महाराष्ट्र शासन

DISTRICT SURVEY REPORT

FOR

RIVERBED SAND MINING AND OTHER

MINOR MINERALS



Prepared by
District Mining Officer
Collector Office,Ahilyanagar

Prepared Under

A] Appendix –X of MoEFCC, GoI. Notification S.O. 141(E) Dated 15.1.2016
B] Sustainable Sand Mining Guidelines, 2016
C] MoEFCC, GoI. Notification S.O. 3611(E) Dated 25.07.2018
D] Enforcement and Monitoring Guidelines, MoEF&CC, 2020

CERTIFICATE

The District Survey Report preparations have been undertaken in compliance as per Notification Na. S.O. 3611 (E) New Delhi, 25th July, 2018 and Enforcement and Monitoring Guidelines, 2020 of Ministry of Environment Forests and Climate Change, Government of India.

Every effort has been made to cover sand mining location, area and overview of mining activity in the district with all its relevant features pertaining to geology and mineral wealth in replenish able and non-replenish able areas of rivers, stream and other sand sources as well as information regarding minor minerals availability in the district.

This report will be a model and guiding document which is a compendium of available mineral resources, geographical set up, environmental and ecological set up of the district and is based on data of various departments, published reports, and websites. The District Survey Report will form the basis for application for environmental clearance, preparation of reports and appraisal of projects.

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PREFACE

With reference to the gazette notification dated 15th January 2016, ministry of Environment, Forest and Climate Change, the State Environment Impact Assessment Authority [1](SEIAA) and State Environment Assessment Committee [2](SEAC) are to be constituted by the divisional commissioner for prior environmental clearance of quarry for minor minerals. The SEIAA and SEAC will scrutinize and recommend the prior environmental clearance of ministry of minor minerals on the basis of district survey report. The main purpose of preparation of District Survey Report is to identify the mineral resources and mining activities along with other relevant data of district. This report contains details of Lease, Sand mining and Revenue which comes from minerals in the district. This report is prepared on the basis of data collected from different concern departments. A survey is carried out by the members of District Environment Impact Assessment Authority[3](DEIAA) with the assistance of Geology Department or Irrigation Department or Forest Department or Public Works Department or Ground Water Boards or Remote Sensing Department or Mining Department etc. in the district.

Minerals are classified into two groups: (i) Major minerals and (ii) Minor minerals. Amongst these two groups minor mineral has been defined under section 3(e) of Mines and Minerals (Regulation and Development) Act, 1957.

The minor minerals are further governed by ―The Maharashtra Minor Minerals Rule [4](MMME(D&R) rules 2013‖. The Minor minerals include building stones, gravel, ordinary clay, ordinary sand, limestone used for lime burning, boulders, Murum, brick earth, bentonite, road metal, slate, marble, stones used for making

Household utensils etc. and other minerals not defined as minor minerals in the said Act are treated as major minerals. They include coal, kyanite, sillimanite, barites, chromite, fluorite, quartz, sand used for stowing purposes in coal mines and many other minerals used for industrial purposes.

Based on the amendments made by the Ministry of Environment, Forests and Climate Change, Government of India, in the Environment Impact Assessment Notification, 2006 notified or amendment on 15th January 2016, the Survey document of the district Ahilyanagar. The district survey document has been prepared in accordance with the Appendix-X of the said notification.

The Minerals/ rivers/streams were studied based on the following parameters excluding the hill slope mining.

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[1] SEIAA - State Environment Impact Assessment Authority
[2]SEAC - State Expert Appraisal Committee
[3] DEIAA - District Environment Impact Assessment Authority
[4]MMME(D&R) - Maharashtra Minor Mineral Extraction (Development & Regulation) Rules of 2013

OBJECTIVES

The main objective of the preparation of District Survey Report (as per the Sustainable Sand Mining Guideline) is to ensure the following

- Identification of areas of aggradations or deposition where mining can be allowed; and
- Identification of areas of erosion and proximity to infrastructural structures and installations where mining should be prohibited and calculation of annual rate of replenishment and allowing time for replenishment after mining in that area.
- Identification of mineral wealth in the district.

District Survey Report for Ahilyanagar Part A Sand Mining

ABBREVIATIONS

Short form	Long form
SEIAA	State Environment Impact Assessment Authority
SEAC	State Environment Assessment Committee
DEIAA	District Environment Impact Assessment Authority
MMME(D&R)	Maharashtra Minor Mineral Extraction (Development & Regulation) Rules of
MoEF& CC	Ministry of Environment, Forest & Climate Change
OM	Office Memorandum
DSR	District Survey Report
B.C.	Before Christ
NSG	Non-Suburban Grade
NH	National Highway
MSRTC	Maharashtra State Road Transport Corporation
NGT	National Green Tribunal

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DISTRICT SURVEY REPORT FOR SAND MINING OR RIVER BED MINING (PART-A)

INTRODUCTION

A mineral is a solid chemical compound that occurs naturally in pure form. A rock may consist of a single mineral, or may be an aggregate of two or more different minerals, specially segregated into distinct phases. Minerals are classified into two groups namely Major minerals and Minor minerals. Amongst these two groups, Minor mineral has been defined under Section 3(e) of Mines and Minerals (Regulation and Development) Act, 1957.

These include building stones, gravel, ordinary clay, ordinary sand, Boulders, Kankar, Murum, Brick earth, bentonite etc. Major minerals include Coal, Manganese ore, Iron ore, Bauxite, Lime stone, Chromite, Silica sand, Quartz sand etc. The minerals are state resources and Collector of each district is custodian of this property. Legally, Mining Plan is pre-requisite to commence mining operations and has to be approved by Authority. Mining operations are conducted in accordance with the approved Mining plan.

There are 89 minerals, out of which 4 fuel, 11 metallic, 52 non-metallic and 31 are minor minerals. All developmental activities need different construction material of which stone is basic material used for construction of roads, bridges, buildings etc. Stone Quarry are the only source of supply of aggregates or minor mineral. The demand and production of Stone is increasing rapidly due to increased infrastructure, developmental projects and construction activities supported by packages provided by the Government.

Hon'ble Supreme Court of India dated 27th February, 2012 in I.A. No.12-13 of 2011 in Special Leave Petition (C) No.19628-19629 of 2009, in the matter of Deepak Kumar etc. Vs. State of Haryana and Others etc., prior environmental clearance has made mandatory for mining of minor minerals irrespective of the area of mining lease. Accordingly, Ministry of Environment, Forest & Climate Change [5](MoEF& CC) had issued Office Memorandum No. LllOll/ 47/2011-IA. II(M) dated18th May 2013. As per this [6]O.M. all mining projects of minor minerals would henceforth require prior Environmental Clearance irrespective of the lease area. The stone quarry and sand quarrying projects need environmental clearance as per the MoEF guidelines and such projects are treated as Category 'B' even if the lease area is less than 5ha. Subsequently, various amendments were made as regards to obtain environmental clearance of the minor minerals.

[5]MoEF&CC - Ministry of Environment, Forest & Climate Change

[6]OM - Office Memorandum

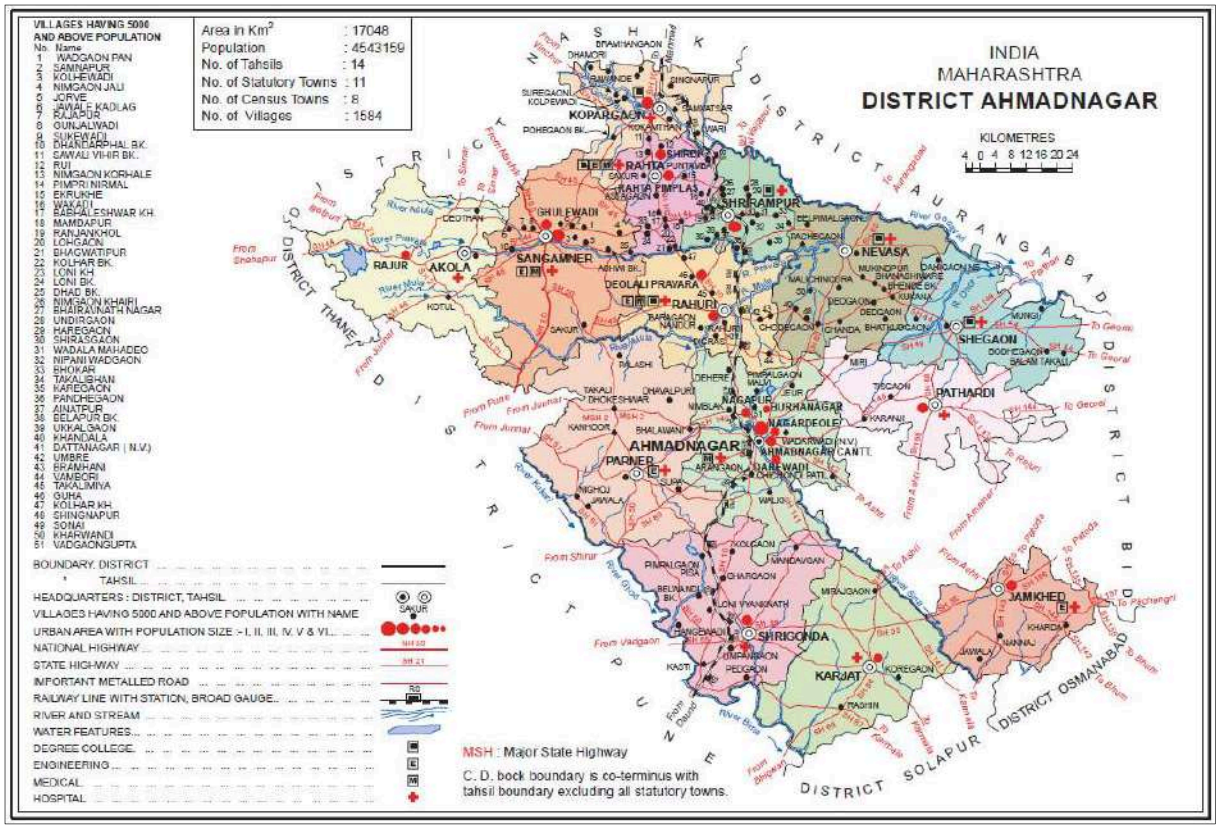


Figure 1: District Map of Ahilyanagar

The Hon'ble National Green Tribunal, vide its order dated the 13th January, 2015 in the matter regarding sand mining has directed for making a policy on environmental clearance for mining leases in cluster for minor minerals. As per the latest amendment S.O. 141 (E) & S.O.190(E) dated 15th January 2016 & 20th January in exercise of the powers conferred by sub-section (3) of Section 3 of the Environment (Protection) Act, 1986 (29 of 1986) and in pursuance of notification of Ministry of Environment and Forest number S.O. 1533 (E), dated the 14th September,2006 the Central Government was constituted the District Level Environment Impact Assessment Authority (DEIAA), for grant of Environmental Clearance for Category B2' Projects for mining of minor minerals, for all the districts in the country.

But, meanwhile The Hon'ble High Court, Nagpur vide its order dated 7th Dec, 2018 in the matter regarding sand mining has ruled out the powers of said District Level Environment Impact Assessment Authority (DEIAA), for granting of Environmental Clearance for category B2 later State Govt. has issued directions to move towards State Level Environment Impact Assessment Authority (SEIAA) for granting of Environmental Clearance for all Categories.

The MoEF & CC in its Notification dated 15th January 2016has prescribed Preparation of District Survey Report for Sand Mining or River Bed Mining and Mining of other Minor Minerals. A detailed procedure and format for preparation of District Survey Report is provided in the said Notification.

Further the procedure for preparation of [7]DSR and format is amended vide MoEF & CC Notification S.O. 3611(E) dated 25.07.2018. The 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.

Objective of preparation of District Survey Report is to ensure identification of areas of aggradations or depositions where mining can be allowed and identification of areas of erosion rate of replenishment and allowing time for replenishment after mining in that area.

Demography

According to the 2011 census Ahilyanagar District has a population of 45,43,159. The district has a population density of 266 in habitants per square kilometre. Its population growth rate over the decade 2001-2011 was 12.43%. Ahilyanagar has a sex ratio of 934females for every 1000 males, and a literacy rate of 80.22%. Scheduled Castes and Scheduled Tribes make up 12.62% and 8.63% of the population respectively. As per official census 2011 and population data 2024 of Ahilyanagar district, Hindu are majority in Ahilyanagar district. Hinduism constitutes 90.40% of Ahilyanagar population. Muslims are minority in Ahilyanagar state forming 7.06% of total population.

At the time of the 2011 Census of India, 88.3% of the population in the district spoke Marathi, 4.6% Hindi, 2.5% Urdu. Languages used mostly in the district include Marathi, Hindi as well as Telugu and its dialect Waddar.

History of the Ahilyanagar district

Ahilyanagar formerly known as Ahmednagar District is situated partly in the upper Godavari basin and partly in the Bhima basin occupying a somewhat central position in Maharashtra State. It extends between 18°10' and 20°00' North latitudes and 73°30' and 75°37' East longitudes. The district is irregular in shape and resembles a slanting cross with a length of 200 kms and a breadth of 210 kms. It is surrounded by Nashik District to the North, Chhatrapati Sambhajinagar District to the North-East, BeedDistrict to the East, Dharashiv and Solapur District to the South, Pune District to the West and Thane District to the North-West.

The former name of District is named after Ahmednagar town. The town is famous since the medieval times. In the year 1490 when Ahmad Nizam Shah, the founder of the Nizam dynasty defeated the Bahamani troops under Jahangir Khan near its site, this victory was called the Victory of the Garden. Because on that spot Ahmad Shah built a palace and laid out a garden. In the year 1494 he laid the foundation of the city close to the bag Nizam upon the left bank of the Sina River and called after himself Ahmednagar or the city of Ahmad.

On May 31, 2023, Chief Minister Eknath Shinde announced the renaming of Ahmednagar after at an event to mark the 198th birth anniversary of legendary warrior queen of the Maratha-Malwa kingdom Ahilyabai Holkar at her birthplace, Chondi village. Ahmednagar has become the third district in Maharashtra to be renamed after Aurangabad and Osmanabad.

[7]DSR - District Survey Report

District has a chequered history of evolution in as much as in 1891 it included the sub-divisions of Jamkhed, Newasa, Shrigonda, Shevgaon, Sangamner, Nagar, Kopargaon, Akola, Karjat, Parner and Rahuri. In 1913, Pathardi Peta was created and the remaining part of Jamkhed taluka was renamed as Jamkhed Mahal. Subsequently, Karjat taluka was down-graded as Karjat Peta during 1931-41. The period 1941-51 was marked by the upgrading of Pathardi and KarjatPetas as Karjat taluka. In 1945 Shrirampur taluka came into being. Jurisdictional changes of 1950 resulted in the transfer of 21 villages from Beed District to Ahmednagar District; on the contrary the district had to lose 26 villages to Beed District and one village to Aurangabad District. With the reorganization of State, the District was incorporated into Bombay State in 1956. However, since 1960, it constitutes a part of Maharashtra State. The district at present has 14 Tehsils.

Geography

Maharashtra falls under two macro level divisions 1) The Deccan Plateau and 2) The Coastal Plains and Islands. The north-south running Sahyadri range separates these two divisions. The Deccan Plateau lies to the east while the Coastal Plains and Islands lie to the west up to the Arabian Sea. The Deccan Plateau is much larger of the two divisions and includes twenty-nine Districts of the State while only six Districts lie in the Coastal Plains and Islands.

The whole Deccan Plateau is sub-divided into 12 meso regions. Of these, only 2 meso regions i.e. Northern Maharashtra and The Maharashtra Plateau lie within the State. Northern Maharashtra is further divided into 2 micro regions i.e. The Tapi-Purna Valley and The Wardha-Penganga Wainganga Plain. The Maharashtra Plateau is also further sub-divided into 2 micro regions i.e. The Eastern Plateau and The Western Plateau with Protruded Hills.

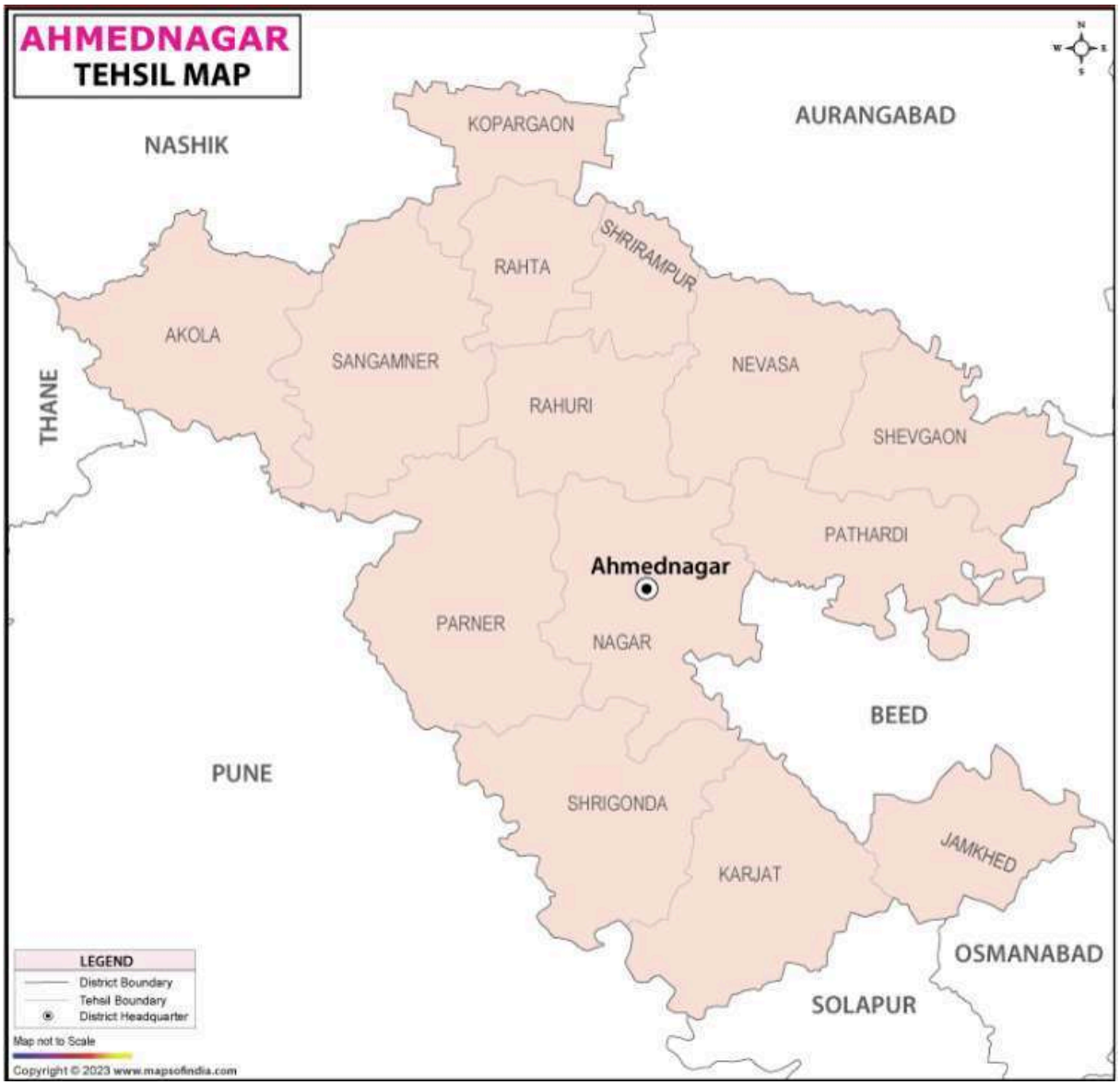


Figure 2: Tehsils Map of Ahilyanagar District

The Coastal Plains and Islands are divided into 4 meso regions i.e. Gujarat Region, Western Coastal Region, Eastern Coastal Region and The Islands. Of these, The Western Coastal Region covers Maharashtra. This region is divided into 4 micro level regions i.e. Maharashtra Littoral, Goa Coast, Karnataka Coast and North Kerala Coast. Only Maharashtra Littoral falls within the State of Maharashtra. The Ahilyanagar District falls under Maharashtra Plateau division and Western Plateau with Protruded Hills sub-division.

Table 1: Taluka wise Villages list

Name of Taluka	No. of Villages	Area (km^2)
Ahilyanagar	114	1605.74
Akole	191	1505.00

Name of Taluka	No. of Villages	Area (km^2)
Jamkhed	87	878.62
Karjat	121	1503.61
Kopargaon	81	725.16
Newasa	129	1343.43
Parner	131	1930.00
Pathardi	135	1214.10
Rahta	60	759.19
Rahuri	98	1035.11
Sangamner	172	1705.06
Shevgaon	112	1131.85
Shrigonda	115	1605.61
Shrirampur	57	569.87

Topography

The district as a whole is a tableland which has been incised by the Godavari and its tributaries and Sina River. Physiographically the District is broadly divisible into three parts i.e. (i) Low land of Godavari Basin, (ii) Balaghat plateau and (iii) Sina Basin.

Low land of Godavari Basin which is also known as Gangathad. It includes area drained by the Godavari River. It slopes gradually towards East and is located at the height varying between 400 and 500 metres. There are a number of residual hills with summits of over 600 metres. These are generally higher in the West and became lower in the East.

Balaghat Plateau which traverses the central portion from the Western border to Eastern border of the district. The plateau has fairly steep and highly dissected slopes by head ward erosion of streams. The height of plateau varies between 500 metres and 800 metres from mean sea level. The general slope in the Northern portion is towards North and North East while that in the Southern portion is towards South or South-East. The top of this tableland is covered with almost bared rocks. The Southern parts gently slope towards the Manjra River. The valley of Manjra has fairly fertile soils and better ground water condition as a result that crops are cultivated both seasons.

The Sina Basin, situated at approximately 600 meters above sea level, slopes south-eastward. Composed of valleys carved by small, southward-flowing streams that feed the Sina River, the basin is characterized by generally poor soils, with slightly higher fertility found near the streams. This, coupled with the district's lowest rainfall, contributes to the area's status as the poorest region within the district.

Land use pattern

- Bareen/Unculturable/Waste land Area: 1673.08sq. km.
- Agricultural land: 13546.21 sq.km.
- Built-up area: 255.71 sq. km.
- Wet lands/Water Bodies: 497.44 km
- Forest Land: 1075.56 sq. km.

Weather conditions in Ahilyanagar

The climate of the district is characterised by a hot summer and general dryness except during the South-West monsoon season. The year can be divided into four seasons. The cold season from December to February is followed by the hot season from March to the first week of June. The South West monsoon season is from the second week of June till the end of September while October and November constitute the post monsoon.

The distribution of rainfall is very uneven. The Western part of Akole Tahsil gets good rainfall and the rainfall decreases as one proceeds towards East. The district mostly lies in the rain shadow to the East of the Sahyadri's. September is the rainiest month. About 75 percent of the annual rainfall is received during the South West monsoon season. The variation in rainfall from year to year is large. With the withdrawal of the monsoon day temperatures increase but night temperatures progressively decrease. Seasonal variation in temperature is quite large. From March onwards is a period of continuous increases. May is the hottest month of the year. December is the coldest month of the 10 year with the mean daily minimum temperature at 11°C. Sometimes due to cold waves in Northern India the minimum temperature drops to 2°C to 3°C.

Except during the South-West monsoon season, the air is generally dry, particularly so in the afternoons. Skies are generally clear or lightly clouded during most part of the year. During the South West monsoon season, the skies are heavily clouded to overcast. Winds are generally light to moderate in force with some strengthening during the monsoon season.

Transport

Rail

The Ahmednagar junction railway station in Ahilyanagar city has a number of trains passing through this line. The Ahmednagar junction railway station comes under the Pune railway division. Manmad–Daund line was opened in 1878, and connects the south-east and north-east sections. This station prioritizes passenger comfort with dedicated waiting and retiring

rooms. A variety of food options, including vegetarian and non-vegetarian, are available, and a book stall provides reading material for travellers.

Road

The Ahilyanagar district map provides information about various routes to reach Ahilyanagar by road. Roads are linked between Ahilyanagar and cities like Pune, Nagpur, Nashik, Solapur, and several other cities.

Airport

Chhatrapati. Sambhajinagar airport is the nearest airport to Ahilyanagar, which is located 120 km on north-east of Ahilyanagar city.This location is easily accessible by road via Highway 753F and by rail via Manmad Junction. There aren't any scheduled flights operating out of Chhatrapati. Sambhajinagar Airport. The Government of Maharashtra has planned to upgrade the airport but no on-ground works has been done till now.

Geomorphology

The Ahilyanagar district in Maharashtra can be primarily divided into three physiographic divisions: Low land of Godavari Basin, Balaghat plateau region, and Sina Basin region.

This area lies within the low-lying Godavari Basin, also known as Gangathad, encompassing the drainage area of the Godavari. The land gently slopes eastward, with elevations ranging from 400 to 500 meters, punctuated by residual hills exceeding 600 meters at their summits. These hills are generally taller in the west and diminish in height as they extend eastward.

The Balaghat Plateau bisects the district from west to east. Characterized by steep, dissected slopes due to stream erosion, the plateau's elevation ranges from 500 to 800 meters above sea level. The northern slopes generally face north and northeast, while the southern slopes descend south and southeast. The plateau's summit is largely barren rock. In the south, the terrain slopes gently towards the Manjra River valley, where fertile soils and favourable groundwater conditions support year-round cultivation.

The Sina Basin, situated at approximately 600 meters above sea level, slopes south-eastward. This area, drained by small, southward-flowing streams that feed the Sina River, consists of valleys with predominantly poor soils, although some areas near the streams exhibit slightly better fertility. The basin also experiences the district's lowest rainfall, resulting in its designation as the district's most economically disadvantaged region.

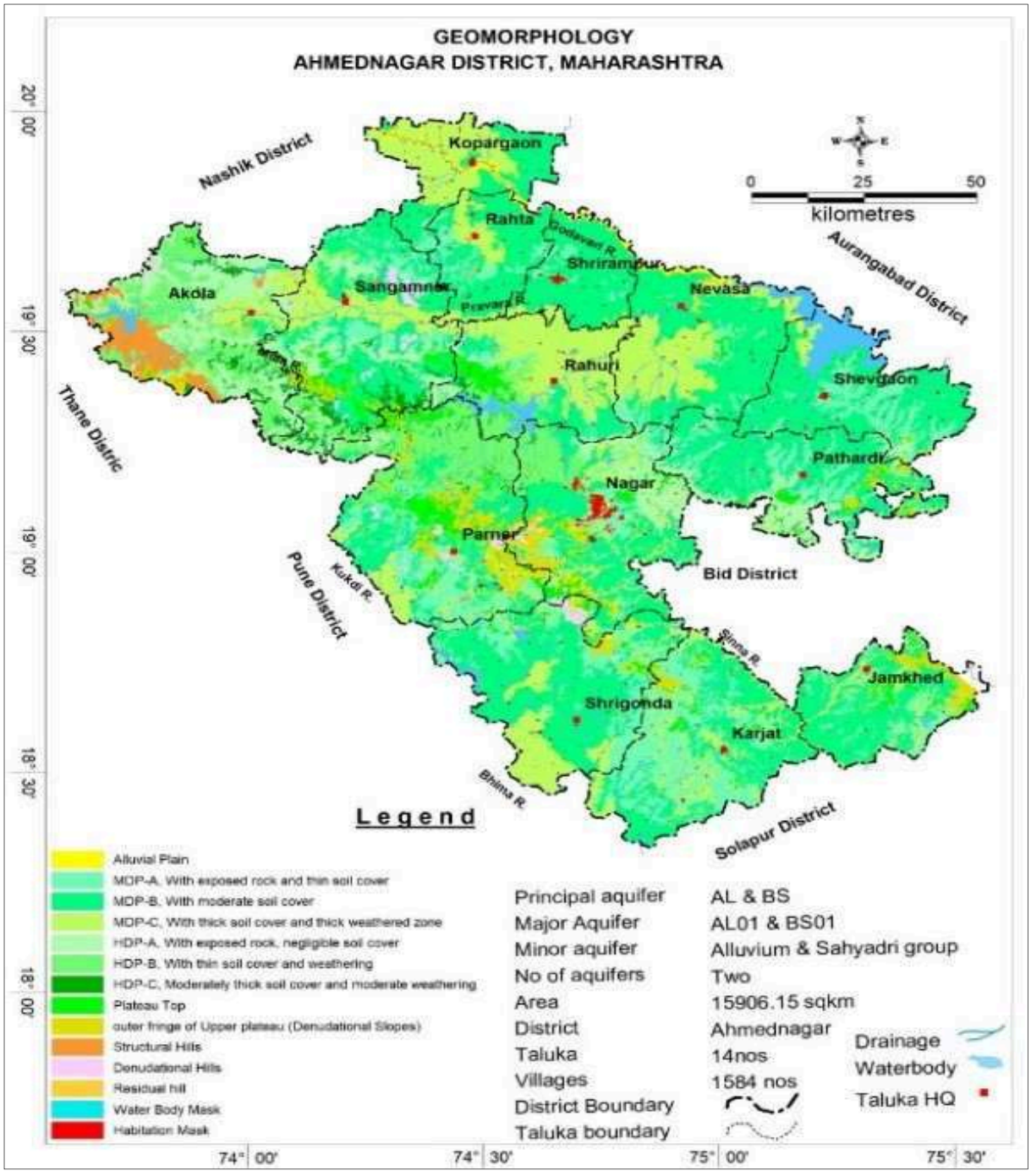


Figure 3:Geomorphology Map of Ahilyanagar District

OVERVIEW OF MINING ACTIVITY IN THE DISTRICT

Ahilyanagar District does not have any major mineral sources like Iron, Aluminium, Coal, etc. but district has a rich source of minor mineral like stones, pebbles, red soils (Murum), Sand etc. The rapid urbanization of Ahilyanagar city and other major towns have created a growing demand for high-quality public facilities and infrastructure. This, in turn, has driven growth in the construction industry, leading to the development of various facilities.

