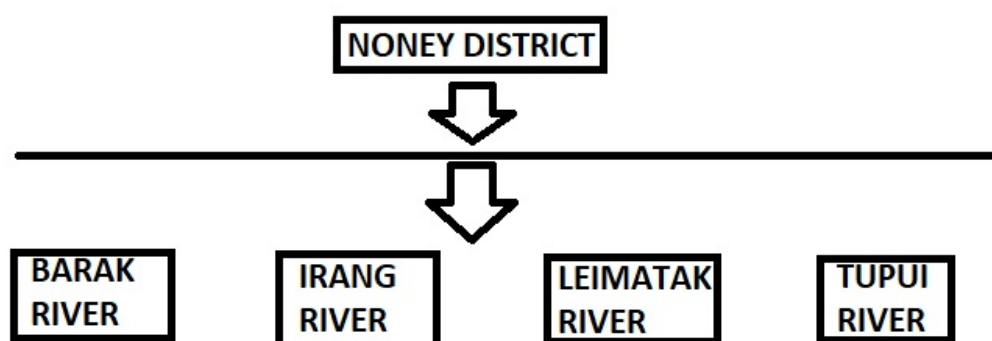
Source Department of Trade & Industries, Govt. of Manipur

9.0 Physiography of the District :

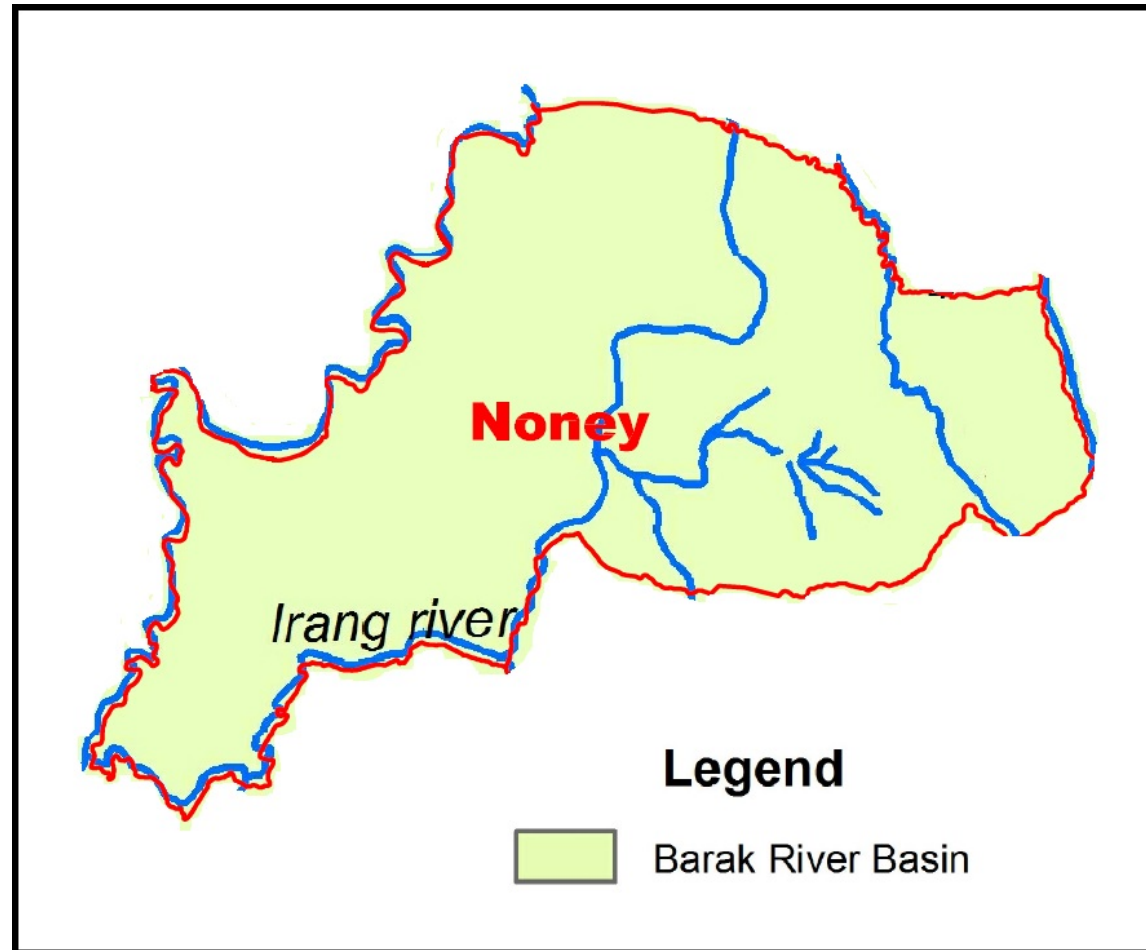
The major topographical features of the district are rugged hilly terrain . According to the Regional Divisions of India 1991 , the district is divided into 3 hilly regions, i.e. (i) Northern Hilly region (ii) Western Hilly region and (iii) Eastern Hilly region , based on geology ,soils,topography,climate and natural vegetation . The northern hilly region occupies the portions of the Tamenglong North and Tamenglong sub-divisions between the Barak and the Irang rivers. This region consists of three parallel hill ranges stretching north-south directions. The Sintongbung range as high as 2,437 meters above the mean sea level stretches in the east and meets the Laikot (2,832) peak, which is located at the dividing point between the Senapati and Tamenglong districts. The middle range stretches as high as 2,190 meters near Santing and the last range in the west stretches 1,428 metres high near Nalong. The important peaks of the region are Chabamlong (2,093), Thuyang Waichong (1,960), Kadi (1,810),Kawailong(1,741), Khongjang (1,615), Chaton(1,578),Molsong(1,572), Lenlong(1,222), Dunnong (1,152),Ileng (1,135), Old Tamenlong (1,135), etc. The western hilly region has three parallel hill ranges also stretching towards north – south direction. The west one divides the Jiri and the Makru rivers. The highest peak located in this range is 2,080 metres high at Thingdoi and the other peaks are Phoklong Khullen (1,434), Cheplum (1,030), Tuithang (719), etc. The second range divides the Makru and the Barak rivers and maximum relief is 1880 metres near New Magulong. The important peaks of the range are Jingning (1,798), Chaojing (1,355), Kaimai (1,142), Phellong(1,105), Namtiram (1,082), Atengba (1,053), Aziuram (1,007), Vamchengphai (1,001), Sibilong (965),etc. The last one separates the Barak and the Irang rivers and the major peaks are Kamlangching (1,499), Nubut (1,252), Okolong (812), etc. The eastern hilly region occupies east of the Irang river of the portion of Tamenglong and Nungba subdivisions. The northern portion of the region has rounded hilly range with maximum relief upto 2,241 metres high. The other peaks of the range are Phakbanglong (1,853), Toubam Mol (1,679), Lungjanglong (1,600), Kajinglong (1,558), etc. Spring and waterfalls (about 200 metres) are seen here and there in this

range . The Koubru range stretching north – south direction separates this region from Senapati district. The maximum height of the Koubru range is 2,348 metres. Other shorter ranges stretching both north - south and east-west directions are also found in this region and other peaks are Phourungba (1,854), Nungthek (1,805), Khaukong (1,608), Lakhong Kabui (1,512), Gaidimjang (1,488), Tashobut (1,451), Phungsang (1,040), etc. Contours are comparatively dense in the upper portions of the district and varying from 100 metres to 2400 metres with 100-metres- contours intervals.

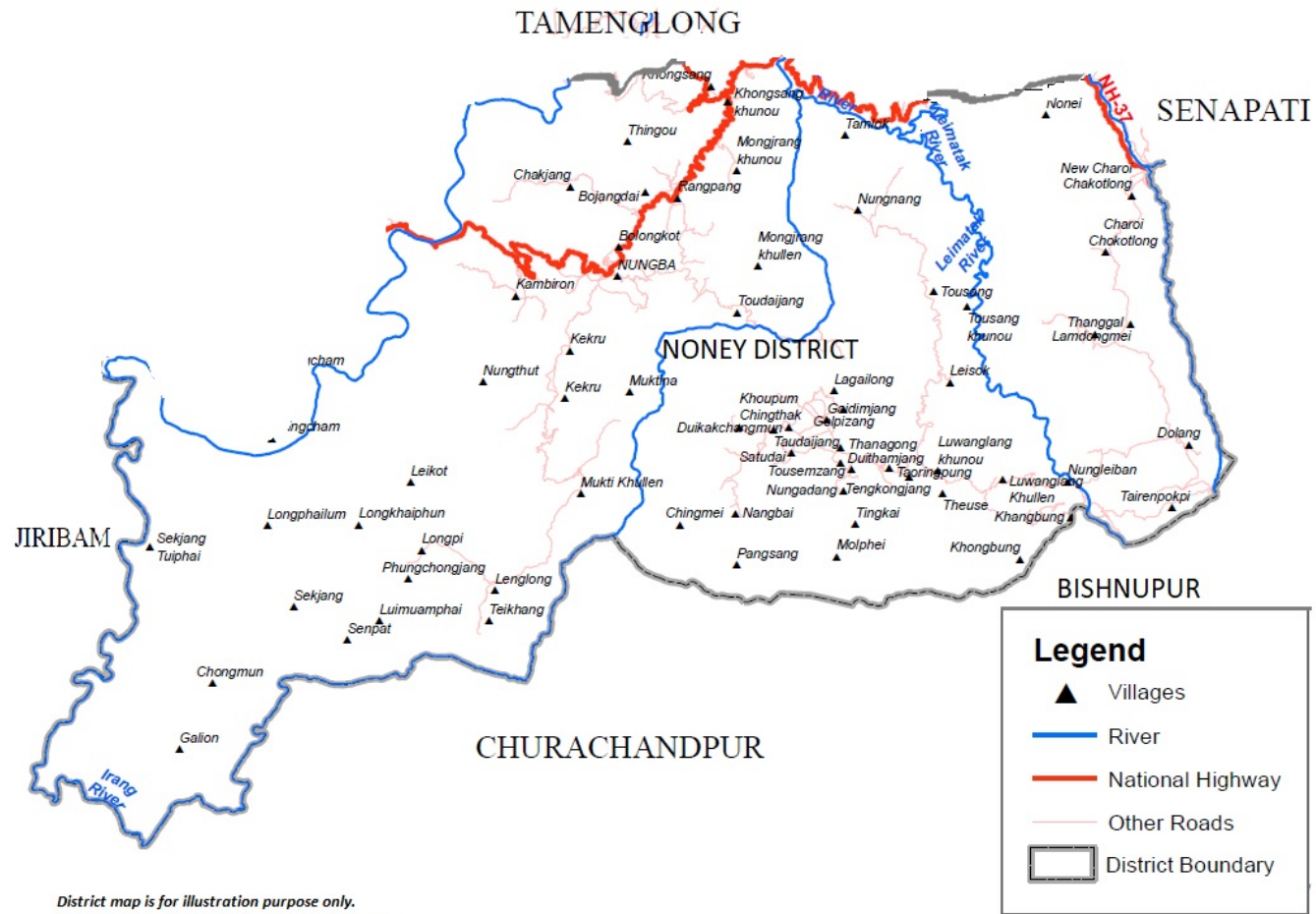
River Inventory of the district :



Basin Map for Noney district is drawn as:



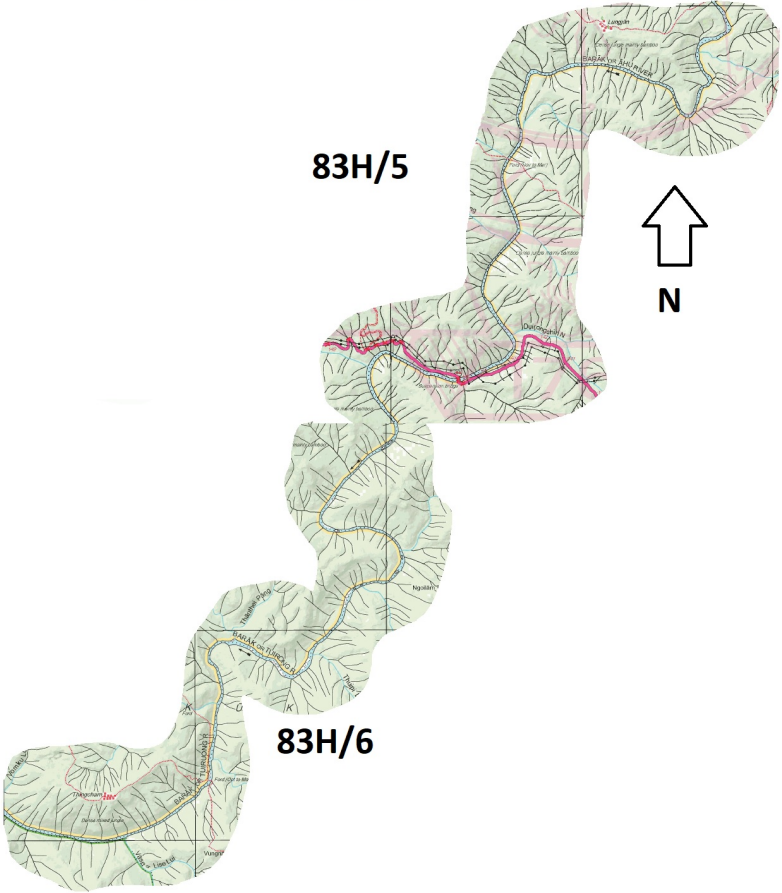
Confluence Points for the rivers in the district :



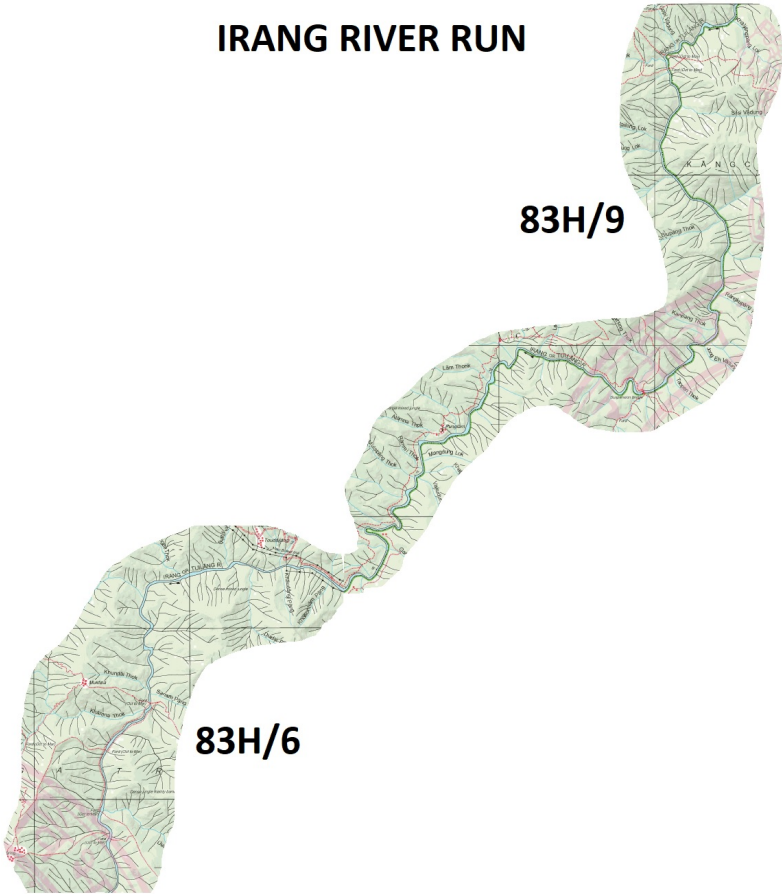
Major rivers are not confluent in the district

Barak River flowing through Noney district:

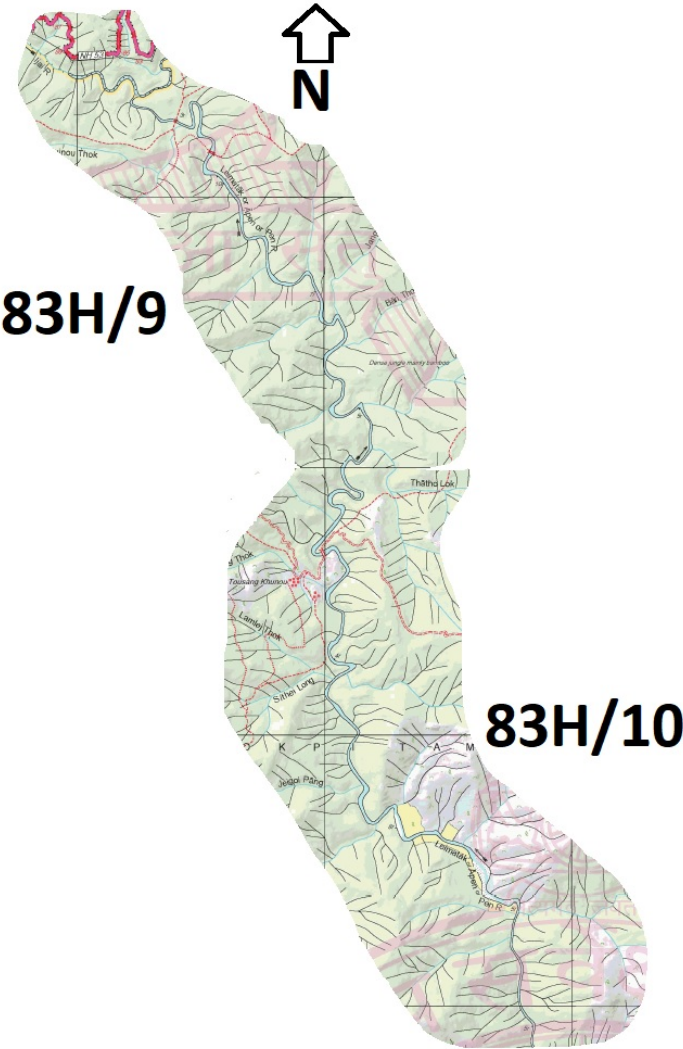
BARAK RIVER RUN



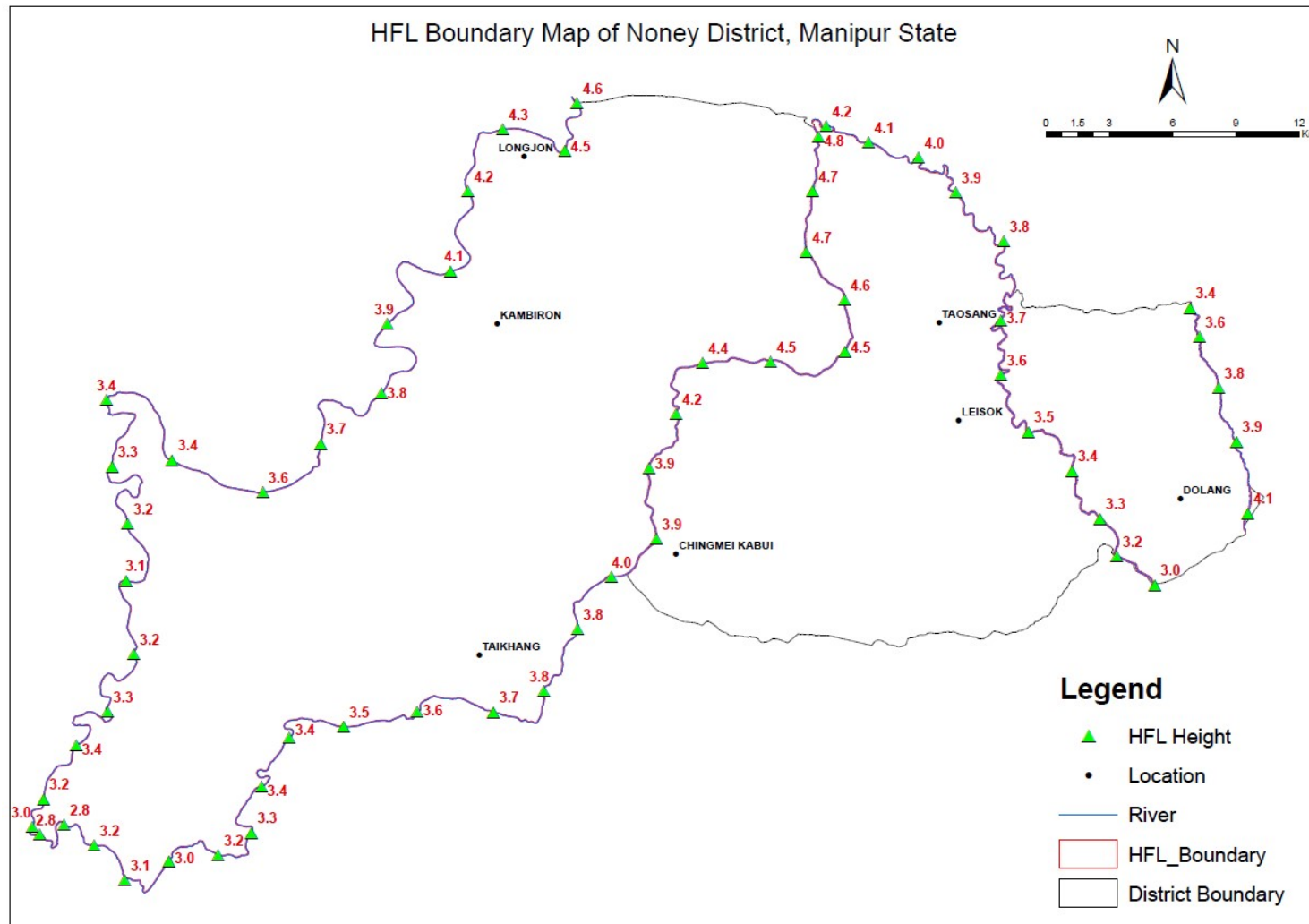
Irang River flowing through district:



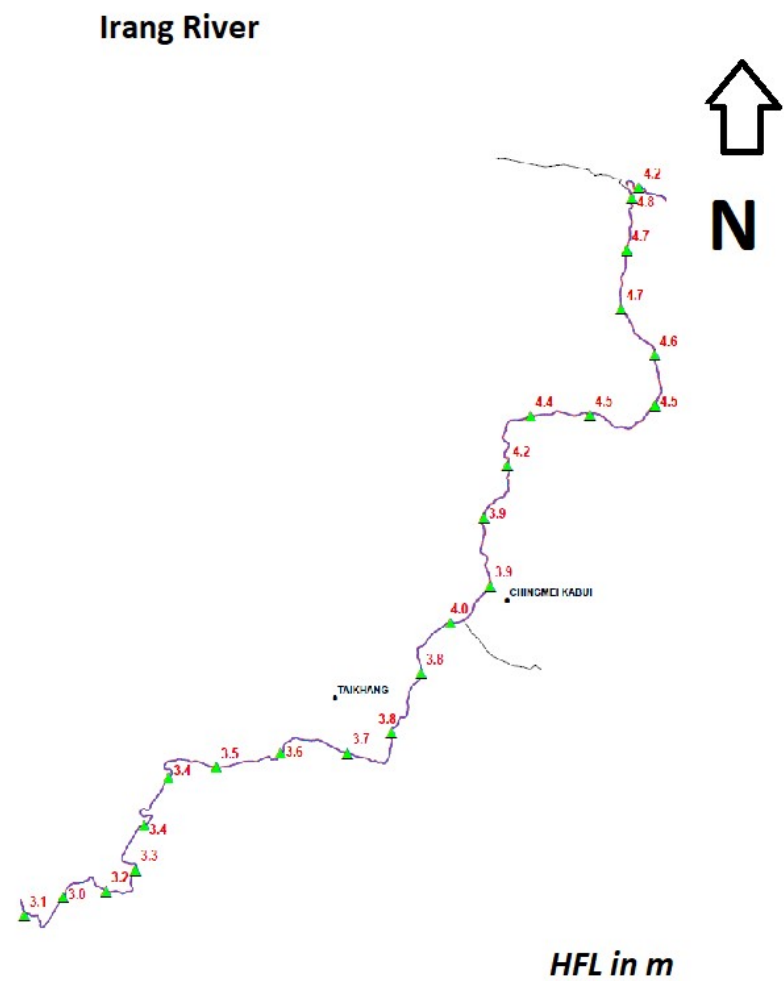
Leimatak River flowing through district:



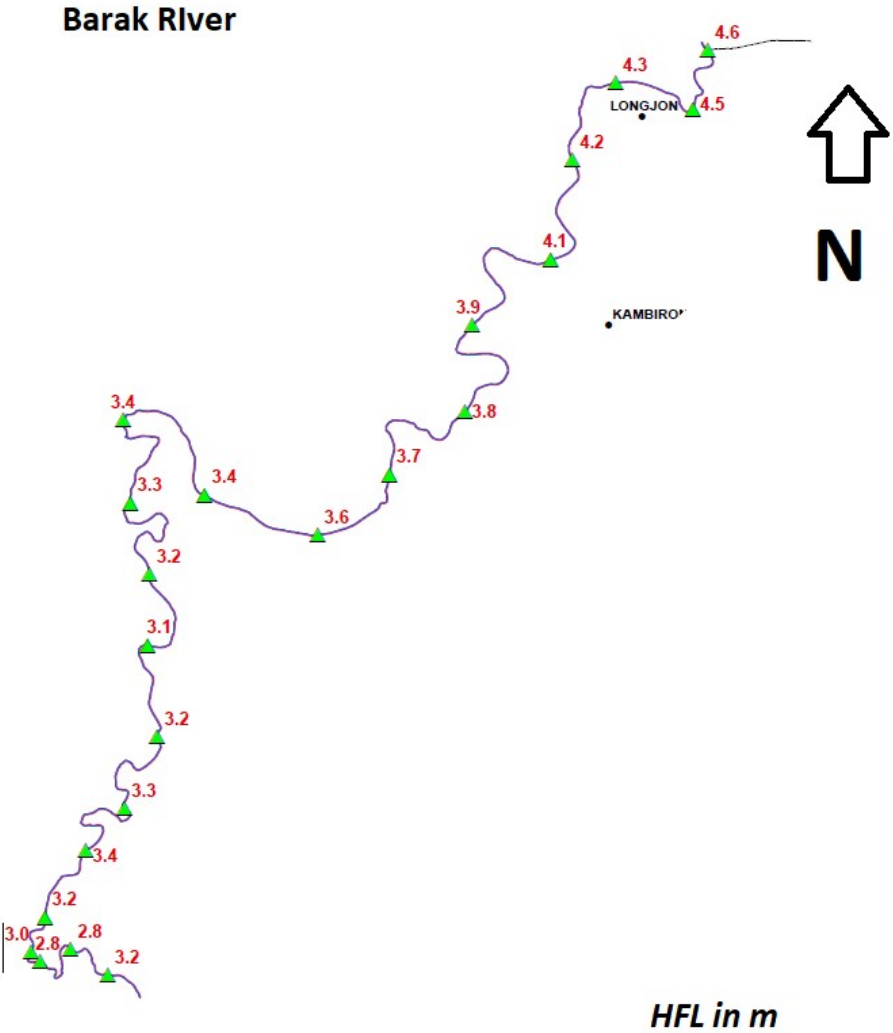
River streams flowing through district:



HFL Map for Irang River :

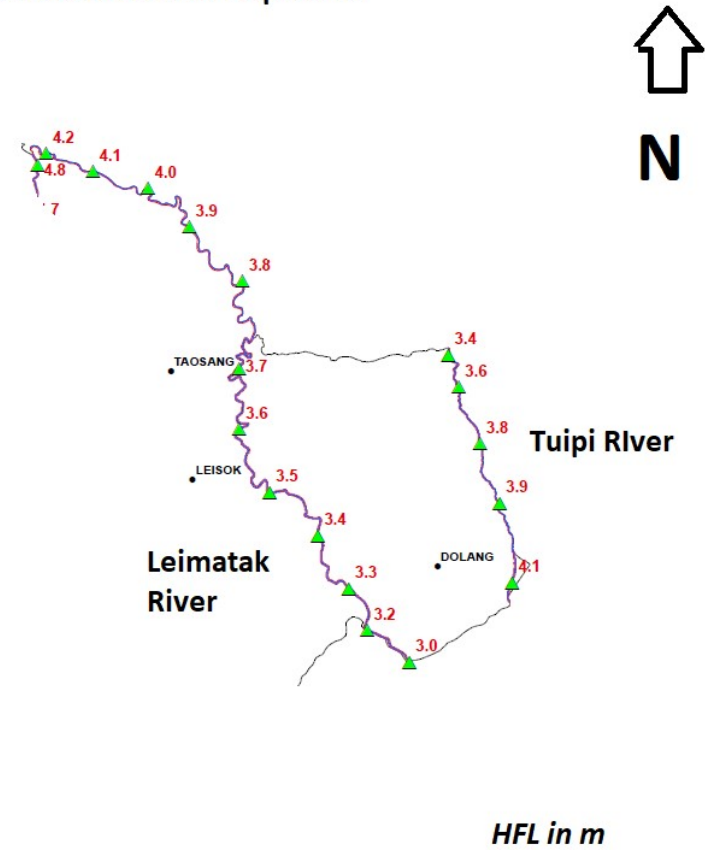


HFL Map for Barak River :

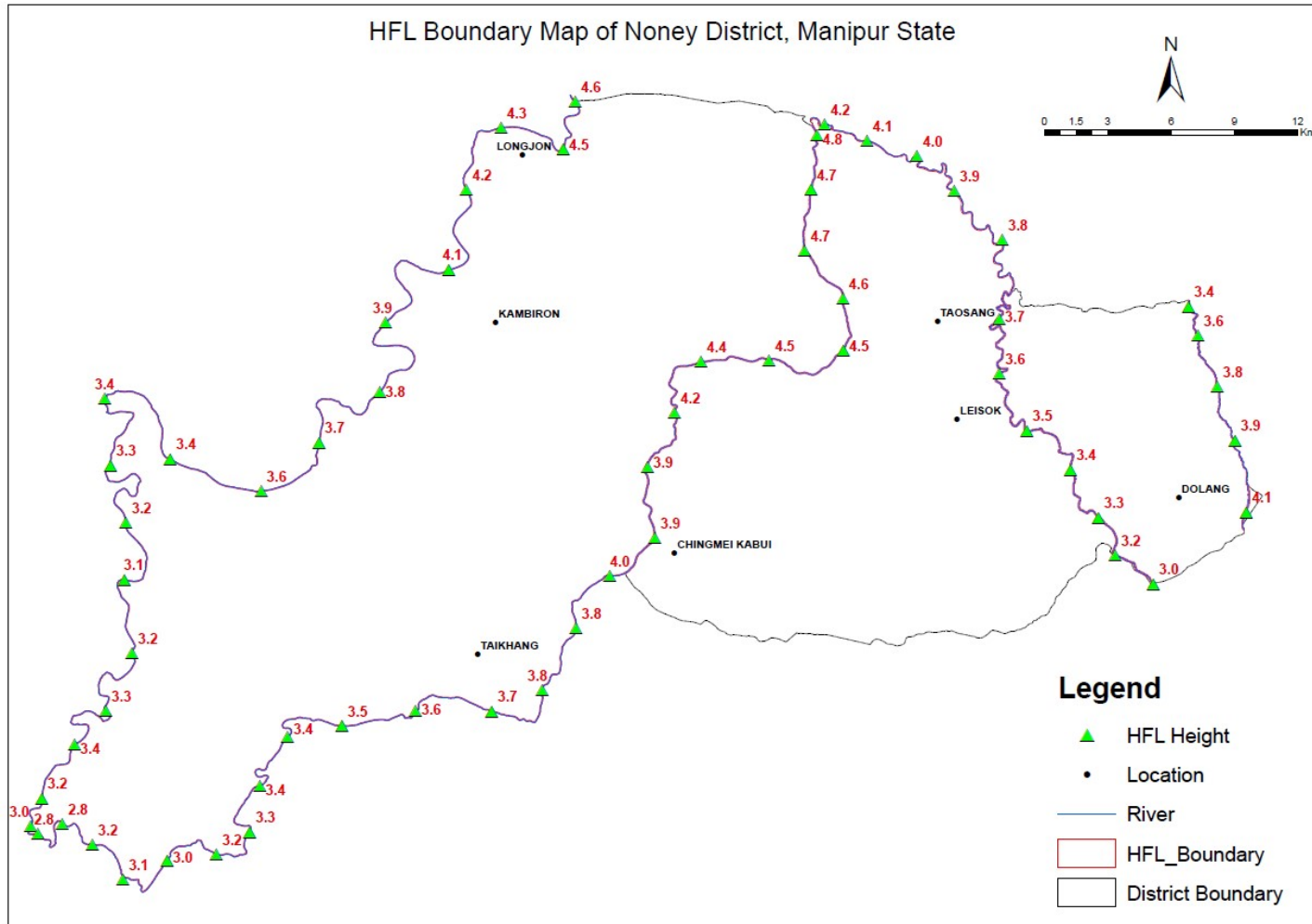


Leimatak River:

Leimatak River and Tuipi River



High Flood Level Map for Noney District :

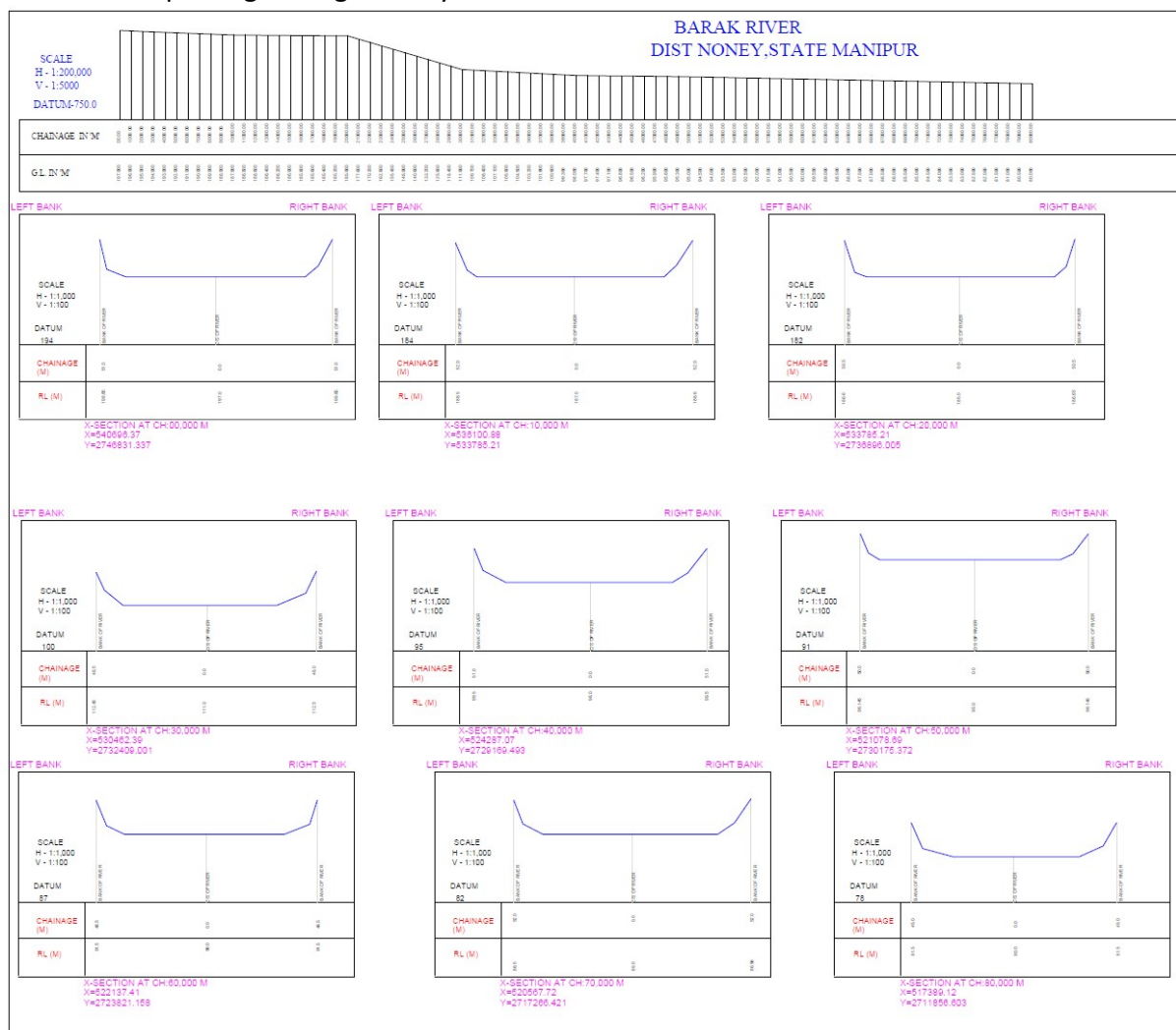


As per Enforcement and monitoring guidelines January 2020, a detailed L- Section and Cross Sections at specified locations are drawn over the rivers running length passing through Noney district for Barak,Irang and Leimatak