The development of infrastructure, including roads, bridges, and buildings, relies heavily on various construction materials, with sand being a fundamental component. Riverbed sand quarries serve as the primary source of sand supply, offering a convenient and cost-effective solution. Strategically located near development areas, these quarries enable easy transportation of sand at minimal costs. Domestic demand plays a major role in the fast growth of mining of sand. In fact, the domestic demand of sand has been found increasing in India. The sand consumption has increased over the last few decades. The demand and production of sand as a construction material is increasing rapidly due to increased infrastructure development projects and other construction activities supported by the packages provided by the Government.

The entire market for sand is from the Ahilyanagar city, Sangamner, Parnerand surrounding areas. There are about 44 no. stone quarries in Ahilyanagar District till December 2024.Mining activity is one of the main revenue sources for the district.

There are 9 locations of sand ghats over Godavari, Pravara, Bhima, Sina, Mula, Nani and Ghod rivers where sand deposition is allowed from replenishment and other safety point of view in the district (Source info. District Mining Office, Ahilyanagar).

LIST OF SAND MINING LEASES PROPOSED IN THE DISTRICT WITH LOCATION, AREA AND PERIOD OF VALIDITY

Table 2: List of Proposed Sand Mining Leases 2022-23

Sr.	Taluka	Name of Sand ghat	River	Survey No./Gat No.	Details of Sand Ghats 2022-23			
					Length (m)	Width (m)	G.S.D.A. Proposed Depth (m)	Minable Sand Quantity
1.	Newasa	Khupti-1	Pravara	182, 197 to 200	753	56	1	14,900
2.	Newasa	Khupti-2	Pravara	202 to 205	735	54	1	14,025
3.	Newasa	Khupti-3	Pravara	206 to 208, 210, 212	524	55	1	10,184
4.	Newasa	Khupti-4	Pravara	214, 231, 232, 233अ, 233ब	537	55	1	10,436

Sr.	Taluka	Name of Sand ghat	River	Survey No./Gat No.	Details of Sand Ghats 2022-23			
					Length (m)	Width (m)	G.S.D.A. Proposed Depth (m)	Minable Sand Quantity
5.	Newasa	Amalner	Mula	18 to 20, 30, 38 to 42, 52 to 54/2, 56 to 65	1236	29	2	25,331
6.	Shrigonda	Ajnuj	Bhima	444 to 472, 486, 493, 495, 505, 504	287	37	0.9	3,377
7.	Shrigonda	Angare	Bhima	41 to 45, 33, 35, 17, 23, 16, 13, 10, 9, 7, 6, 141 to 143, 145 to 155, 119 to 121	801	17	0.5	2,406
8.	Shrigonda	Kashti	Ghod	1140 to 1164, 1185 to 1200 1212 to 1218	1120	14	0.6	3,324
9.	Shrigonda	Sangvi Dumla	Bhima	197, 198, 213 to 275	1554	14	0.6	4,613
10.	Shrigonda	Gar	Bhima	136	982	18	0.6	3,748
11.	Parner	Kurund	Ghod	336/1, 336/2, 337	450	35	0.5	2,783
12.	Shevgaon	Mungi-1	Godavari	1, 2, 3, 5/1, 5/2	375	42	1	5,565
13.	Shevgaon	Mungi-2	Godavari	6, 7, 8, 10, 12	385	42	1	5,714
14.	Shevgaon	Mungi-3	Godavari	216, 217, 214, 402	352	30	1	3,731
15.	Shevgaon	Mungi-4	Godavari	688 to 694, 698, 633, 636, 89	700	45	1	11,131

Sr.	Taluka	Name of Sand ghat	River	Survey No./Gat No.	Details of Sand Ghats 2022-23			
					Length (m)	Width (m)	G.S.D.A. Proposed Depth (m)	Minable Sand Quantity
16.	Shevgaon	Karadgaon	Nani	480 to 485, 488 to 490, 436, 437, 438	524	20	1	3,703
17.	Sangamner	Ashvi Bu-1	Pravara	131, 132, 124, 125, 128	925	50	0.5	8,171
18.	Sangamner	Ashvi Bu-2	Pravara	48, 49, 50, 51, 52, 53, 54, 56, 59	400	50	0.5	3,534
19.	Sangamner	Shibalpur	Pravara	299, 300, 301, 308, 309, 310, 311	540	32	0.5	3,053
20.	Sangamner	NandurKhandarmal	Mula	Nr Dam Land Acquisition व 581, 582, 583, 584, 585, 586, 587	485	21	0.5	1,800
21.	Sangamner	Jambut-1	Mula	Jambut Bu. 28, 30, 33 to 38 Jambut Khu. 241, 258 to 265, 267, 270	405	45	0.5	3,220
22.	Sangamner	Jambut-2	Mula	Jambut Bu 10 to 25, 27, 28 Jambut Khu. 70, 78	510	35	0.5	3,154
23.	Shrirampur	Wangi Khu	Pravara	1,2,3,4,5,6,7,8,21	1542	30	0.4	6,539
24.	Shrirampur	Ukkalgaon	Pravara	30, 31, 32, 33, 34, 40, 41, 42,	548	20	0.8	3,098

Sr.	Taluka	Name of Sand ghat	River	Survey No./Gat No.	Details of Sand Ghats 2022-23			
					Length (m)	Width (m)	G.S.D.A. Proposed Depth (m)	Minable Sand Quantity
				43, 44				
25.	Shrirampur	Waladgaon	Pravara	15,12,8,9,10,6,144,4,5,3	720	15	0.9	3,435
26.	Shrirampur	Eklahare	Pravara	58, 59, 60, 61	507	20	0.8	2,866
27.	Shrirampur	Naygaon-1	Godavari	373, 374, 375	505	65	2	23,198
28.	Shrirampur	Naygaon-2	Godavari	329, 330	425	72	2	21,625
29.	Shrirampur	Galnimb	Pravara	225, 224, 223, 16, 226	700	50	1	12,367
30.	Shrirampur	Wangi Bu-1	Pravara	101	450	30	1	4,770
31.	Shrirampur	Wangi Bu-2	Pravara	2	337	30	0.9	3,215
32.	Shrirampur	Govardhanpur	Godavari	11, 117, 118	785	30	1	8,321
33.	Shrirampur	Matulthan-1	Godavari	281, 282, 283, 284	264	58	0.9	4,870
34.	Shrirampur	Matulthan-2	Godavari	293, 294	195	75	1	5,168
35.	Shrirampur	Matulthan-3	Godavari	7,8,9,10,11,14,17,18	390	46	2	12,678
36.	Shrirampur	Kadit Khu.	Pravara	1, 15, 16	450	54	1	8,587
37.	Shrirampur	Kadit Bu.	Pravara	12, 17, 15, 14, 13, 19, 20, 22, 8, 9, 10, 18	838	59	1	17,471

Sr.	Taluka	Name of Sand ghat	River	Survey No./Gat No.	Details of Sand Ghats 2022-23			
					Length (m)	Width (m)	G.S.D.A. Proposed Depth (m)	Minable Sand Quantity
38.	Shrirampur	Padhegaon	Pravara	20, 32, 51	229	45	1	3,641
39.	Shrirampur	Fatyabad	Pravara	3, 2, 1, 182, 181, 180, 179, 178	834	54	1	15,914
40.	Shrirampur	Khanapur	Godavari	21, 220	1170	38	1	15,710
41.	Shrirampur	Malunja Bu.	Pravara	69, 70, 80	330	39	1	4,548
42.	Shrirampur	Bherdapur-1	Pravara	28	470	22	1	3,654
43.	Shrirampur	Bherdapur-2	Pravara	20, 22	390	27	0.6	2,232
44.	Shrirampur	Kuranpur	Pravara	2,1, 258, 257, 256, 255, 250/1, 249, 248, 241, 242, 243	1300	38	1	17,456
45.	Shrirampur	Mandve	Pravara	8, 9, 181, 182, 184, 199, 187, 1, 2, 3	1100	45	1	17,491
46.	Rahuri	Deswadi	Mula	42, 46 & 289	350	80	1	9,894
47.	Rahuri	Rampur	Pravara	369, 370	290	35	0.9	3,228
48.	Rahuri	Walan	Mula	38, 39, 41, 45	280	47	0.6	2,790
49.	Rahuri	Digras	Mula	15, 50, 76, 133, 171, 172, 173, 174	170	60	1	3,604

Sr.	Taluka	Name of Sand ghat	River	Survey No./Gat No.	Details of Sand Ghats 2022-23			
					Length (m)	Width (m)	G.S.D.A. Proposed Depth (m)	Minable Sand Quantity
50.	Rahuri	Mahisgaon	Mula	70, 71, 72, 73, 74, 90, 91, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 133, 134, 136, 137, 139, 140	249	56	0.5	2,464
51.	Rahuri	Mahegaon	Pravara	307, 308, 309, 310, 311, 312	210	50	1	3,710
52.	Rahuri	Chikhalthan	Mula	242, 243, 245	240	56	0.5	2,375
53.	Rahuri	Bodhegaon	Pravara	42, 43, 103	650	50	1	11,484
54.	Rahuri	Dhanore-1	Pravara	335, 336, 345, 347, 348, 358, 359, 360	500	70	0.5	6,184
55.	Rahuri	Dhanore-2	Pravara	361, 362, 363	570	79	0.5	7,956
56.	Rahuri	Dhanore-3	Pravara	371, 372	440	70	0.5	5,442
57.	Rahuri	Chandegaon-1	Pravara	217, 218, 13	440	55	1	8,551
58.	Rahuri	Chandegaon-2	Pravara	35, 36, 39, 40, 41, 43	700	70	1	17,314
59.	Rahuri	Baragaon Nandur-1	Mula	447, 446, 445, 448	250	42	0.9	3,339
60.	Rahuri	Baragaon Nandur-2	Mula	431/2/5, 431/2/4, 431/2/2	240	42	0.5	1,781

Sr.	Taluka	Name of Sand ghat	River	Survey No./Gat No.	Details of Sand Ghats 2022-23			
					Length (m)	Width (m)	G.S.D.A. Proposed Depth (m)	Minable Sand Quantity
61.	Rahuri	Baragaon Nandur-3	Mula	428, 426, 407	250	48	0.5	2,120
62.	Karjat	Sidhhteck-1	Bhima	4,5,6,7,8,9,10,11, 19,20, 21,22,24,28,29	310	46	0.6	9,002
63.	Karjat	Deulwadi	Bhima	3	923	46	0.7	4,180
64.	Karjat	Jalalpur-1	Bhima	347, 348, 349, 371 to 379, 381, 382, 383	650	26	0.8	4,880
65.	Karjat	Jalalpur-2	Bhima	327 to 332, 334 to 339, 344, 345	630	27	0.8	4,808
66.	Karjat	Berdi-1	Bhima	62 to 69	600	40	0.5	4,240
67.	Karjat	Berdi-2	Bhima	4 to 9	500	40	0.5	3,534
68.	Karjat	Berdi-3	Bhima	222 to 228	550	40	0.5	3,887
69.	Karjat	Khed-1	Bhima	69, 70, 71	350	30	0.6	2,226
70.	Karjat	Ganeshwadi	Bhima	218 to 224, 233, 235, 236	950	25	0.5	4,196
71.	Karjat	Sitpur	Sina	4,5,6,8,9	921	14	1	4,556
72.	Karjat	Dudhodi-1	Bhima	13 to 30	800	18	1	5,088
73.	Karjat	Dudhodi-2	Bhima	276 to 316/8	800	14	1	3,958
74.	Karjat	Dudhodi-3	Bhima	213 to 225	500	20	1	3,534

Sr.	Taluka	Name of Sand ghat	River	Survey No./Gat No.	Details of Sand Ghats 2022-23			
					Length (m)	Width (m)	G.S.D.A. Proposed Depth (m)	Minable Sand Quantity
75.	Karjat	Dudhodi-4	Bhima	180 to 316/13	550	20	1	3,887
76.	Karjat	Autewadi	Bhima	25	200	50	1	3,534
77.	Karjat	Nagapur	Sina	63, 64, 65, 66, 67, 68, 1, 2	550	20	1	3,887
78.	Karjat	Nimbodi	Sina	94, 95, 98, 99, 100	500	20	1.5	5,300
79.	Karjat	Taradgaon	Sina	6, 7, 8, 9, 10, 11, 12	250	40	1	3,534
80.	Karjat	Dighi	Sina	87, 88, 89, 90, 91, 93	520	20	1.5	5,512
81.	Karjat	Babhulgaon Du.	Nandni	56,57	510	22	0.6	2,379
82.	Karjat	Bhambhora-1	Bhima	313 to 328, 756, 757, 758	800	60	1	16,961
83.	Karjat	Bhambhora-2	Bhima	709, 761, 762, 755, 763, 764, 746, 745, 744, 743	800	50	1	14,134
84.	Karjat	Malthan	Sina	1, 2, 5, 9, 10, 21, 22	725	24	0.8	4,919
85.	Jamkhed	Pimparkhed	Vincharana	10, 74, 581, 589	288	38	0.5	1,934
86.	Jamkhed	Chaundi-1	Sina	93, 92, 91, 90, 73/1	547	36	0.6	4,175

Sr.	Taluka	Name of Sand ghat	River	Survey No./Gat No.	Details of Sand Ghats 2022-23			
					Length (m)	Width (m)	G.S.D.A. Proposed Depth (m)	Minable Sand Quantity
87.	Jamkhed	Aaghi	Sina	43, 44, 45, 42, 41	356	32	0.8	3,220
88.	Jamkhed	Kawadgaon	Sina	44, 49, 50, 51, 57, 58, 59, 61	405	32	0.5	2,290
89.	Jamkhed	Chaundi-2	Sina	408, 403, 402, 401, 400, 375	536	36	0.5	3,409
90.	Rahata	Rastapur	Godavari	12	520	95	1	17,456
91.	Rahata	Puntamba-1	Godavari	48, 49	425	110	1	16,519
92.	Rahata	Puntamba-2	Godavari	50	430	110	1	16,714
93.	Rahata	Puntamba-3	Godavari	14, 15	278	82	1	4,028
94.	Rahata	Durgapur	Pravara	81, 119, 109, 170, 108, 169, 156, 128, 122, 127, 121, 91	550	22	0.5	4,276
95.	Rahata	Pathare Bu.1	Pravara	13 to 17, 29, 30, 40 to 44	318	35	1	3,933
96.	Rahata	Pathare Bu.2	Pravara	45 to 51, 53, 55, 58, 59 to 64	427	35	1	5,281
97.	Rahata	Pathare Bu.3	Pravara	65 to 80	653	35	1	8,076
98.	Rahata	Hanmantgaon-1	Pravara	30 to 37, 68 to 70, 71, 74, 76 to 79, 80, 81, 85, 86 to 91, 119 to 126	592	31	1	6,485

Sr.	Taluka	Name of Sand ghat	River	Survey No./Gat No.	Details of Sand Ghats 2022-23			
					Length (m)	Width (m)	G.S.D.A. Proposed Depth (m)	Minable Sand Quantity
99.	Rahata	Hanmantgaon-2	Pravara	137, 140, 142, 145, 146	384	41	1	5,563
100.	Rahata	Dadh Bu.	Pravara	129 to 132, 156 to 158, 151 to 154, 149, 142 to 146, 136 to 147	1145	24	1	9,710
101.	Rahata	Bhagwatipur-1	Pravara	12, 13, 14, 15, 16	580	45	1	9,223
102.	Rahata	Bhagwatipur-2	Pravara	7, 8	720	45	1	11,449
103.	Kopargaon	Wari	Godavari	125	450	40	1	6,360
104.	Kopargaon	Dauch Khurd	Godavari	74, 75	175	60	0.5	1,855
105.	Kopargaon	JeurKumbhari	Godavari	142	155	85	1	4,655
106.	Kopargaon	Sanwatsar	Godavari	199, 195, 193	180	60	1	3,816
107.	Kopargaon	Chandgavhan	Godavari	12, 13, 14, 18, 22	980	40	1	13,852
108.	Kopargaon	Murshatpur	Godavari	6	140	75	2	7,420
109.	Kopargaon	Dharangaon-1	Godavari	189, 187, 174, 185, 184	650	75	1	17,226
110.	Kopargaon	Dharangaon-2	Godavari	4, 14, 15, 16	690	60	1	14,629
111.	Kopargaon	JeurPatoda	Godavari	3, 2, 86, 85, 84	120	90	1	3,816
112.	Kopargaon	Manjur	Godavari	71, 72, 73, 74, 75, 83, 84, 95, 96	591	35	0.4	2,924

Sr.	Taluka	Name of Sand ghat	River	Survey No./Gat No.	Details of Sand Ghats 2022-23			
					Length (m)	Width (m)	G.S.D.A. Proposed Depth (m)	Minable Sand Quantity
113.	Kopargaon	Mahegaon Deshmukh-1	Godavari	326, 338, 339, 340	550	90	1	17,491
114.	Kopargaon	Mahegaon Deshmukh-2	Godavari	5	300	105	1	11,131
115.	Kopargaon	Dauch Bu.	Godavari	214, 52, 225, 218, 219, 1, 2, 3, 96, 4, 8, 6, 7	223	45	1	3,546
116.	Kopargaon	Sangvi Bhusar	Godavari	387, 381, 380, 379, 368, 367, 388	225	45	1	3,578
117.	Kopargaon	Maygaon Devi	Godavari	187,164,163,162, 161,153, 152, 142, 141, 140, 139, 132, 131, 118, 117	524	70	1	12,961
118.	Kopargaon	Malegaon Thadi	Godavari	33, 32, 570	315	70	1	7,792
119.	Kopargaon	Suregaon-1	Godavari	523, 522, 521, 476, 520, 517, 515, 514, 511, 508	810	53	1	15,170
120.	Kopargaon	Suregaon-2	Godavari	16, 291, 537, 535, 534, 533, 532, 531, 528, 527, 524	880	52	1	16,170
121	Kopargaon	Suregaon-3	Godavari	17, 18, 19, 20, 21, 22, 24, 25,	920	52	1	16,905

Sr.	Taluka	Name of Sand ghat	River	Survey No./Gat No.	Details of Sand Ghats 2022-23			
					Length (m)	Width (m)	G.S.D.A. Proposed Depth (m)	Minable Sand Quantity
				26, 27, 28, 29				
122	Kopargaon	Kolgaon Thadi	Godavari	8, 15, 21, 27, 28, 29, 144, 1, 5, 7	420	53	1	7,866

Table 3: List of Proposed Sand Mining Leases 2023-24

Sr	Taluka	Name of Sand ghat	River	Survey No./Gat No.	Details of Sand Ghats 2023-24				
					Area (Ha)	Length (m)	Width (m)	G.S.D.A Proposed Depth (m)	Minable Sand Quantity
1.	Jamkhed	Aaghi	Sina	43, 44, 45, 42, 41	1.14	356	32	0.8	3,220
2.	Karjat	Nagalwadi	Sina	1, 2	4.75	950	50	0.5	8,392
3.	Karjat	Dighi	Sina	87, 88, 89, 90, 91, 93	1.04	520	20	1.5	5,512
4.	Parner	Vankute	Kalu	248 to till the temple	1.2	600	20	0.8	3,392
5.	Parner	Tas	Mula	तासगावठाणतेगटनं16/1	1.10	550	20	1.0	3,887
6.	Parner	Tas	Mula	37 to 50	1.05	350	30	1.0	3,710
7.	Parner	Palshi Nagapur	Mula	618 to 622, 121 to 123	1.80	1000	18	0.5	3,180

Sr	Taluka	Name of Sand ghat	River	Survey No./Gat No.	Details of Sand Ghats 2023-24				
					Area (Ha)	Length (m)	Width (m)	G.S.D.A Proposed Depth (m)	Minable Sand Quantity
		wadi							
8.	Parner	Mandve Khu.	Mula	285 to 286	1.20	600	20	0.50	2,120
9.	Parner	Palshi	Mula	132 to 136	1.80	900	20	0.40	2,544
10.	Parner	Deshwande-1	Mula	413, 414, 415 to 279/9	1.90	950	20	0.40	2,686
11.	Parner	Deshwande-4	Mula	1, 3, 505 to 508	1.57	850	18.5	0.40	2,223
12.	Parner	Deshwande-3	Mula	416 to 458	1.35	900	15	0.40	1,908
13.	Parner	Deshwande-2	Mula	32 to 38	1.80	900	20	0.30	1,908
14.	Rahuri	Jatap-1	Pravara	301	1.05	300	35	1	3,710
15.	Rahuri	Jatap-2	Pravara	288, 289, 294, 295	2.025	450	45	1	7,155
16.	Rahuri	Deswandi	Devnadi	289, 42, 46, 47	2.10	420	50	1	7,420

Table 4: List of Proposed Sand Mining Leases 2024-25& 2025-26

Sr.	Taluka	Name of Sand ghat	River	Survey No./Gat No.	Details of Sand Ghats 2025-26				
					Area (Ha)	Length (m)	Width (m)	G.S.D.A Proposed Depth (m)	Minable Sand Quantity
1.	Samgamner	Chanegaon	Pravara	3 to 5,17 to 19	1.66	520	32	1	5880
2.	Samgamner	JambutBudruk No. 1	Mula	Jambutbudruk 28, 30, 33 to 38, 303 Jambutkhurd 70, 78, 258 to 265, 267, 268	1	222	45	0.5	1765
3.	Samgamner	Ghargaon	Mula	40 to 51,142,152,153	1.13	450	25	0.5	1988
4.	Samgamner	Sakur	Mula	107,122,124,125,127 to 139,148 to 152, 156,157,158,166 to 169,172	1.05	300	35	1	3710
5.	Karjat	Sitpur	Sina	4,5,7,8,9	1.80	600	30	0.8	5088
6.	Shirrampur	Rampur	Godavari	70,71,73,78	4.68	1170	40	0.5	8269
7.	Shrigonda	Kashti	Ghod	1140 to 1164, 1185 to 1200,1212 to 1218	1.87	1040	18	0.6	3969
8.	Shrigonda	SagaviDumala	Bhima	197,198,213 to 241,271 to 275,1,37,38	3.72	1240	30	0.6	7887
9.	Shrigonda	Ajnuj	Bhima	505,494,472,473,469,462,460,457	3.66	1220	30	0.8	10346

Table 5:List of Proposed Sand Mining Leases 2026-27

Sr. No.	Taluka	Sand Group Name	Name of River	Group Number	Area (H.R.)	Length (meter)	width (meter)	Proposed Depth (M)	Minable Sand Quantity
1	2	3	4	5	6	7	8	9	10
1	Newasa	Ambalner	Mula	18 to 20,30,38 to 42,52 to 54/2,56 to 65	3.58	1236	29	2.1	26598
2	Shriram pur	Goverdhanpur	Godavari	83, 87	1.62	540	30	2	11449
3	Shriram pur	Naur	Godavari	222,223 ,231, 232 233	4.72	502	94	2.1	35016
4	Shriram pur	Jafrabad	Godavari	109, 110, 111	1.09	255	43	2	7749
5	Shriram pur	Naigaon	Godavari	373,374 , 375	1.66	405	41	2.8	16429
6	Shriram pur	Khanapur	Godavari	21	3.84	960	40	1	13569
7	Rahuri	Manjri .2	Mula	574 to 576 and 582 to 585, 590 , 592 to 596	4.38	730	60	1	15477
8	Rahuri	Vajulpoee	Mula	65 to 67 ,70 to 72	1.41	235	60	1	4982
9	Sangamner	Jambutbu	Mula	जाबुत बुद्रूक- 28, 30, 33 to	1.00	222	45	0.5	1765

Sr. No.	Taluka	Sand	Name	Group	Area	Length	width	Propos	Minabl
				38, 303 जांबुत खुर्द- 70, 78, 258 to 265, 267, 268,270 ,241					
10	Sangamner	Sakur	Mula	107,122, 124, 125, 127 to 139, 148 to 152,156 to 158, 166 to 169, 172, 173	1.05	300	35	1	3710
11	Sangamner	Ghargaon	Mula	40 , 51, 142, 152, 153	1.13	450	25	0.5	1988
12	Parner	vankute	kalu	348 to Mula river Khandoba mandir	1.2	600	20	0.75	3180
13	Parner	Taas	Mula	37 to 50	1.05	350	30	0.75	2783
14	Parner	Taas	Mula	Taas Gavthan to 16/1	1.1	550	20	1	3887
15	Parner	Mandve Khu	Mula	285 and 286	1.2	600	20	0.5	2120
16	Parner	Desvande.2	Mula	32 to 38	1.8	900	20	0.3	1908
17	Parner	Desvan	Mula	1, 3,	1.57	850	18.5	0.4	2223

Sr. No.	Taluka	Sand	Name	Group	Area	Length	width	Propos	Minabl
		de.4		505 to 508					
18	Parner	Desvande .3	Mula	416 to 458	1.35	900	15	0.4	1908
19	Parner	Desvande.1	Mula	413, 414 , 415 and 279/9	1.9	950	20	0.4	2686
20	Parner	Pokhri	Mula	430,431 ,432/1 to 432/8, 435 and 436	1.1	550	20	1	3887
21	Parner	Palshi	Mula	132 to 136	1.76	880	20	0.4	2488
22	Parner	Palshi	Mula	121 to 123 and 618to622	1.62	950	17	0.5	2853
23	koparga on	Sangvi Bhusar	Godava ri	367, 368, 379, 380, 381, 387 to 395	3.6	800	45	1	12721
24	koparga on	Maigao n Devi	Godava ri	152,153 ,139 to 142,117 ,118,18 7,161to 164,131 ,132	1.85	410	45	1	6519
25	koparga on	Mahego an Deshm ukh	Godava ri	5	1.62	180	90	1	5724
26	koparga on	suregoa n 1	Godava ri	508,511 ,514,51	4.29	810	53	1	15170

Sr. No.	Taluka	Sand	Name	Group	Area	Length	width	Propos	Minabl
				5,517, 520 to 523,476					
27	koparga on	suregoa n 2	Godava ri	17 to 22,24 to 29	4.78	920	52	1	16905
28	Karjat	Dighi	Sina	87,88,8 9,90,91, 93	1.56	520	20	1.5	5512
29	Karjat	malthan	sina	1,2,5,9, 10,21,2 2	1.39	725	24	0.8	4919

Table 6: List of Final sand Mining Lease for year 2026-2027

Sr. No.	Taluka	Sand Group Name	Name of River	Group Number	Area (H. R.)	Length (meter)	width (meter)	GSDA Proposed Depth (M)	Minable Sand Quantity	Validity
1	2	3	4	5	6	7	8	9	10	11
1	Shrirampur	Naur	Godavari	222,223,231, 232 233	4.72	502	94	2.1	35016	2031 - 2032
2	Shrirampur	Naigaon	Godavari	373,374, 375	1.66	405	41	2.8	16429	2031 - 2032
3	Shrirampur	Khanapur	Godavari	21	3.84	960	40	1	13569	2031 - 2032
4	Sangamner	Jambutbu	Mula	जाबुतबुद्रूक-28, 30, 33 to 38, 303 जांबुतखुर्द- 70, 78, 258 to 265, 267, 268,270,241	1.00	222	45	0.5	1765	2031 - 2032
5	Sangamner	Sakur	Mula	107,122, 124, 125, 127 to 139, 148 to 152,156 to 158, 166 to 169, 172	1.05	300	35	1	3710	2031 - 2032
6	Sangamner	Ghargaon	Mula	40 , 51, 142, 152, 153	1.13	450	25	0.5	1988	2031 - 2032
7	kopargaon	Sangvi Bhusar	Godavari	367, 368, 379, 380, 381, 387 to 395	3.6	800	45	1	12721	2031 - 2032
8	kopargaon	Maigaon Devi	Godavari	152,153,139 to 142,117,118,187,161 to164,131,132	1.85	410	45	1	6519	2031 - 2032
9	kopargaon	Mahegaon	Godavari	5	1.62	180	90	1	5724	2031 - 2032

Sr. No	Taluka	Sand Group	Name of River	Group Number	Area	Length	width	GSDA	Minable	Validity
		Deshmukh								
10	kopargaon	suregoan1	Godavari	508,511,514,515,517, 520 to 523,476	4.29	810	53	1	15170	2031 - 2032

DETAILS OF ROYALTY OR REVENUE RECEIVED IN LAST THREE YEARS

The royalty rates vary on the type of mineral exploited. The rates for royalty for different minor mineral are tabulated below.

Table 7: The rates for royalty for different minor mineral

Sr.	Type of Mineral	Royalty rate per Brass (Rs.)
1	Black stone	600/-
2	Murrum	600/-
3	Ordinary Soil	240/-
4	Sand	As per Upset price comes through Auction Process

Revenue collected for last 3 years

The Revenue & Forest Department, Government of Maharashtra, had set the revenue collection targets for entire Maharashtra State and accordingly it was distributed to every district for every financial year wise. Accordingly, every district tries to achieve the targets given by Revenue Department. The details of the target set by Revenue Department and against which revenue collected in Ahilyanagar District is tabulated below.

Table 8:Details of revenue or royalty collected from 2023-2024 to 2025-26

Sr.	Financial Year	Target given by State Revenue Department (In Lac.)	Revenue Collected (In Lac.)	Percent Revenue Collected
1.	2023-24	12600.00	15147.46	120.22
2.	2024-25	17500.00	13762.59	78.64

3.	2025-26	24000	15393.51	64.14
4.	2026-27	18000	3890.08	21.06

DETAILS OF PRODUCTION OF SAND OR BAJRI OR MINOR MINERALS IN THE LAST THREE YEARS

Table 9: Details of the production of Sand or Minor Mineral in last 3 years

		For the Financial Year 2023-24	For the Financial Year 2024-25	For the Financial Year 2025-26
Name of Minerals		**Production (Brass)**	**Production (Brass)**	**Production (Brass)**
1	Gitty/Building Stone	1214506	877883	155440
2	Murum	1221200	1409101	1554391
3	Stone Bricks/ Bricks earth	215016	16954	0
4	Ordinary Clay	0	0	4612
5	Ordinary Sand	89318	20269	152702
	Total	**2740040**	**2324207**	**1867145**

PROCESS OF DEPOSITION OF SEDIMENTS IN THE RIVERS OF THE DISTRICT

Sediment is naturally occurring material that is broken down by process of weathering & erosion, and is consequently transported by the action of wind, water, tides& force of gravity acting on the particles. The strongest agent for transportation of the sediments is water and degree of sediment transported is depending on strength and velocity of flow. There is a range of different particle size in flow; material of different sizes moves through all areas of the flow for given stream conditions. Sand is an essential minor mineral used extensively across the country as a useful construction constituent. The rivers are the most important source for sand. It acts as source of transportation and deposition of sand and Bajri etc. The various aspects leading to the formation and deposition of sand are geological activity, climate, rainfall, and water velocity acting on country rock. The drainage system of the major rivers in the district is mostly of dendritic type. The river systems are young with a small drainage area and westerly seasonal regime. Major rivers forms part of the westerly flowing river system originating from Nashik, and Thane District.

Deposition is the opposite of erosion. Deposition is where a river lays down or drops the Sediments or material that it is carrying. Rivers carries lots of different sediments, including Rocks, boulders, silt, mud, pebbles and stones. Normally, a river has the power to carry sediments. If the force of a river drops, the river cannot carry sediment. This is when the river deposits its sediment.

Constituents of minor mineral

The work done by a river consists of the following:

- Erosion
- Transport of the material produced by erosion
- Accumulation (deposition) of the transported material Constituents of minor mineral.

The work done by a river consists of the following:

The erosion and transport of material go hand in hand with the deposition of the latter. There is not a single river that doesn't carry fragmental material and deposit it. Even at the early stages, in the development of a river, when the erosion and transport definitely prevail over accumulation, the material carried by the river is deposited in some of the sections. During youthful stage of the river, these deposits are unstable and when the volume of water and stream velocity increases (during flood), they may start moving again downstream. The load carried by a stream includes the rock waste supplied to it by rain wash, surface creep, slumping etc. by tributaries, external agents such as glaciers, wind, together with, acquired by its own erosion work. The term load doesn't specifically mean the maximum number of debris, that a stream could carry in a given set of conditions, that amount is referred to as the transporting power or capacity of a river.



Figure 4: Deposition Pattern of the River

River replenishment study

Sediment transportation

Sediment transport is the movement of organic and inorganic particles by water. In general, greater the flow more sediment that will be conveyed. Water flow can be strong enough to suspend particles in the water column as they move downstream, or simply push them along the bottom of a waterway. Transported sediment may include mineral matter, chemicals and pollutants, and organic material. Another name for sediment transport is sediment load. The total load includes all particles moving as bed load, suspended load, and wash load.

BED LOAD-

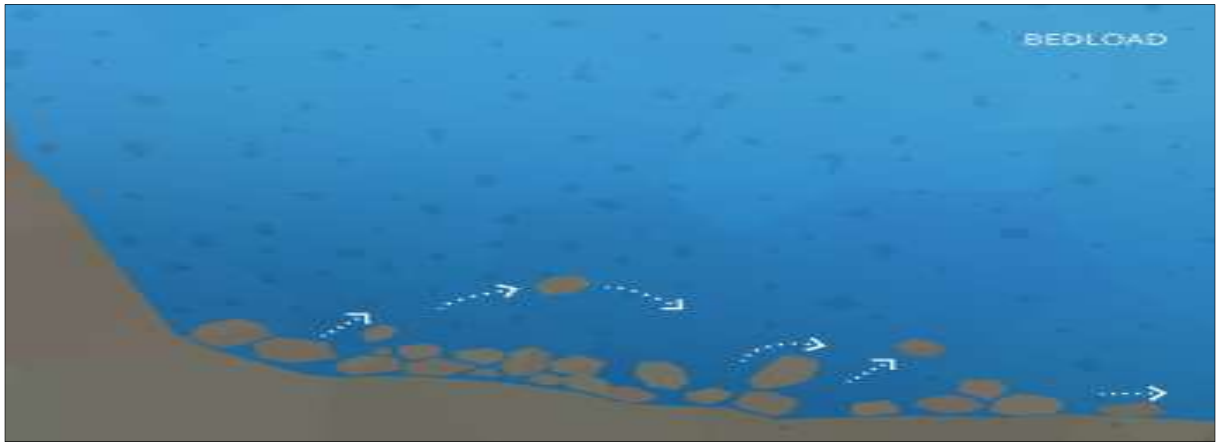


Figure 5: Bed Load

Bed load particles travel with water flow by sliding or bouncing along the bottom. Bed load is the portion of sediment transport that rolls, slides or bounces along the bottom of a waterways. This sediment is not truly suspended, as it sustains intermittent contact with the streambed, and the movement is neither uniform nor continuous. Bed load 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. Bed load transport

can occur during low flows (smaller particles) or at high flows (for larger particles).Approximately 5-20% of total sediment transport is bed load. In situations where the flow rate is strong enough, some of the smaller bed load particles can be pushed up into the water column and become suspended.

SUSPENDED LOAD-

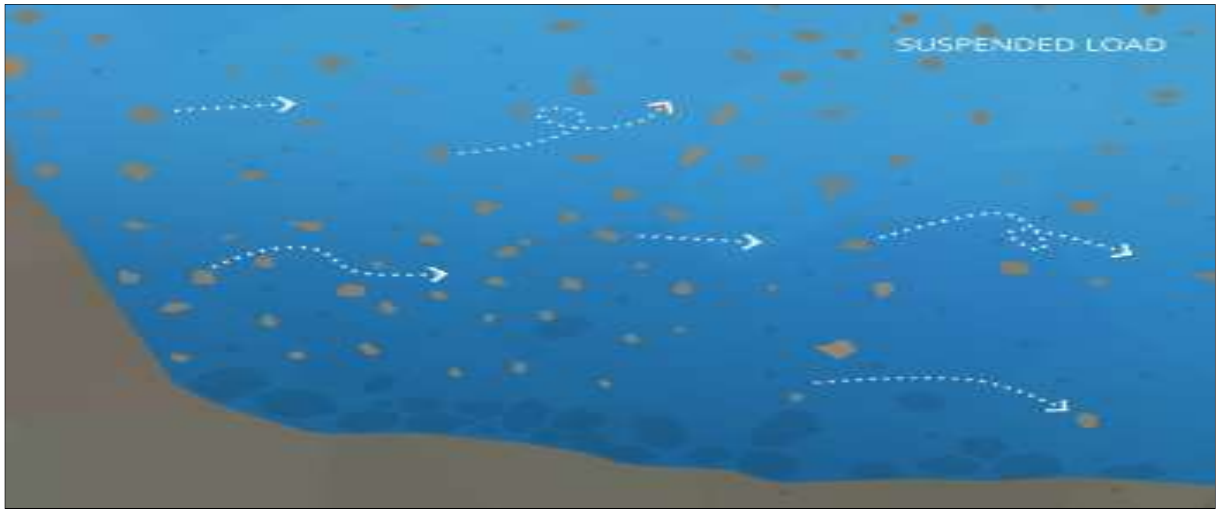


Figure 6: Suspended Load

If the water flow is strong enough to pick up sediment particles, they will become part of the 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-



Figure 7:Wash Load

The wash load is the portion of sediment that will remain suspended even when there is no water flow.

When the flow rate changes, some sediment can settle out of the water, adding to point bars, channel bars and beaches. The wash load is a subset of the suspended load. This load is comprised of the finest suspended sediment (typically less than 0.00195mm 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.

WHAT IS SEDIMENT DEPOSITION?

Sediment is necessary to the development of aquatic ecosystems through nutrient replenishment and the creation of benthic habitat and spawning areas. These benefits occur due to sediment deposition – when suspended particles settle down to the bottom of a body of water. This settling often occurs when water flow slows down or stops and heavy particles can no longer be supported by the bed turbulence. Sediment deposition can be found anywhere in a water system, from high mountain streams, to rivers, lakes, deltas and floodplains. However, it should be noted that while sediment is important for aquatic habitat growth, it can cause environmental issues if the deposition rates are too high, or too low. Sediment transportation and Deposition depends upon various factors like Slope of the Area, Annual Rainfall, Lithology, flow intensity of River, Geomorphology, Soil, Geology and Land use.

The rivers are the most important source for sand. It acts as source of transportation and deposition of sand and Bajri etc. The various aspects leading to the formation and deposition of sand are geological activity, climate, rainfall, and water velocity acting on country rock.

The drainage system of the major rivers in the district is mostly of dendritic type. The river systems are young with a small drainage area and westerly seasonal regime. Major rivers forms part of the westerly flowing river system originating from Nashik and Thane District.

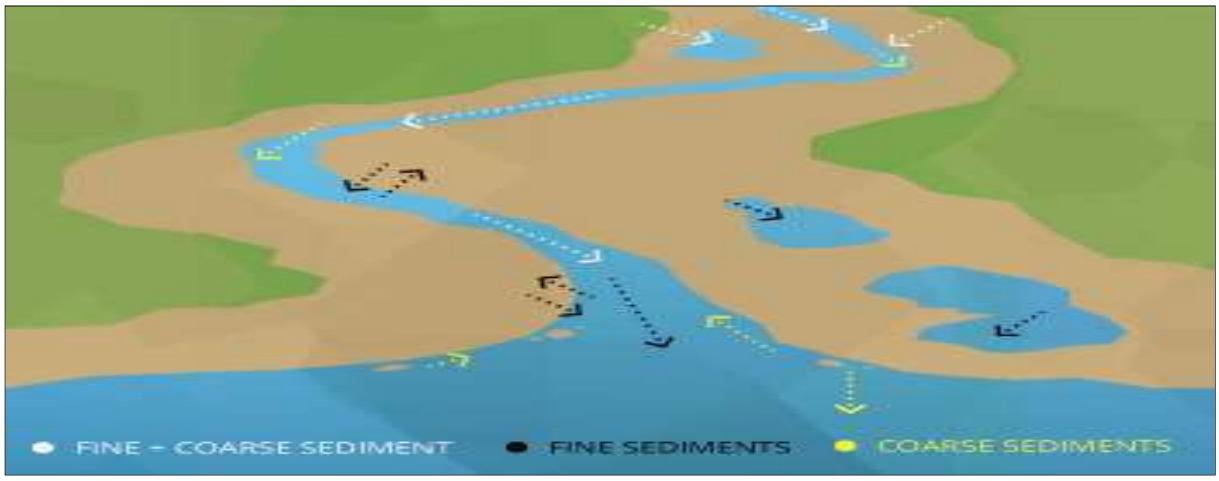


Figure 8: Sediments Deposition

TRIBUTARIES-

The Bhima River, flowing through the district of Ahilyanagar in Maharashtra, has various tributaries and sub-tributaries that contribute to its flow. Some of the important tributaries of the Bhima River in the Ahilyanagar district include the Sina River, the Nira River, the Bori, the Chandani, the Kamini, the Man, the Moshi and the Bhogavati River. These tributaries are crucial for the overall hydrology and water supply in the region, supporting agriculture and other water-dependent activities.

GENERAL PROFILE OF THE DISTRICT

The district lies between North latitudes 18°02’ and 19°09’ and east longitudes 73°09’ and 75°05’. The city Ahilyanagar is district headquarters. The district's total area is 17,048 sq.km and falls under Survey of India toposheets47E, 47F, 47I, 47J, 47N & 47M. It is bounded north by Igatpuri, Sinnar and Yeola talukas of Nashik district; on the north-east by Vaijapur, Gangapur and Paithan talukas of Chh. Sambhajinagar district of Marathwada division, on the east by Georai and Ashti talukas of Beed district; Bhum and Parenda talukas of Dharashiv district; on the south by the Karmala taluka of Solapur district; and on the south-west by Murbad and Shahapur talukas of Thane district. The population density as per 2011 census 266 persons/Sq.km. The major part of the district comes under Pravara and Mula basin. Pravara is the main river flowing through the district. The economy of the district is dependent on agriculture, especially on Sorghum and Pearl millet. Grapes, Orange, Pomegranate grown in this district are exported outside the state. The transport is based on both railway sand STB uses by road.

Physiographically the district forms part of Deccan Plateau. The Ahmednagar plateau between Baleshwar and Harishchandragad range has an average width of 50 km and has a trend north west to south-east along the length of the district from Akola in the north-west to Jamkhed in the south-east. It has an average elevation of over 900 m. in the west and less than 600 m. in the east having a general south-easterly slope. From the Harishchandragad range to its west, it goes down in elevation to form the crest of a tableland. North of the city of Ahilyanagar, the crest rises again to the dignity of a mountain range locally known as the Agargaon range. On the south side, has a mean elevation of 650 m. with a slope towards the south-east indicated by the direction of the Sina River.

The district includes the Sahyadri and its three eastward offshoots, the Kalsubai-Adala range in the north, the Baleshwar range in the middle and the Harishchandragad range in the south. The vast Ahmednagar plateau in the middle running with a northwest-south-eastern trend; and the river basins of the Godavari and Bhima on either side of the plateau. The district as a whole is an elevated tableland with a number of plateaus within it at various levels, one plateau merging into the other often through sharp-crested ridges. The western taluka of Akola which abuts on the Sahyadri, is the highest part of the district averaging about 800 m. in height above the mean sea-level in contrast to the plains of Shevgaon taluka that lie below 450 m. in the Godavari valley in the extreme eastern parts.

Table 10: Geographical Data of District

Sr.	Geographical Data	Unit	Statistics
1	Latitude and Longitude	Degrees	18°02’ N 73°09’E/ 19°09’N75°05’ E
2	Geographical Area	Km^2	17,048

Administrative division

Ahilyanagar district comes under Nashik Administrative Division the district comprises 4 sub-divisions and 14 tehsils.

Table 11: Administrative Division of District

Sr	Name of Subdivision	Name of Tahsil
1	Ahilyanagar	Ahilyanagar
		Newasa
2	Karjat	Karjat
		Jamkhed
3	Shrirampur	Rahuri
		Shrirampur
4	Sangamner	Sangamner
		Akole
5	Pathardi	Pathardi
		Shevgaon
6	Shirdi	Rahata
		Kopargaon
7	Parner – shrigonda	Parner
		Shrigonda

Connectivity

The Ahilyanagar district map provides information about various routes to reach Ahilyanagar. The nearest airport is Chh. Sambhajinagar Airport located in Chikalthana, Chh. Sambhajinagar. By road, Pune, Nashik, Chh. Sambhaji Nagar, Beed, and Jalgaon. Train services are well developed.

Distance to Ahilyanagar

- Pune – 122 km
- Mumbai – 254 km
- Surat – 378 km
- Indore – 518 km

- Hyderabad – 520 km



Figure 9: Connectivity Map of District

General description

Minerals are classified into two groups as Major minerals and Minor minerals. Minor mineral has been defined under section 3 (e) of Mines and Minerals (Regulation and development) Act, 1957. They include building stones, gravel, ordinary sand, limestone lime burning, boulders, kankar, murum, brick earth ordinary clay used for, bentonite, road metal, slate, marble, stones used for making household utensils etc. Therefore, all other minerals not defined as minor minerals in the said Act are treated as major minerals. They include coal, manganese ore, iron ore, bauxite, limestone, kyanite, sillimanite, barites, chromite, silica sand, fluorite, quartz, sand used for stowing purposes in coal mines and many other minerals used for industrial purposes.

LAND UTILIZATION PATTERN IN THE DISTRICT

As the largest private enterprise in India, agriculture contributes one-fourth of the national GDP. Agriculture has been and will continue to be the life line of India economy. However, agriculture productivity and development differ very much from region to region, which needs a detail investigation. The temperature and pedagogical conditions are favourable for growing valuable crops like jawar, sugarcane, oil seeds, bajra, wheat, etc. By contrast, very low level of agriculture productivity is confined to the tehsils belonging to drought prone areas having irregular rainfall, rugged topography and poor irrigation facilities. Inadequacy of water is main hurdle in agriculture productivity. Hence, in present report an attempt has been made to assess the regional disparities in levels of agriculture productivity in Ahilyanagar District of Maharashtra.

The district lies partly in Godavari basin and partly in Bhima basin. The northern part of the district is drained by Godavari River and its tributaries viz., Pravara, Mula, Adula and Mahalungi whereas the southern part is drained by Bhima River and its tributaries viz., Ghod and Sina. All the rivers have sub-parallel to semi dendritic drainage pattern and the drainage density is quite high. The district is divided into 80 watersheds, based on geomorphological setting and drainage pattern.

Table 12: wise Land Use/Land Cover of Ahilyanagar District

Particulars	Area (Sq. Km.)
Barren/Unculturable/Waste land	1673.08
Agriculture land	13546.21
Built-up area	255.71
Wet lands/Water Bodies	497.44
Forest area	1075.56

Agricultural productivity

As the largest private enterprise in India, agriculture contributes one fourth of the national GDP. Agriculture has been and will continue to be the lifeline of India economy. However, agriculture productivity and development differ very much from region to region, which needs a detailed investigation. The temperature and pedagogical conditions are favorable for growing valuable crops like Sorghum, Wheat, pearl millet, lime, sugarcane, etc. The only one Pravara is the large regular and perennial river with their small tributaries out of which the Mula, Adula and other seasonal rivers like Mahalungi, Dhor, Iradha and Nina are considerably supportive to agriculture.

Area, production and productivity of major crops cultivated in the Ahilyanagar district.

Table 13: Agriculture Details

Sr.	Crop	Area (ha)	Production (Tons)	Productivity (kg/ha)
A) Major field crops:				
1	Pearl millet	128.2	200	800
2	Soyabean	55.5	105.8	1,400
3	Chickpea	90.5	46.2	700
4	Wheat	138.2	255	1,700
5	Sugarcane	113.7	5,985	90,000

Horticulture

Table 14:Horticultural Fruits Crops Details

Sr.	Crop	Area (ha)	Production (Tons)	Productivity (kg/ha)
1	Pomegranate	6.4	30.644	4,730
2	Lime	6.1	172.836	10,990
3	Mango	3.5	35.242	2,700
4	Sapota	3.1	59.962	5,900
5	Guava	4.2	147.217	30,670

Table 15: Horticultural Vegetables Crops Details

Sr.	Crop	Area (ha)	Production (Tons)	Productivity

				(kg/ha)
1	Onion	69.97	740.314	16,410
2	Tomato	4.173	50.526	27,640
3	Brinjal	1.786	24.813	19,430
4	Chilli	1.774	13.488	38,540

Table 16: Mining Details

Area Under Mining	Area in Ha.
River Bed Scooping	419.25
Stone Mining	177.54

Soil types of districts

Physiographically the district forms part of the Deccan Plateau. The whole district forms part of the Deccan's great trap region, and the trap rock is distinctly stratified. Throughout Ahilyanagar, the trap rock is distinctly stratified, and as in the rest of the Deccan, the alternative belts of basalt and amygdaloids preserve a striking parallelism to each other. The basaltic rock formation is intruded by dykes. The lava flows are almost horizontal in disposition but local gentle tilting, undulations, and minor flexures are rarely seen. Compound lava (Pahoehoe flows are seen in the northern part of the district and the southern part is simple aa– lava type) in nature. Black cotton soil, river alluvium sands, gravels, silts, and calcareous kankar. Recent Intrusive basic dykes, basalt lava flows belonging to the Deccan trap volcanic episode, associated with inter-trappean beds, red bole beds, porous ash and coriaceous matter, etc. Cretaceous- Eocene.

The Ahmednagar plateau between Baleshwar and Harishchandragad range has an average width of 50 km. The relief of the district has an immense variety, not to be witnessed to the same extent in many other districts of the State. This is partly on account of its size and partly on account of its westerly location, immediately adjoining the crest of the Sahyadri.

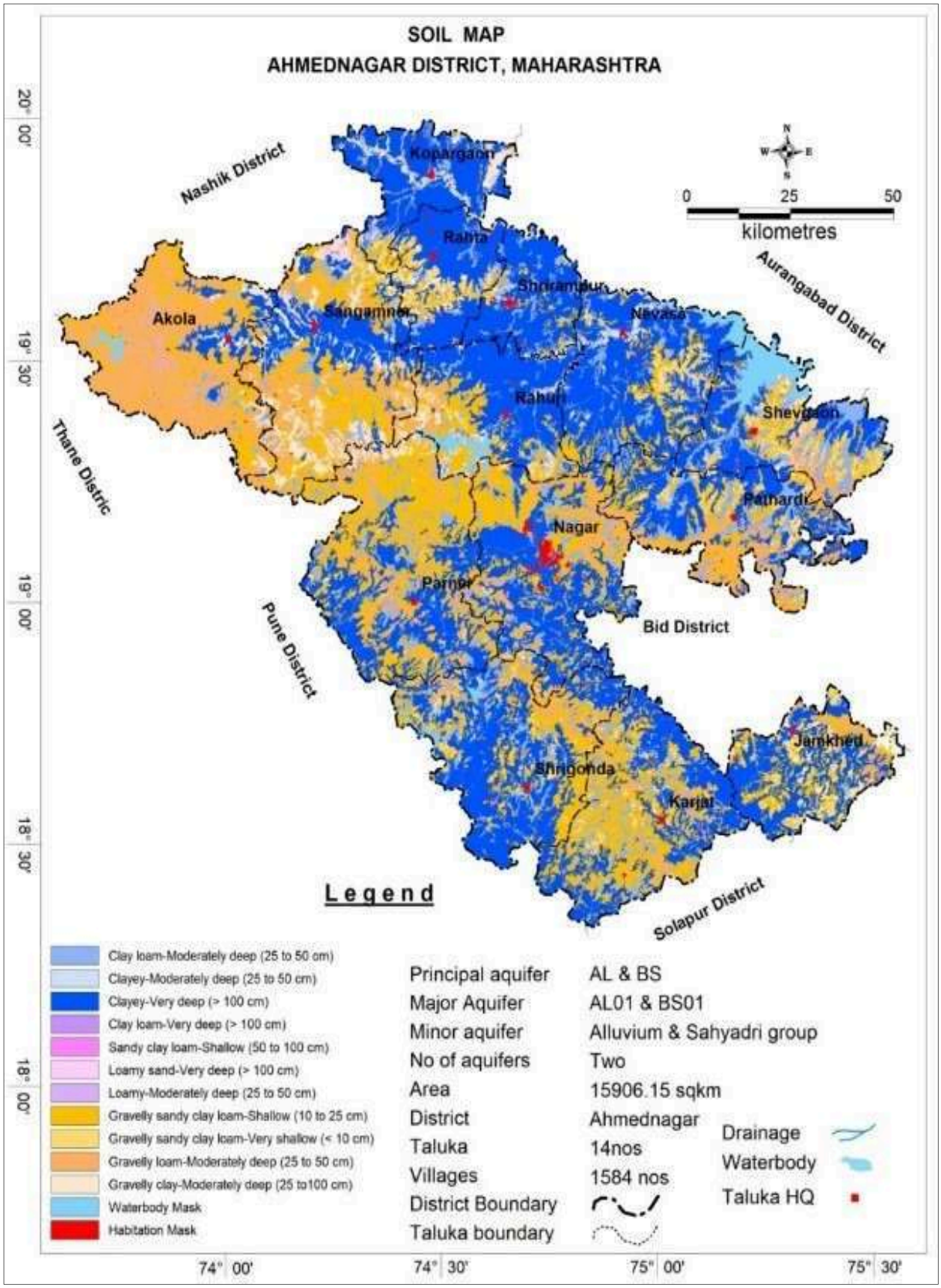


Figure 10: Soil Map of District

Table 17: The Details of the soil types of the district

Sr.	Soil type	Characteristics	Area (Ha).
1	Deep soils	• Soil depth is between 90 cm to 150 cm. • Water availability period exceeding 130 days. Rahata, Kopargaon, Shrirampur, Newasa, and Rahuri areas of the district have deep soils.	2,26,330
2	Medium deep soils	• Soil depth is between 50 cm to 90 cm. • Water availability period exceeding between 110-130 days. • Akole, Sangamner, Parner, and Ahilyanagar areas of the district have medium-deep soils.	7,13,810
3	Shallow soils	• Soil depth is between 25 cm to 50 cm. • Water availability period less than 90-110 days. • Karjat, Shevgaon, and Pathardi areas of the district have shallow soil.	6,61,580

PHYSIOGRAPHY OF THE DISTRICT

Ahilyanagar can be divided into three physical divisions as Western Hilly Region, Central Plateau Region and the region of northern and southern plains. Two chief rivers are, the Godavari and the Bhima drain Ahilyanagar. The important rivers flowing through the district are Paravara, Mula, Sina and Dhora. The landscape is typically that of the Deccan lavas with residual hill ranges on western side and plains on central and eastern side. Thus, the region includes varied topographical features and landscapes consisting of wild hills, barren plains and bad land topography near major river banks. Physiographically the District is broadly divisible into three parts i.e.

i) Western Hilly Region (Sahyadri Ranges / Western Ghats)

ii) Central Plateau Region (Deccan Plateau) - Covers most of the central portion of Ahmednagar

iii) Eastern Lowland / Drought-Prone Region (Rain Shadow Area) - Eastern Ahmednagar

iv) River Basin - Godavari (northeast boundary), Pravara, Mula, and Sina

RAINFALL: MONTH-WISE

Table: Rainfall Month-wise

		June			July			August			September			October			1st June to 23 oct		
Sr.	Tahshil	Normal Rainfall	Actual Rainfall	%	Normal Rainfall	Actual Rainfall	%	Normal Rainfall	Actual Rainfall	%	Normal Rainfall	Actual Rainfall	%	Normal Rainfall	Actual Rainfall	%	Normal Rainfall	Actual Rainfall	%
1	Nagar	106.9	78.9	73.5	94.4	127.1	134.6	100.4	19.5	19.4	178.1	63.9	35.9	53.5	0.4	0.7	533.3	289.8	54.3
2	Parner	99.9	56.8	56.9	87.4	188.1	215.2	84.6	19.2	22.7	142.4	49	34.4	47.9	0.5	1	462.	313.6	67.8
3	Shrigonda	100	84.5	84.5	69.9	168.5	241.1	72.8	10.3	14.1	160.2	46.6	29.1	59.6	0.3	0.5	462.5	310.2	67.1
4	Karjat	101.9	144.2	144.5	92.3	144.1	156.3	91.4	15.3	16.7	161.8	53.3	32.9	57.2	0.2	0.3	504.6	357.3	70.8
5	Jamkhed	133.3	119.5	89.6	123.3	144.1	116.9	133	35.7	26.8	186.5	47.7	25.6	50	0.3	0.6	626.1	347.3	55.5
6	Shegaon	109.2	69.5	63.6	101.8	81.4	80	102.6	23.1	22.5	149.6	40.6	27.1	47	0	0	510.2	214.6	42.1
7	Pathardi	116.4	78.1	67.1	103.4	84.2	81.4	109.6	23.7	22.2	146.6	56.2	38.3	53	0	0	526.1	242.2	46
8	Newasa	97.1	84.5	87	90.4	69	76.3	84.6	13.8	12.6	132.7	39.7	29.9	42.7	0.3	0.7	472.5	207.3	43.9
9	Rahuri	106.1	18.6	17.5	91.2	68	74.6	65.6	23.4	27.7	149.9	49.2	32.8	58	0.3	0.5	489.8	159.5	32.6
10	Sangamner	91.9	27.7	30.1	73.5	169.6	230.7	104.9	25.7	39.2	120.2	51.8	43.1	38	0.7	1.8	389.2	275.5	70.8
11	Akola	114.4	22	19.2	141.3	475.1	336.2	104.9	73.1	69.7	127.9	49.9	39	48.5	3.2	6.6	537	623	116.1

12	Kopargaon	103.6	38.5	37.2	94.2	206.8	219.5	86.8	25.8	29.7	119.7	20.3	17	41.8	0	0	446.1	291.4	99.6
13	Shrirampur	126.2	57.9	45.9	104	81.1	78	97.6	27.5	28.2	135.2	9.8	7.2	62.4	0	0	487.5	2.7.1	42.5
14	Rahata	123	33.5	27.2	77.3	146.6	189.7	114.7	22.9	20	139	4.1	2.9	33.5	0	0	487.5	207.1	42.5

RAINFALL OF THE DISTRICT AND CLIMATE CONDITION

Rainfall

The normal rainfall over the district varies from about 560.3mm to 620.0 mm. The rainfall during the southwest monsoon from June to September amounts to about 90 % of the annual rainfall. September is the rainiest month.