Length of all above rivers passing through the district is as below

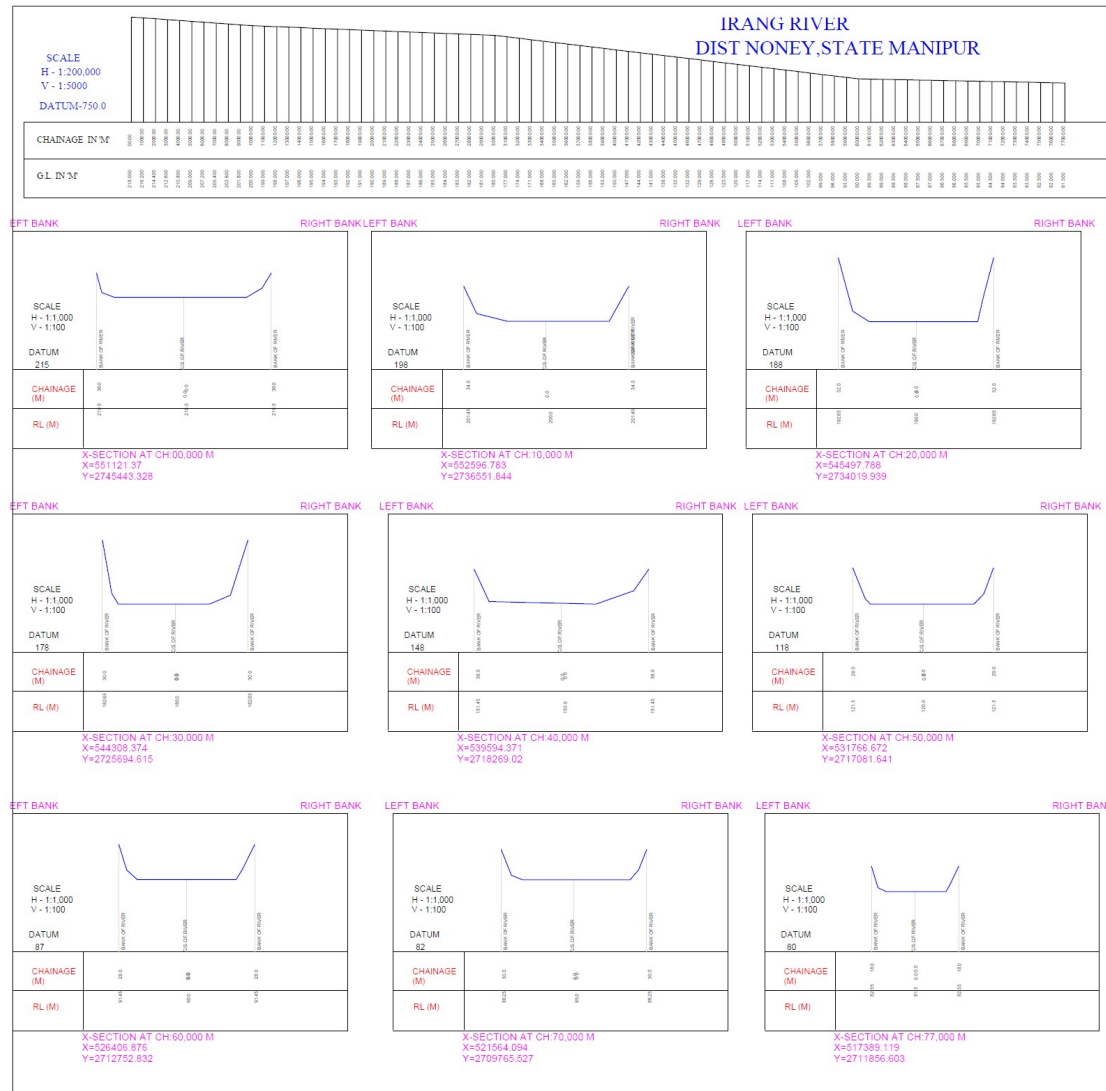
S.No.	Name of River/Stream	Total Length in the district (in Km)
1	Barak River	79.02
2	Irang River	77.53
3	Leimatak River	44.65

L & C – Sections for Barak river passing through Noney district :



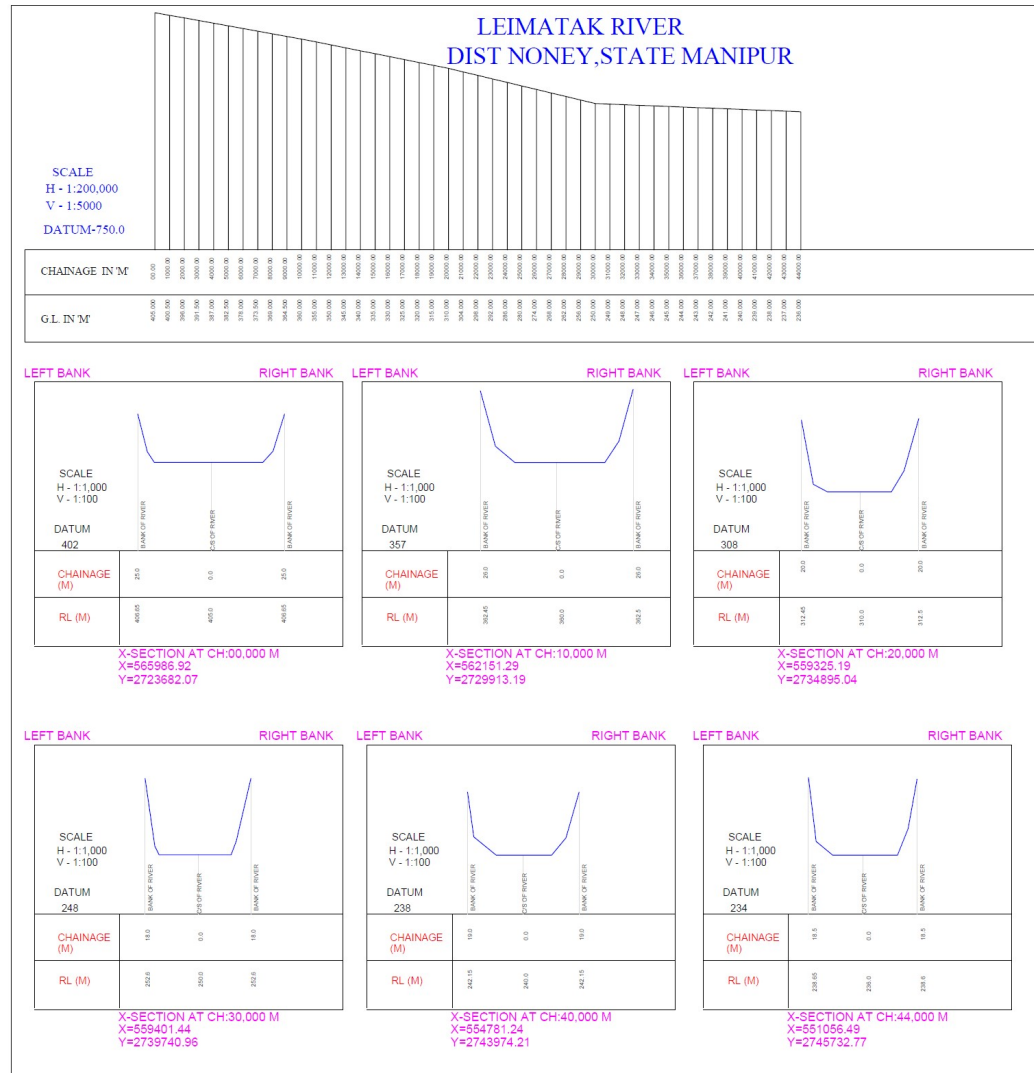
Refer hard copy for visibility of drawings

L & C – Sections for Irang river passing through Noney district :



Refer hard copy for visibility of drawings

L & C – Sections for Leimatak river passing through Noney district :



10.0 Rain Fall Data for Noney district:

Average rainfall for Konhpokpi district is 2000 mm per year.

11.00 Geology* and Mineral Wealth:

The geology of the district is similar to Barail series and Simrang formation (Garo Hills) with Surma Series and Baghmara formation (Garo Hills) , Tipam Series and Chengapara formation (Garo Hills). The district is believed to be a part of an ancient plateau . There are also several “U” shape villages, a shape that is believed to have caused by a long process of gestation. Small quantities of sands and sandstones are found in the district. Noney district spread over 1604 sq. km. is bounded by Senapati District to the East, Jiribam district to West, Tamenglong to the North and Churachanpur of Manipur to the South. Due to weak and fragile nature of rocks and high gradient of hill slopes, landslide is common phenomenon in the district during rainy season. The district has equitable and pleasant climate. Rainfall is relatively abundant and widespread. The monsoon season starts in June and continues till September. The average annual rainfall is 2000mm. Important rivers are Barak, Ilang, Leimatak, Tuipi.

The district exposes sequence of tertiary sediments of Disang Formation, Barail, Surma , Tipam and Dupitila Groups. The tertiary sediments occupies major part within inner Palaeogene Fold Belt. The Lower Disang , oldest unit encountered in the district comprises of thick grey splintery shales with minor siltstone and sand stone interbands. The succeeding upper Disang comprises rhythmic alterations of thick grey splintery to slaty shales and thin to thick bedded grey sandstone and minor siltstones, fragmentary plant remains and rare invertebrate fossils. The Liason Formation of Barail group conformably overlaying Diang Group sediments, comprises well bedded, multistoried sandstone and minor siltstone intercalations. These are succeeded by shale, siltstone, silty shale and minor sandstone, carbonaceous shale and thin coal seams belonging to Jenam Formation. Stratigraphically above it is the Renji Formation comprising massive thick sandstone with very thin shale band and clay galls at places. The Bhuban Formation belonging to Surma Group, disconformably overlaying Barail sediments, consists of cross laminated , micaceous sand stone with shale, siltstone and intraformational conglomerate. The Bhuban formation grades into a succession comprising shale, sandy shale, siltstone, mudstone and lenticular, coarse ferruginous sandstone belonging to Bokabil Formation of Surma Group. The rocks of Bokabil Formation grades conformably to the overlaying Tipam sandstone Formation of Tipam Group, characterized by thick bedded grits and conglomerates with occasional sandstone and claystones of Dupitila Formation belonging to Dupitila Group.

District is covered with thin layer of veneer of alluvial deposits. Groundwater occurs under unconfined and confined conditions. Since the upper Formations are mainly silty and clayey , open wells have poor yield prospects. However deeper zone, consisting sandstone of Tertiary age, forms good aquifers. The quality of water is good.

Minerals

Among the minerals found in the district, salt springs are of some significance. Water from these springs is boiled and salt is extracted by method of evaporation. The salt springs are found at Waikhong, Sikkong, Chandrakong and Ningel etc. Red clay suitable for pottery is found in the district. Hard bedded, massive sandstone of Disang Formation and Barail Group are extensively used for road construction and as building material.

* Geological resource map of Noney is not yet divided by authorities.

Noney district is rich in minor minerals such as building stone and sand. Mining activity is proposed to be one of the main revenue source for the district.

District has to allot new mining leases based on potentials and applications. There are no temporary permits working within the district as per information recorded in the district mining committee in the month of March 2020. (Source info. District Collector, Noney)

There are potential locations of sand leases over Imphal, Rodak, Thoubal, Irang rivers where sand/pebble deposition are allowed from replenishment and other safety point of view in the district. (Source info. District Collector, Noney).

Mineral	Mineable Reserves in Million Tonnes
Stone/Sand (Exposed river bed)	0.20 (Approx.) Based on river potential of the district.

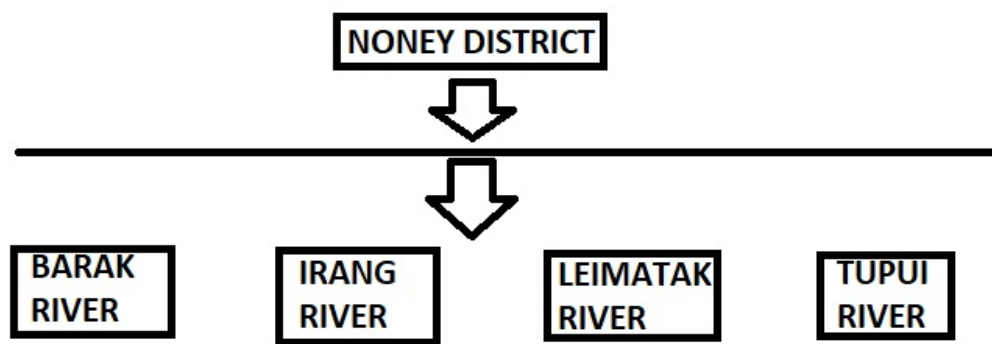
Source Geological Survey of India



District wise details of river or stream and other sand sources:

District is merged between Barak-Irang-Leimatak river sub basins. These subbasins are part of Barak Basin. Western part part of district is a part of Barak river watershed whereas Central Part of district forms a part of Irang river watershed and eastern part form a Leimatak watershed.

District river inventory is sketched below :



There are four major rivers draining across the district viz. Barak,Irang,Leimatak and Tuipi. Irang river has flows across Centre of district from North to South. Other rivers of the district are Barak flowing along western boundary of the district and Leimatak flows through eastern part of district .

All the sand/stone deposits are on Barak,Irang and Leimatak river water shed. Only exposed sand/stone area allowed by administration to recommend for scooping of sand/stone every year on satisfactory deposition keeping 2m of sand/stone as a base layer in the river bed.

District has few crushers of stone producing mechanical sand/sized aggregates by crushing and meeting as per IS standards for building grade sand/stone. But demand is for river bed sand and hence scooping of sand is a major activity to cater sand requirement to infrastructural development. However district authority is promoting to use mechanical sand to balance between river bed sand scooping.

District wise availability of sand and gravel or aggregate resources:

Noney district is rich in minor minerals such as building stone and sand. Mining activity is proposed to be one of the main revenue source for the district.

District has to allot new mining leases based on potentials and applications. There are no temporary permits working within the district as per information recorded in the district mining committee in the month of March 2020. (Source info. District Collector, Noney)

There are potential locations of sand leases over Imphal, Rodak, Thoubal, Irang rivers where sand/pebble deposition are allowed from replenishment and other safety point of view in the district. (Source info. District Collector, Noney).

The large sized pebbles/ stone aggregates are crushed in to different sizes like 6mm, 20mm, 40mm, 60mm and mechanical sand.

District wise details of existing mining leases of sand and aggregates :

District administration as per rules framed by Govt. of Manipur vide Manipur Minor Mineral Concession Rules, 2012 and amendments there of and after sought of all legal clearances proposed to convert these mineral concession areas in to leases for 5 years minimum period to 10 years of maximum period subject to renewal clause.

No. of Leases of Sand/Stone	Total Area in ha	Mineable Reserves Available in Million MT
Not allotted Yet by district administration		0.20(approx.) Based on potential

Drainage System with description of main rivers:

S.No.	Name of River	Area drained in Sq. Km.	% Area drained in the District
1	Barak River	740	46.13
2	Irang River	510	31.79
3	Leimatak River	354	22.08

Both the rivers includes their tributaries

Salient Features of important rivers and streams:

S.No.	Name of River/Stream	Total Length in the district (in Km)	Place of Origin	Altitude at Origin
1	Irang River	77.53	Irang is the most important river in the district and drains the northern and north western portions of the district.	2438m
2	Barak River	79.02	The Barak River rises from the Manipur hills, south of Mao in Senapati district of Manipur at an elevation of 2,331 m. It flows then along Nagaland-Manipur border through hilly terrains and enters Assam. It further enters Bangladesh where it is known by the name of the Surma and the Kushiara and later called the Meghna before receiving the combined flow of the Ganga and the Brahmaputra. The length of the Barak River from its origin upto the border of Assam along the Kushiara is 564 km	2331m
3	Leimatak River	44.65	Leimatak River and Tuipiului River, tributaries of Irang River.	990m

List of Sand /Stone Concession Areas:

Sl. No.	Name of Mineral	Name of Lessee	Address & Contact No. of LOI Holder	Letter of Intent Grant Order No. & Date	Area of M.L. to be allotted	Location
1	2	3	4	5	6	7
1.	Stone /Sand	Not allotted yet by District Administration				
2.						
3.						

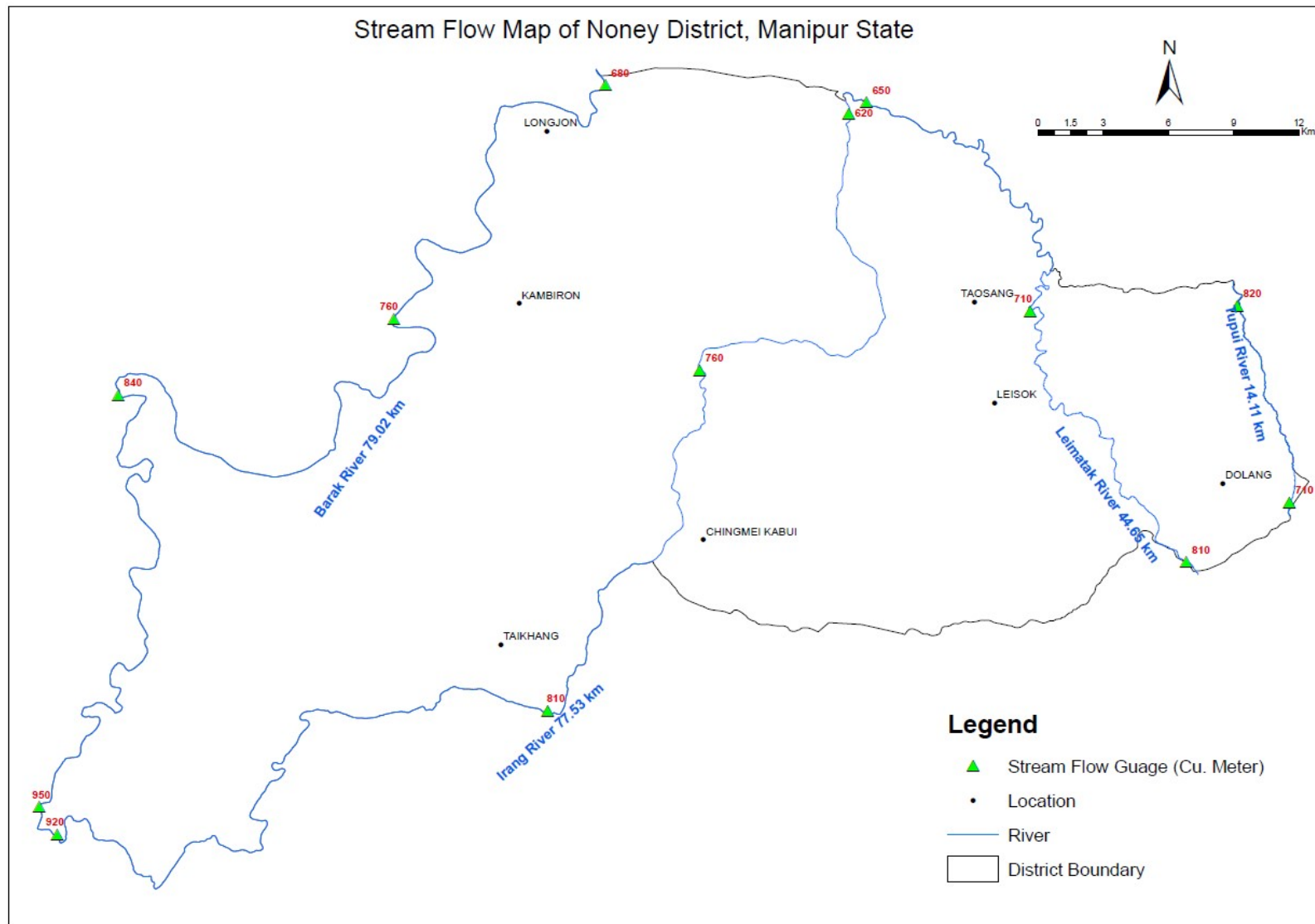
**On allotment of Mine Leases List will be amended*

Mineral Potential :

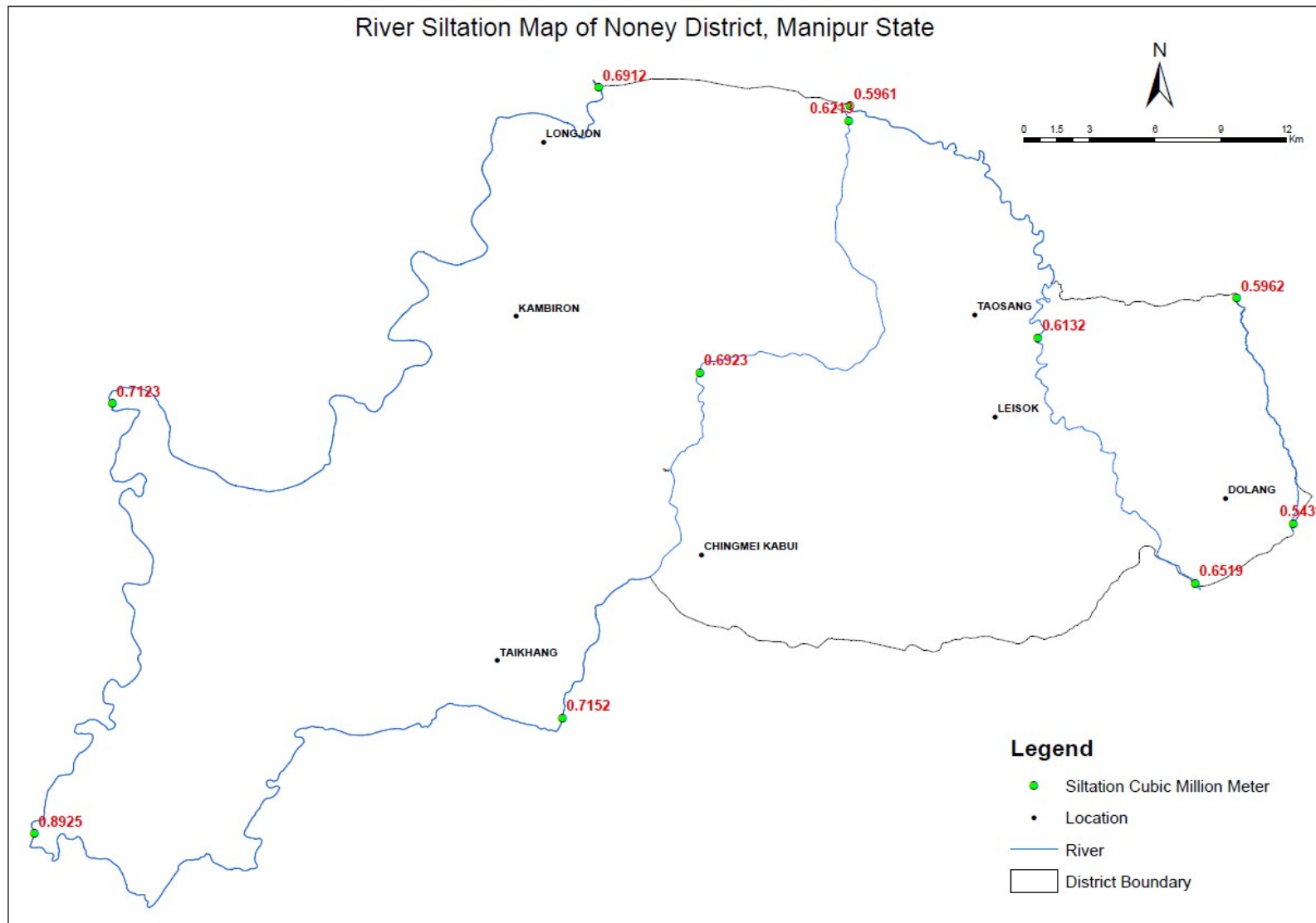
Boulder (MT)	Bajari (MT)	Sand(MT)	Total Mineable Mineral Potential
0.20 MT (Based on river potential in the district.)			0.20 MT

Annual Deposition :

Annual deposition is calculated by considering watershed area in Km^2 , Annual Rainfall in mm^3 , Average Watershed slope, Drainage density in Km^{-1} , Vegetative cover factor, Annual precipitation in cm, mean annual runoff in cm, mean annual temperature for Irang, Barak & Leimatak river and plotted on district map as :



#cum/min



#Cubic Million Meter

Sl. No.	Name of Mineral	Name of Lessee	Address & Contact No. of LOI Holder	Letter of Intent Grant Order No. & Date	Area of M.L. to be allotted	Location
1	2	3	4	5	6	7
1.	Stone /Sand	Not allotted yet by District Administration				
2.						
3.						

* This potential may be revised as per approval of mining plans. Once leases are allotted by district administration of Noney, amendment towards above information will be made in the district survey report.

DISTRICT SURVEY REPORT FOR NONEY DISTRICT

PART –B

FOR MINOR MINERALS OTHER THAN SAND MINING OR RIVER BED MINING (PEBBLE FOR CRUSHING/OPENCAST SURFACE MINING)

Prepared under

A] Appendix –X of MoEFCC, GoI notification S.O. 141(E) dated 15.1.2016

B] Sustainable Sand Mining Guidelines

C] MoEFCC, GoI notification S.O. 3611(E) dated 25.07.2018

D] Enforcement & Monitoring Guidelines, January 2020, MoEFCC, GoI

1.0 Introduction :

Hon'ble Supreme Court of India vide its judgement dated February 27,2012 and further relief amendment dated April 16,2012 directed all state, union territories and ministry of Environment and Forest, Govt. of India, New Delhi to screen mining of minor minerals leases within the purview of EIA notification 2006 and made requirement of environmental clearance to minor minerals less than 5 ha compulsory.

Ministry of Environment & Forest , Gol vide its office Memorandum L-11011/47/2011.IA.II(M) dated 18.05.2012 directed mass to comply Ho'ble Supreme Court decision.

Further streamlining of environmental clearance procedures, MOEFCC, Gol amended EIA notification 2006 vide S.O. 141(E) dated 15.01.2016 where procedure for preparation of District Survey Report (DSR) for minor minerals has been prescribed.

Further the procedure for preparation of DSR and format is amended vide MOEFCC notification S.O. 3611(E) dated 25.07.2018.

The subjected DSR is defined at " Appendix -X (See Paragraph 7(iii)(a)" of the notification S.O.141(E)dated 15.01.2016 and S.O. 3611(E) dated 25.07.2018.

This District survey report comply the environmental & monitoring guidelines issued by MoEFCC, Gol, New Delhi published in January 2020.

Accordingly this document is prepared by Secretary,Water Resources,State of Manipur on behalf of District Collector of Noney , Secretary, Water Resources,State of Manipur is empowered to change,modify and amend the District Survey Report for District of Imphal(West)

This District Survey Report will be utilized for assessing the minor minerals proposals of the district for grant of minor mineral leases, their feasibility and for grant of environmental clearances by the designated authorities.

Brief Introduction of Noney district :

Noney District is bounded by Senapati District to the East, Jiribam district to West, Tamenglong to the North and Churachanpur of Manipur to the South. The District had been part of Manipur West District before 1972. It is the farthest District from the state capital, Imphal and the District HQ. Tamenglong itself is also the farthest District HQ of Noney being 147 Kms from the state Capital.

When India attained independence in 1947, Tamenglong the parent District was not connected by motorable roads. The first motorable road constructed in Tamenglong District connected the capital of Manipur which was 75 miles long i.e. The main rivers flowing in the District are

Barak(Ahu), Irang, Makhru(Makhu), Iring, Ijei(Aga) and Apah rivers etc. Barak(Ahu) is the biggest river. Till now, the water of this river are not utilized for irrigation or power production.

Rare species like hornbill, hoolock gibbon, slow loris etc are found in the forest. Bamboo, cane etc grow abundantly in the forest. Medicinal herbs are also available in the forests. The region is known for its biodiversity.

The topography of the district is generally hilly with steep slopes with a small valley. The hill ranges generally run in the north to south direction. Four major rivers running through the district are Barak, Irang, Leimatak, Tuipi. These rivers play an important role in the economic life of the people not only by providing fertile valley and fishes, but also making it feasible to take up important hydel project.

Annual Rainfall in Noney district is above 2000mm in the months from April to October. Generally the main soils found in the district are Red loamy soil, Red sandy soil and Red gravelly soil.

Noney District is a new district in Manipur, India, created by bifurcating erstwhile Tamenglong District vide notification No. 408 dated 08.12.2016 by Govt. of Manipur.

Noney, also known as Longmai, is a town located in the western part of Manipur, India. It is 63 kilometres (39 mi) west of Imphal, the capital of the state of Manipur. Its population is almost entirely made up of Rongmei Naga. Previously known as a village, recently has been declared as one of the new district headquarters of Manipur and is separated from the existing Tamenglong District and now comprises Haochong, Khoupum, Nungba and the Longmai subdivision.

Though the area is often known by the name "Noney" leaders of the land preferred the name "Longmai". Which mean, Luang-range and mai-widow (the widow ranges) derive from its geographical features. Despite the vast land they have, their great, great grandfathers started their life in a place called Napthiat Lauboot (located inside Longmai) usually known by the name " old Longmai village". A place situated on top of the mountain, approximately 2.3 km away from Noney bazaar. People don't live there anymore, but it is remembered and preserved till today in respect of their elders who had lived there. Elders would tell stories of being there and how people slowly, bit by bit move downward, toward the river Aga Duithuak (Aga river), until finally they completely vacate the old place. They all moved out of the old place, but all of them didn't settle in one area. Some moved further downward, some closer to the old place. Due to this settlement, the village got divided into 6 parts. The parts are usually known by numbers. The number assigned to the parts and their names are as follows:

Longmai 1: PLZ/Gangbangbut Longmai

2: Longmai 2

Longmai 3: Longmai 3,

Longmai 4: Peaceland.

Longmai 5: Namthan,

Longmai Bazaar, (spring valley, happy colony)

The old Longmai village is known as Number 1 but when the last group of people living in the old village moved downward below Number 2, the new place is also known by the name "Number 1". In the list above the Number 1 is the new place below number 2. The lowest or the

settlement nearest to the river Aga is the present bazaar area. People from all over Longmai and from nearby villages such as Khumji, Nungtek, Makhuam would come down to this place to sell their agricultural goods. For the last few years, many people from nearby villages come here, not only for commercial purposes but also for education and medical purposes. In Noney, most of the population belongs to Scheduled Tribe populations. These constitute 60.69%, while Scheduled Castes account for 0.13% of the total population.

The following are the sub-divisions in Noney district:

- Longmai
- Nungba
- Khoupum
- Haochong

The major topographical features of the district are rugged hilly terrain . According to the Regional Divisions of India 1991 , the district is divided into 3 hilly regions, i.e. (i) Northern Hilly region (ii) Western Hilly region and (iii) Eastern Hilly region , based on geology ,soils,topography,climate and natural vegetation . The northern hilly region occupies the portions of the Tamenglong North and Tamenglong sub-divisions between the Barak and the Irang rivers. This region consists of three parallel hill ranges stretching north-south directions. The Sintongbung range as high as 2,437 meters above the mean sea level stretches in the east and meets the Laikot (2,832) peak, which is located at the dividing point between the Senapati and Tamenglong districts. The middle range stretches as high as 2,190 meters near Santing and the last range in the west stretches 1,428 metres high near Nalong. The important peaks of the region are Chabamlong (2,093), Thuyang Waichong (1,960), Kadi (1,810),Kawailong(1,741), Khongjang (1,615), Chaton(1,578),Molsong(1,572), Lenlong(1,222), Dunnong (1,152),Ileng (1,135), Old Tamenlong (1,135), etc. The western hilly region has three parallel hill ranges also stretching towards north – south direction. The west one divides the Jiri and the Makru rivers. The highest peak located in this range is 2,080 metres high at Thingdoi and the other peaks are Phoklong Khullen (1,434), Cheplum (1,030), Tuithang (719), etc. The second range divides the Makru and the Barak rivers and maximum relief is 1880 metres near New Magulong. The important peaks of the range are Jingning (1,798), Chaojing (1,355), Kaimai (1,142), Phellong(1,105), Namtiram (1,082), Atengba (1,053), Aziuram (1,007), Vamchengphai (1,001), Sibilong (965),etc. The last one separates the Barak and the Irang rivers and the major peaks are Kamlengching (1,499), Nubut (1,252), Okolong (812), etc. The eastern hilly region occupies east of the Irang river of the portion of Tamenglong and Nungba subdivisions. The northern portion of the region has rounded hilly range with maximum relief upto 2,241 metres high. The other peaks of the range are Phakbanglong (1,853), Toubam Mol (1,679), Lungjanglong (1,600), Kajinglong (1,558), etc. Spring and waterfalls (about 200 metres) are seen here and there in this range . The Koubru range stretching north – south direction separates this region from Senapati district. The maximum height of the Koubru range is 2,348 metres. Other shorter ranges stretching both north - south and east-west directions are also

found in this region and other peaks are Phourungba (1,854), Nungthek (1,805), Khaukong (1,608), Lakhong Kabui (1,512), Gaidimjang (1,488), Tashobut (1,451), Phungsang (1,040), etc. Contours are comparatively dense in the upper portions of the district and varying from 100 metres to 2400 metres with 100-metres- contours intervals.

Earlier being the part of Tamanglong district, drainage pattern for the Noney district is dominated by rivers flowing from Temanglong district. Hence here it is important to relate and describe drainage pattern of Tamanglong and Noney district combinedly. The Barak river and its tributaries such as the Jiri river and the Makru river in the west and the Irang river with her tributary like Leimatak river, etc., in the east drain the entire regions of the districts. It is rising from the Liyai Khunou village of the Paomata sub division of Senapati district and flows towards south – west. More than half of the total length of the Barak river flowing in Manipur runs in the district. The upper portion of this river flowing in the district forms state boundary of Nagaland and Manipur states for about 35 kms. This river also forms district boundary of Churachandpur and Tamenglong districts (nearly 25 kms.) and then flows towards south and after meeting the Tuivai river at Tipaimukh, it is turned towards north. The Jiri river rises from the height of 1,953 metres above the mean sea level near Thenbung village of Assam state and flows towards south and meets the Barak river at Jirimukh. It forms the state boundary between Assam and Manipur of nearly 85 kms long. After joining the Jiri river, the Barak river turns towards west and runs upto Sylhet district of Bangladesh as the Surma river and joins with the Bhramaputra river at Comilla district of Bangladesh. The Makru river rises from the Thingdoi Peak (2,080 metres) situated in the north – western corner of the district and flows towards south and join the Barak river at the boundary of Churachandpur and Tamenglong districts. The length of this river is about 80 kms. The Irang river starts from Sintongbung range (near Shogyangjang Kuki village – 2,249 metres) and flows towards south along the Imphal Tamenglong districts. A small stream called Noaki rising from the Koubru (2,561 metres) hill of senapati district flows towards north and divide the two districts of Senapati and Tamenglong and meets the Irang river near Thengjeng. The Irang river is then flowing southwards parallel to the highway upto Songpram and then cross the National Highway 53 at Tingjang and further turns westwards from Vantungbung and forms district boundary of Churachandpur and Tamenglong joins the Barak river near Gailon village. The length of the Irang river from the source to joining point is about 160 kms. The Leimatak river rises from the Mount Mamun Lhang (1,699 metres) of the Churachandpur district and flows towards north and falls to the Irang river near Tamlok village. Major portions of this river courses (about 33 kms) run in the south – eastern regions of Tamenglong district. The Irang river, a branch of the Irang river starts from the Nurathen village about 1,100 metres height and flows southwards. After crossing the National highway 53, it turns towards west along with the highway and again turns towards south and joins the Leimatak river near Tamok village running about 30 kms. The Tupui river starts from the Jouzangtek village (about 1,00 metres) and after running about 28 kms northwards falls into the Irang river at Noney. This river crosses the NH 53 and flows along the highway for about 10 kms. The Yai river rises from the Koubru range (2,348) and flows towards south. After running about 27 kms, it empties itself into Tupui river at Tupui village.

The economy of the district is basically agrarian with paddy as major crop. 76 percent of the total area under paddy cultivation in the district is under jhum. The district has hardly any industrial activity except for a small number of registered small industrial units.

Poultry and livestock farming is an important economic activity of the people in this hill district. The livestock and poultry production in the district is fairly high. The major livestock include goat, cattle, buffalo and pigs.

The district is good producer of oranges in Manipur. The district is suitable for all kinds of horticulture crops such as oranges, papaya, royal chillies, pineapples and also lime, coconut, mango, litchi, etc. which are grown in large area of the district. Tea and coffee plantation have been to be successful on a small scale. As there are no processing and marketing facilities, farmers process their tea at home for local consumption.

Drainage

Earlier being the part of Tamenglong district, drainage pattern for the Noney district is dominated by rivers flowing from Tamenglong district. Hence here it is important to relate and describe drainage pattern of Tamenglong and Noney district combinedly. The Barak river and its tributaries such as the Jiri river and the Makru river in the west and the Irang river with her tributary like Leimatak river, etc., in the east drain the entire regions of the districts. It is rising from the Liyai Khunou village of the Paomata sub division of Senapati district and flows towards south – west. More than half of the total length of the Barak river flowing in Manipur runs in the district. The upper portion of this river flowing in the district forms state boundary of Nagaland and Manipur states for about 35 kms. This river also forms district boundary of Churachandpur and Tamenglong districts (nearly 25 kms.) and then flows towards south and after meeting the Tuivai river at Tipaimukh, it is turned towards north. The Jiri river rises from the height of 1,953 metres above the mean sea level near Thenbung village of Assam state and flows towards south and meets the Barak river at Jirimukh. It forms the state boundary between Assam and Manipur of nearly 85 kms long. After joining the Jiri river, the Barak river turns towards west and runs upto Sylhet district of Bangladesh as the Surma river and joins with the Bhramaputra river at Comilla district of Bangladesh. The Makru river rises from the Thingdoi Peak (2,080 metres) situated in the north – western corner of the district and flows towards south and join the Barak river at the boundary of Churachandpur and Tamenglong districts. The length of this river is about 80 kms. The Irang river starts from Sintongbung range (near Shogyangjang Kuki village – 2,249 metres) and flows towards south along the Imphal Tamenglong districts. A small stream called Noaki rising from the Koubru (2,561 metres) hill of Senapati district flows towards north and divide the two districts of Senapati and Tamenglong and meets the Irang river near Thengjeng. The Irang river is then flowing southwards parallel to the highway upto Songpram and then cross the National Highway 53 at Tingjang and further turns westwards from Vantungbung and forms district boundary of Churachandpur and Tamenglong joins the Barak river near Gailon village. The length of the Irang river from the source to joining point is about 160 kms. The Leimatak river rises from the Mount Mamun

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Climate

The district enjoys on the whole a very pleasant climate throughout the year. The temperature is neither very hot nor very cold. The seasons can be conveniently classified into spring, rainy season, autumn and winter. By far March and October are the most pleasant months of the year. April and May are hot seasons. Temperatures rise from March onwards and day temperatures are highest in April and May. From the month of October the temperature begins to go down and by the beginning of November winter season starts and continues upto the end of February. December and January are the coldest months of the year. Climatic condition of a region is one of the major factors, which can influence directly or indirectly human occupancy ,effects its distribution of population / settlements and their socio - economic conditions .The temperature of the district varied from 26⁰ C to 36⁰C and from 0⁰C to 11⁰C as measured.

Natural Economic Resources

Apart from the building material such as sandstones, clay, pebble and gravel, no other mineral of economic significance has been found in the district. Hard, bedded and massive sand stone of Disang Formation and Barail Group are extensively used for road construction and as building material. Suitable earths and alluvium along the river banks provide material for local brick making. Pebbles are crushed to use as aggregates.

The evergreen forests give the district a sylvan look. The important trees found in the district are Pine (Uchan), Albizzia spp.(Khok), Castanopsis spp. (S a h i) , M e d u s f e r r e a (U t h o u) , M a g n i f e r a i n d i c a (H e i n o u) , P h o e b a H e r i n i s i a n a (Uningthou), Albizzia Lebbek (Uyel), etc. Some teak and Oak are also found in the western foot hills of the district. Evergreen forests mixed with multi bamboos are seen in the southern portion of these forests. Moubi (local name) bamboo's are abundantly grown but also some medicinal plants, wild fruits ,wild variety of fruits and edible mushrooms like Uyel, Kanglayel, Uchina, etc. are abundantly available in these forest areas

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district. The livestock and poultry production in the district is fairly high. The major livestock include goat, cattle buffalo and pigs.

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Forestry

Noney District falls in the Category of Manipur valley region. Reserve Forest Cover 2.59 sq. km. Major Forest products are Teak, Timber other than Teak, Fire wood etc. The process of regularization of land grants and effecting relevant changes in the basic records of survey and settlement are somewhat protracted and time consuming. Therefore the information based on records is in some cases at least, likely to be different when compared with the actual field situation.