Table 18: Normal Rainfall from various stations in the Ahilyanagar District

Sr. No.	Taluka	Normal Rainfall June-Sept (mm)	2025-26		2026-27	
			Total Rainfall June-Sept (mm)	%	Total Rainfall June-Sept (mm)	%
1	Nagar	479.8	627.7	130.8	289.4	60.3

2	Parner	414.3	510.2	123.1	313.1	75.6
3	Shrigonda	402.9	554	137.5	309.9	76.9
4	Karjat	447.4	665.7	148.8	357.1	79.8
5	Jamkhed	576.1	818.5	142.1	347	60.2
6	Shegaon	463.2	794.3	171.5	214.6	46.3
7	Pathardi	473.1	921.1	194.7	242.2	51.2
8	Newasa	429.8	679.2	158	207	48.2
9	Rahuri	431.8	438.3	101.5	159.2	36.9
10	Sangamner	351.2	335.4	95.5	274.8	78.2
11	Akole	488.5	445.1	91.1	618.8	126.7
12	Kopargaon	404.3	401.6	99.3	291.4	72.1
13	Shrirampur	463	485.7	104.9	176.3	38.1
14	Rahata	454	518.1	114.1	207.1	45.6
District		**448.1**	**583.3**	**130.2**	**299.3**	**66.8**

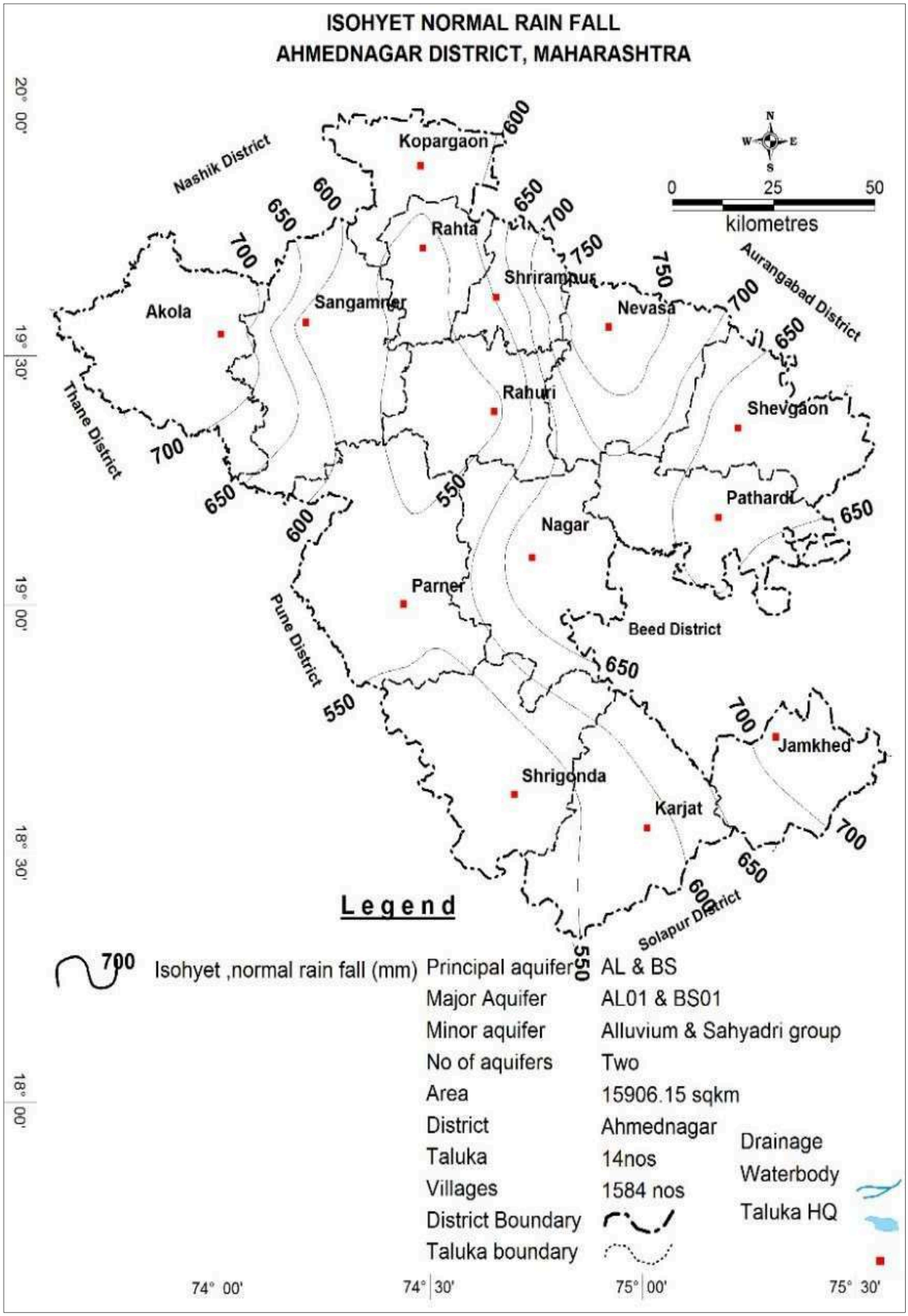


Figure 11: Normal Rainfall from various stations in the Ahilyanagar district

GEOLOGY AND MINERAL WEALTH OF THE DISTRICT

Ahilyanagar, nestled within the expansive Deccan Traps, showcases a distinct layered volcanic rock structure. This stratification is evident in the striking parallelism of basalt and amygdaloidal formations, a common characteristic across the Deccan region. These layers, formed by successive volcanic eruptions and subsequent weathering processes, reveal a fascinating geological history. The dark, dense basalt layers, rich in iron and magnesium, represent solidified lava flows, while the lighter, porous amygdaloidal layers, riddled with cavities filled with secondary minerals, mark zones where gases escaped from the cooling lava. Over time, erosion has sculpted these layers, creating the distinctive stepped topography often observed in the Deccan landscape. The parallel alignment of these layers provides a visual testament to the immense forces that shaped the region over millions of years.

Geological structures

The Deccan Trap basalt flows, a dominant feature of Ahilyanagar's geology, display a succession of 19 major layers within the elevation range of 420 to 730 meters above mean sea level. These flows occur in layered sequence ranging in thickness from 15 to 50 m. Flows are represented by massive portion at bottom and vesicular portion at top and are separated from each other by marker bed known as bole bed. The thickness of weathering varies widely in the district from 5 to 25 m bgl. The weathered and fractured trap occurring in topographic lows form the main aquifer in the district.

Economic minerals

In Ahilyanagar district minerals of economic importance are not found. Weathered basaltic rock (murrum) is used economically for construction purpose. Mud used for making bricks, sand, gravels, clay and agate are found in some areas of district.

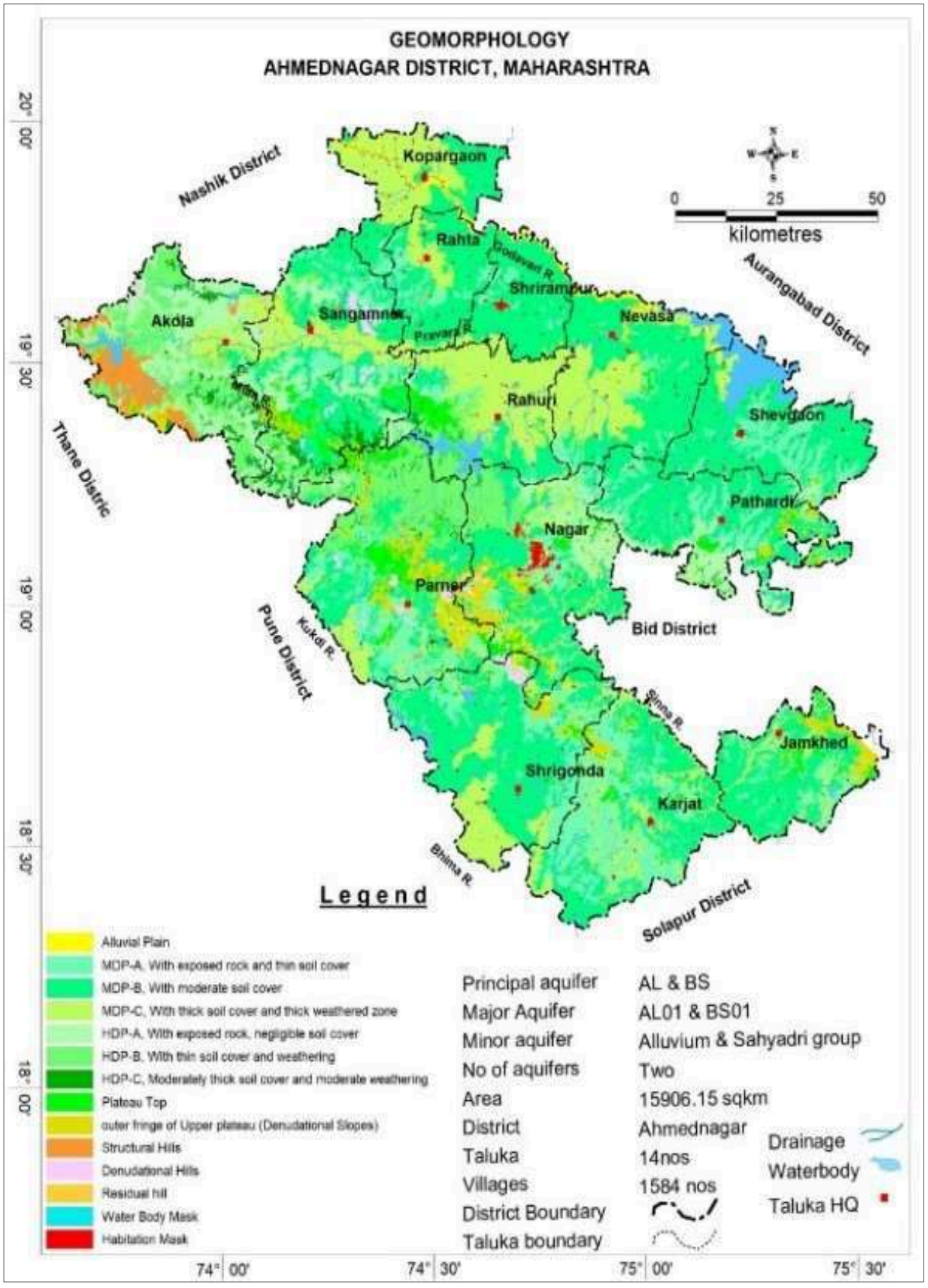


Figure 12:Geomorphology map of district

DISTRICT WISE AVAILABILITY OF SAND AND GRAVEL OR AGGREGATE

District has 10 Sand scooping sand ghats catering 1,12,611 brass of sand. District has 65 stone quarries at present catering 7,97,658 brass stone aggregates of different sizes like 6mm, 20mm, 40mm, 60mm and mechanical sand.

DISTRICT WISE DETAILS OF RIVER OR STREAM AND OTHER SAND SOURCE

Most of the sand ghats are on Godavari, Bhima, Sina, Mula and Pravara rivers. Only Feasible sand ghats are allowed by administration for further process of EC to recommend for scooping of sand every year after proper survey.

Table 19: Drainage with description of main rivers

Sr.	Name of River	Area drained in District (Sq. Km.)	Area drained in the District (%)
1.	Godavari (Between Pochampad and Jaikwadi	754.2	4.42
2.	Godavari (Uppermost upstream of Jaikwadi)	9678.0	56.77
3.	Manjara	120.8	0.7
4.	Savitri	115.9	0.7
5.	Upper Bhima with Sina	6378.9	37.42

Table 20: Salient features of Important Rivers and Streams

Sr.	Name of River	Total length in the district in km	Place of origin
1.	Bhima	56	Bhimashankar
2.	Godavari	115	Tryambakeshwar
3.	Sina	180	Jamgaon & Jeur
4.	Pravara	203	Ratangad-Kulang
5.	Mula	186	Harishchandragad

Table 21: Mineable mineral potential

Portion of the River or Stream Recommended for Mineral Concession	Length of area recommended for mineral concession (in kilometers)	Average width of area recommended for mineral concession (in meter)	Area recommended for mineral concession (in square meter)	Mineable mineral potential (in metric ton) (60 percent of total mineral potential
Year 2025-2026				
Pravara	24320	40	0	0
Sina	5310	20	0	0
Mula	4570	45	210150	58420
Godavari	16500	60	243000	386395
Bhima	13540	31	0	0
Nani	525	20	0	0
Ghod	1570	25	0	0
Total	**66435**	**241**	**453150**	**444815**

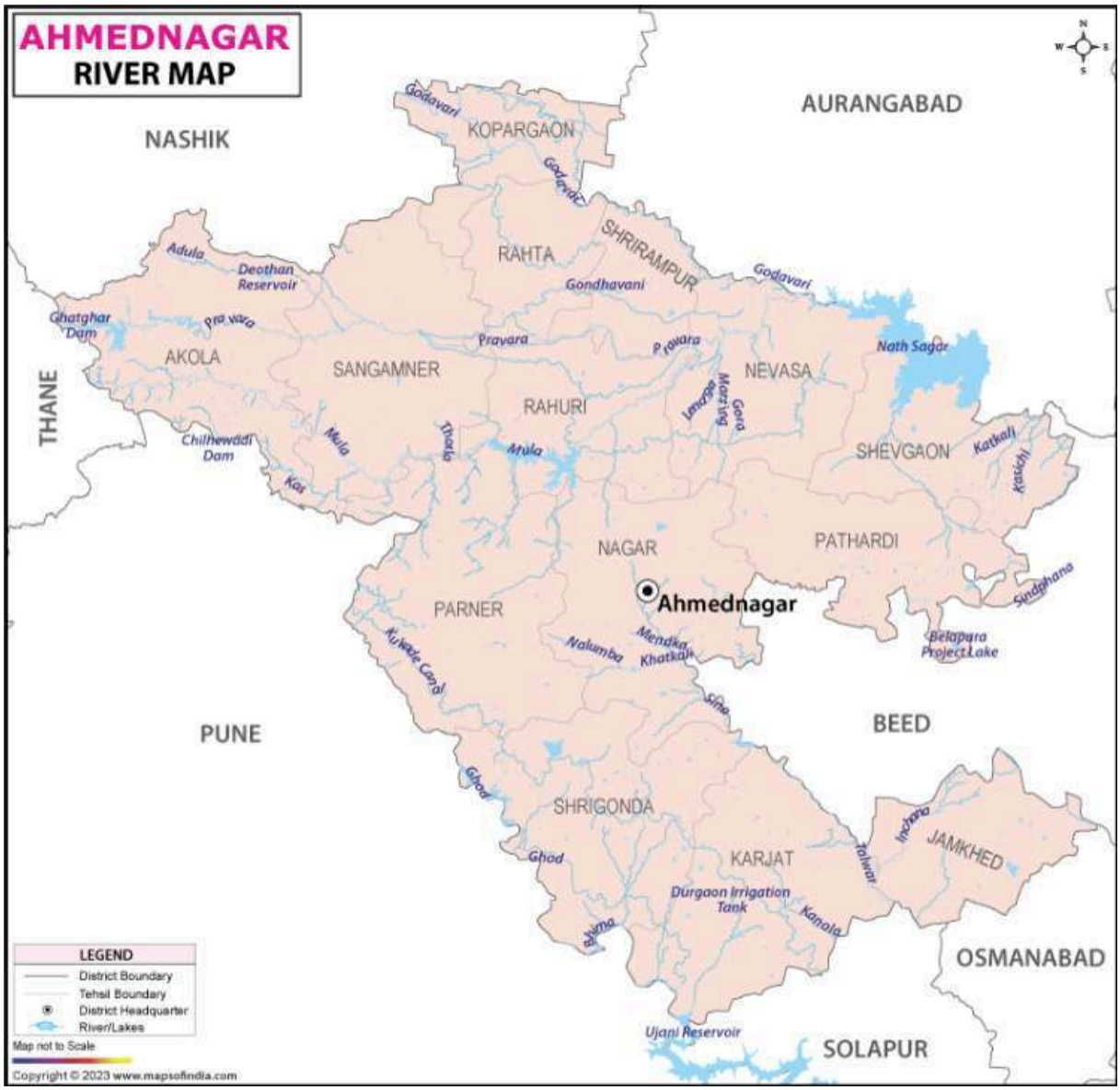


Figure 13: River Map

DISTRICT WISE DETAIL OF EXISTING MINING LEASES OF SAND AND AGGREGATES

Annual deposition

Annual deposition is calculated by considering watershed area in Km^2, Annual Rainfall in mm Average Watershed slope, Drainage density in Km-1, Vegetative cover factor, Annual precipitation in cm, mean annual runoff in cm, mean annual temperature for Ahilyanagar:

Table 22: Annual Deposition

Boulder (MT)	Bajari (MT)	Sand (MT)	Total Mineable Potential (MT)
89.48		11.48	100.96

DRAINAGE PATTERN

The drainage of Ahilyanagar district belongs to two major river systems of Maharashtra, the Godavari with its tributaries viz., Pravara, Mula, Adula and Mahalungi in the north and the Bhima with its tributaries viz., Ghod and Sina in the south. All the rivers have sub-parallel to semi dendritic drainage pattern and the drainage density is quite high. Based on geomorphological setting and drainage pattern, the district is divided into 80 watersheds. The Major parts of the district are covered by agriculture land with net sown area and double crop area.

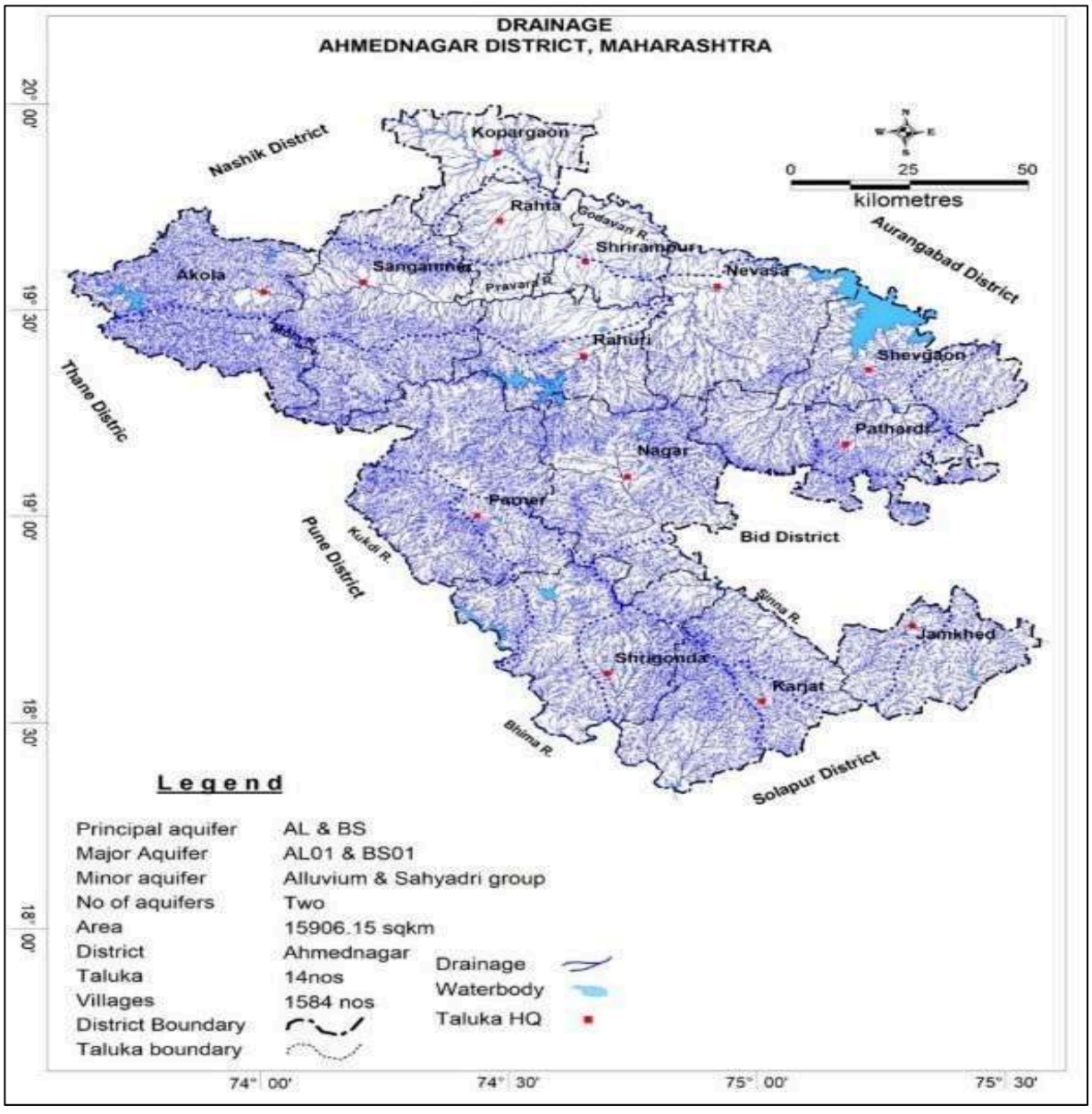


Figure 14: Drainage Map of District

Natural vegetation

The River Godavari

The Godavari River rises in Tryambakeshwar hills in Nashik District and on the eastern slopes of the Sahyadri. It drains by far the larger part of the district including the entire talukas of Kopargaon, Sangamner, Akola, Rahuri, Newasa, Shevgaon, the northern half of Parner and parts of Ahilyanagar and Jamkhed. The Godavari forms almost continuously the boundary between Ahilyanagar and Chh. Sambhajinagar districts. The river has an over-all length of 200 km. within the district.

The River Bhima

The Bhima originates at Bhimashankar in Nashik District and drains the southern part of Ahilyanagar district, comprising the greater part of Parner and Ahilyanagar talukas, the whole of Shrigonda, Karjat and Jamkhed talukas. The course of the Bhima in the district is continuously to the south-east. The banks of the river are generally low. The river-bed is sandy, crossed here and there by rocky barriers. The chief tributaries of the Bhima in the district are the Ghod and the Sina rivers.

The River Pravara

The Pravara River originates near the hill-forts Ratangad and Kulang. It flows through the northern part ofthe district and major tributary of Godavari River. The upper waters of the Pravara in the amphitheatre between the Kalsubai-Baleshwar ranges have been developed into a huge reservoir lake, the lake Arthur, behind the Wilson dam near Bhandardara.

The River Sina

The Sina River originates from two main sources near Jamgaon and Jeur, located west and northeast of Ahilyanagar city, respectively. It also forms a segment of the boundary between the Ahilyanagar and Beed districts. The banks of the Sina river are low and its bed sandy. After heavy rains, its flow is somewhat rapid, as is shown by the directness of its course. During summer, the river becomes practically dry.

The River Mula

The River Mula rises on the eastern slopes of the Sahyadri between Ratangad and Harishchandragad, it flows parallel to the Pravara draining the southernmost Kotul valley of Akola taluka. It is the major tributary of Pravara.

Climate

The climate of the district is characterized by a hot summer and general dryness except during the South-West monsoon season. The year can be divided into four seasons. The cold season from December to February is followed by the hot season from March to the first week of June. The South West monsoon season is from the second week of June till the end of September while October and November constitute the post monsoon or retreating monsoon season.

The average annual rainfall in the district is 565.29 mm. The distribution of rainfall is very uneven. The Western part of Akole Tehsil gets good rainfall and the rainfall decreases as one

proceeds towards the East. The district mostly lies in the rain shadow to the East of the Sahyadries. September is the rainiest month. About 75 percent of the annual rainfall is received during the Southwest monsoon season. The variation in rainfall from year to year is large.

Seasonal temperature variation is quite large. From March onwards is a period of continuous increase in day temperatures, the nights remaining comparatively cool. May is the hottest month of the year with the mean daily maximum temperature at 38.9° C, on individual days temperatures occasionally rise to 43° or 44° C. December is the coldest month of the year with the mean daily minimum temperature at 11.7° C. Sometimes due to cold waves in Northern India the minimum temperature drops to 2° or 3°C.

Groundwater information of Ahilyanagar district

Ahilyanagar district is one of the districts of the Nashik Region and is situated in the western part of Maharashtra. Deccan Trap Basalt of late Cretaceous to Eocene age is the major rock formation in the district covering almost entire district.

Recent Alluvium occurs as small patches, mostly along the river. Alluvium occurs in small areas along banks and flood plains of major rivers like Godavari, Pravara, Mula rivers and their tributaries. Coarse grained detrital material like sand and gravel usually occurring as lenses forms good aquifer. Ground water exploration in Godavari-Pravara Alluvium reveals that the thickness of alluvium is less than 40m and the aquifer thickness are ranges between 5-8 m. The yield of the dug wells ranges from 50 to 100 m^3/day.

The weathered and fractured part of basalt occurring in topographic lows form the main aquifer in the district. Ground water occurs under phreatic, semi confined, and confined conditions. Generally, the shallower zones down to the depth of 35 m bgl form phreatic aquifer. The water bearing zones occurring between the depths of 9 and 35 m are weathered interflow or shear zones and yield water under semi-confined conditions. The yield of the dug wells ranges from 10 to 100m3/day, whereas bore wells yield is restricted upto 2.5 lps when favourably located.

Groundwater scenario

Groundwater in Deccan Trap Basalt occurs mostly in the upper weathered and fractured parts down to 20-25 m depth. At places, potential zones are encountered at deeper levels in the fractures and inter-flow zones. The upper weathered and fractured parts form a phreatic aquifer and groundwater occurs under water table (unconfined) conditions. At deeper levels, the groundwater occurs under semi-confined conditions. The yield of dug wells tapping the upper phreatic aquifer ranges between 21 and 337 m^3/day, which have 5-15 m below-ground-level depth range. Bore wells drilled down to 60-150 m depths, tapping weathered and vesicular basalt are found to yield 1.8 to 52 m^3/day. Groundwater in alluvium occurs under water table, semi-confined and confined conditions. The dug wells in these formations are deep ranging from 25 to 50 m below ground level in depth with yield varying from 120 to 200 m^3/day in winter and from 100 to 150 m^3/day in summer. In Bazada aquifers,the yield of dug wells varies from 160 to 200 m^3/day in winter and 100 to 180 m^3/day in summer.