Details of Notified Reserve forest in district

SL	District	Name of the Reserved forests	Area covered (sq. km.)	Total Area in the district (sq. km.)
1	Noney (Forest Division Noney)	(i) Laimaton	2.59	2.59

Source: Statistical Booklet of Manipur Forest, 2018

Minerals and mining

Apart from building materials such as sandstones, clay, pebble and gravel, no other mineral of economic important has been found the Noney district. Hard, bedded and massive sand stone of Disang Formation and Barail Group are extensively used for road construction and building material. Suitable earths and alluvium along the river banks is being used as raw material for local brick manufacturing. The occurrence of evaporate and salt springs in the Disang Formation has been reported from several places. Thin coal streaks and powdery coal are present in the sandstone of Barail Group at several places.

Soil and Cropping pattern

Hill soil like red laterite is found throughout the district. Sandy soil is also in the river gorges. Soils are highly eroded due to wide practice of traditional Shifting / small Jhuming cultivation. Single cropping pattern is adopted in the regions with either Kharif and Rabi crops. No land Revenue act is applied in the district. The economy of the district is basically agrarian with paddy as major crop. 76 percent of the total area under paddy cultivation in the district is under

jhum. The district is good producer of oranges in Manipur. The district is suitable for all kinds of horticulture crops such as oranges, papaya, royal chillies, pineapples and also lime, coconut, mango, litchi, etc. which are grown in large area of the district. Tea and coffee plantation have been to be successful on a small scale. As there are no processing and marketing facilities, farmers process their tea at home for local consumption

Agriculture

Most of the people of this District are engaged in agricultural activities. According to Census 2011, percentage of the total workers engaged as cultivators is 74.48 and as agricultural labourers is 2.15 percent in the District. Together they constitute 76.63 percent of the total workers of the District.

The following are the sub-divisions in Noney district:

- Longmai
- Nungba
- Khoupum
- Haochong

*Info: Notification Govt. of Manipur

Salient Features of Noney District :

Details of the Area				
District & State	Noney & Manipur			
Subdivision & Taluka (Circles)	4 Nos.			
Villages	57 villages			
Area of district	1604 Sq. Km			
Minerals in district	Sandstone, Alluvium ,Clay			
Category	‘B’			
Geographical Co-ordinates		LATITUDE [N]	LONGITUDE [E]	
		24 ⁰ 29'N and 24 ⁰ 50'N	93 ⁰ 13' E to 93 ⁰ 26'E	
Accessibility				
Road Connectivity	SH Tamenglong to Nungba,Jiribam to Nungba, Nungba to Thalon,Nungba to Bishnupur and NH37 to Imphal			
Rail Connectivity	Not Available			
Airport	Bir Tikendrajit International Airport (Nearest Airport)			
General Climatic Conditions				
Wind Pattern during study period	Northwest- Southeast			
Maximum Temperature	Summer : 28 – 30 ⁰ C			
	Winter : 11 – 0 ⁰ C			
Minimum Temperature	Summer : 28 – 30 ⁰ C			
	Winter : 11 – 0 ⁰ C			
Average Annual Rainfall (mm)	2000 mm			
Details of the Project				
Elevation	Its average elevation is about 770 m above the sea level.			
Historical / Important Places				
Archaeological/Historical/Ancient Monuments within district	No archeological /historical places are notified.			

	Noney District: <table><tr><th>Sl. No.</th><th>Historical Site/Monument</th><th>Year of Protection</th><th>Location</th></tr><tr><td>1</td><td colspan="3">Nil</td></tr></table>	Sl. No.	Historical Site/Monument	Year of Protection	Location	1	Nil		
Sl. No.	Historical Site/Monument	Year of Protection	Location						
1	Nil								
Names of the national park, sanctuary Biosphere reserve, Tiger Reserve, Elephant reserve, Forest (RF/PF/Unclassified)	No ESZ or Biosphere is notified in the district Zeilad wild life sanctuary is at northern cutting edge of Noney district falling in southern part of Tamenglong district. It is notified vide MoEFCC, Govt of India S.O. S.O. 3309 dated 20.10.2016								

2.0 Overview of Mining Activity in the district :

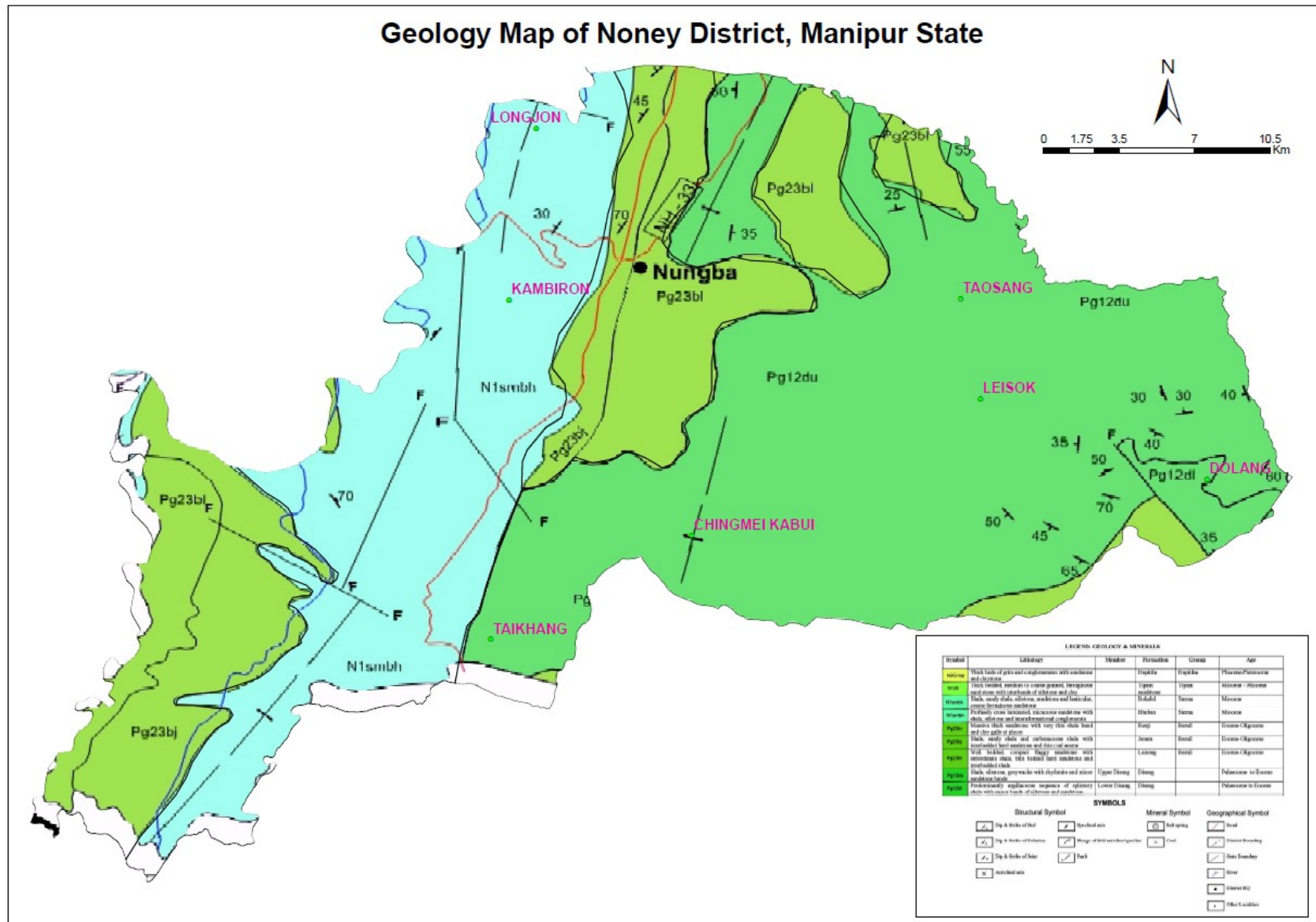
Noney district is rich in minor minerals such as building stone and sand. Mining activity is proposed to be one of the main revenue source for the district.

District has to allot new mining leases based on potentials and applications. There are no temporary permits working within the district as per information recorded in the district mining committee in the month of March 2020. (Source info. District Collector, Noney)

There are potential locations of sand leases over Imphal, Rodak, Thoubal, Irang rivers where sand/pebble deposition are allowed from replenishment and other safety point of view in the district. (Source info. District Collector, Noney).

Villages marked on the district geological map is as below :

Geology Map of Noney District, Manipur State



3. General Profile of the district :

Noney District is bounded by Senapati District to the East, Jiribam district to West, Tamenglong to the North and Churachanpur of Manipur to the South. The District had been part of Manipur West District before 1972. It is the farthest District from the state capital, Imphal and the District HQ. Tamenglong itself is also the farthest District HQ of Noney being 147 Kms from the state Capital.

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Noney District is a new district in Manipur, India, created by bifurcating erstwhile Tamenglong District vide notification No. 408 dated 08.12.2016 by Govt. of Manipur.

Noney, also known as Longmai, is a town located in the western part of Manipur, India. It is 63 kilometres (39 mi) west of Imphal, the capital of the state of Manipur. Its population is almost entirely made up of Rongmei Naga. Previously known as a village, recently has been declared as one of the new district headquarters of Manipur and is separated from the existing Tamenglong District and now comprises Haochong, Khoupum, Nungba and the Longmai subdivision.

Though the area is often known by the name "Noney" leaders of the land preferred the name "Longmai". Which mean, Luang-range and mai-widow (the widow ranges) derive from its geographical features. Despite the vast land they have, their great, great grandfathers started their life in a place called Napthiat Lauboot (located inside Longmai) usually known by the name " old Longmai village". A place situated on top of the mountain, approximately 2.3 km away from Noney bazaar. People don't live there anymore, but it is remembered and preserved till today in respect of their elders who had lived there. Elders would tell stories of being there and how people slowly, bit by bit move downward, toward the river Aga Duithuak (Aga river), until finally they completely vacate the old place. They all moved out of the old place, but all of them didn't settle in one area. Some moved further downward, some closer to the old place. Due to this settlement, the village got divided into 6 parts. The parts are usually known by numbers. The number assigned to the parts and their names are as follows:

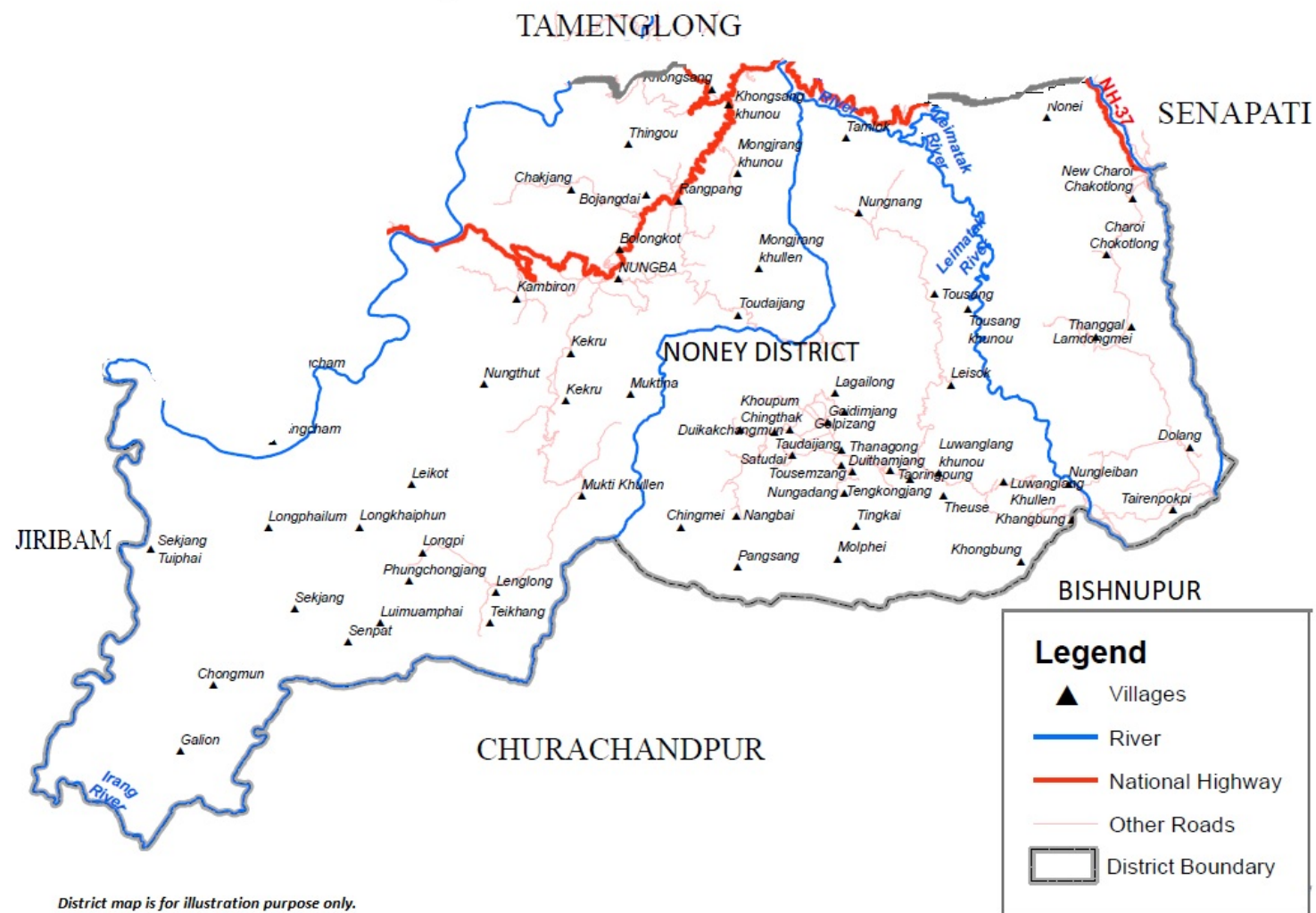
Longmai 1: PLZ/Gangbangbut Longmai
2: Longmai 2
Longmai 3: Longmai 3,
Longmai 4: Peaceland.
Longmai 5: Namthan,
Longmai Bazaar, (spring valley, happy colony)

The old Longmai village is known as Number 1 but when the last group of people living in the old village moved downward below Number 2, the new place is also known by the name "Number 1". In the list above the Number 1 is the new place below number 2. The lowest or the settlement nearest to the river Aga is the present bazaar area. People from all over Longmai and from nearby villages such as Khumji, Nungtek, Makhuam would come down to this place to sell their agricultural goods. For the last few years, many people from nearby villages come here, not only for commercial purposes but also for education and medical purposes. In Noney, most of the population belongs to Scheduled Tribe populations. These constitute 60.69%, while Scheduled Castes account for 0.13% of the total population.

The following are the sub-divisions in Noney district:

- Longmai
- Nungba
- Khoupum
- Haochong

Location Map of District :



*Leases will be marked once allotted as amendment

4.0 Geology of the District:

The geology of the district is similar to Barail series and Simrang formation (Garo Hills) with Surma Series and Baghmara formation (Garo Hills) , Tipam Series and Chengapara formation (Garo Hills). The district is believed to be a part of an ancient plateau . There are also several “U” shape villages, a shape that is believed to have caused by a long process of gestation. Small quantities of sands and sandstones are found in the district. Noney district spread over 1604 sq. km. is bounded by Senapati District to the East, Jiribam district to West, Tamenglong to the North and Churachanpur of Manipur to the South. Due to weak and fragile nature of rocks and high gradient of hill slopes, landslide is common phenomenon in the district during rainy season. The district has equitable and pleasant climate. Rainfall is relatively abundant and widespread. The monsoon season starts in June and continues till September. The average annual rainfall is 2000mm. Important rivers are Barak, Ilang, Leimatak, Tuipi.

The district exposes sequence of tertiary sediments of Disang Formation, Barail, Surma , Tipam and Dupitila Groups. The tertiary sediments occupies major part within inner Palaeogene Fold Belt. The Lower Disang , oldest unit encountered in the district comprises of thick grey splintery shales with minor siltstone and sand stone interbands. The succeeding upper Disang comprises rhythmic alterations of thick grey splintery to slaty shales and thin to thick bedded grey sandstone and minor siltstones, fragmentary plant remains and rare invertebrate fossils. The Liason Formation of Barail group conformably overlaying Diang Group sediments, comprises well bedded, multistoried sandstone and minor siltstone intercalations. These are succeeded by shale, siltstone, silty shale and minor sandstone, carbonaceous shale and thin coal seams belonging to Jenam Formation. Stratigraphically above it is the Renji Formation comprising massive thick sandstone with very thin shale band and clay galls at places. The Bhuban Formation belonging to Surma Group, disconformably overlaying Barail sediments, consists of cross laminated , micaceous sand stone with shale, siltstone and intraformational conglomerate. The Bhuban formation grades into a succession comprising shale, sandy shale, siltstone, mudstone and lenticular, coarse ferruginous sandstone belonging to Bokabil Formation of Surma Group. The rocks of Bokabil Formation grades conformably to the overlaying Tipam sandstone Formation of Tipam Group, characterized by thick bedded grits and conglomerates with occasional sandstone and claystones of Dupitila Formation belonging to Dupitila Group.

District is covered with thin layer of veneer of alluvial deposits. Groundwater occurs under unconfined and confined conditions. Since the upper Formations are mainly silty and clayey , open wells have poor yield prospects. However deeper zone, consisting sandstone of Tertiary age, forms good aquifers. The quality of water is good.

Minerals

Among the minerals found in the district, salt springs are of some significance. Water from these springs is boiled and salt is extracted by method of evaporation. The salt springs are found at Waikhong, Siphong, Chandrakhong and Ningel etc. Red clay suitable for pottery is found in the district. Hard bedded , massive sandstone of Disang Formation and Barail Group are extensively used for road construction and as building material.

* Geological resource map of Noney is not yet divided by authorities.

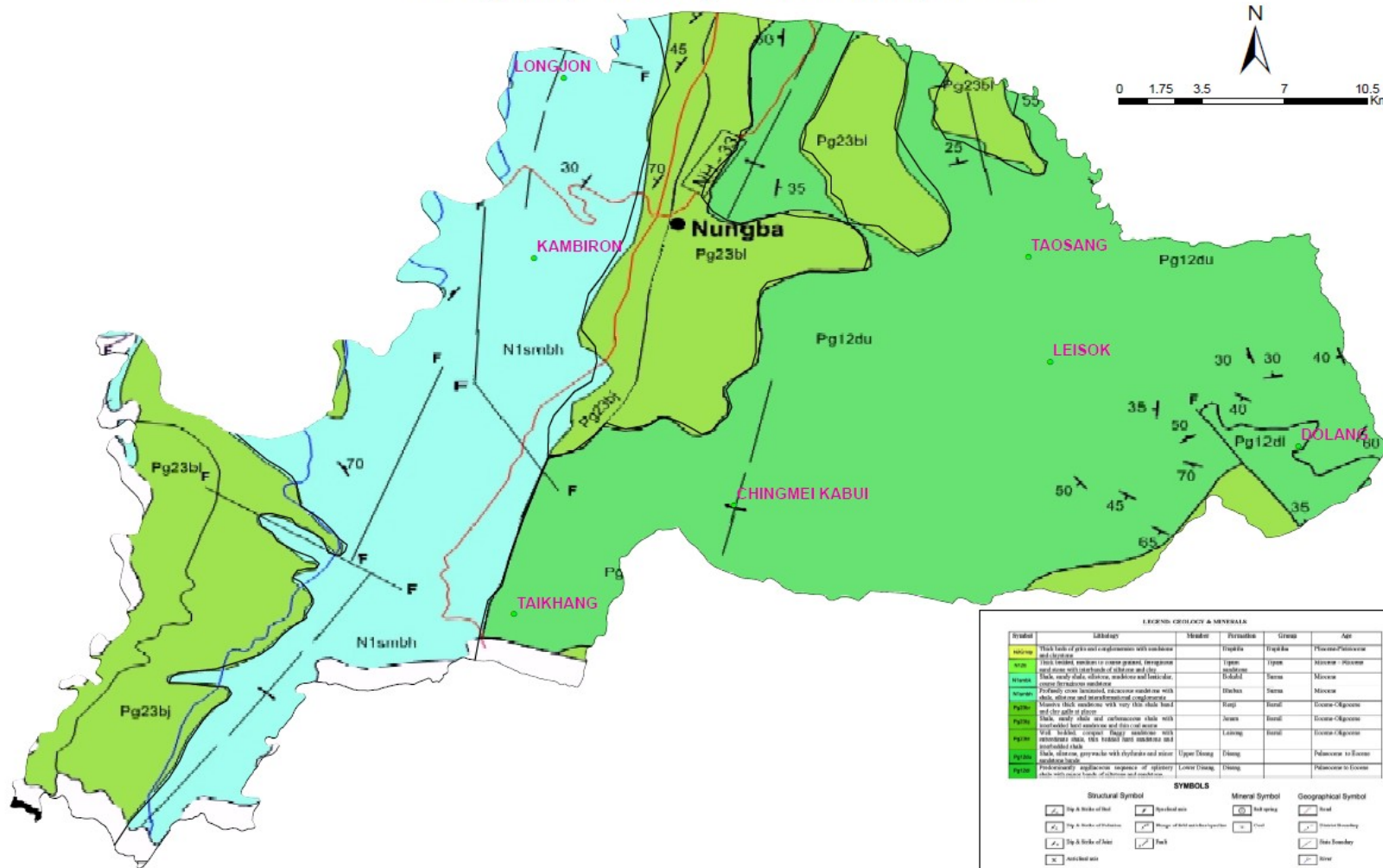
Noney district is rich in minor minerals such as building stone and sand. Mining activity is proposed to be one of the main revenue source for the district.

District has to allot new mining leases based on potentials and applications. There are no temporary permits working within the district as per information recorded in the district mining committee in the month of March 2020. (Source info. District Collector, Noney)

There are potential locations of sand leases over Imphal, Rodak, Thoubal, Irang rivers where sand/pebble deposition are allowed from replenishment and other safety point of view in the district. (Source info. District Collector, Noney).

Mineral	Mineable Reserves in Million Tonnes
Stone/Sand (Surface Mining)	0.75 (Approx.) Based on potential demand of the district.

As per the scenario of the state, mining activity is stopped since a long period. Reexploration by agencies of the state will enable to include further mineral concession leases for stone as well. According amendments to District Survey Report will be made subject to mineral, reserves and methodology aspects.



Geological Map of Noney District

5.0 Drainage of irrigation Pattern:

Irrigation Details for the district :

Irrigation	Area (% Cultivable)
Net Irrigated area	0.55
Gross irrigated area	0.94
Rainfed area	98.51

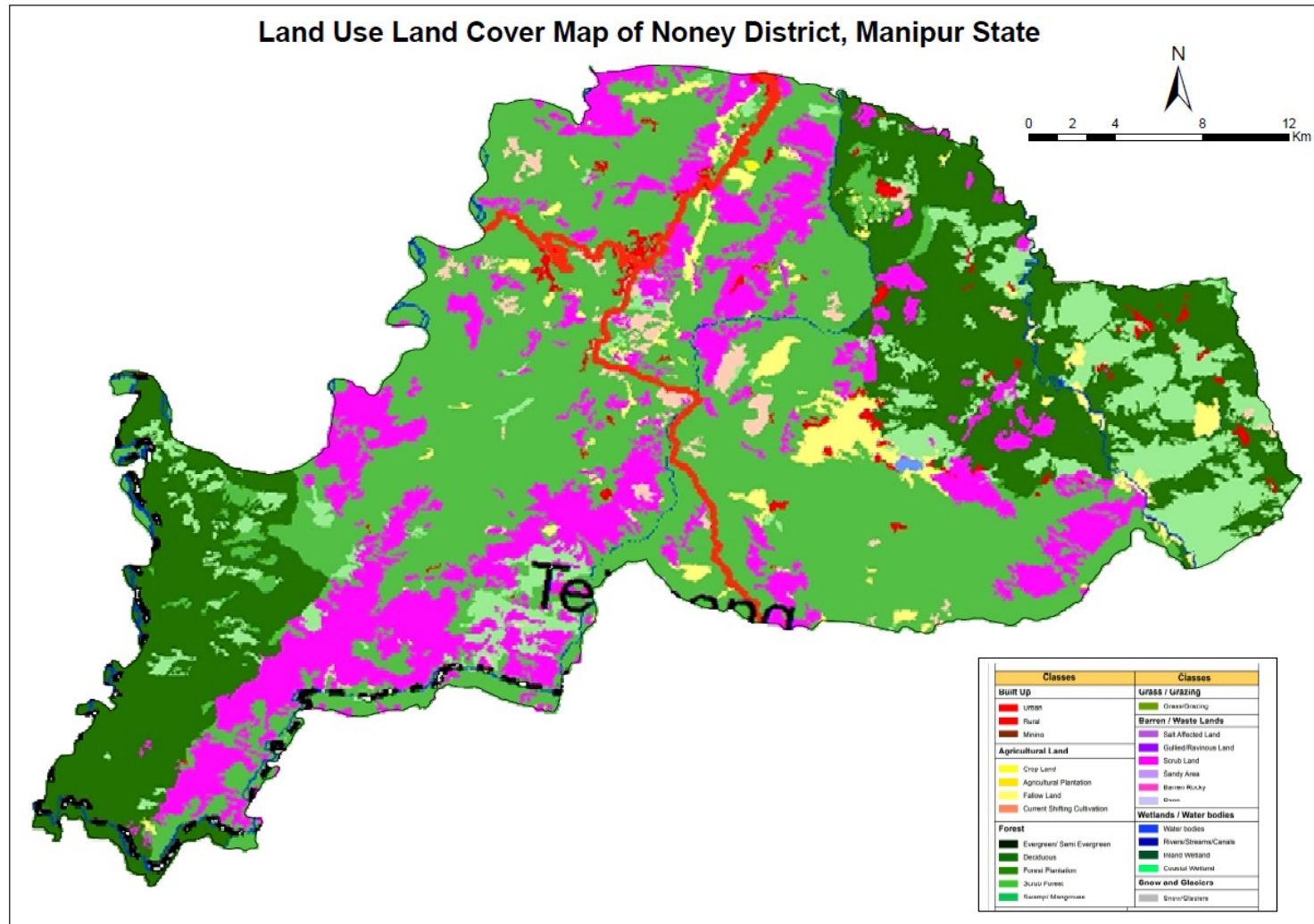
Drainage

Earlier being the part of Tamenglong district, drainage pattern for the Noney district is dominated by rivers flowing from Tamenglong district. Hence here it is important to relate and describe drainage pattern of Tamenglong and Noney district combinedly. The Barak river and its tributaries such as the Jiri river and the Makru river in the west and the Irang river with her tributary like Leimatak river , etc., in the east drain the entire regions of the districts. It is rising from the Liyai Khunou village of the Paomata sub division of Senapati district and flows towards south – west. More than half of the total length of the Barak river flowing in Manipur runs in the district . The upper portion of this river flowing in the district forms state boundary of Nagaland and Manipur states for about 35 kms. This river also forms district boundary of Churachandpur and Tamenglong districts (nearly 25 kms.) and then flows towards south and after meeting the Tuivai river at Tipaimukh , it is turned towards north. The Jiri river rises from the height of 1,953 metres above the mean sea level near Thenbung village of Assam state and flows towards south and meets the Barak river at Jirimukh. It forms the state boundary between Assam and Manipur of nearly 85 kms long . After joining the Jiri river , the Barak river turns towards west and runs upto Sylhet district of Bangladesh as the Surma river and joins with the Bhramaputra river at Comilla district of Bangladesh. The Makru river rises from the Thingdoi Peak (2,080 metres) situated in the north – western corner of the district and flows towards south and join the Barak river at the boundary of Churachandpur and Tamenglong districts. The length of this river is about 80 kms. The Irang river starts from Sintongbung range (near Shogyangjang Kuki village – 2,249 metres) and flows towards south along the Imphal Tamenglong districts . A small stream called Noaki rising from the Koubru (2,561 metres) hill of senapati district flows towards north and divide the two districts of Senapati and Tamenglong and meets the Irang river near Thengjeng. The Irang river is then flowing southwards parallel to the highway upto Songpram and then cross the National Highway 53 at Tingjang and further turns westwards from Vantungbung and forms district boundary of Churachandpur and Tamenglong joins the Barak river near Gailon village . The length of the Irang river from the source to joining point is about 160 kms. The Leimatak river rises from the Mount Mamun Lhang (1,699 metres) of the Churachandpur district and flows towards north and falls to the Irang river near Tamlok village . Major portions of this river courses (about 33 kms) run in the south – eastern regions of Tamenglong district. The Irang river , a branch of the Irang river starts from the Nurathen village about 1,100 metres height and flows southwards. After

crossing the National highway 53, it turns towards west along with the highway and again turns towards south and joins the Leimatak river near Tamok village running about 30 kms. The Tupui river starts from the Jouzangtek village (about 1,00 metres) and after running about 28 kms northwards falls into the Irang river at Noney. This river crosses the NH 53 and flows along the highway for about 10 kms. The Yai river rises from the Koubru range (2,348) and flows towards south. After running about 27 kms, it empties itself into Tupui river at Tupui village.

6.0 Land Utilization Pattern in the District : Forest, Agriculture, Horticulture, Mining etc.

Land Use Map for Noney district is as below:



Area Statistics of Land Use in Noney District, Manipur		
Sr. No.	Land Use Class	Area (Ha)
1	Crop Land	6238.37
2	Deciduous	63189.4
3	Evergreen/ Semi Evergreen	36136.6
4	Rivers/Streams/Canals	3583.8
5	Scrub Forest	12727.1
6	Scrub Land	33310.5
7	Urban	5213.9
	Total Area	160400

Irrigation

Irrigation	Area (% Cultivable)
Net Irrigated area	0.55
Gross irrigated area	0.94
Rainfed area	98.51

Agriculture Crops:

Major field crops cultivated (Kharif)	Area in ('000ha) by Rainfed /Irrigated	Major field crops cultivated (Rabi)	Irrigation
Rice	12.45	Rice	-
Maize	1.0	Maize	-
Sugarcane	1.09	Sugarcane	-
Potato	-	Potato	1.2
Pulses	0.36	Pulses	0.99
Wheat	-	Wheat	0.98
Oilseeds	0.19	Oilseeds	2.9

Source Agriculture Plan Noney

Horticulture :

Horticulture Crops (Fruits)	Area in ('000ha)
Fruits (Pineapple,Banana, Orange, Passion fruit and Others)	1.651

Horticulture Crops (Vegetables)/Others	Area in ('000ha)
Vegetables (Cabbage, Cauliflower, Tomato, Pea)	3.08

Source Agriculture Plan Noney

Mining :

Area under Mining	Area in ha
River Bed Sand/Pebble/Stone	0.00 (No Mine lease allotted by District Administration Yet)

Mineral Concession Leases yet to allot/yet to issue letter of intent to applicants

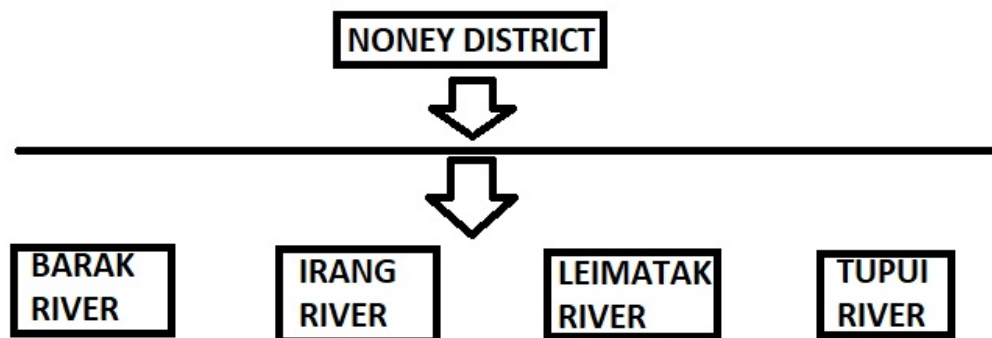
Source Department of Trade & Industries, Govt. of Manipur

7.0 Surface Water And Ground Water Scenario :

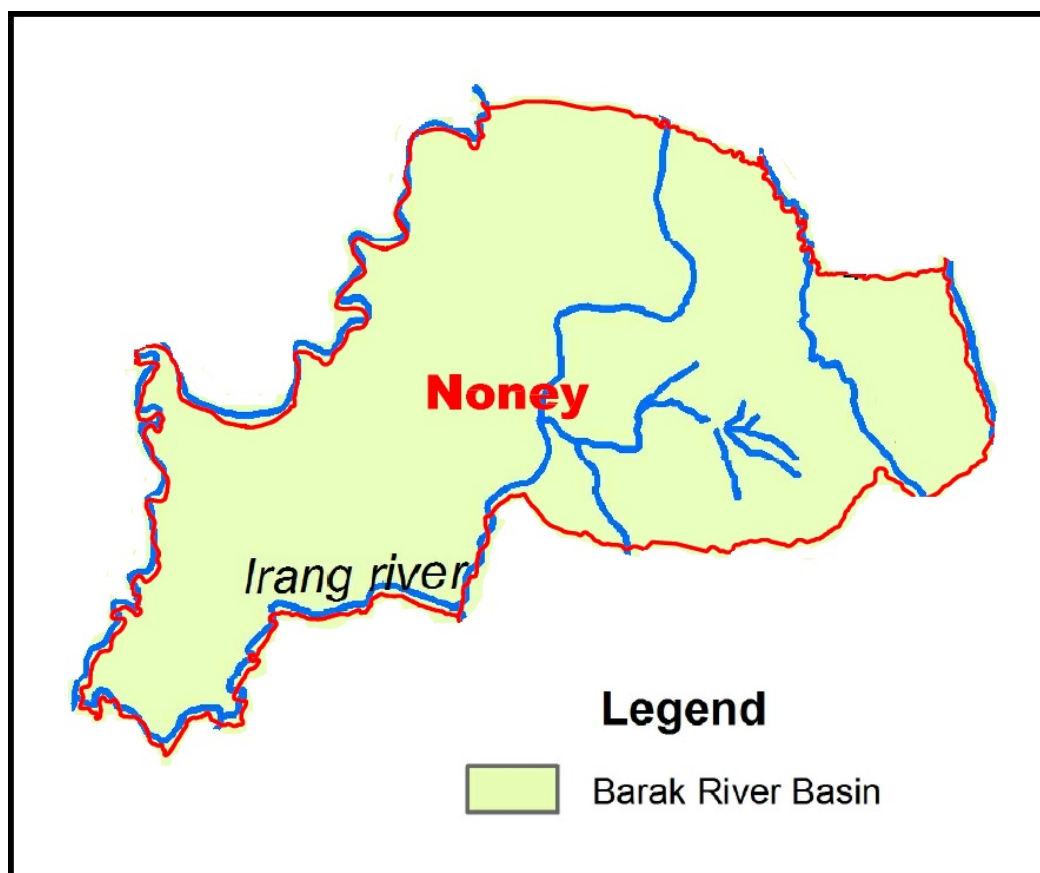
7.1 Surface Water Scenario :

Noney district has four main rivers Barak, Irang, Leimatak, Tuipi etc.

River Inventory for the district is sketched as



Noney district is a part of Barak basin.



Total Catchment area for both the rivers are tabulated below

S.No.	Name of River/Stream	Total Length in the district (in Km)	Drainage in Sq, Km.	Catchment %
1	Barak River	79.02	740	46.13
2	Irang River	77.53	510	31.79
3	Leimatak River	44.65	354	22.08

District Booklet W.R.D. Govt of Manipur.

7.2 Ground Water Scenario :

District is in “SAFE” Category from Ground Water Development point of view. Detailed Ground Water Scenario for the district is discussed below

Hydrogeology

Major water bearing formations are un consolidated to semi consolidated stage.

The district is underlain by thin negligible unconsolidated alluvial sediments of the Quaternary age along the river courses in intermontane valleys like Jiribam and Dhalakhal located in the extreme south western part of the district covering an area about 10 sq. km. and the major parts are covered by Tertiary group of rocks comprising shale, siltstone, sandstone and conglomerate, Geological sequences of the district is as given below.

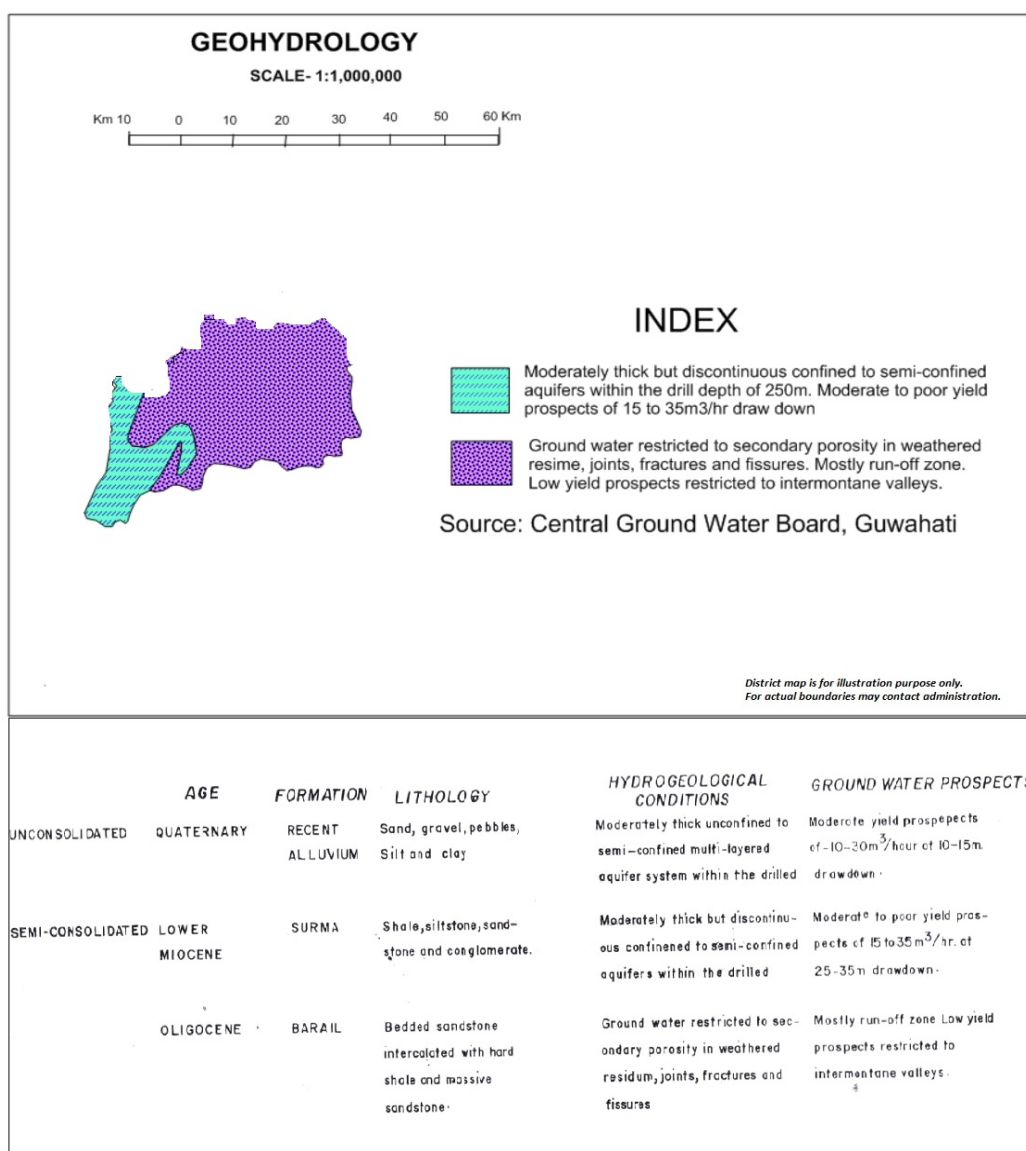
<u>Age</u>	<u>Formation</u>	<u>Lithology</u>
Quaternary	Recent alluvium	Sand, gravel, pebble, silt and clay
Lower Miocene	Surma	Shale, siltstone, sandstone and conglomerate
Oligocene	Barail	Bedded sandstone, hard shale and massive Sandstone

The rock formation pertaining to Surma and Barail formations are semi-consolidated in nature and at places, very hard and massive. These are highly fragile in nature and are criss-crossed by faults, fissures, joints and lineaments of high intensity developed due to various tectonic activities experienced by the district in geologic time scales. Secondary porosity developed thus act as ground water repository in case of hard formations. Loose Recent alluvial formations have thickness varying from 10 to 15 m and ground water occurs under water table conditions. In the semi-consolidated formations, ground water occurs under water table to semi-confined conditions. Depth to water level in the water table zone varies from 3 to 5 m in the pre-monsoon period and 1.0 to 3.0 m during post-monsoon period.