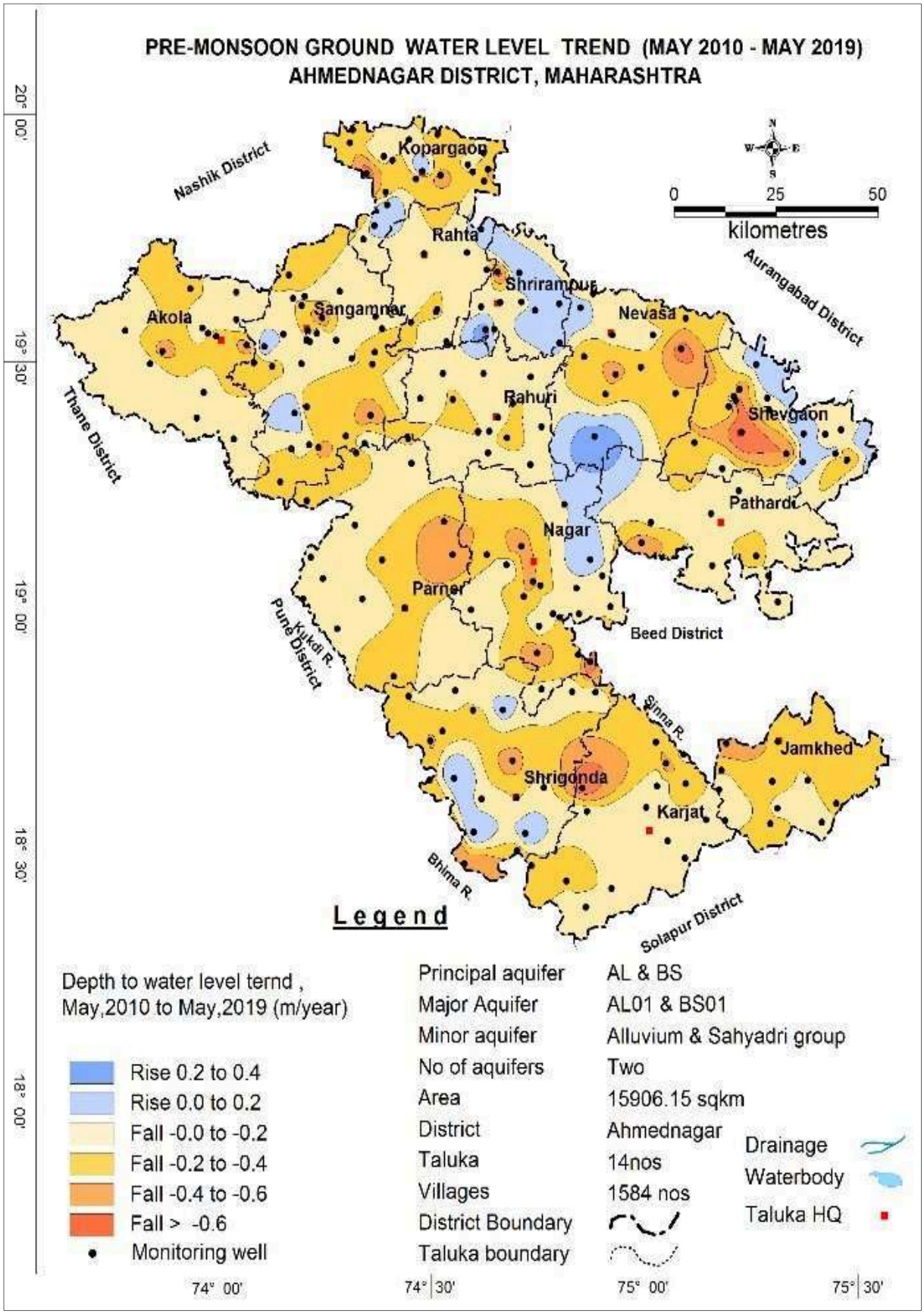


Figure 15: Pre-monsoon Groundwater Level of District

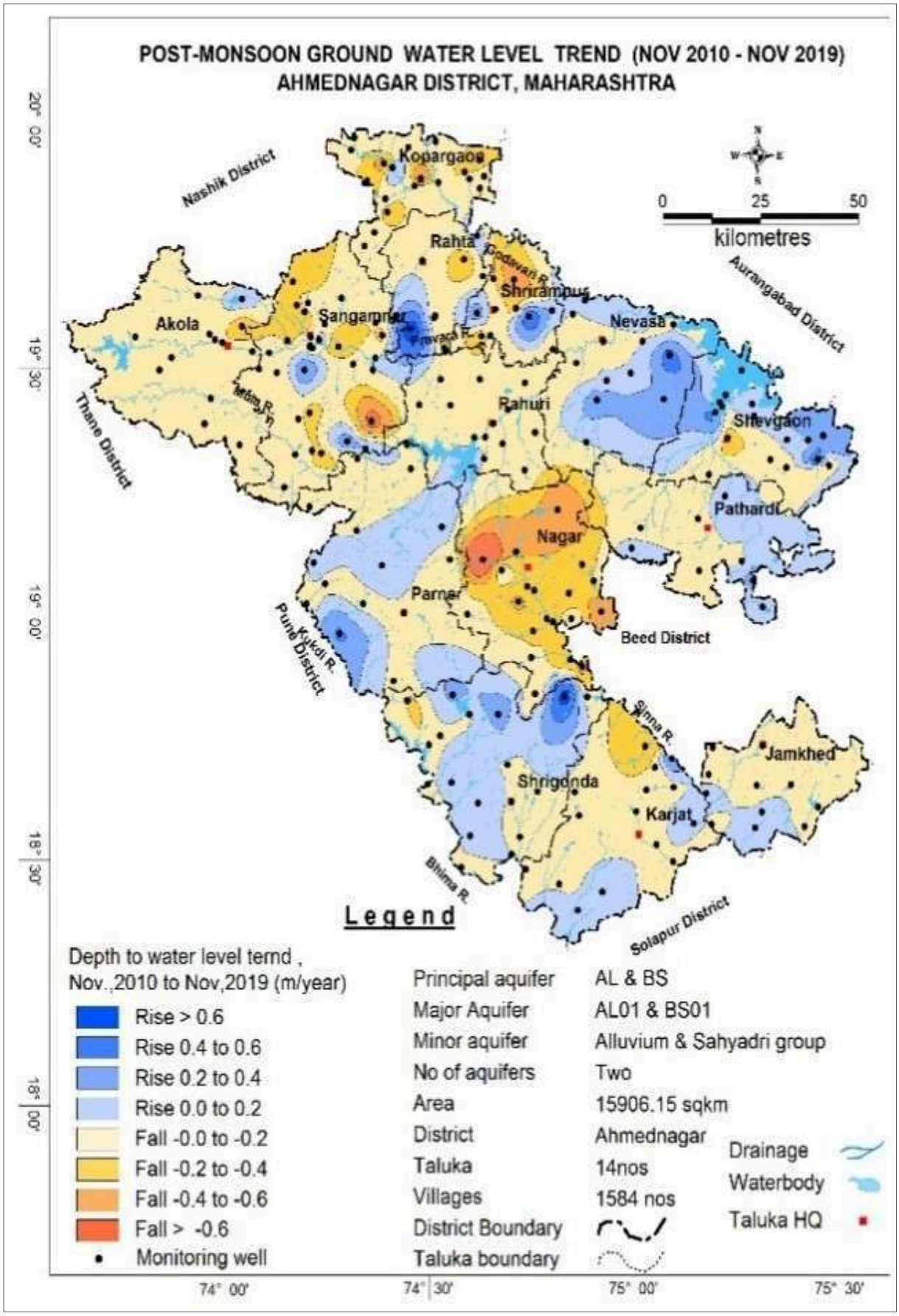


Figure 16: Post-monsoon Groundwater Level of District

Surface water

There are four major irrigation projects, seven medium irrigation projects and 107 minor irrigation projects in the district. Mula, Bhandardara, Nilwande and Ghod are the four major irrigation projects in the district. Irrigation is also available from Gangapur, Ghod and Kukadi major irrigation projects which are in the adjoining district. The irrigation potential of the above projects is 92 thousand hectares. Visapur, Adnala, Pargaonghatsheel, Mandohol, Takilban and Mahesangvi are the medium Irrigation. Projects with 66 thousand hectares potential. There are 107 minor irrigation projects with the irrigation potential of 53 thousand hectares. Well irrigation covers about 253,000 Hectares.

Hydrology

The entire Ahilyanagar district is occupied by the lava flows of the Deccan Trap Basalt. Deccan Trap Basalt Upper Cretaceous to Lower Eocene age is the major rock formation, covering about 8040 sq. km. area in central and the southern parts of the district. These rocks formations are intruded by the dykes of the same period. Alluvium occurs over an area of 3600 sq. km. in the northern part of the district.

Deccan Trap Basalt

The weathered and fractured part of basalt occurring in topographic lows form the main aquifer in the district. Ground water occurs under phreatic, semi-confined, and confined conditions. Generally, the shallower zones down to the depth of 35 m bgl form a phreatic aquifer. The water-bearing zones occurring between the depths of 9 and 35 m are weathered interflow or shear zones and yield water under semi-confined conditions. The yield of the dug wells ranges from 10 to 100m3/day, whereas bore wells yield is restricted upto 2.5 lps when favourably located.

Alluvium

Alluvium occurs as small patches, mostly along the river. Alluvium occurs in small areas along banks and flood plains of major rivers like Godavari, Pravara, Mula rivers and their tributaries. Coarse grained detrital material like sand and gravel usually occurring as lenses forms good aquifer. Ground water exploration in Godavari-Pravara Alluvium reveals that the thickness of alluvium is less than 40m and the aquifer thickness are ranges between 5-8 m. The yield of the dug wells ranges from 50 to 100 m^3/day.

Water level scenario

Central Ground Water Board periodically monitors the National Hydrograph Network Stations (NHNS) stations in the Ahilyanagar district, four times a year i.e. in January, May (Pre-monsoon), August and November (Post-monsoon).

Pre-Monsoon&Post-Monsoondepth to water level

During pre-monsoon, rise in water level trend has been recorded at 24 stations and ranges from 0.012 (Mandave Bk., Sangmner block) to 0.3 m/year (Ghodegaon, Newasa block). While falling trend was observed in 183 stations varying from 0.0002 (Sonegaon, Jamkhed block) to 0.77 m/year (Mathpimpri, Ahilyanagar block).Fall in water level trend >0.2 m/year is observed in 5702.83 sq km area. Rise in water level trend has been observed in isolated

parts of Nevasa, Srigonda, Sangamner, Ahilyanagar, Shevgaon, Kopargaon and Srirampur Blocks.

During post monsoon, rise in water level trend has been recorded at 50 stations and it ranges between 0.001 (Ashwi Kh, Sangamner block) to 0.68 m/year (Loni Kh. Rahata block). While falling trend was observed in 160 stations varying from between 0.001 m/year (VarvandiRahuri block) to 0.91 (Jakhangaon, Nagar block). Rising water level trend has been observed in all blocks except Nagar, Rahuri, Akole and Kopargaon. Fall in water level trend >0.2 m/year is observed in 2711.03 sq km area. Significant decline, more than 0.20 m/year has been observed in almost entire Nagar block and isolated patches in Sangamner, Kopargaon, Srirampur and Karjat block.

Yield of borewells

A wide variation in yield of bore wells has been recorded in the district. The Ground Water Surveys and Development Agency (GSDA) had drilled 20,320 tube wells and bore well sunder various schemes for rural water supply. Wells are drilled between range of 14.60 to 352 mbgl.

Status of Groundwater development

Ground water has special significance for agricultural development in the State of Maharashtra. The ground water development in Bazada zone is feasible at those sites wherever additional recharge from percolation tanks all along places.

Current groundwater extraction is 1205.74 million cubic meters. Rahata tehsil is in ‘over exploited’ category, where Kopargaon, Rahuri, Sangamner and Shrirampur are in ‘critical’ category and Akole, Newasa, Pathardi, Shevgaon and Shrigonda are in ‘semi critical category.

The district being situated in “Rain Shadow” zone of Western Ghats, it often suffers the drought conditions. Almost entire district covering Ahilyanagar, Rahuri, Nevasa, Shevgaon, Jamkhed, Karjat, Srigonda, Pathardi and Parner Blocks comes under “Drought Area” The major parts of the district are also showing falling ground water level trends mainly in central, northern and eastern parts of the district. The ground water quality is also non-potable at many places as the concentrations of nitrate and total hardness are above desirable limit. The ground water quality is also getting affected due to industrial pollution from sugar and allied industries like Distillery and Paper. The effluent generated from these sugar and allied industries and other industries are causing environmental problems because of its improper storage and disposal without adequate treatment.

RECOMMENDATION OF ENFORCEMENT & MONITORING GUIDELINES FOR SAND MINING BY MOEF&CC- 2020

Introduction

India is developing at a faster pace and much technological advancement has already been taken place in the surveillance and remote monitoring in the field of mining. Thus, it is

prudent to utilize the technological advancement for the effective monitoring of the mining activities particularly sand mining in the country.

Following a series of orders by the National Green Tribunal in 2018, the Ministry of Environment, Forests and Climate Change has for the first time released guidelines to monitor and check illegal sand mining in the country. The Enforcement and Monitoring (EM) Guidelines for Sand Mining 2020 released by the Ministry include directions to states to carry out river audits, put detailed survey reports of all mining areas online and in the public domain, conduct replenishment studies of river beds, constantly monitor mining with drones, aerial surveys, ground surveys and set up dedicated task forces at district levels. The guidelines also push for online sales and purchase of sand and other riverbed materials to make the process transparent. They propose night surveillance of mining activity through night vision drones.

While the MoEF & CC has already put in place the Sustainable Sand Management Guidelines 2016, which focus on the management of sand mining in India, that there is an urgent need to have guidelines for effective enforcement of regulatory provisions and their monitoring.

Background

The Mines and Minerals (Development and Regulation) Act, 1957 has empowered state governments to make rules to prevent illegal mining, transportation and storage of minerals. “But in the recent past, it has been observed that there were a large number of illegal mining cases in the country and in some cases, many of the officers lost their lives while executing their duties to curb illegal mining. Illegal and uncontrolled illegal mining leads to loss of revenue to the State and degradation of the environment. The enforcement guidelines focus on the “effective monitoring of sand mining from the identification of sand mineral sources to its dispatch and end-use by consumers and the general public and looks at a uniform protocol for the whole country”.

The need for replenishment study for riverbed sand is also required in order to “nullify the adverse impacts arising due to excessive sand extraction”. No riverbed mining will be allowed during the monsoon. In cases where rivers become district boundaries or state boundaries, the districts or states sharing the boundary shall constitute the combined task force for monitoring of mined materials, mining activity and participate in the preparation of District Survey Reports (DSR) by providing appropriate inputs.

The guidelines say the detailed survey needs to be carried out for quantification of minerals and the demand and supply of the riverbed material through market survey, including the future demand for the next five years.

The guidelines also push for the sale and purchase of sand and riverbed material (RBM) online to make the process more transparent. “In order to curb illegal mining, it is very necessary that the general public is aware of the legal source of sand and RBM suppliers. It is suggested that the state government should develop an online portal for sale and purchase of sand and RBM. The state government will also decide the model of sale and the price of RBM. “It is suggested that the controlled price model is more effective in controlling illegal sand mining,” the guidelines state.

This document will serve as a guideline for collection of critical information for enforcement of the regulatory provision(s) and also highlights the essential infrastructural requirements necessary for effective monitoring for Sustainable Sand Mining. The document is prepared in consideration of various orders/directions issued by Hon’ble NGT in matters pertaining to illegal sand mining and also based on the reports submitted by expert committees and investigation teams.

Further, this document is supplemental to the existing "Sustainable Sand Mining Management Guideline-2016" (SSMG- 2016), and these two guidelines viz. "Enforcement & Monitoring Guidelines for Sand Mining" (EMGSM-2020) and SSMG-2016 shall be read and implemented in sync with each other. In case, any ambiguity or variation between the provisions of both these documents arises, the provision made in "Enforcement & Monitoring Guidelines for Sand Mining-2020 "shall prevail.

Objective of Guidelines

- Identification and Quantification of Mineral Resource and its optimal utilization.
- To regulate the Sand & Gravel Mining in the Country since its identification to its final end-use by the consumers and the general public.
- Use of IT-enabled services & latest technologies for surveillance of the sand mining at each step.
- Reduction in demand & supply gaps.
- Setting up the procedure for replenishment study of Sand.
- Post Environmental Clearance Monitoring.
- Procedure for Environmental Audit.
- To control the instance of illegal mining.

Salient Features of the Guidelines

- **District Survey Report:** The guidelines provide the procedure to be followed for identifying areas where mining can be allowed or prohibited. It provides guidelines for preparing a district survey report, which includes Preparing a report before granting a mining lease and Defining mining and no-mining zones based on certain environmental and social factors.
- **Preventing Illegal Mining:** The guidelines suggest that sites can be monitored remotely by using unmanned artificial vehicles or drones. Drones can also be used for quantity estimation and land use monitoring. Further, the guidelines propose night surveillance of mining activity through night-vision drones. The environmental damages incurred due to illegal mining will be assessed by a committee constituted by the District Administration.
- **Environmental Clearance:** Environmental Clearance for mining is given by regulatory authorities after considering the potential environmental impact. However, it has been observed that often the Letter of Intent (LoI) is granted for a location which is not feasible for environment-friendly mining. The guidelines provide that LoIs should be granted for those locations which have the least possibility of an impact on the environment and nearby habitation.
- The guidelines also push for online sales and purchase of sand and other riverbed materials to make the process transparent.

There are some important key points of EM guidelines for sand mining 2020:

a) Source to Destination Monitoring:

- The new set of guidelines focuses on the effective monitoring of sand mining from the identification of sand mineral sources to its dispatch and end-use by consumers and the general public and look at a uniform protocol for the whole country.

- Constantly monitor mining with drones and night surveillance of mining activity through night-vision drones.

b) Audits:

- States to carry out river audits put detailed survey reports of all mining areas in the public domain.

c) Enforcement:

- It gives directions to states to set up dedicated task forces at district levels.
- In cases where rivers become district boundaries or state boundaries, the districts or states sharing the boundary shall constitute the combined task force for monitoring of mined materials, mining activity and participate in the preparation of District Survey Reports (DSR) by providing appropriate inputs.

d) Sustainability:

- Conduct replenishment study for river bed sand in order to nullify the adverse impacts arising due to excessive sand extraction.
- No riverbed mining will be allowed during the monsoon.

Requirement for Monitoring & Enforcement

Sustainable Sand Mining Management Guidelines (SSMMG) 2016 and past experience suggest that the sources of sand in India are through:

- River (riverbed and flood plain)
- Lakes and reservoirs
- Agricultural fields
- Coastal / marine sand
- Palao-channels and
- Manufactured Sand (M-Sand)

Preparation of District Survey Report

"Sustainable Sand Mining Guidelines, 2016" issued by MoEF&CC requires preparation of District Survey Report (DSR), which is an important initial step before grant of mining lease/LoI. The guidelines emphasize detailed procedure to be followed for the purpose of identification of areas of aggradation/ deposition where mining can be allowed and identification of areas of erosion and proximity to infrastructural structures and installation where mining should be prohibited. Calculation of annual rate of replenishment, allowing time for replenishment after mining, identification of ways of scientific and systematic mining; identifying measures for protection of environment and ecology and determining measures for protection of bank erosion, benchmark (BM) with respect to mean Sea Level (MSL) should be made essential in mining channel reaches (MCR) below which no mining shall be allowed.

Therefore, preparation of District Survey Report is a very important step and sustainable sand mining in any part of the country will depends on the quality of District Survey Report. Considering the importance of district survey report, the Ministry of Environment Forest and climate change, after consultation with experts dealing with mining-related matters,

formulated the following guidelines for the preparation of comprehensive District Survey Report for sand mining.

a. District Survey Report for sand mining shall be prepared before the auction/e-auction/grant of the mining lease/Letter of Intent (LoI) by Mining department or department dealing the mining activity in respective states.

b. The first step is to develop the inventory of the River Bed Material and Other sand sources in the district. In order to make the inventory of River Bed Material, a detailed survey of the district needs to be carried out, to identify the source of River Bed Material and alternative source of sand (M-Sand). The source will include rivers, de-siltation of reservoir/dams, Patta lands/Khatedari Land, M-sand etc.

c. District Survey Report is to be prepared in such a way that it not only identifies the mineral-bearing area but also define the mining and no mining zones considering various environmental and social factors.

d. Identification of the source of Sand & M-Sand. The sources may be from Rivers, Lakes, Ponds, Dams, De-silting locations, Patta land/Khtedari lands. The details in case of Rivers such as [name, length of river, type (Perennial or Non-Perennial), Villages, Tehsil, District], in case of Lakes, Ponds, Dams, De-silting locations [Name, owned/maintained by (State Govt./PSU), area, Villages, Tehsil, District] in case of Patta land/Khtedari lands [Owner Name, Sy No, Area, Agricultural/Non-Agricultural, Villages, Tehsil, District], in case of M-Sand Plant [Owner Name, Sy No, Area, Quantity/Annum, Villages, Tehsil, District], needs to be recorded as per format given in Annexure-I.

e. Defining the sources of Sand/M-Sand in the district is the next step for identification of the potential area of deposition/aggradation wherein mining lease could be granted. Detailed survey needs to be carried out for quantification of minerals. The purpose of mining in the river bed is for channelization of rivers so as to avoid the possibility of flooding and to maintain the flow of the rivers. For this, the entire river stretch needs to be surveyed and original ground level (OGL) to be recorded and area of aggradation/deposition needs to be ascertained by comparing the level difference between the outside riverbed OGL and water level. Once the area of aggradation/deposition is identified, then the quantity of River Bed Material available needs to be calculated. The next step is channelization of the river bed and for this central ¾th part of the river; width needs to be identified on a map. Out of the ¾th part area, where there is a deposition/aggradation of the material needs to be identified. The remaining ¼th area needs to be kept as no mining zone for the protection of banks. The specific gravity of the material also needs to be ascertained by analyzing the sample from a NABL accredited lab. Thus, the quantity of material available in metric ton needs to be calculated for mining and no mining zone.

f. The permanent boundary pillars need to be erected after identification of an area of aggradation and deposition outside the bank of the river at a safe location for future surveying. The distance between boundary pillars on each side of the bank shall not be more than 100 meters.

g. Identifying the mining and no mining zone shall follow with defining the area of sensitivity by ascertaining the distance of the mining area from the protected area, forest, bridges, important structures, habitation etc. and based on the sensitivity the area needs to be defined in sensitive and non-sensitive area.

h. Demand and supply of the Riverbed Material through market survey needs to be carried

out. In addition to this future demand for the next 5 years also needs to be considered.

i. It is suggested that as far as possible the sensitive areas should be avoided for mining, unless local safety condition arises. Such deviation shall be temporary & shall not be a permanent feature.

j. The final area selected for the mining should be then divided into mining lease as per the requirement of State Government. It is suggested the mining lease area should be so selected as to cover the entire deposition area. Dividing a large area of deposition/aggradation into smaller mining leases should be avoided as it leads to loss of mineral and indirectly promote illegal mining.

k. Cluster situation shall be examined. A cluster is formed when one mining lease of homogenous mineral is within 500 meters of the other mining lease. In order to reduce the cluster formation mining lease size should be defined in such a way that distance between any two clusters preferably should not be less than 2.5 Km. Mining lease should be defined in such a way that the total area of the mining leases in a cluster should not be more than 10 Ha.

l. The number of a contiguous cluster needs to be ascertained. Contiguous cluster is formed when one cluster is at a distance of 2.5 Km from the other cluster.

m. The mining outside the riverbed on Patta land/Khatedari land be granted when there is possibility of replenishment of material. In case, there is no replenishment then mining lease shall only be granted when there is no riverbed mining possibility within 5 KM of the Patta land/Khatedari land. For government projects, mining could be allowed on Patta land/Khatedari land but the mining should only be done by the Government agency and material should not be used for sale in the open market. Cluster situation as mentioned in para k above is also applicable for the mining in Patta land/Khatedari land.

n. The State Government should define the transportation route from the mining lease considering the maximum production from the mines as at this stage the size of mining leases, their location, the quantity of mineral that can be mined safely etc. is available with the State Government. It is suggested that the transportation route should be selected in such a way that the movement of trucks/tippers/tractors from the villages having habitation should be avoided. The transportation route so selected should be verified by the State Government for its carrying capacity.

o. Potential site for mining having its impact on the forest, protected area, habitation, bridges etc, shall be avoided. For this, a sub-divisional committee may be formed which after the site visit shall decide its suitability for mining. The list of mining lease after the recommendation of the Committee needs to be defined in the following format given in as **Annexure-II.** The Sub-Divisional Committee after the site visit shall make a recommendation on the site for its suitability of mining and also records the reason for selecting the mining lease in the Patta land. The details regarding cluster and contiguous cluster needs to be provided as in **Annexure-III.** The details of the transportation need to be provided as in **Annexure IV.**

p. **Public consultation-**The Comments of the various stakeholders may be sought on the list of mining lease to be auctioned. The State Government shall give an advertisement in the local and national newspaper for seeking comments of the general public on the list of mining lease included in the DSR. The DSR should be placed in the public domain for at least one month from the date of publication of the advertisement for obtaining comments of the general public. The comments so received shall be placed before the sub-divisional committee for active consideration. The final list of sand

mining areas [leases to be granted on riverbed & Patta land/Khatedari land, de-siltation location (ponds/lakes/dams), M-Sand Plants (alternate source of sand)] after the public hearing needs to be defined in the final DSR in the format as per **Annexure-V.** The details regarding cluster and contiguous cluster needs to be provided in **Annexure-VI.** The details of the transportation need to be provided in **Annexure-VII.**

No. of Annexures	Details
Annexure-I	Details of Sand/ M-Sand Sources
Annexure-II	List of Potential Mining Leases (Existing & Proposed)
Annexure-III	Cluster & Contiguous Cluster details
Annexure-IV	Transportation Routes for individual leases and leases in Cluster
Annexure-V	Final List of Potential Mining Leases (Existing & Proposed)
Annexure-VI	Final List of Cluster & Contiguous Cluster
Annexure-VII	Final Transportation Routes for individual leases and leases in Cluster

ANNEXURES AS PER EM GUIDELINES 2020

ANNEXURE NO.-I

Compliance to Enforcement and Monitoring Guidelines for Sand Mining-2020

Details of Sand/M-Sand Sources

Table 23:Details of River

RiverName/M-Sand Plant	Total Stretch of River (km) (approx.)	Type of River (Perennial or Non-Perennial)
Sina	180	Non-Perennial
Godavari	115	Non-Perennial
Ghod	75	Non-Perennial
Bhima	56	Non-Perennial
Pravara	203	Non-Perennial
Mula	186	Non-Perennial

Table 24: De-Siltation Location (Lakes/Ponds/Dams etc.)

Name of Reservoir/ Dams	Maintain / Controlled by State Govt./PSU etc.	Location	District	Tehsil	Village	Size (Ha)
Nil						

Table 25: Patta Lands/Khatedari Land

Owner	Sr. No	Area (Ha)	District	Tehsil	Village	Agricultural Land (Yes/No)
Nil						

Table 26: M-Sand Plants

Plant Name	Owner	District	Tehsil	Village	Geo-location	Quantity Tonnes/Annum
Nil						

Note: For inclusion of M-Sand Plant/Patta Land in DSR the plant/landowners need to submit the request to the Mining Department with complete details. Inclusion in DSR does not give them the right to operate the M-Sand Plant/Sand Mining lease.