Groundwater is important in the rural areas for irrigation and domestic supply. Existing hydro geological set up indicate that there is some few scope for the development of groundwater by way of constructing ground water abstraction structures in a planned way for profitable ground water development in the district.

The development of ground water for water supply is highly recommended with strong attention to be paid to the water quality, availability and recharge rate in such area. The following steps are important for regulating the inflow of rivers, streams etc with sedimentation and siltation check in such hilly terrains

- i. Construction of check dams throughout the catchment and ridge at suitable places in the area.
- ii. Development of suitable plantations over the denuded and barren hill slopes at the maximum possible scale and speed.
- iii. Encouraging terrace cultivation in the hill slopes and proper guidance of Jhum Cultivation. Construction of contour canals, subsurface dykes, gully plugging, terracing etc should be taken up. This step should be taken up urgently as the ratio of settled land in proportion to Jhum land under rice in the hill districts has been deteriorating over times, resulting in rapid land degradation in the hills and floods in the valley areas.



District is in “SAFE” Category from Ground Water Development point of view. Detailed Ground Water Scenario for the district is discussed below

8.0 Rainfall of the district and Climatic Conditions :

Average rainfall for Noney district is 2000mm per year. The district gets rainfall from the South-West monsoon.

9.0 Details of the mining leases in the district as per the following format :

SR No	Name of Mineral	Name of Lease	Address & contact No of lessee	L.L. grant order No & date	Area of M.L. Area (ha)	Period of ML		Period of ML (1/2 Renewal)	
						From	To	From	To
1	2	3	4	5	6	7	8	9	10
	Sand & Stone	No mine leases are allotted by district administration of Noney							
1									

Sr No	Date of Commencement of Operation	Status (Working /non working/temp working for despatch)	captive /	obtained Environmental clearance (Yes / No) if yes letter no with date of grant of EC	Method of mining (Opencast/ underground)
			Non captive		
11	12	13	14	15	16
	No mine leases are allotted by district administration of Noney				
1					

10. Details of Royalty or Revenue received in last three years :

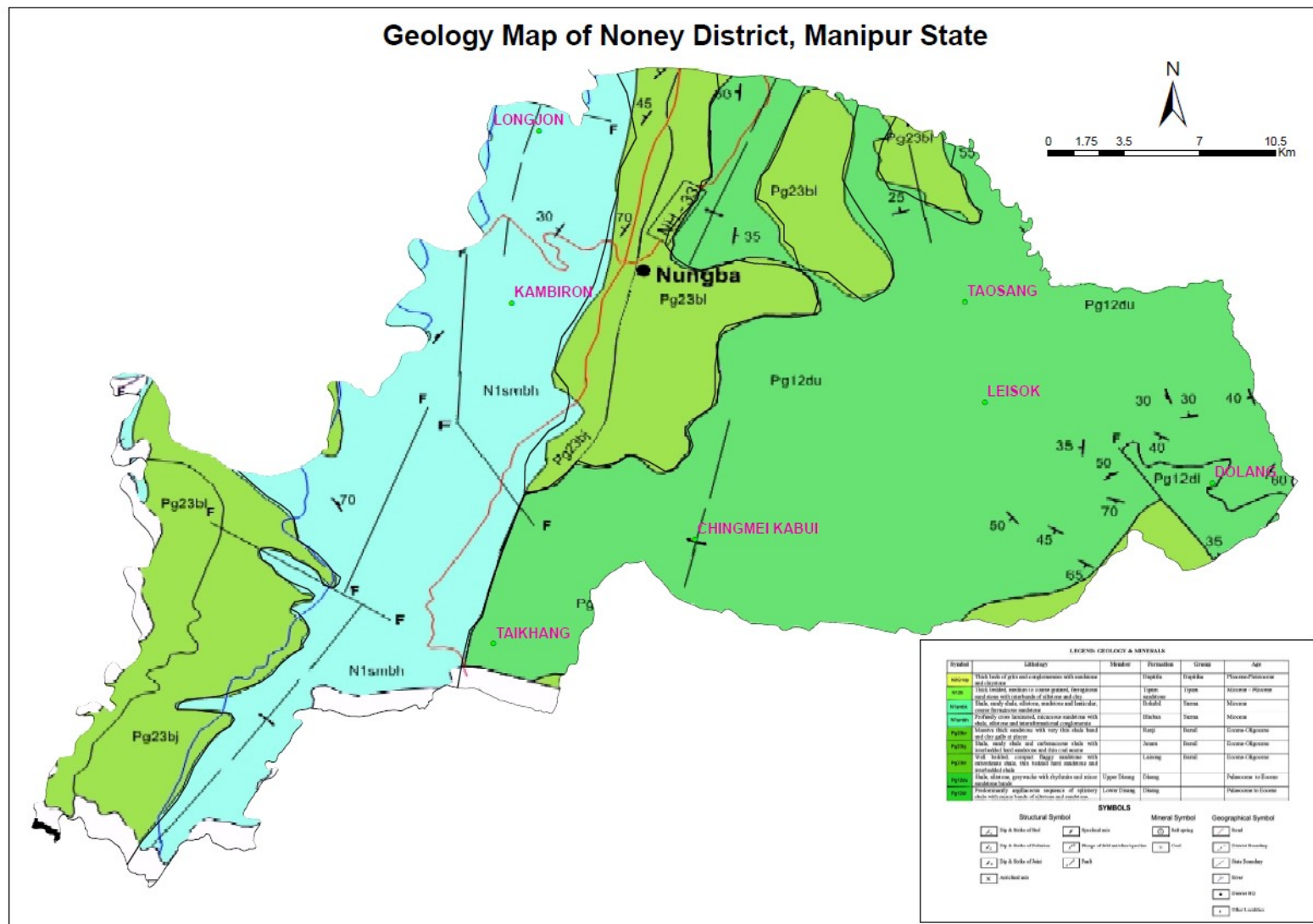
Financial Year	Revenue in Rs.Lakhs
F.Y. 2015-16	Nil
F.Y. 2016-17	Nil
F.Y. 2017-18	Nil
F.Y. 2018-19	Nil
F.Y. 2019-20	Nil
F.Y. 2020-21	Nil

11. Details of Production of Minor Mineral in last three years : (Approx. Quantity)

Financial Year	Minor Mineral in Cum.	Minor Mineral in Million Tonnes
F.Y. 2015-16	00	00
F.Y. 2016-17	00	00
F.Y. 2017-18	00	00
F.Y. 2018-19	00	00
F.Y. 2019-20	00	00
F.Y. 2020-21	00	00

12. Mineral Map of District :

Geology Map of Noney District, Manipur State



Mineral Map of District

13. List of Letter of Intent (LOI) Holders in the district along with its validity as per following format:

S.No.	Name of Mineral	Name of Lessee	Address & Contact No. of Lessee	M.L. grant Order No. & Date	Area of M.L. Area (ha)	River Bed
1	2	3	4	5	6	7
1.	Sand & Stone	No mine leases are allotted by district administration of Noney				

* This potential may be revised as per approval of mining plans. Once leases are allotted by district administration of Noney , amendment towards above information will be made in the district survey report.

14. Total Mineral Reserves Available in the District :

Mineral	Mineable Reserves in Million Tonnes
Stone (Based on potential demand of the district.)	0.75 Million Tonnes (Approx.)

15. Quality / Grade of Mineral available in the District :

Quality of stone available in Noney district is building grade stone confirming IS standards IS:7779 (Part II/Sec 3) of 1979.

16. Use of Mineral :

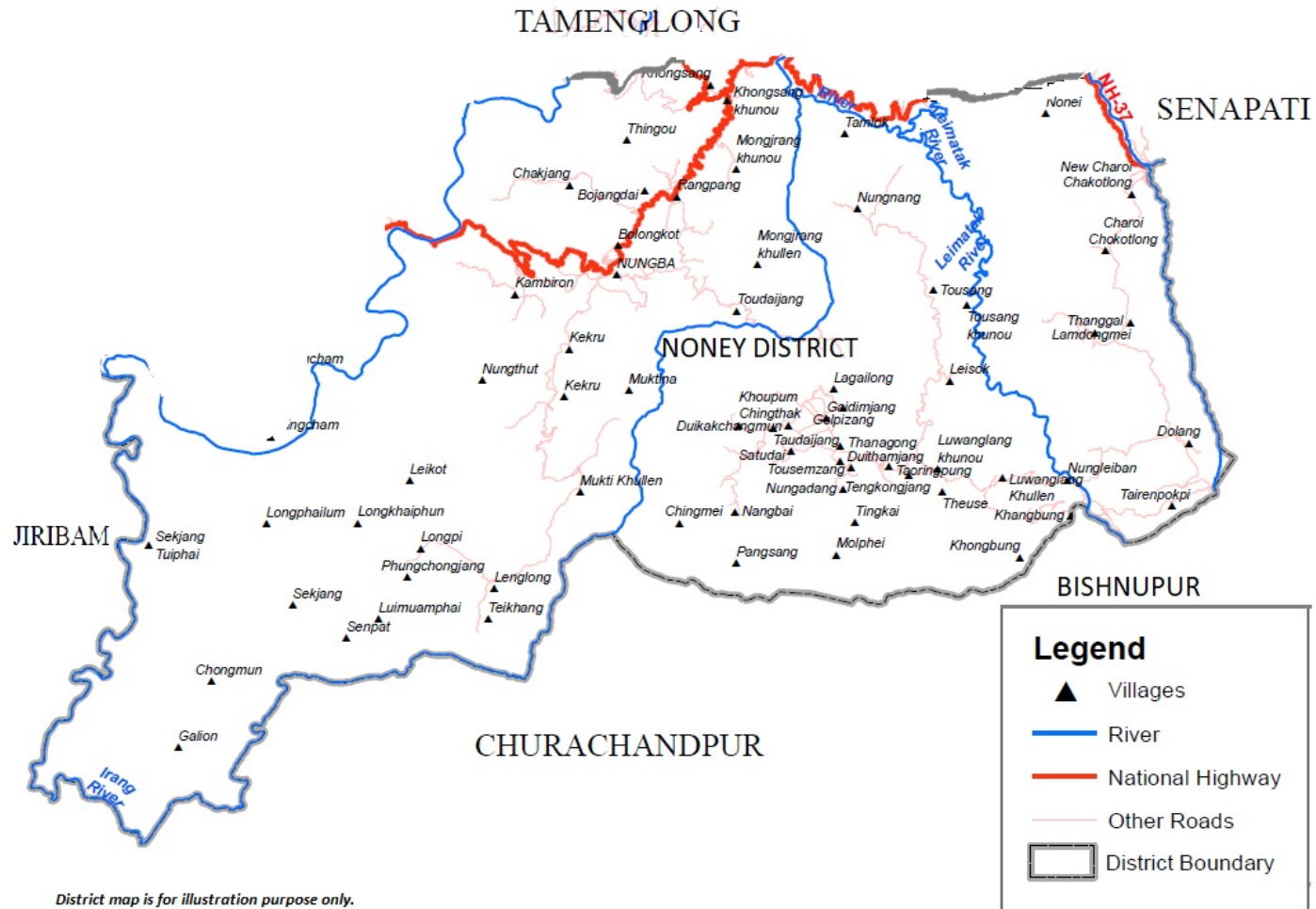
Sand Stone or the pebbles floated and collected from river bed is used for building, construction works , road works as an aggregate.

17.Demand and Supply of the Mineral in last three years :

Sand Stone or the pebbles floated and collected from river bed with variable sizes from 6mm,20mm,40mm,60mm,100mm are used for construction and road works as an aggregate material. To cater infrastructural requirements and local demand Pebble/Sand stone quarries are emerged catering demand for 4 circles of district. In general demand for district is ranging between 0.75 MT/Annum generating revenue of around 1.00Cr. Approximately. This demand is perpetual to market requirements depending on growth of infrastructural index of the area , state and country. However considering the rules and stage of minor mineral exploration in the State supply of 0.75LTPA is expected for the F.Y. 2021-2022.Detailed demand calculated for F.Y. 2021-22 is as below

Sr. No.	District	Particulars	2021-2022
			Quantity in Tonnes
1	NOney	PWD	15000
2		Irrigation Dept.	10000
3		Domestic Requirement including Govt. Contractors	20000
4		NHAI/Central Road Fund	20000
5		Railways and other State projects	10000
Total			75000

18. Mining Leases marked on District Map



- Once Leases will be allotted , locational markings will be done as an amendment

19. Details of the area of where there is a cluster of mining leases viz. no. of mining leases/ Location :

Name of Lessee	Mineral	Village	Land Type	S.No.	Area in ha	Date of Grant	Lease From	Lease up to
No Cluster is formed till March 2020								

20.0 Details of Eco sensitive area

No Ecosensitive area is notified by central government or state government within the territory of the Noney district. However Zeilad wild life sanctuary is at northern cutting edge of Noney district falling in southern part of Tamenglong district. It is notified vide MoEFCC, Govt of India S.O. S.O. 3309 dated 20.10.2016

21. Impact on the Environment (Air, Water, Noise Soil, Flora & Fauna, Land Use, agriculture, forest etc.) due to mining activity :

Air Environment : Anticipated Impacts

Stone/metal mining is carried out by opencast manual method/Picking of Pebbles from river Bed. The air borne particulate matter generated by mining and handling operations, transportation and screening of stone chips at crusher is the main air pollutant. The emissions of Sulphur dioxide (SO₂), Oxides of Nitrogen (NO_x) contributed by tractor trolley. As the number of trips of tractor trolley are less, the pollutant levels are well within prescribed limits . Prediction of impacts on air environment has been carried out taking into consideration proposed production and net increase in emissions. Air pollution sources in the operating mine are classified into three categories

- a. Point sources
 - b. Area sources
 - c. Line sources
- Drilling & Blasting (In case of Opencast Surface Mining) and crusher operations of the mine are considered as point sources
 - As the cumulative impacts for cluster of stone/Sand quarries are to be considered, thus the cluster of stone/Sand mines are described as area sources
 - Transportation of stone chips from mining pit to crusher is considered as line sources. Also transportation of pebbles from river bed to crusher is also considered as Line Source.

The other source of air pollution is the dust generated during the movement of tractor trolley/Trucks/Tippers. Water tankers with spraying arrangement will be used for regular water sprinkling on the haul roads to ensure effective dust suppression. The tractor trolley/Trucks/Tippers are well maintained so that exhaust smoke does not contribute abnormal values of noxious gases and un-burnt hydrocarbons.

Noise Environment : Anticipated Impacts:

The main sources of noise in the mine are classified as follows:

- ❖ Transportation Vehicles/tractor trolley
- ❖ Drilling & Blasting (In Case of opencast surface mining)
- ❖ Crushing & Screening

Exposure of Noise may lead to hearing losses and may impact of mental health of Workers working in the vicinity.

Water Environment : Anticipated Impacts:

Mining activities cause adverse impacts due to mine drainage and siltation due to storm water.

The impact on water environment has been considered under the following heads:

- Water consumption
- Mine seepage and impact on ground water
- Impact on surface water bodies
- Storm water management

Soil Environment : Anticipated Impacts

Most of the stone quarries (In case of Surface Opencast Mining Method) are operated at the barren area where outcrops of Sand Stone are exposed having very thin layer of soil and overburden. This soil is removed and stacked separately for plantation around peripheral area of 7.5 m.

Land Use :

These stone quarries (In case of Surface Opencast Mining Method) are very small in area. After removal of stone these abandoned quarries are used as water tank for irrigation purpose by lessee. Where as in case of river bed pebble picking, the mineral is replenishable. Hence pits will be automatically replenished during monsoon.

Forest :

No quarry is permitted within district within 250m of forest boundary and within 10 km buffer area of Eco Sensitive Area.

22. Remedial measures to mitigate the impact of mining on Environment:

Remedial measures to mitigate air environment

- ❖ Dust suppression arrangements like water tankers on haulage road and at all dust generation points
- ❖ Dust extractors during crushing/ screening
- ❖ Grading of haul roads time to time and cleaning to remove the accumulated dusty material
- ❖ Regular maintenance of the tractor trolley.
- ❖ Practicing wet drilling (In case of Surface Opencast Mining Method).
- ❖ Controlled blasting using delay detonators (In case of Surface Opencast Mining Method).
- ❖ Usage of sharp drill bits for drilling of holes (In case of Surface Opencast Mining Method)
- ❖ Avoiding of overloading of 10T tippers and covering of loaded tippers with tarpaulins during stone/Pebble chip /Sand transportation
- ❖ Dust mask provision to workers
- ❖ Adequate barrier zone will be maintained all along the mine lease boundary and green belt will be maintained in the barrier zone
- ❖ Periodical monitoring of air quality to take steps to control the pollutants

Remedial measures to mitigate noise environment:

The operations of the mining equipment, plying of tractor trolley, trucks, tippers and mine machinery like drill operations (In case of Surface Opencast Mining Method) are the major sources of undesirable noise in the proposed project area.

The following control measures are proposed for bringing down the noise levels-

- ❖ The vibration due to blasting is minimized by careful planning, supervision and execution of each blast and using milli-second(M.S) delay detonators and proper stemming to prevent blow out of holes (In case of Surface Opencast Mining Method)
- ❖ Green belt will be made around the working areas to screen the noise and also for arresting fugitive dust (In case of Surface Opencast Mining Method along haul road and safety barrier where as in pebble mining from river bed along river bank and haul road)
- ❖ Maintenance and tuning of machinery would be ensured to reduce undesirable noise

- ❖ Earplugs and earmuffs will be provided to the workmen
- ❖ Limiting the speed of haulage tractor, trucks/tractors
- ❖ Rubber lining in the chutes of Crushing/ screening plant

Remedial measures to mitigate water environment:

In case of Surface Opencast Mining Method:

The only pollution anticipated in the surface drainage water is the suspended solids, due to wash off. For this purpose retaining wall with garland drain is proposed. The discharge from this drain is diverted to a settling tank unused pit workings, which allows the sediments to settle. Further to arrest the silted drainage entering into the area down below, check dams and gully plugs shall be erected in the existing natural drains. These check dams also assist in the recharge of ground water system.