ANNEXURE NO.-II

List of Potential Mining Leases (Proposed)

Table 27: List of Potential Mining Leases

Sr.	River Details	Lease Details	Area (ha)	Distance km from PA/BR/WC	Distance from Forest Area (m)	Mining leases Within 500m (if yes cluster area)	Total excavation in Brass/Annum considering digging depth max as per survey	Mineral to be mined (Sand/ Bajri/ RBM etc.)	Existing Proposed
1.	Mula	Ambalner	3.58	--	More than 500 m	No	26598	Sand	Proposed
2.	Godavari	Naur	4.72	--	More than 500 m	No	35016	Sand	Proposed
3.	Godavari	Naigaon	1.66	--	More than 500 m	No	16429	Sand	Proposed
4.	Godavari	Khanapur	3.84	--	More than 500 m	No	13569	Sand	Proposed
5.	Mula	Manjri .2	4.38	--	More than 500 m	No	15477	Sand	Proposed
6.	Mula	Vajulpoee	1.41	--	More than 500 m	No	4982	Sand	Proposed
7.	Mula	Jambutbu	1.00	--	More	No	1765	Sand	Proposed

Sr.	River Details	Lease Details	Area (ha)	Distance km from PA/BR/WC	Distance from Forest Area (m)	Mining leases Within 500m (if yes cluster area)	Total excavation in Brass/Annum considering digging depth max as per survey	Mineral to be mined (Sand/ Bajri/ RBM etc.)	Existing Proposed
					than 500 m				
8.	Mula	Sakur	1.05	--	More than 500 m	No	3710	Sand	Proposed
9.	Mula	Taas	1.05	--	More than 500 m	No	2783	Sand	Proposed
10.	Mula	Mandve Khu	1.2	--	More than 500 m	No	2120	Sand	Proposed
11.	Mula	Desvande.2	1.8	--	More than 500 m	No	1908	Sand	Proposed
12.	Mula	Desvande.4	1.57	--	More than 500 m	No	2223	Sand	Proposed
13.	Mula	Desvande .3	1.35	--	More than 500 m	No	1908	Sand	Proposed
14.	Mula	Palshi	1.76	--	More than 500 m	No	2488	Sand	Proposed
15.	Mula	Palshi	1.62	--	More than 500 m	No	2853	Sand	Proposed
16.	Godavari	Sangvi Bhusar	3.6	--	More than 500 m	No	12721	Sand	Proposed

Sr.	River Details	Lease Details	Area (ha)	Distance km from PA/BR/WC	Distance from Forest Area (m)	Mining leases Within 500m (if yes cluster area)	Total excavation in Brass/Annum considering digging depth max as per survey	Mineral to be mined (Sand/ Bajri/ RBM etc.)	Existing Proposed
17.	Godavari	Maigaon Devi	1.85	--	More than 500 m	No	6519	Sand	Proposed
18.	Godavari	Mahegoan Deshmukh	1.62	--	More than 500 m	No	5724	Sand	Proposed
19.	Godavari	suregoan 1	4.29	--	More than 500 m	No	15170	Sand	Proposed

Annexure-III

Cluster & Contiguous Cluster details Clusters

Table 28:Details of Cluster & Contiguous

River Name	Cluster No.	Lease Name	Location (Riverbed/Patta Land)	Village
Nil				

Contiguous Clusters

Table 29:Details of contiguous clusters

River Name	Contiguous Cluster No.	Cluster No	Number of leases in the cluster	Location (Riverbed/PattaLand)	Distance between clusters	Village	Area of Cluster (Ha)	Total Mineral Excavation (Ton)
Nil								

Annexure-IV

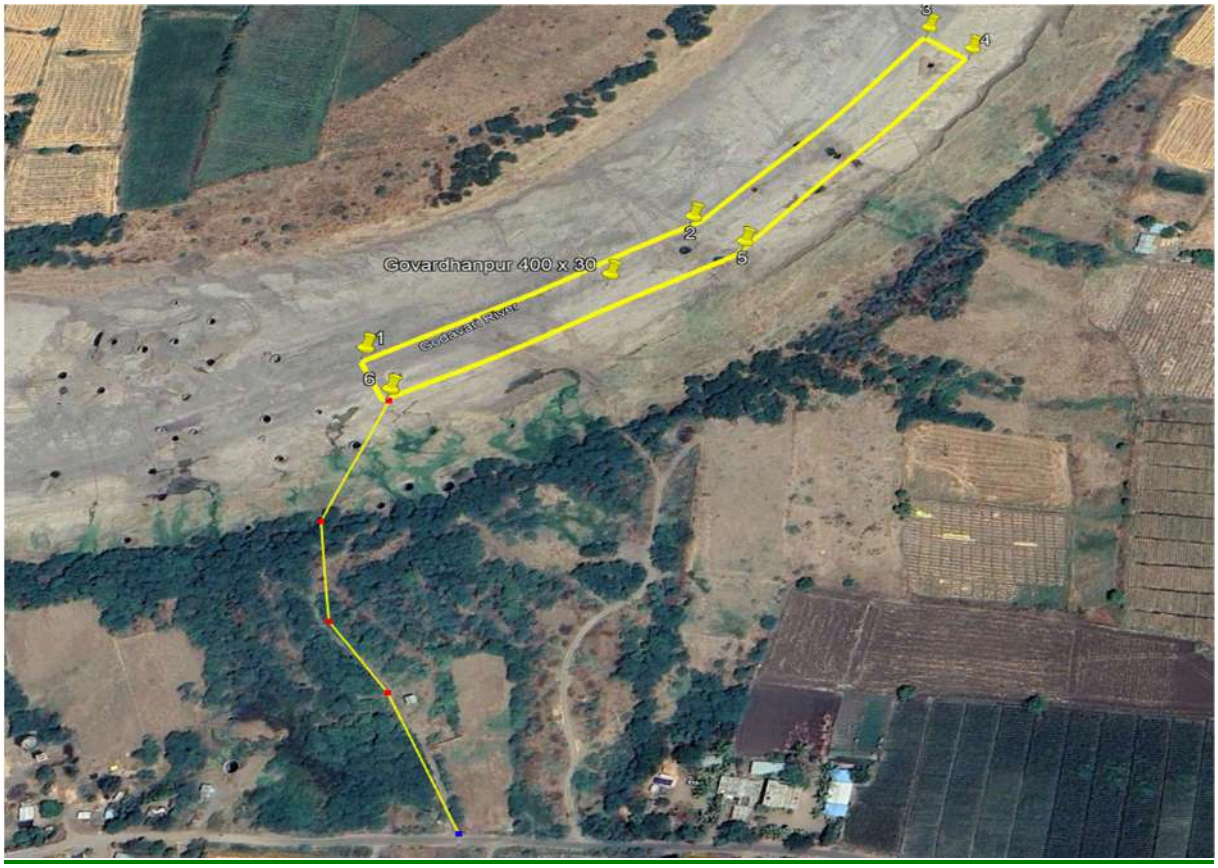
Transportation Routes for individual leases

Table 30: Transportation Routes

Lease Name	Transportation Route No.	Number of tractors /days of lease	Number of Tractors /days of all the lease onroute	Length of Route in km	Type of Road (Black Topped/ unpaved)	Recommend ation for road (Black Topped/ unpaved)	The road will be Construct ed by Govt/ Lease Owner	Route Map & Location
Ambalner	1	2	6	0.28	Unpaved	Unpaved	Existing Road	Enclosed
Naur	1	2	6	0.76	Unpaved	Unpaved	Existing Road	Enclosed
Naigaon	1	2	6	0.62	Unpaved	Unpaved	Existing Road	Enclosed
Khanapur	1	2	6	1.02	Unpaved	Unpaved	Existing Road	Enclosed
Manjri .2	1	2	6	0.89	Unpaved	Unpaved	Existing Road	Enclosed
Mula	1	2	6	0.28	Unpaved	Unpaved	Existing Road	Enclosed
Mula	1	2	6	0.32	Unpaved	Unpaved	Existing Road	Enclosed
Mula	1	2	6	0.18	Unpaved	Unpaved	Existing Road	Enclosed
Mula	1	2	6	2.49	Unpaved	Unpaved	Existing Road	Enclosed
Mula	1	2	6	0.47	Unpaved	Unpaved	Existing Road	Enclosed
Mula	1	2	6	0.46	Unpaved	Unpaved	Existing	Enclosed

Lease Name	Transportation Route No.	Number of tractors /days of lease	Number of Tractors /days of all the lease onroute	Length of Route in km	Type of Road (Black Topped/ unpaved)	Recommend ation for road (Black Topped/ unpaved)	The road will be Construct ed by Govt/ Lease Owner	Route Map & Location
							Road	
Mula	1	2	6	0.28	Unpaved	Unpaved	Existing Road	Enclosed
Mula	1	2	6	0.60	Unpaved	Unpaved	Existing Road	Enclosed
Mula	1	2	6	0.44	Unpaved	Unpaved	Existing Road	Enclosed
Godavari	1	2	6	0.22	Unpaved	Unpaved	Existing Road	Enclosed
Godavari	1	2	6	1.01	Unpaved	Unpaved	Existing Road	Enclosed
Godavari	1	2	6	0.89	Unpaved	Unpaved	Existing Road	Enclosed
Godavari	1	2	6	0.23	Unpaved	Unpaved	Existing Road	Enclosed

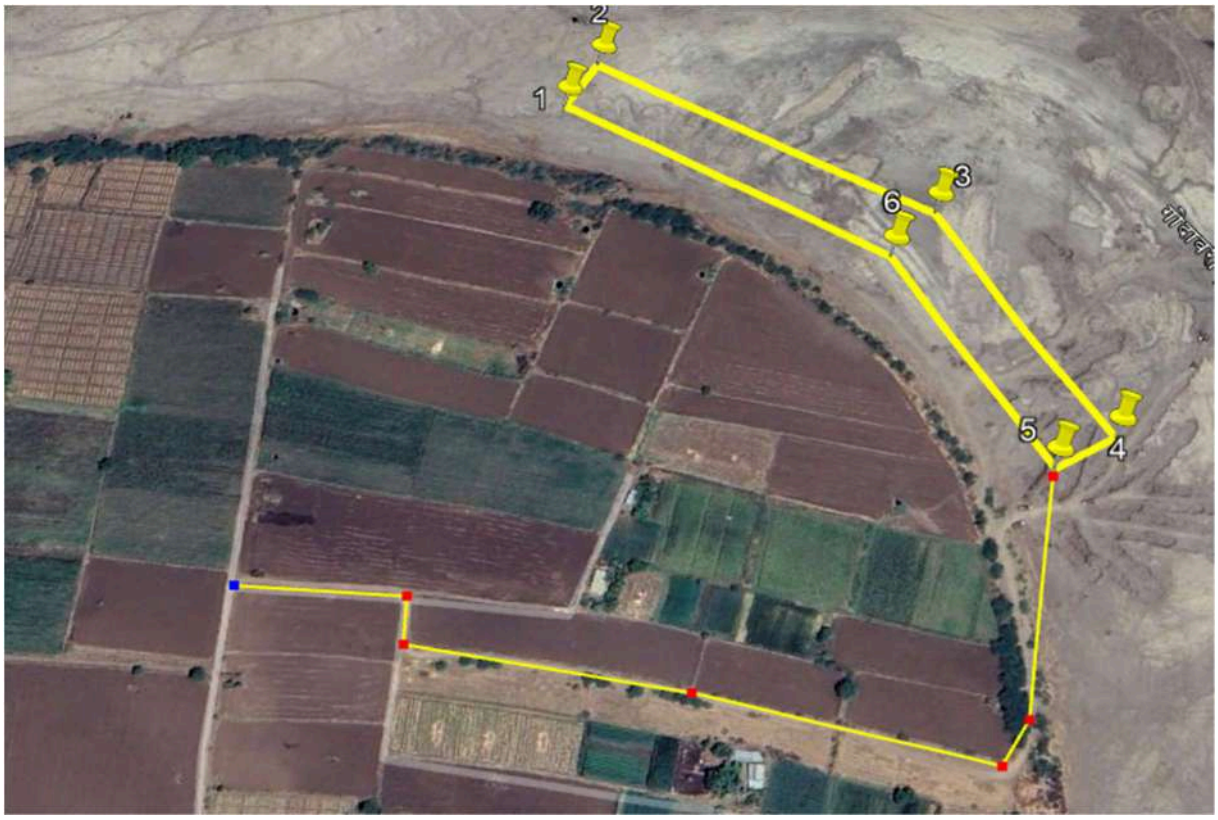
Sand ghat Transportation Route Maps



Transportation Route and location of Govardhanpur sand ghat



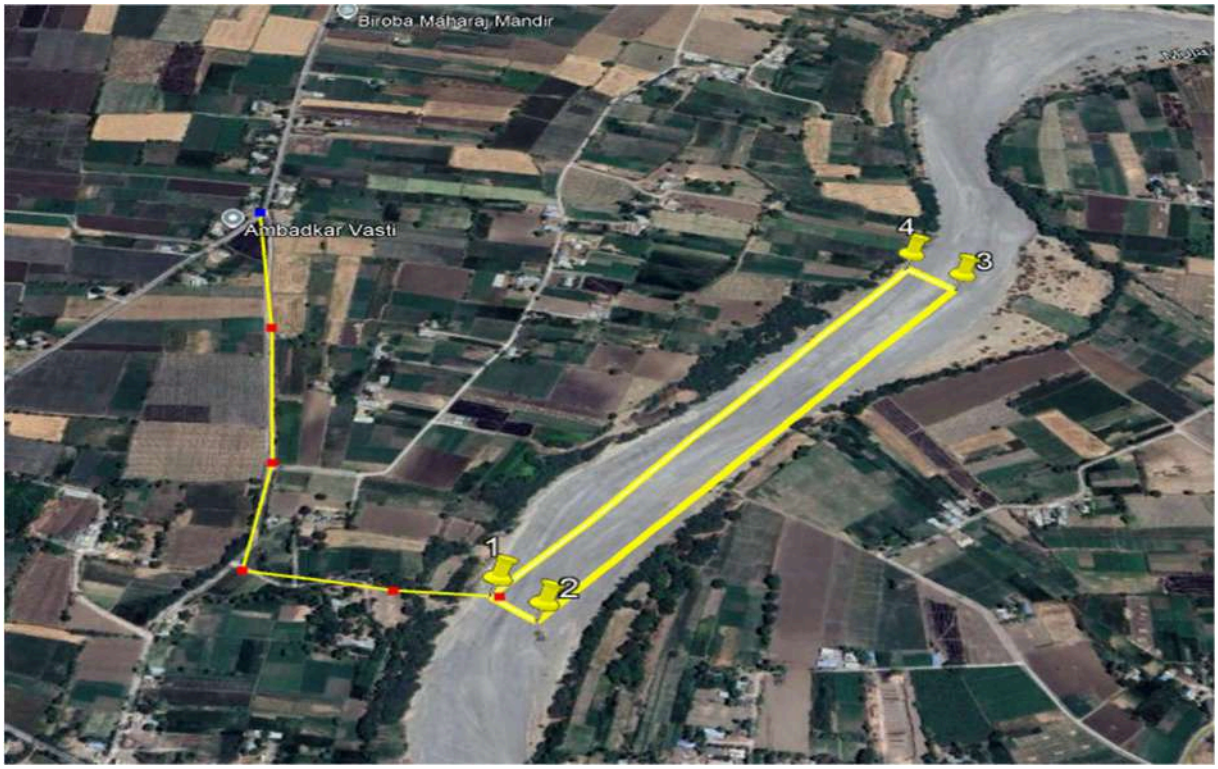
Transportation Route and location of Naur sand ghat



Transportation Route and location of Naigaon sand ghat



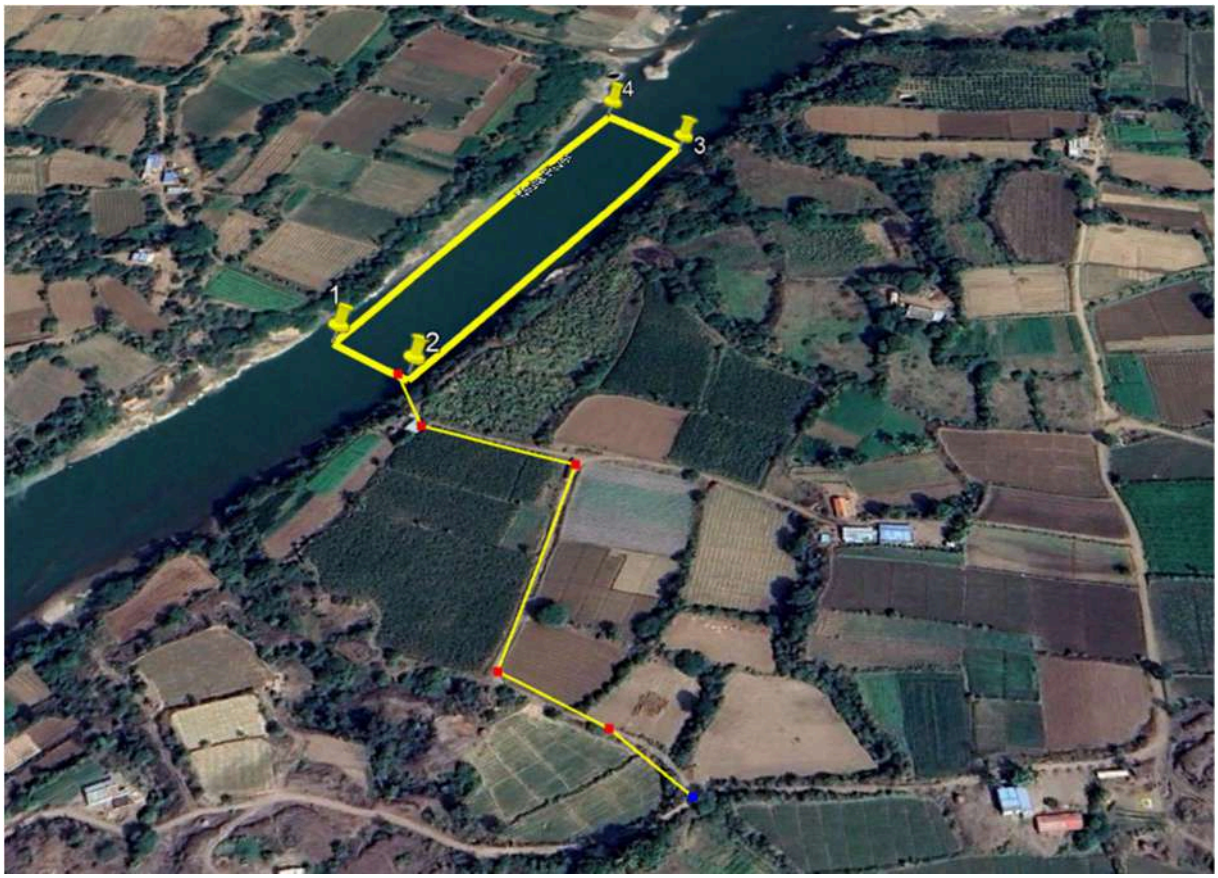
Transportation Route and location of Khanapur sand ghat



Transportation Route and location of Manzari sand ghat



Transportation Route and location of Vajulpoyy sand ghat



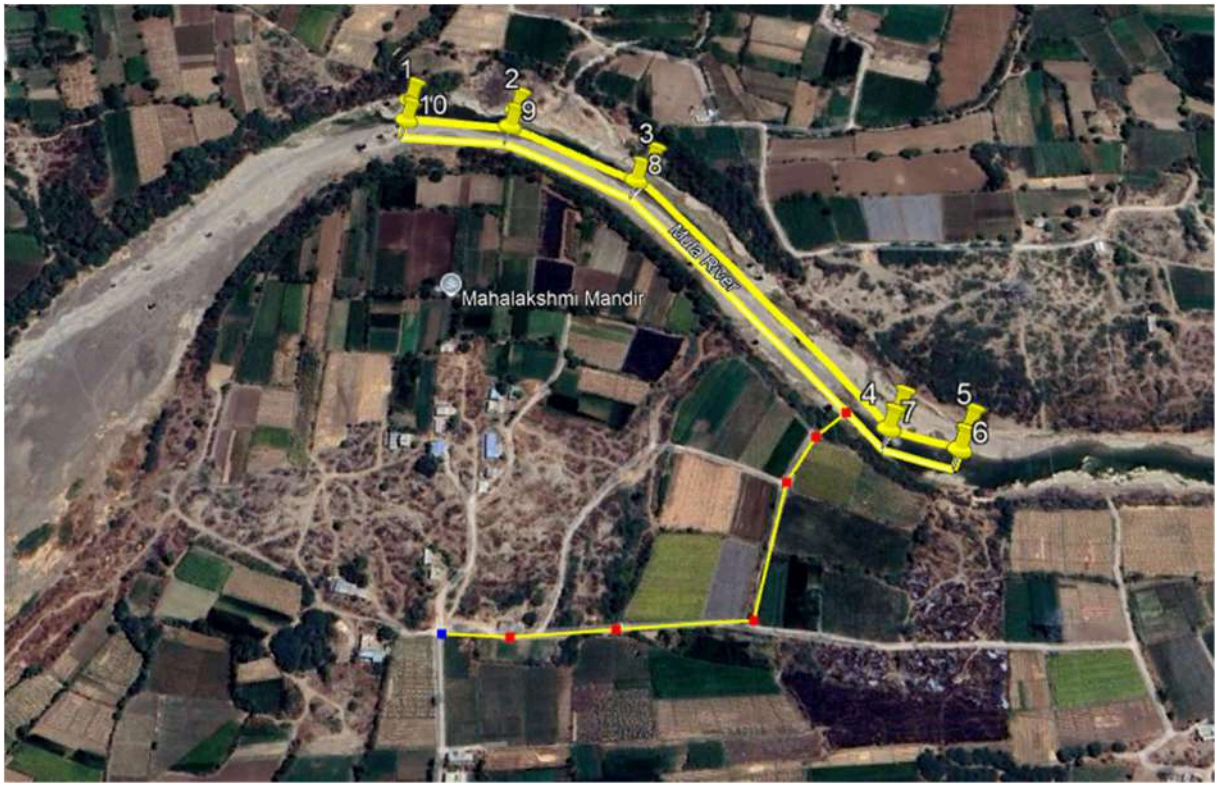
Transportation Route and location of Jambut sand ghat



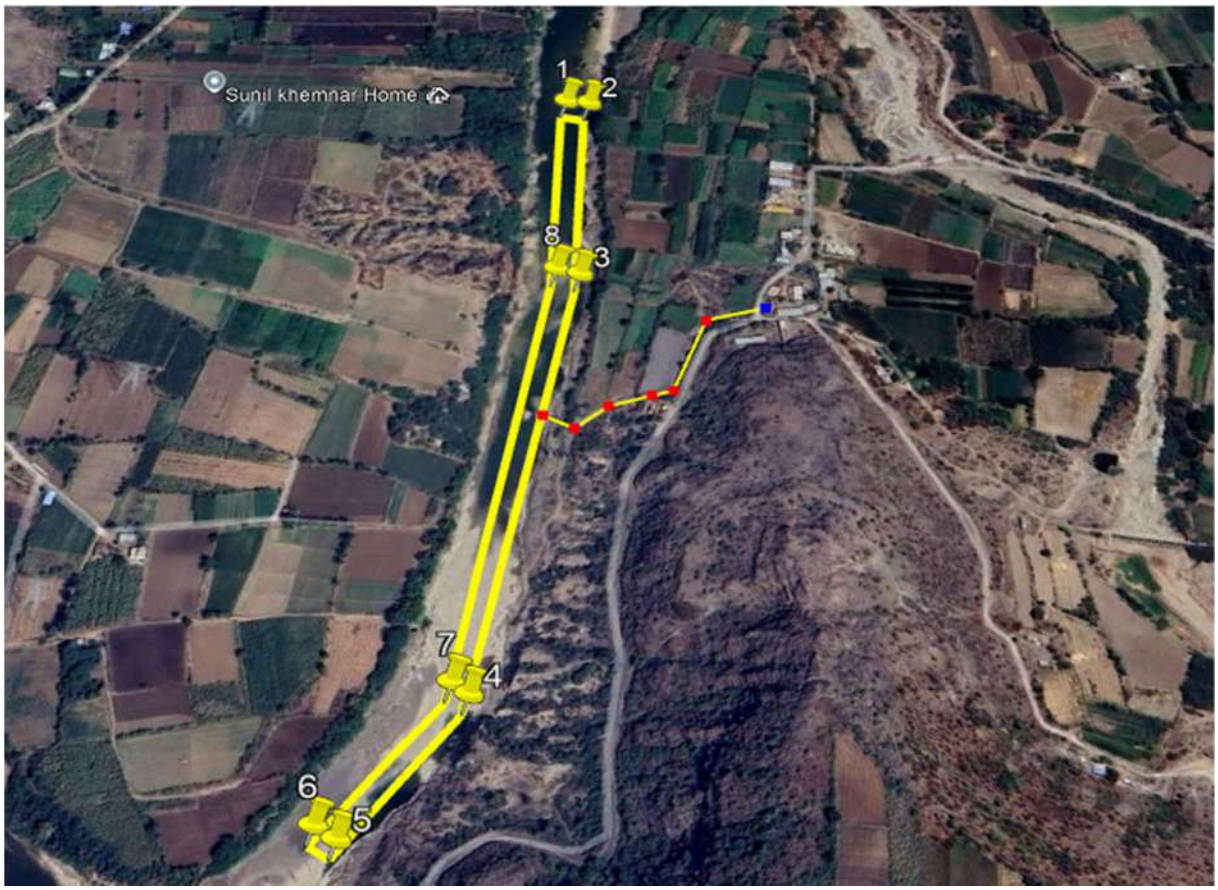
Transportation Route and location of Sakur sand ghat



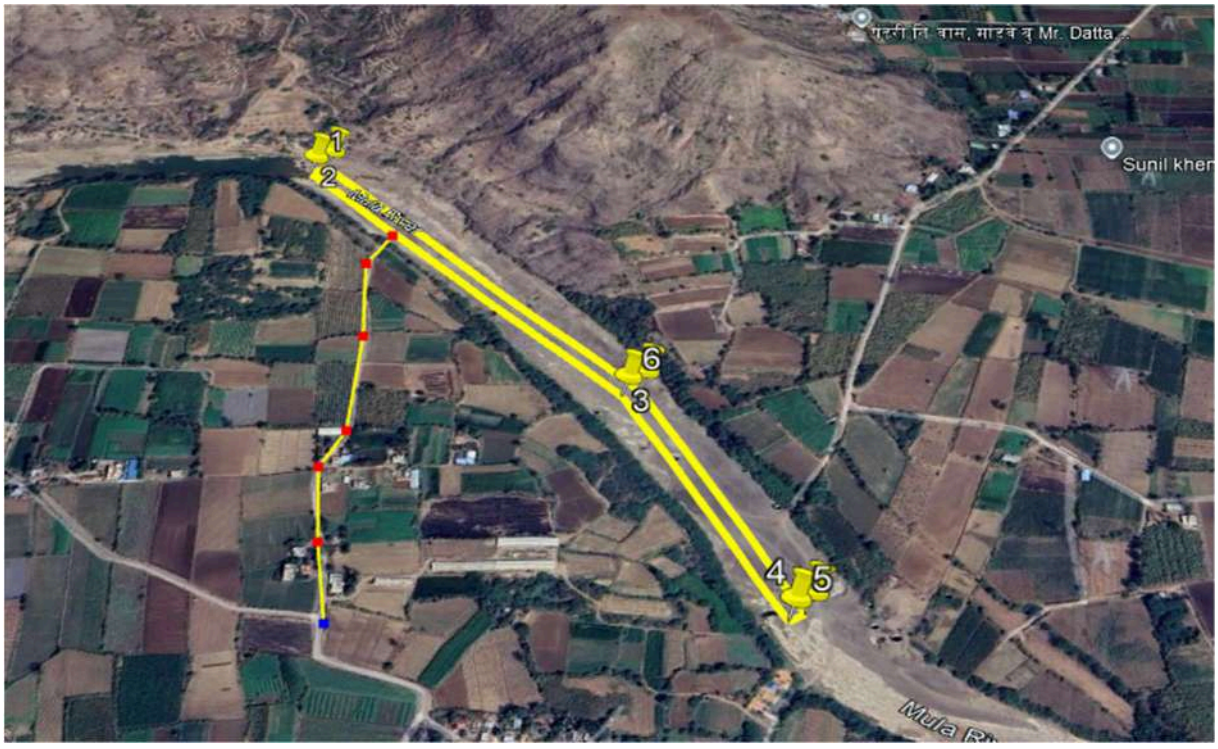
Transportation Route and location of Taas sand ghat



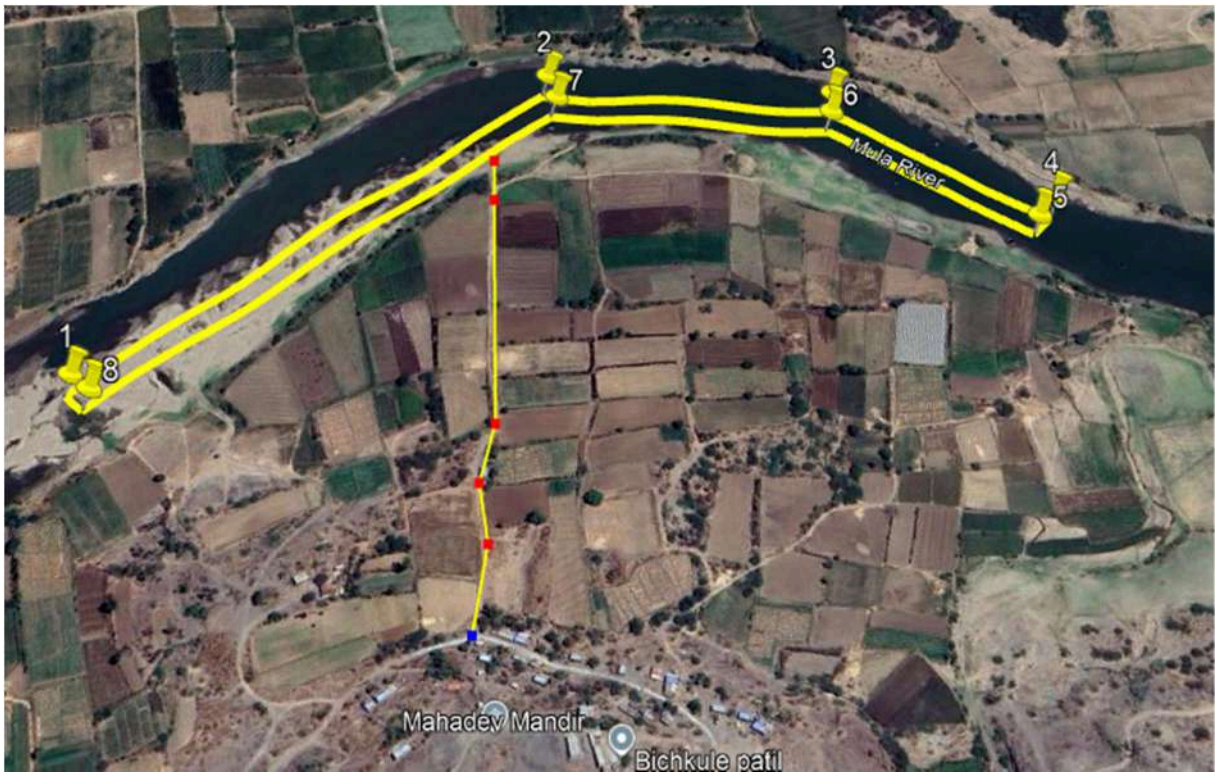
Transportation Route and location ofMandavekhu sand ghat