Deliberate attempt has been made to collect this in to a garden drain. This water will be available for uses integrated above. Percolation losses will be negligible.

In Case of Pebble Picking from River Bed.

No hinderence to water channel or lifting of river water will be permitted for any of the industrial/mining use. Water required for dust suppression will be outsourced from authorized water suppliers through tankers. Also drinking water will also be outsourced from Drinking water suppliers.

23. Reclamation of Mined Out Area (best practice already implemented in the district, requirement as per rules and regulations , proposed reclamation plan)

As per Manipur Minor Mineral Concession Rules, 2012, quarry after exhaustion of mineral and on abandonment , the pit be reclaimed as per State and Central Government rules.

As per requirement of Mines and Mineral Act every stone quarry (In case of Surface Opencast Mining Method) after exhaustion of minerals will plan Final Mine Closure Plan with the approval of Directorate of Geology and Mining GoM and abandon the stone quarry as per method of approval within time frame prescribed and approved by authority. However in case of river bed mining reclamation will be done using gabion entrapment method as suggested by Indian Bureau of Mines in the year 2010.

In the district, till date no mine for stone is abandoned and Final Closure Work is under operation. Details area as

Name of Lessee	Area in ha	Gut No	Village/Taluka	Lease Order Details	Reason for Closure
Nil	Nil	Nil	Nil	Nil	Nil

24. Risk Assessment and Disaster Management Plan :

Risk Assessment

A] Stone mining through semi mechanized opencast mining(In case of Surface Opencast Mining Method)

The proposed project involves Stone mining through semi mechanized opencast mining(In case of Surface Opencast Mining Method). The anticipated risks are mentioned below:

Inundation

There is no chance of inundation of mine pits from surface waters such as rivers or nalas as it is situated a long away from river.

The lease hold area is located in the district and the area in general receives appreciable amount of rain fall, which is in the range of 2000mm (annual average).

Pit slope & dump slope failures

Mining is restricted to an average depth of 12 m from surface levels. No permanent dumps are proposed.

Blasting

Controlled blasting using delay detonators is proposed

Surface Fire

There are no ignitable materials in Basalt deposit. Sufficient fire extinguishers of suitable type and make will be made available at strategic locations in the mine lease area to control any fire/explosion incident.

Dust from the screening & crushing operations

The hazard is the inhalation of dust which is created during the screening & crushing operations which may result in the various respiratory diseases to the workers. While it is not presently possible to totally remove the hazard, properly applied control measures can substantially reduce the risk.

The dust generated during the screening & crushing operations can be controlled by providing proper enclosure to the plant area and by installing rain guns at transfer points inside the plant. Water sprinkling at the crushing and screening plant units also forms an effective measure of controlling dust generation. Provision of green belt surrounding the plant area will further

suppress the spread of airborne dust to the surrounding atmosphere. The workers engaged in these operations will be provided with dusk masks.

Noise

Loading, screening & crushing operations give rise to harmful levels of noise.

Noise generated by screening & crushing can be well controlled by providing enclosure and the green belt. The workers engaged will be provided with ear muffs.

The noise created is harmful to anyone who is within a zone around screening & crushing machines at which the noise level is above that considered to be safe for persons to work without having to use control measures. Therefore wherever necessary, the workers engaged will be provided with ear muffs.

The noise levels around screening & crushing equipment should be measured and the risk assessed. Unless control measures are in place no-one, except those necessary for the work in hand, should be allowed inside the designated noisy area.

In most cases this will be the operators. The risk is highest at older machines. Newer large machines are provided with sound insulated systems which control the noise levels to acceptable levels.

Other control measures will include training operators and providing them with ear protection, although the later should only be seen as an interim precaution until a permanent solution can be found.

The risk is very high when no control measures are provided. However if all the control measures specified as above are provided the risk will be low.

Loading

The main hazard associated with loading is the Mineral falling on to the loading labour/tractor, tractor toppling over due to uneven ground, failure of hydraulic systems. Good housekeeping practices, regular cleaning of the haulage roads and regular maintenance of the tractors, loading operations under supervision of competent persons, etc will be done to avoid such accidents.

Heavy Vehicles

Tractor used for excavation and loading and 20 tonne dumpers used for mineral and waste transport are the major heavy vehicles in the proposed mine. The main hazards arising from the use of such machines are incompetent drivers, brake failure, lack of all around visibility from the drivers position, access to the cab, vehicle movements particularly reversing, roll over, vibration, noise, dust and maintenance. Those most at risk are the driver and company

employees likely to be struck by the vehicle, and drivers of smaller vehicles, which cannot be seen from the cabs of large vehicles. Visibility defects can be reduced by the use of visibility aids such rear view mirrors.

Good maintenance and regular testing are necessary to reduce the possibility of brake failure. An area shall be set out as a testing area where regular tests are carried out on the effectiveness of a vehicles braking system.

Protection guards will be provided for moving parts of the equipment and handling heavy components during maintenance work.

Those most at risk will be the users of the system, vehicle operators and also company employees working in such areas may also be at risk.

Explosives

No magazine is within lease hold area. Contractual blasting is proposed.

House keeping

The provision and maintenance of a safe and healthy workplace is the most basic principle of health and safety. Dirty and untidy workplaces or walkways contribute to a very large proportion of trip and fall accidents. In the context of surface mining the provision of well defined roadways and walkways clear of obstruction and regular cleaning up of spillage will greatly reduce the potential risk for this type of accidents. Lack of maintenance may lead to roadways and walkways being unsuitable for use.

The Work

The application of risk assessment depends upon a full understanding of all aspects of the job being undertaken. In carrying out a risk assessment in relation to a particular task the evaluation must include a review of the knowledge, experience and training of those persons carrying out the work.

Personal Competence

It follows that the knowledge, experience and training of personnel involved in work is critical to evaluate any risk assessment. A knowledgeable, experienced well-trained and competently supervised workforce will be at a lower risk of accidents occurring than a poorly trained and badly supervised workforce. For this purpose all the supervisory and managerial staff qualified under MMR 1957 shall only be employed.

Co-ordination

A competent person should be given the responsibility for overseeing and coordinating work as required under the Manipur Minor Mineral Rule 2012. It is essential that the coordinator ensures that everyone engaged in the work is capable and understands the role of others and their responsibility for each other. This is particularly important when contract workers undertake part or all of the work to be carried out.

Equipments

The prerequisite for the risk assessment is that equipments are suitable for the work being undertaken and have been designed, manufactured and installed to at least the minimum standards for health and safety.

Failure to meet the standard will result in people being at higher risk and remedial steps have to be implemented to compensate the shortfall. Other interim arrangements should be implemented to protect any persons exposed to latent danger. Maintenance of plant and equipment to agreed specification, whether original or upgraded to the latest health and safety standards, is essential.

Dangerous parts of machinery

Parts of machinery such as revolving parts, in running nips and entrapment between reciprocating parts as defined in European and National standards should be protected meeting those standards.

Health hazards

For the purposes of this document health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations, as well as the handling of heavy loads.

While complete elimination and often suppression at source is not practicable, in many cases, the normal threshold values of health standards should be made applicable.

Personal Protective Equipment (PPE)

The PPE should be of good construction, where ever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particular hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it should only be used as a last resort and then as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Traffic Movement

The traffic movement should only take place within designated areas and over suitable roadways. Adopting one way traffic movement systems are preferred to two directional traffic systems. The risk of accidents due to traffic movement is much less with a one way traffic.

Whenever mineral is mined the first step in winning the product is the preparation of the site. The four main stages in the site preparation are:

1. Planning
2. Surveying
3. Clearing of site
4. Laying out

Planning

The risk of injuries can be significantly reduced if sufficient regard is given to health and safety at the planning stage of a new or developing mine.

Using trained drivers can largely eliminate the danger of being struck by large moving vehicles and providing the vehicles with suitable appliances, such as aids to ensure the driver has all round visibility. Designing and implementing one-way traffic systems and ensuring that open edges of roadways are suitably protected with parapet wall to prevent accidental driving off the edge can further reduce the danger. Additionally, ensuring that the vehicles are properly maintained in good working condition, particularly the braking system will go a long way to help the driver control the vehicle. Well-designed access and working platforms will also reduce the possibility of a fall.

Surveying

Surveying has its hazards, for example surveyors are likely to be seriously injured if they fall from heights or are thrown out of overturning vehicles. Since the hazards are created by ground formation it is unlikely that they can be removed.

Those normally at risk would be the surveying team of the surveyor and assistants. Individuals working at the edge of vertical face or on very steep undulating ground are at greater risk than those working on level ground. Driving over steep rough terrain is more dangerous than driving over gentle slopes. It is necessary to give clear positive instruction and ensure vehicles used to gain access to the areas to be surveyed are well maintained and suitable for the terrain over which access is to be gained.

Clearance

Clearance covers all the activities associated with preparing a site ready for laying out primary roads for working a face. The primary hazards are being struck by falling trees and debris from demolition of buildings, use of power saws, equipment used in the removal of the top layers of earth and trucks used to convey it to storage areas, and the possibility of being struck by trucks.

The hazards are created in clearing the site. While the clearing of the site cannot be avoided adopting the safest methods to carry out the work can control hazards. For example, fully trained persons should be used in tree felling operations. Well-maintained fully protected power saws should be used and the operatives should wear full personal protection e.g. safety helmets, ear defenders, face shields, gloves, full protection for legs (trousers) and boots.

Laying out

There are many different ways of opening and development of mines but careful planning particularly concerning the mine layout will reduce hazards. Well maintained equipment is essential to reduce the risk of injuries.

If suitable equipment is not used, for example if poor and badly constructed scaffolding is used there is a much higher probability of persons falling from heights or the scaffolding collapsing than if good properly constructed scaffolding is used.

To reduce the risk of injuries while using large earth moving equipment and vehicles the equipment drivers and those giving signals should be well trained. The lack of training and competence in the use of such equipment is the biggest cause of such type of accidents.

B] Sand/Pebble mining from River Bed

The proposed project involves sand mining through manual opencast mining. The anticipated risks are mentioned below:

Inundation

There is no chance of inundation of mine pits from surface waters such as rivers or nalas as the activity is manual. Maximum allowable sand scooping is about 2.0m. All sand scooping activity is over exposed sand ghat keeping safe distances from water course/flow of river.

The proposed sand ghats are located in the Noney district of Manipur and the area in general receives appreciable amount of rain fall, which is in the range of 1400 mm (annual average).

Pit slope & dump slope failures

Mining is restricted to an average depth of 2.0m from surface levels. No dumps are proposed. All scooped sand will be transported immediately through tractor to destination/buyers.

Blasting

No blasting is proposed.

Surface Fire

There are no ignitable materials in Sand ghats. The sand scooping is manual.

Dust from the screening & crushing operations

Transportation is only the dust source on haul roads. Regular water sprinkling is proposed to suppress the dust.

Noise

Sand scooping is manual using ghamelas and phavadas. However necessarily, the workers engaged will be provided with ear muffs.

Loading

The main hazard associated with loading is the Mineral falling on to the loading labour/tractor, tractor toppling over due to uneven ground, failure of hydraulic systems. Good housekeeping practices, regular cleaning of the haulage roads and regular maintenance of the tractors, loading operations under supervision of competent persons, etc will be done to avoid such accidents.

Heavy Vehicles

Tractor/Trucks/Tippers used for excavation and loading used for mineral The main hazards arising from the use of such machines are incompetent drivers, brake failure, lack of all around visibility from the drivers position, access to the cab, vehicle movements particularly reversing, roll over, vibration, noise, dust and maintenance. Those most at risk are the driver and company employees likely to be struck by the vehicle, and drivers of smaller vehicles, which cannot be seen from the cabs of large vehicles. Visibility defects can be reduced by the use of visibility aids such rear view mirrors.

Good maintenance and regular testing are necessary to reduce the possibility of brake failure. An area shall be set out as a testing area where regular tests are carried out on the effectiveness of a vehicles braking system.

Protection guards will be provided for moving parts of the equipment and handling heavy components during maintenance work.

Those most at risk will be the users of the system, vehicle operators and also company employees working in such areas may also be at risk.

Explosives

No magazine is within lease hold area.

House keeping

The provision and maintenance of a safe and healthy workplace is the most basic principle of health and safety. Dirty and untidy workplaces or walkways contribute to a very large proportion of trip and fall accidents. In the context of surface mining the provision of well defined roadways and walkways clear of obstruction and regular cleaning up of spillage will greatly reduce the potential risk for this type of accidents. Lack of maintenance may lead to roadways and walkways being unsuitable for use.

The Work

The application of risk assessment depends upon a full understanding of all aspects of the job being undertaken. In carrying out a risk assessment in relation to a particular task the evaluation must include a review of the knowledge, experience and training of those persons carrying out the work.

Personal Competence

It follows that the knowledge, experience and training of personnel involved in work is critical to evaluate any risk assessment.

Personal Protective Equipment (PPE)

As personal protective equipment only affords limited protection it should only be used as a last resort and then as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Traffic Movement

The traffic movement should only take place within designated areas and over suitable roadways. Adopting one way traffic movement systems are preferred to two directional traffic systems. The risk of accidents due to traffic movement is much less with a one way traffic.

25. Disaster Management Plan

The following natural/industrial hazards may occur during normal operation.

- Inundation of mine pit due to flood/excessive rains;
- Slope failure of pits
- Accident due to explosives (In Case of Opencast Surface Mining);
- Accident due to heavy mining equipment (In Case of Opencast Surface Mining);; and

In order to take care of above hazard/disasters, the following control measures have been adopted.

- Checking and regular maintenance of garland drains and earthen bunds to avoid any inflow of surface water in the pit
- Provision of suitable pumps for pumping out water from the pit during heavy rains
- Entry of unauthorized persons is prohibited
- Fire fighting and first-aid provisions in the mines office complex and mining area
- Provisions of all the safety appliances such as safety boot, helmets, goggles etc. are made available to the employees and regular check for their use
- Training and refresher courses for all the employees working in hazardous premises
- Working of mine, as per approved plans and regularly updating the mine plans
- Cleaning of mine faces is regularly done
- Regular maintenance and testing of all mining equipment as per manufacturer's guidelines
- Suppression of dust on the haulage roads
- Increasing the awareness of safety and disaster through competitions, posters and other similar drives
- No Sand /Pebble mining will be permitted during Monsoon period/ Rainy Days.

The management is able to deal with the situation efficiently to reduce confusion keeping in view of the likely sources of danger in the mine.

Out Line of Disaster Management Plan

The purpose of disaster management plan is to restore the normalcy for early resumption of mining operation due to an unexpected, sudden occurrence resulting to abnormalities in the course of mining activity leading to a serious danger to workers or any machinery or the environment.

System of communication

An internal communication system for the department head and to their line of command should be maintained. Having the telephone nos and addresses of adjoining mines, rescue station, police station, Fire service station, local hospital, electricity supply agency and standing consultative committee members is another essential aspect.

Consultative committee

A standing consultative committee of 3 persons headed by Mines Manager will be formed.

Facilities & Accommodation

Accommodation and facilities for medical centre, rescue room and for various working groups will be provided.

First Aid & medical facilities

The mine management is having first aid for use in emergency situation. All casualties would be registered and will be given first aid.

Stores and equipment

A detailed list of equipment available its type & capacity and items reserved for emergency will be maintained.

Transport services

A well-defined transport control system will be provided to deal with the situation.

Functions of public relations group

A cordial relation with government officials and other social service organization and working groups shall be maintained. To liaise with representatives of the mine workers to ameliorate the situation of panic, tension, sentiments, grievances and misgivings created by any disaster. To ameliorate the injured, survivors and family members of affected persons by providing material, moral support, finance and establishing contact with relatives of victims.

Security

Strict manning of security posts during the disaster will be done.

Catering & Refreshment

Arrangements will be made for the victims, rescue teams and others for their Catering & Refreshment services.

26. Plantation and Green Belt Development in respect of leases already granted in the district:

District administration on yearly basis collects the compliance w.r.t. green clearance along with photographic evidences of plantation and safety measures the green belt development plan along with quarry owners individually and with their associations.

27. Any other information :

Nil

DISTRICT SURVEY REPORT FOR NONEY DISTRICT

PART –C

FOR OTHER MINERALS EXCLUDING RIVERBED SAND/PEBBLES, BUILDING STONE(SURFACE MINING)

Prepared under

A] Appendix –X of MoEFCC, GoI notification S.O. 141(E) dated 15.1.2016

B] Sustainable Sand Mining Guidelines

C] MoEFCC, GoI notification S.O. 3611(E) dated 25.07.2018

D] Enforcement & Monitoring Guidelines, January 2020, MoEFCC, GoI

1.0 Details of leases for other minerals like Coal, Limestone and dolomite are tabled below :

No exploration work for other minerals (excluding Riverbed sand/pebbles, building stone) is proposed or under existence for the district.

Apart from building material such as sandstones , clay, pebble and gravel , no other mineral of economic importance has been in the district. Hard bedded massive sandstone of Disang Formation and Barail group are extensively used for road construction and building material. Suitable earths and alluvium along river bank provide material for brick manufacturing. Pebbles from river beds are used as building material after suitable crushing.

This district Survey report is reviewable and for district information. Copying of technical data without approval of district authority is restricted.

Annexure -1 : Procedure to scrutinize Minor Mineral proposals

Procedure to scrutinize Minor Mineral proposals

- 1] Receipt of Application as per The Manipur Minor Mineral Concession Rules, 2012 with required documents in prescribed formats as the case may be.
- 2] Site Visit by representative of Competent Officer of Director of Commerce and Industries, Govt. of Manipur.
- 4] Correlating demand and supply for circle, nearest town or any specific demand for specific project on feasibility of requirement of stone quarry.
- 5] Issuance of Letter of Intent.
- 6] Procedure for award of Lease.

Annexure -2 : Procedure to monitor compliances of Minor Mineral Leases

Procedure to monitor compliances of Minor Mineral Leases

- 1] After award of lease, first compliance to prior EC conditions are to be submitted by Lessee for ground work carried out.
- 2] Yearly Compliance to Lease Agreement for royalty clearance, Lease conditions and prior EC conditions (scrutiny based on photographic and documentary evidences with site visit).
- 3] Penal Action : failure to submit compliance as per sr. no. 2, district administration reserves right to hold the royalty passes or to suspend or cancel lease agreement subject to fulfillment of compliance.

Annexure -3 : Demand and Supply for Noney District**Demand and Supply for Noney District**

Sr. No.	District	Particulars	2021-2022
			Quantity in Tonnes
1	NOney	PWD	15000
2		Irrigation Dept.	10000
3		Domestic Requirement including Govt. Contractors	20000
4		NHAI/Central Road Fund	20000
5		Railways and other State projects	10000
Total			75000

Annexure -4 MoEFCC, Gol notification S.O. 3611(E) dated 25.07.2018

Annexure -5
L Sections and Cross Sections for rivers flowing through Noney district

Annexure -6
Sections for Sand/Stone Leases 2021-22
(Will be updated on approval of mining plans for the proposed Mineral
Concession Leases)

Annexure -7
Compliance to E & M guidelines 2020
(Will be updated on approval of mining plans for the proposed Mineral
Concession Leases)