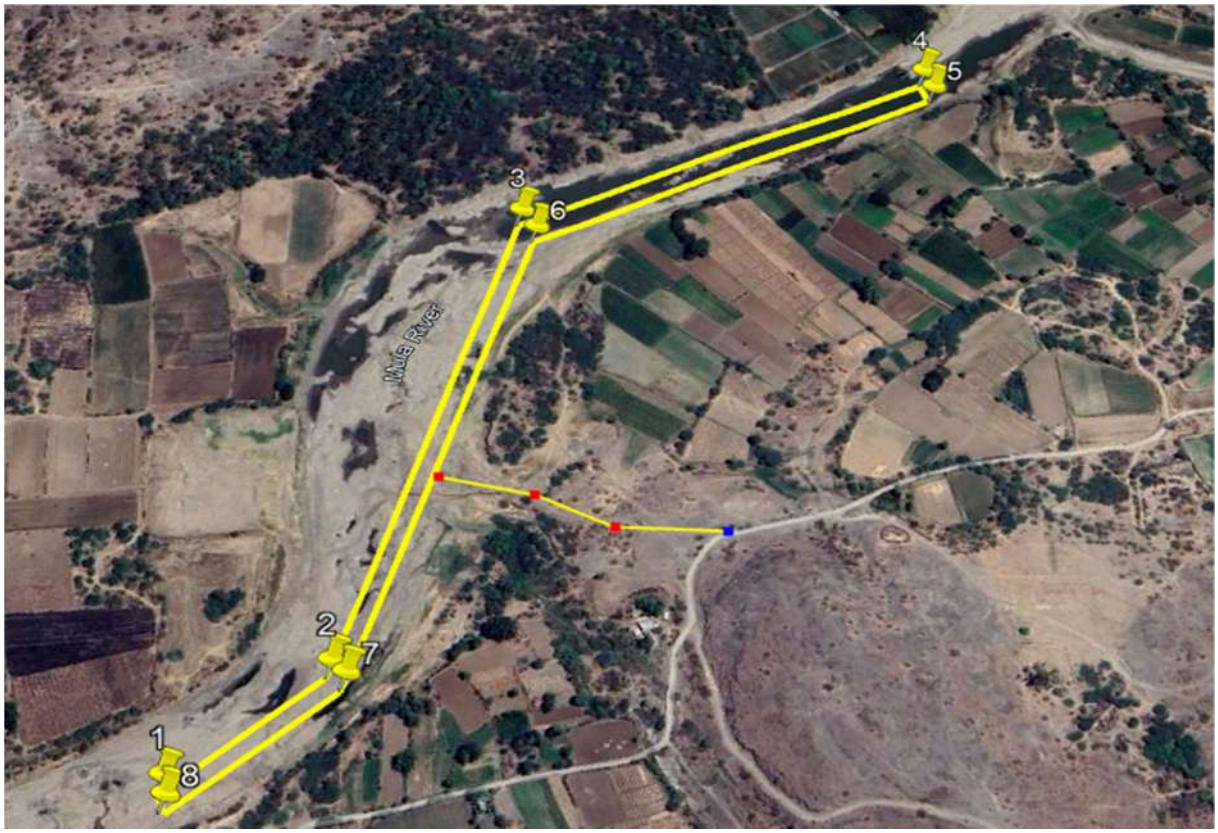
Transportation Route and location of Deswande 2 sand ghat



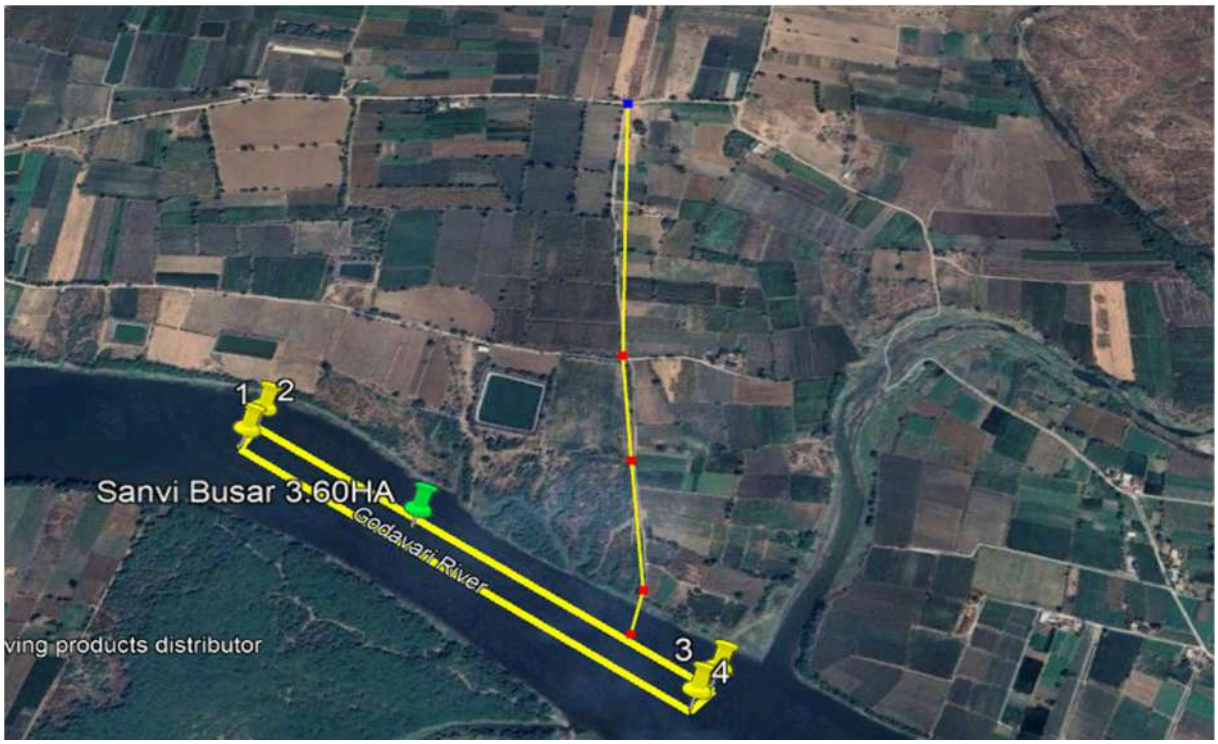
Transportation Route and location of Deswande 4 sand ghat



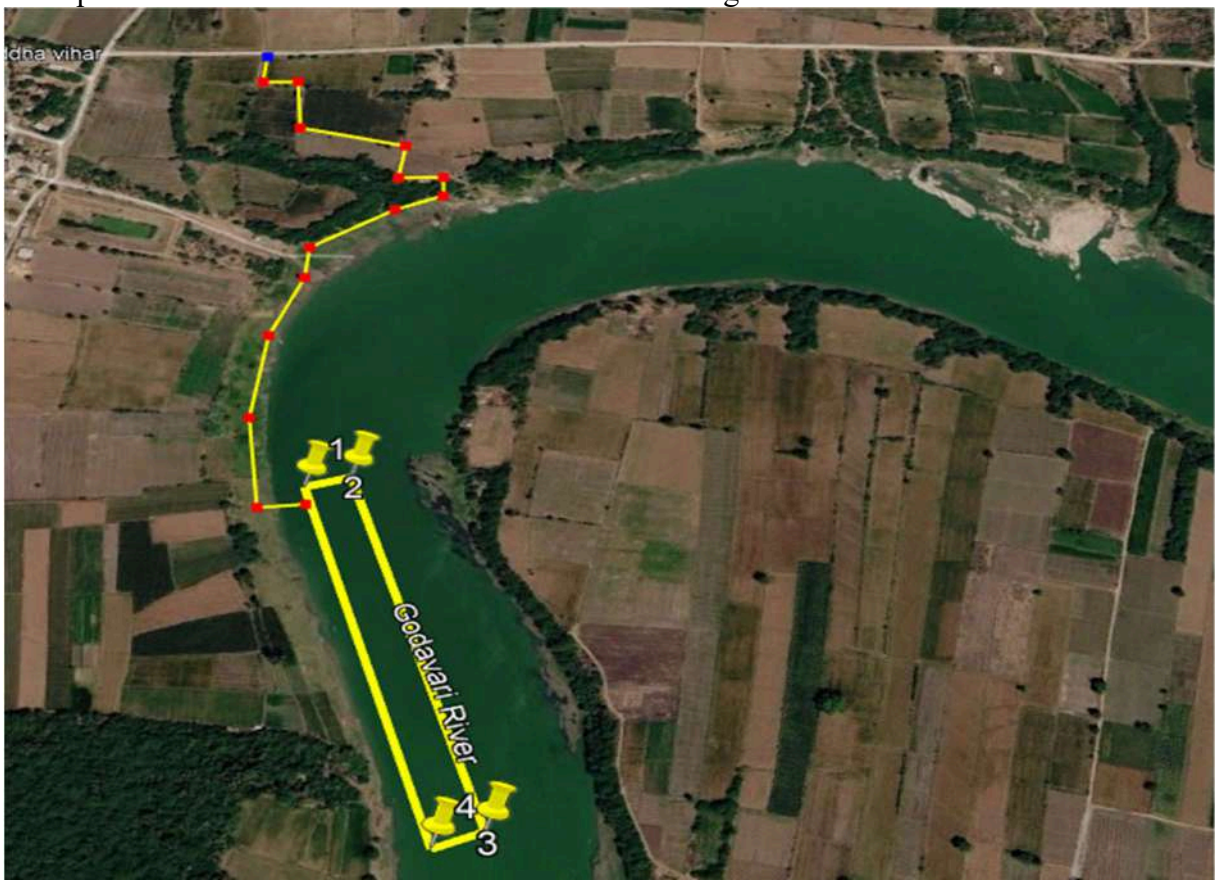
Transportation Route and location of Palshi 1 sand ghat



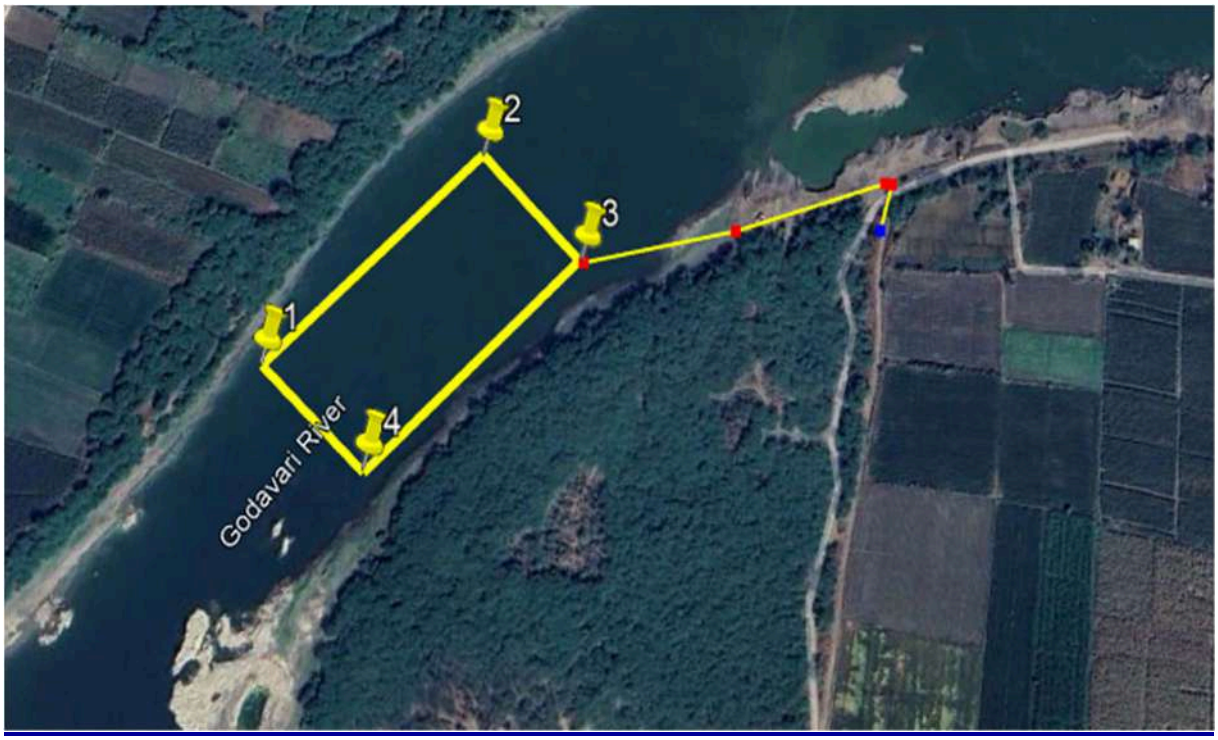
Transportation Route and location of Palshi 2 sand ghat



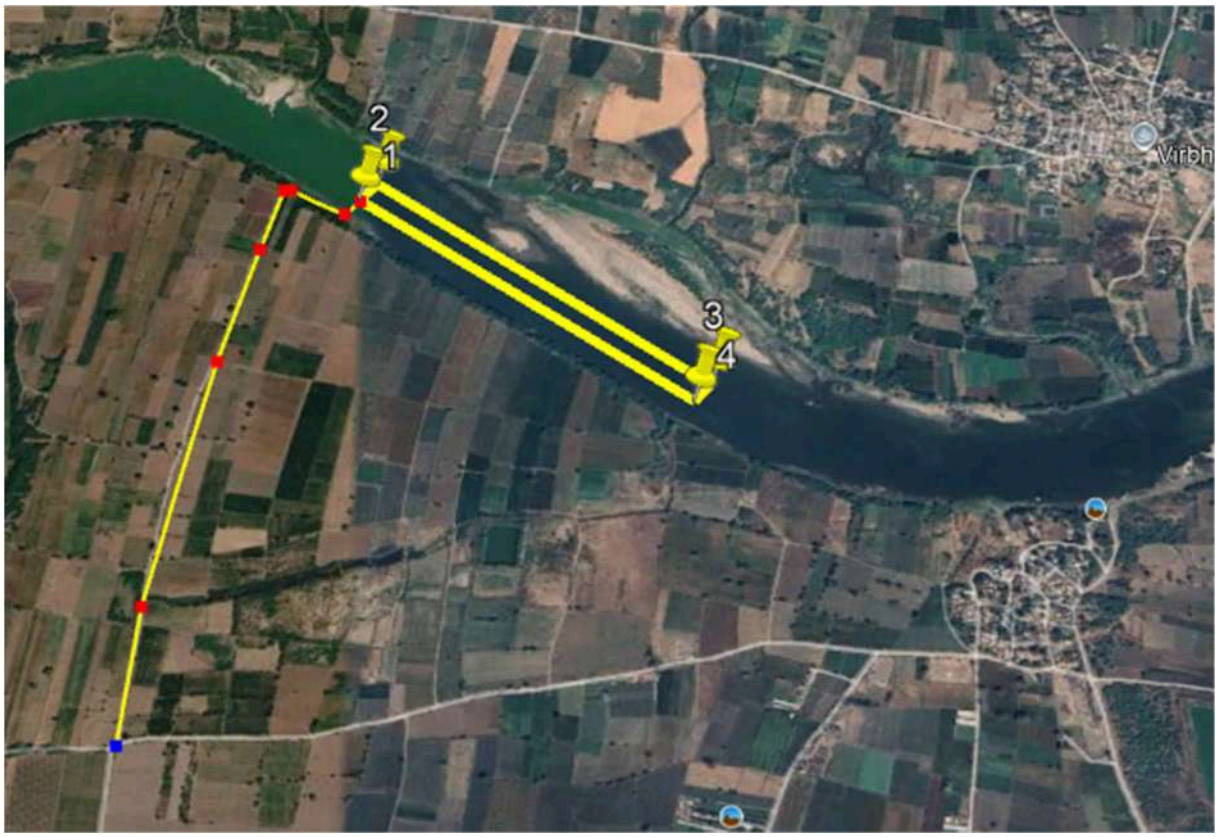
Transportation Route and location of Sanvi Bhusarsand gh



Transportation Route and location of Maigaon devi sand ghat



Transportation Route and location of Maigaondeshmukhsand ghat



Transportation Route and location of Suregaonsand ghat

Annexure V

Final List of Sand Ghats

Table 31:Final Proposed Sand Ghats

.	River Details	Lease Details	Area (ha)	Distance km from PA/BR/WC	Distance from Forest Area (m)	Mining leases Within 500m (if yes cluster area)	Total excavation in Brass/Annum considering digging depth max as per survey	Mineral to be mined (Sand/ Bajri/ RBM etc.)	Existing Proposed
1.	Mula	Ambalner	3.58	--	More than 500 m	No	26598	Sand	Proposed
2.	Godavari	Naur	4.72	--	More than 500 m	No	35016	Sand	Proposed
3.	Godavari	Naigaon	1.66	--	More than 500 m	No	16429	Sand	Proposed
4.	Godavari	Khanapur	3.84	--	More than 500 m	No	13569	Sand	Proposed
5.	Mula	Manjri .2	4.38	--	More than 500 m	No	15477	Sand	Proposed
6.	Mula	Vajulpoee	1.41	--	More than 500 m	No	4982	Sand	Proposed
7.	Mula	Jambutbu	1.00	--	More than 500 m	No	1765	Sand	Proposed
8.	Mula	Sakur	1.05	--	More than 500 m	No	3710	Sand	Proposed
9.	Mula	Taas	1.05	--	More than 500	No	2783	Sand	Proposed

					m				
10.	Mula	Mandve Khu	1.2	--	More than 500 m	No	2120	Sand	Proposed
11.	Mula	Desvande.2	1.8	--	More than 500 m	No	1908	Sand	Proposed
12.	Mula	Desvande.4	1.57	--	More than 500 m	No	2223	Sand	Proposed
13.	Mula	Desvande .3	1.35	--	More than 500 m	No	1908	Sand	Proposed
14.	Mula	Palshi	1.76	--	More than 500 m	No	2488	Sand	Proposed
15.	Mula	Palshi	1.62	--	More than 500 m	No	2853	Sand	Proposed
16.	Godavari	Sangvi Bhusar	3.6	--	More than 500 m	No	12721	Sand	Proposed
17.	Godavari	Maigaon Devi	1.85	--	More than 500 m	No	6519	Sand	Proposed
18.	Godavari	Mahegoan Deshmukh	1.62	--	More than 500 m	No	5724	Sand	Proposed
19.	Godavari	suregoan 1	4.29	--	More than 500 m	No	15170	Sand	Proposed

Annexure-VI

Final List of Cluster & Contiguous Cluster details Clusters

Table 32:Details of Cluster & Contiguous Cluster

River Name	Cluster No.	Lease Name	Location (Riverbed/Patta Land)	Village	Area (ha)	Total Excavation (Brass)
Nil						

Contiguous Clusters

Table 33: Details of Contiguous Clusters

River Name	Contiguous Cluster No.	Cluster No	Nos. of leases in the cluster	Location (Riverbed/Patta Land)	Distance between clusters	Village	Area of Cluster (ha)	Total Mineral Excavation (Ton)
Nil								

Annexure-VII

Final Transportation Routes for individual leases

Table 34: Transportation Routes

Lease Name	Transportation Route No.	Number of tractors /days of lease	Number of Tractors /days of all the lease onroute	Length of Route in km	Type of Road (Black Topped/ unpaved)	Recommendation for road (Black Topped/ unpaved)	The road will be Constructed by Govt/ Lease Owner	Route Map & Location
Ambalner	1	2	6	0.28	Unpaved	Unpaved	Existing Road	Enclosed
Naur	1	2	6	0.76	Unpaved	Unpaved	Existing Road	Enclosed
Naigaon	1	2	6	0.62	Unpaved	Unpaved	Existing Road	Enclosed

Lease Name	Transportation Route No.	Number of tractors /days of lease	Number of Tractors /days of all the lease onroute	Length of Route in km	Type of Road (Black Topped/ unpaved)	Recommend ation for road (Black Topped/ unpaved)	The road will be Construct ed by Govt/ Lease Owner	Route Map & Location
Khanapur	1	2	6	1.02	Unpaved	Unpaved	Existing Road	Enclose d
Manjri .2	1	2	6	0.89	Unpaved	Unpaved	Existing Road	Enclose d
Mula	1	2	6	0.28	Unpaved	Unpaved	Existing Road	Enclose d
Mula	1	2	6	0.32	Unpaved	Unpaved	Existing Road	Enclose d
Mula	1	2	6	0.18	Unpaved	Unpaved	Existing Road	Enclose d
Mula	1	2	6	2.49	Unpaved	Unpaved	Existing Road	Enclose d
Mula	1	2	6	0.47	Unpaved	Unpaved	Existing Road	Enclose d
Mula	1	2	6	0.46	Unpaved	Unpaved	Existing Road	Enclose d
Mula	1	2	6	0.28	Unpaved	Unpaved	Existing Road	Enclose d
Mula	1	2	6	0.60	Unpaved	Unpaved	Existing Road	Enclose d
Mula	1	2	6	0.44	Unpaved	Unpaved	Existing Road	Enclose d
Godavari	1	2	6	0.22	Unpaved	Unpaved	Existing Road	Enclose d
Godavari	1	2	6	1.01	Unpaved	Unpaved	Existing	Enclose

Lease Name	Transportation Route No.	Number of tractors /days of lease	Number of Tractors /days of all the lease onroute	Length of Route in km	Type of Road (Black Topped/ unpaved)	Recommend ation for road (Black Topped/ unpaved)	The road will be Construct ed by Govt/ Lease Owner	Route Map & Location
							Road	d
Godavari	1	2	6	0.89	Unpaved	Unpaved	Existing Road	Enclose d
Godavari	1	2	6	0.23	Unpaved	Unpaved	Existing Road	Enclose d

Whereas by notification of the Government of India in the erstwhile Ministry of Environment and Forest issued *vide* number S.O. 1533(E), dated the 14th September, 2006 published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (ii) (hereinafter referred to as the said notification) directions have been given regarding the prior environmental clearance;

And whereas, the Ministry of Environment, Forest and Climate Change has amended the said Notification *vide* S.O. 141 (E) dated 15th January 2016 wherein the procedure for preparation of District Survey Report for minor minerals has been prescribed.

Now, in accordance with the objective, the district mining branch has collected 19 proposals visited and scrutinized by the concerned Sub-district Magistrate and Tahsildar for sand mining. Then after a detailed survey has been carried out by officials of Groundwater Development Agency (GSDA), Ahilyanagar, Respective Tahsildar, Concerned J. Engineer, Water Resource Dept, Ahilyanagar, Representative of Concerned M.P.C.B, Ahilyanagar, District Mining Officer, Ahilyanagar along with Accredited Environment Consultant appointed by this office for identification of areas of aggradations or deposition where mining can be allowed, and identification of areas of erosion and proximity to infrastructural structures and installations where mining should be prohibited and calculation of annual rate of replenishment and allowing time for replenishment after mining in that area proposed by concerned Sub-district Magistrate and tahsildar office for sand mining.

Through the combined survey of officials as stated above total of 9proposals given below have been recommended by the committed stated in Govt. Resolution dated 19th April 2023 for sand mining stating that there will be no harm to groundwater level due to sand mining.

The mineral potential is calculated based on field investigation and the geology of the catchment area of the river or streams. As per the site conditions and location, the depth of minable minerals is defined.

District Survey Report for Ahilyanagar Part B Stone Quarry

ABBREVIATIONS

Short form	Long form
SEIAA	State Environment Impact Assessment Authority
SEAC	State Environment Assessment Committee
DEIAA	District Environment Impact Assessment Authority
MMME(D&R)	Maharashtra Minor Mineral Extraction (Development & Regulation) Rules of
MoEF& CC	Ministry of Environment, Forest & Climate Change
OM	Office Memorandum
DSR	District Survey Report
B.C.	Before Christ
NSG	Non-Suburban Grade
NH	National Highway
MSRTC	Maharashtra State Road Transport Corporation
NGT	National Green Tribunal

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DISTRICT SURVEY REPORT FOR MINOR MINERALS OTHER THAN SAND MINING (PART-B)

INTRODUCTION

A mineral is a solid chemical compound that occurs naturally in pure form. A rock may consist of a single mineral, or may be an aggregate of two or more different minerals, specially segregated into distinct phases. Minerals are classified into two groups namely Major minerals and Minor minerals. Amongst these two groups, Minor mineral has been defined under Section 3(e) of Mines and Minerals (Regulation and Development) Act, 1957.

These include building stones, gravel, ordinary clay, ordinary sand, Boulders, Kankar, Murum, Brick earth, bentonite etc. Major minerals include Coal, Manganese ore, Iron ore, Bauxite, Limestone, Chromite, Silica sand, Quartz sand etc. The minerals are state resources and Collector of each district is custodian of this property. Legally, Mining Plan is pre-requisite to commence mining operations and has to be approved by Authority. Mining operations are conducted in accordance with the approved Mining plan.

There are 89 minerals, out of which 4 fuel, 11 metallic, 52 non-metallic and 31 are minor minerals. All developmental activities need different construction material of which stone is basic material used for construction of roads, bridges, buildings etc. Stone Quarry are the only source of supply of aggregates or minor mineral. The demand and production of Stone is increasing rapidly due to increased infrastructure, developmental projects and construction activities supported by packages provided by the Government.

Hon'ble Supreme Court of India dated 27th February 2012 in I.A. No.12-13 of 2011 in Special Leave Petition (C) No.19628-19629 of 2009, in the matter of Deepak Kumar etc. Vs. State of Haryana and Others etc., prior environmental clearance has made mandatory for mining of minor minerals irrespective of the area of mining lease. Accordingly, Ministry of Environment, Forest &Climate Change (MoEF& CC[8]) had issued Office Memorandum No. LllOll/ 47/2011-IA. II(M) dated 18th May 2013. As per this O.M[9]. all mining projects of minor minerals would hence forth require prior Environmental Clearance irrespective of the lease area. The stone quarry and sand quarrying projects need environmental clearance as per the MoEF guidelines and such projects are treated as Category 'B' even if the lease area is less than 5ha.Subsequently, various amendments were made as regards to obtain environmental clearance of the minor minerals.

[8]MoEF& CC - Ministry of Environment, Forest & Climate Change

[9] OM – Office Memorandum

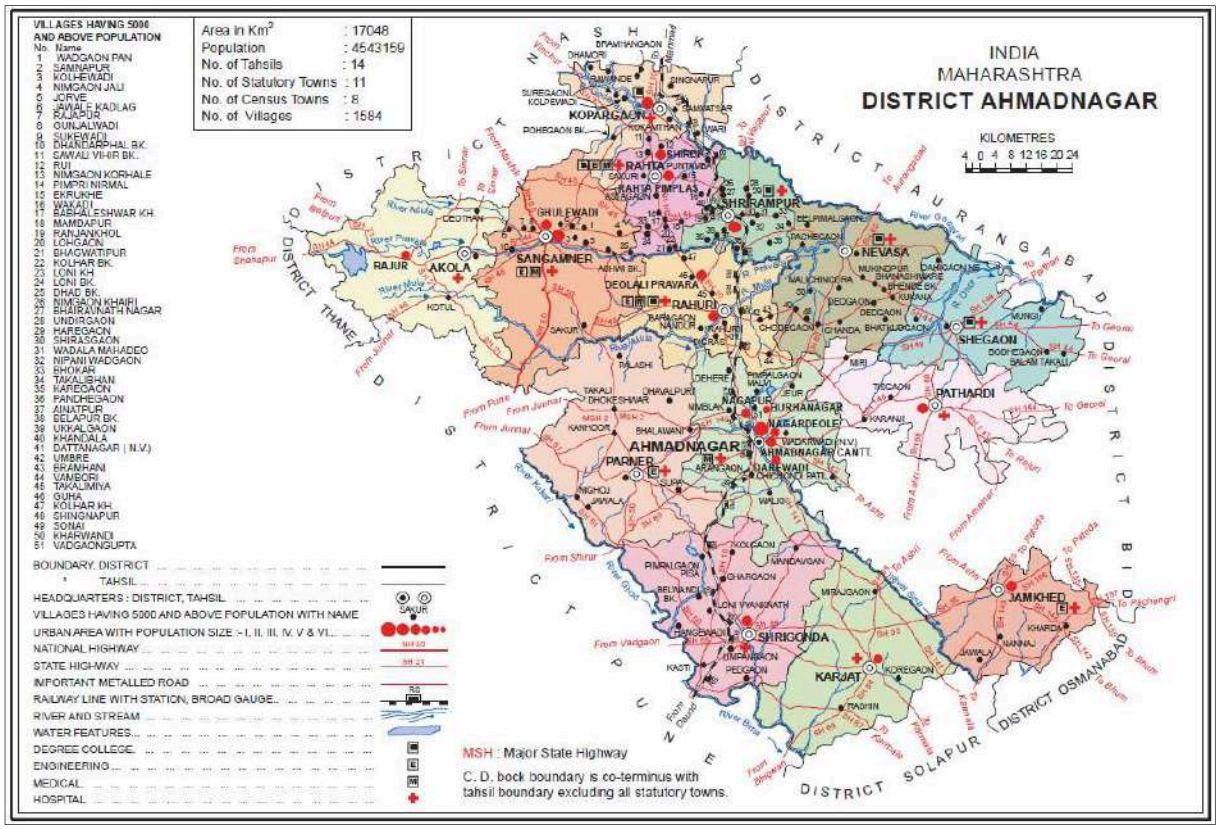

Figure 17: District Map of Ahilyanagar

The Hon'ble National Green Tribunal, vide its order dated the 13thJanuary 2015 in the matter regarding sand mining has directed for making a policy on environmental clearance for mining leases in cluster for minor minerals. As per the latest amendment S.O. 141 (E) & S.O.190(E) dated 15th January 2016 & 20th January in exercise of the powers conferred by sub-section (3) of Section 3 of the Environment (Protection) Act, 1986 (29 of 1986) and in pursuance of notification of Ministry of Environment and Forest number S.O. 1533 (E), dated the 14th September, 2006 the Central Government was constituted the District Level Environment Impact Assessment Authority (DEIAA[10]), for grant of Environmental Clearance for "Category-B2" Projects for mining of minor minerals, for all the districts in the country.

But meanwhile The Hon'ble High Court, Nagpur vide its order dated 7th Dec 2018 in the matter regarding sand mining has ruled out the powers of said District Level Environment Impact Assessment Authority (DEIAA), for granting of Environmental Clearance for Category B2 later State Govt has issued directions to move towards State Level Environment Impact Assessment Authority (DEIAA), for granting of Environmental Clearance for all Categories.

The MOEF&CC in its Notification dated 15th January 2016 has prescribed Preparation of District Survey Report for Sand Mining or Riverbed Mining and Mining of other Minor Minerals.A detailed procedure and format for preparation of District Survey Report is provided in the said Notification.

Further the procedure for preparation of DSR[11] and format is amended vide MoEF&CC Notification S.O. 3611(E) dated 25.07.2018. The DSR is defined at "Appendix -X (See

[10] DEIAA - District Level Environment Impact Assessment Authority

[11]DSR – District Survey Report

Paragraph 7(iii) (a)" of the notification S.O.141 (E) dated 15.01.2016 and S.O. 3611(E) dated 25.07.2018.

Objective of preparation of District Survey Report is to ensure identification of areas of aggradations or depositions where mining can be allowed and identification of areas of erosion rate of replenishment and allowing time for replenishment after mining in that area.

Demography

According to the 2011 census Ahilyanagar District has a population of 45,43,159. The district has a population density of 266 in habitants per square kilometre. Its population growth rate over the decade 2001-2011 was 12.43%. Ahilyanagar has a sex ratio of 934 females for every 1000 males, and a literacy rate of 80.22%. Scheduled Castes and Scheduled Tribes make up 12.62% and 8.63% of the population respectively. As per official census 2011 and population data 2024 of Ahilyanagar district, Hindu are majority in Ahilyanagar district. Hinduism constitutes 90.40% of Ahilyanagar population. Muslims are minority in Ahilyanagar state forming 7.06% of total population.

At the time of the 2011 Census of India, 88.3% of the population in the district spoke Marathi, 4.6% Hindi, 2.5% Urdu. Languages used mostly in the district include Marathi, Hindi as well as Telugu and its dialect Waddar.

History

Ahilyanagar formarly known as Ahmadnagar District is situated partly in the upper Godavari basin and partly in the Bhima basin occupying a somewhat central position in Maharashtra State. It extends between 18° 10' and 20° 00' North latitudes and 73° 30' and 75° 37' East longitudes. The district is irregular in shape and resembles a slanting cross with a length of 200 kms and a breadth of 210 kms. It is surrounded by Nashik District to the North, Chhatrapati Sambhajinagar District to the North-East, Beed District to the East, Dharashiv and Solapur District to the South, Pune District to the West and Thane District to the North-West.

The former name of District is named after Ahmednagar town. The town is famous since the medieval times. In the year 1490 when Ahmad Nizam Shah, the founder of the Nizam dynasty defeated the Bahamani troops under Jahangir Khan near its site, this victory was called the Victory of the Garden. Because on that spot Ahmad Shah built a palace and laidout a garden. In the year 1494 he laid the foundation of the city close to the bag Nizam upon the left bank of the Sina River and called after himself Ahmad Nagar or the city of Ahmad.

On May 31, 2023, Chief Minister Eknath Shinde announced the renaming of Ahmednagar after at an event to mark the 198th birth anniversary of legendary warrior queen of the Maratha-Malwa kingdom Ahilyabai Holkar at her birthplace, Chondi village. Ahmednagar has become the third district in Maharashtra to be renamed after Aurangabad and Osmanabad.

District has a chequered history of evolution in as much as in 1891 it included the sub-divisions of Jamkhed, Newasa, Shrigonda, Shevgaon, Sangamner, Nagar, Kopargaon, Akola, Karjat, Parner and Rahuri. In 1913, Pathardi Peta was created and the remaining part of Jamkhed taluka was renamed as Jamkhed Mahal. Subsequently, Karjat taluka was downgraded as Karjat Peta during 1931-41. The period 1941-51 was marked by the upgrading of Pathardi and Karjat Petas as Karjat taluka. In 1945 Shrirampur taluka came into being. Jurisdictional changes of 1950 resulted in the transfer of 21 villages from Beed District to Ahmednagar District; on the contrary the district had to lose 26 villages to Beed District and one village to Aurangabad District. With the reorganization of State, the District was

incorporated into Bombay State in 1956. However, since 1960, it constitutes a part of Maharashtra State. The District at present has 14 Tehsils.

Geography

Maharashtra falls under two macro level divisions 1) The Deccan Plateau and 2) The Coastal Plains and Islands. The north-south running Sahyadri range separates these two divisions. The Deccan Plateau lies to the east while the Coastal Plains and Islands lie to the west up to the Arabian Sea. The Deccan Plateau is much larger of the two divisions and includes twenty-nine Districts of the State while only six Districts lie in the Coastal Plains and Islands.

The whole Deccan Plateau is sub-divided into 12 meso regions. Of these, only 2 meso regions i.e. Northern Maharashtra and The Maharashtra Plateau lie within the State. Northern Maharashtra is further divided into 2 micro regions i.e. The Tapi-Purna Valley and The Wardha-Penganga Wainganga Plain. The Maharashtra Plateau is also further sub-divided into 2 micro regions i.e. The Eastern Plateau and The Western Plateau with Protruded Hills.

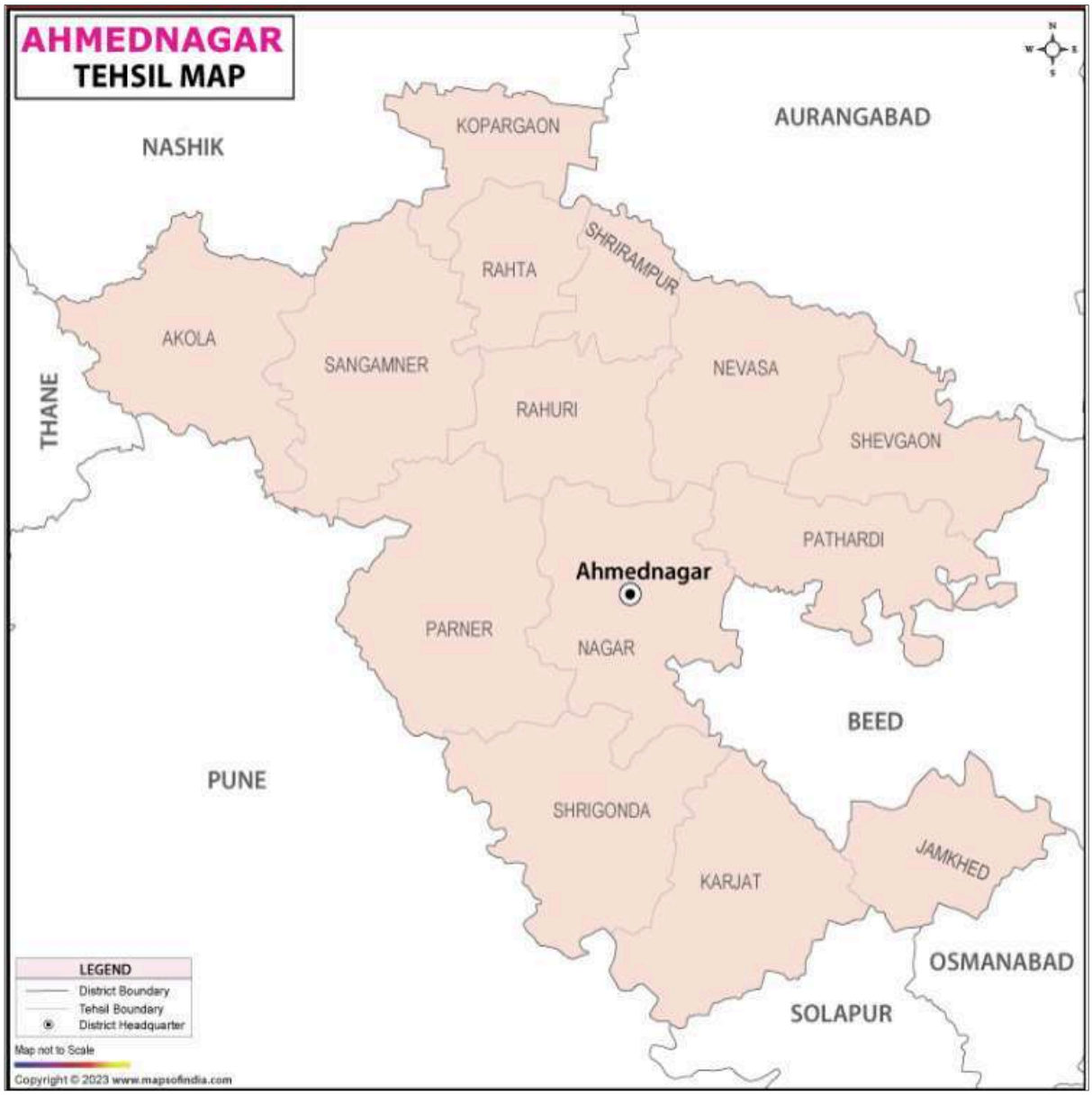

Figure 18:Tehsils Map of Ahilyanagar District

Ahilyanagar District is located in the north-west region of the state of Maharashtra. It is bounded by Satpura mountain ranges in the north, Ajanta Mountain ranges in the south. The district lies between 20 degrees to 21 north latitude, and 74.55 degrees to 76.28 degrees east longitude. Towards the northeast lies the border Madya Pradesh and towards the southeast lies Buldhana district and towards the south is Aurangabad and in the southwest is Nashik district and East West is Dhule district.

Table 35: Taluka wise Village List

Name of Taluka	No. of Villages	Area (km^2)
Ahilyanagar	114	1605.74
Akole	191	1505.00

Name of Taluka	No. of Villages	Area (km^2)
Jamkhed	87	878.62
Karjat	121	1503.61
Kopargaon	81	725.16
Newasa	129	1343.43
Parner	131	1930.00
Pathardi	135	1214.10
Rahta	60	759.19
Rahuri	98	1035.11
Sangamner	172	1705.06
Shevgaon	112	1131.85
Shrigonda	115	1605.61
Shrirampur	57	569.87

Flora & Fauna

The western hilly regions of Ahilyanagar are home to forested areas where tree species such as teak, babul, dhavada, haldu, and neem are commonly found. Fruit-bearing trees like mango, tamarind, amla, and bor also thrive in these areas. The Akole tehsil, characterized by its mountainous terrain and higher rainfall, boasts the densest vegetation in the district, including significant teak forests. Ahilyanagar hosts several wildlife sanctuaries like Maldhok (Indian Bustard) Sanctuary & Rehkuri Blackbuck Sanctuary dedicated to the conservation of specific species. Additionally, the district's varied ecosystems support a range of other wildlife, including species of birds, reptiles, and small mammals, contributing to the region's rich biodiversity.

Topography

The district as a whole is a tableland which has been incised by the Godavari and its tributaries and Sina River. Physiographically the District is broadly divisible into three parts i.e. (i) Low land of Godavari Basin, (ii) Balaghat plateau and (iii) Sina Basin.

Low land of Godavari Basin which is also known as Gangathad. It includes area drained by the Godavari River. It slopes gradually towards East and is located at the height varying between 400 and 500 metres. There are a number of residual hills with summits of over 600 metres. These are generally higher in the West and became lower in the East.

Balaghat Plateau which traverses the central portion from the Western border to Eastern border of the district. The plateau has fairly steep and highly dissected slopes by headward erosion of streams. The height of plateau varies between 500 metres and 800 metres from mean sea level. The general slope in the Northern portion is towards North and Northeast while that in the Southern portion is towards South or South-East. The top of this tableland is covered with almost bared rocks. The Southern parts gently slope towards the Manjra River. The valley of Manjra has fairly fertile soils and better ground water condition as a result that crops are cultivated both seasons.

The Sina Basin, situated at approximately 600 meters above sea level, slopes south-eastward. Composed of valleys carved by small, southward-flowing streams that feed the Sina River, the basin is characterized by generally poor soils, with slightly higher fertility found near the streams. This, coupled with the district's lowest rainfall, contributes to the area's status as the poorest region within the district.

Land Use Pattern

- Barren/Unculturable/Waste land Area: sq. km.
- Agricultural land: 13546.21 sq.km.
- Built-up area: 255.71 sq. km.
- Wetlands/Water Bodies: 497.44 km
- Forest Land: 1075.56 sq. km.

Transport

Rail

The Ahmednagar junction railway station in Ahilyanagar city has a number of trains passing through this line. The Ahmednagar junction railway station comes under the Pune railway division. Manmad–Daund line was opened in 1878 and connects the south-east and north-east sections. This station prioritizes passenger comfort with dedicated waiting and retiring rooms. A variety of food options, including vegetarian and non-vegetarian, are available, and a book stall provides reading material for travellers.

Road

The Ahilyanagar district map provides information about various routes to reach Ahilyanagar by road. Roads are linked between Ahilyanagar and cities like Pune, Nagpur, Nashik, Solapur, and several other cities.

Airport

Chh. Sambhajinagar airport is the nearest airport to Ahilyanagar, which is located 120 km on north-east of Ahilyanagar city. This location is easily accessible by road via Highway 753F and by rail via Manmad Junction. There aren't any scheduled flights operating out of Chh. Sambhajinagar Airport. The Government of Maharashtra has planned to upgrade the airport but no on-ground works has been done till now.

Geomorphology

The Ahilyanagar district in Maharashtra can be primarily divided into three physiographic divisions: Low land of Godavari Basin, Balaghat plateau region, and Sina Basin region.

This area lies within the low-lying Godavari Basin, also known as Gangathad, encompassing the drainage area of the Godavari. The land gently slopes eastward, with elevations ranging from 400 to 500 meters, punctuated by residual hills exceeding 600 meters at their summits. These hills are generally taller in the west and diminish in height as they extend eastward.

The Balaghat Plateau bisects the district from west to east. Characterized by steep, dissected slopes due to stream erosion, the plateau's elevation ranges from 500 to 800 meters above sea level. The northern slopes generally face north and northeast, while the southern slopes descend south and southeast. The plateau's summit is largely barren rock. In the south, the terrain slopes gently towards the Manjra River valley, where fertile soils and favorable groundwater conditions support year-round cultivation.

The Sina Basin, situated at approximately 600 meters above sea level, slopes south-eastward. This area, drained by small, southward-flowing streams that feed the Sina River, consists of valleys with predominantly poor soils, although some areas near the streams exhibit slightly better fertility. The basin also experiences the district's lowest rainfall, resulting in its designation as the district's most economically disadvantaged region.

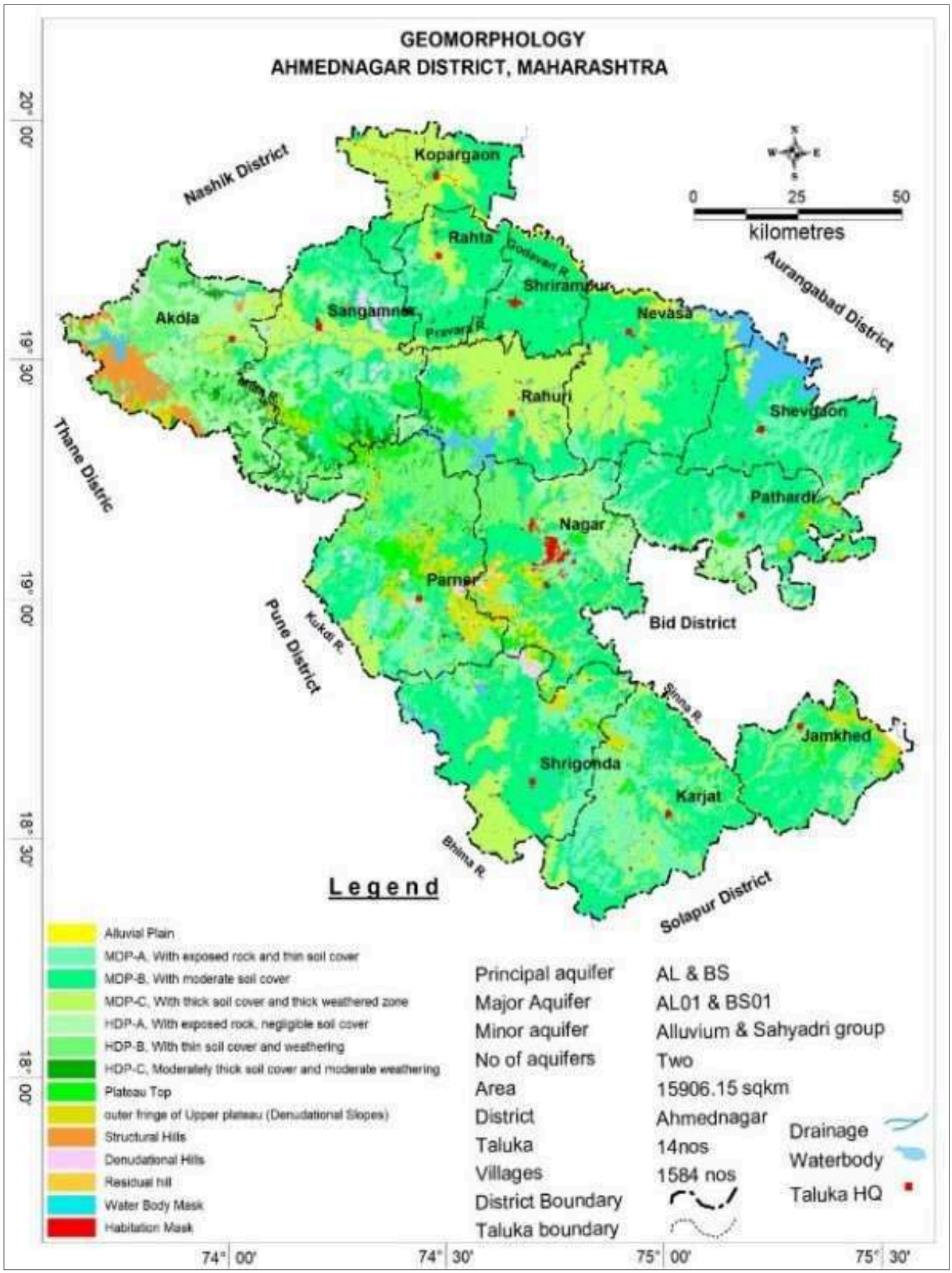

Figure 19: Geomorphology mapof Ahilyanagar District

OVERVIEW OF MINING ACTIVITY IN THE DISTRICT

Ahilyanagar District does not have any major mineral sources like Iron, Aluminium, Coal, etc. but district has a rich source of minor mineral like stones, pebbles, red soils (Murum), Sand etc. The ever-increasing influx of people in the city of Ahilyanagar has heightened the hopes for having more qualitative public facilities at an approachable distance. This has increased the demand in construction industry and various facilities are developed.

All developmental activities need different construction material of which sand is basic material used for development of roads, bridges, buildings etc. Riverbed sand quarry is the only source of supply of sand. These sand quarries are located at approachable distance from where sand is transported with ease and at low costs. Domestic demand plays a major role in the fast growth of mining of sand. In fact, the domestic demand of sand has been found increasing in India. The sand consumption has increased over the last few decades. The demand and production of stone as a construction material is increasing rapidly due to increased infrastructure development projects and other construction activities supported by the packages provided by the Government.

The entire market for sand is from the Ahilyanagar city, Sangamner, Parner and surrounding areas. There are about 44no. stone quarries in Ahilyanagar District till December 2024. Mining activity is one of the main revenue sources for the district.

There are 9 locations of sand ghats over Godavari, Pravara, Bhima, Sina, Mula, Nani and Ghod rivers where sand deposition is allowed from replenishment and other safety point of view in the district (Source info. District Mining Office, Ahilyanagar).

GENERAL PROFILE OF DISTRICT

Location and geographical data

The district lies between North latitudes 18°02' and 19°09' and east longitudes 73°09' and 75°05'. The city Ahilyanagar is district headquarters. The total area of the district is 17,048 sq.km and it falls under Survey of India toposheets 47E, 47F, 47I, 47J, 47N & 47M. It is bounded on the north by Igatpuri, Sinnar and Yeola talukas of Nasik district; on the north-east by Vaijapur, Gangapur and Paithan talukas of Chh. Sambhajinagar district of Marathwada division, on the east by Georai and Ashti talukas of Beed district; Bhum and Parenda talukas of Dharashiv district; on the south by the Karmala taluka of Solapur district; and on the south-west by Murbad and Shahapur talukas of Thane district. The population density as per 2011 census 266 persons/Sq.km. The major part of the district comes under Pravara and Mula basin. Pravara is the main river flowing through the district. The economy of the district is dependent on agriculture, especially on Sorghum and Pearl millet. Grapes, Orange, Pomegranate grown in this district are exported outside the state. The transport is based on both railways and ST Buses by road.

Physiographically the district forms part of Deccan Plateau. The Ahmednagar plateau between Baleshwar and Harishchandragad range has an average width of 50 km and has a trend northwest to south-east along the length of the district from Akola in the north-west to Jamkhed in the south-east. It has an average elevation of over 900 m. in the west and less than 600 m. in the east having a general south-easterly slope. From the Harishchandragad range to its west, it goes down in elevation to form the crest of a tableland. North of the city of Ahilyanagar, the crest rises again to the dignity of a mountain range locally known as the Agargaon range. On the south side, has a mean elevation of 650 m. with a slope towards the south-east indicated by the direction of the Sina River.

The district includes the Sahyadri and its three eastward offshoots, the Kalsubai-Adala range in the north, the Baleshwar range in the middle and the Harishchandragad range in the south. The vast Ahmednagar plateau in the middle running with a northwest-south-eastern trend; and the river basins of the Godavari and Bhima on either side of the plateau. The district as a whole is an elevated tableland with a number of plateaus within it at various levels, one plateau merging into the other often through sharp-crested ridges. The western taluka of Akola which abuts on the Sahyadri, is the highest part of the district averaging about 800 m. in height above the mean sea-level in contrast to the plains of Shevgaon taluka that lie below 450 m. in the Godavari valley in the extreme eastern parts.

Table 36:Geographical Data of District

Sr.	Geographical Data	Unit	Statistics
1.	Latitude and Longitude	Degrees	18°02' N 73°09'E/ 19°09' N 75°05' E
2.	Geographical Area	Km^2	17,048

Administrative divisions

Ahilyanagar district comes under Nashik Administrative Division the district comprises 4 sub-divisions and 14 tehsils.

Table 37:Administrative Divisions of District

Sr	Name of Subdivision	Name of Tahsil
1	Ahilyanagar	Ahilyanagar
		Newasa
2	Karjat	Karjat
		Jamkhed
3	Shrirampur	Rahuri
		Shrirampur
4	Sangamner	Sangamner
		Akole
5	Pathardi	Pathardi
		Shevgaon
6	Shirdi	Rahata
		Kopargaon
7	Parner – shrigonda	Parner
		Shrigonda

Population

According to the 2011 census Ahilyanagar District has a population of 45,43,159. The district has a population density of 266 habitants per square kilometre. Its population growth rate over the decade 2001-2011 was 12.43%. Ahilyanagar has a sex ratio of 939 females for every 1000 males, and a literacy rate of 79.05%. Scheduled Castes and Scheduled Tribes make up 12.63% and 8.63% of the population respectively. As per official census 2011 and population data 2024 of Ahilyanagar district, Hindu are majority in Ahilyanagar district. Hinduism constitutes 90.40% of Ahilyanagar population. Muslims are minority in Ahilyanagar state forming 7.06% of total population.

Connectivity

The Ahilyanagar district map provides information about various routes to reach Ahilyanagar. The nearest airport is Chh. Sambhajinagar Airport located in Chikalthana, Chh. Sambhajinagar. By road, Pune, Nashik, Chh. Sambhaji Nagar, Beed, and Jalgaon. Train services are well developed.

Distance to Ahilyanagar

- Pune – 122 km
- Mumbai – 254 km
- Surat – 378 km
- Indore – 518 km
- Hyderabad – 520 km

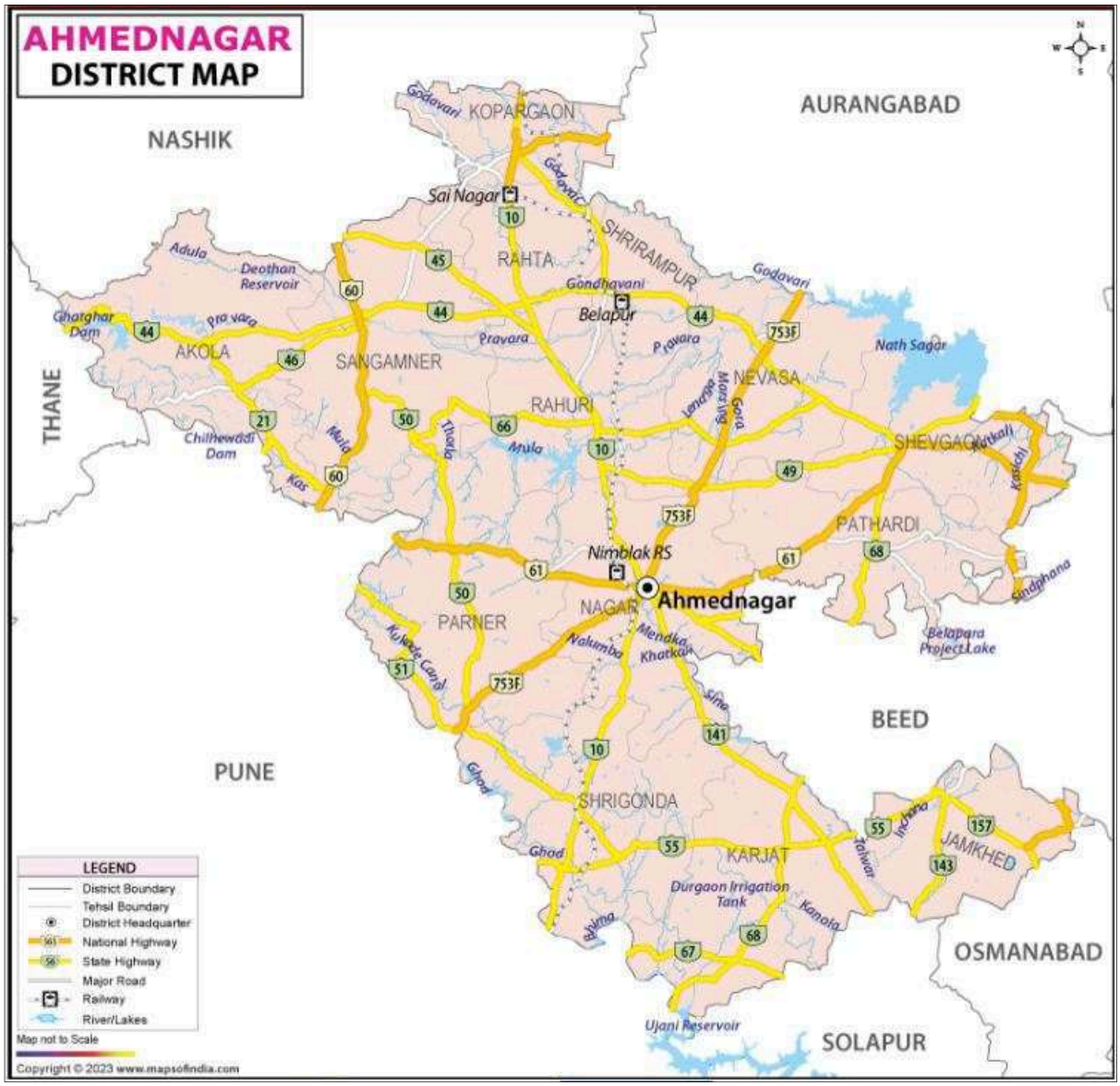

Figure 20:: Connectivity Map of District

General description

Minerals are classified into two groups as Major minerals and Minor minerals. Minor mineral has been defined under section 3 (e) of Mines and Minerals (Regulation and development) Act, 1957. They include building stones, gravel, ordinary sand, limestone lime burning, boulders, kankar, murum, brick earth ordinary clay used for, bentonite, road metal, slate, marble, stones used for making household utensils etc. Therefore, all other minerals not defined as minor minerals in the said Act are treated as major minerals. They include coal, manganese ore, iron ore, bauxite, limestone, kyanite, sillimanite, barites, chromite, silica sand,

fluorite, quartz, sand used for stowing purposes in coal mines and many other minerals used for industrial purposes.

GEOLOGY OF DISTRICT

Ahilyanagar, nestled within the expansive Deccan Traps, showcases a distinct layered volcanic rock structure. This stratification is evident in the striking parallelism of basalt and amygdaloid formations, a common characteristic across the Deccan region. These layers, formed by successive volcanic eruptions and subsequent weathering processes, reveal a fascinating geological history. The dark, dense basalt layers, rich in iron and magnesium, represent solidified lava flows, while the lighter, porous amygdaloid layers, riddled with cavities filled with secondary minerals, mark zones where gases escaped from the cooling lava. Over time, erosion has sculpted these layers, creating the distinctive stepped topography often observed in the Deccan landscape. The parallel alignment of these layers provides a visual testament to the immense forces that shaped the region over millions of years.

Geological structures

The Deccan Trap basalt flows, a dominant feature of Ahilyanagar's geology, display a succession of 19 major layers within the elevation range of 420 to 730 meters above mean sea level. These flows occur in layered sequence ranging in thickness from 15 to 50 m. Flows are represented by massive portion at bottom and vesicular portion at top and are separated from each other by marker bed known as bole bed. The thickness of weathering varies widely in the district from 5 to 25 m bgl. The weathered and fractured trap occurring in topographic lows form the main aquifer in the district.

Economic minerals

In Ahilyanagar district minerals of economic importance are not found. Weathered basaltic rock (murrum) is used economically for construction purpose. Mud used for making bricks, sand, gravels, clay and agate are found in some areas of district.

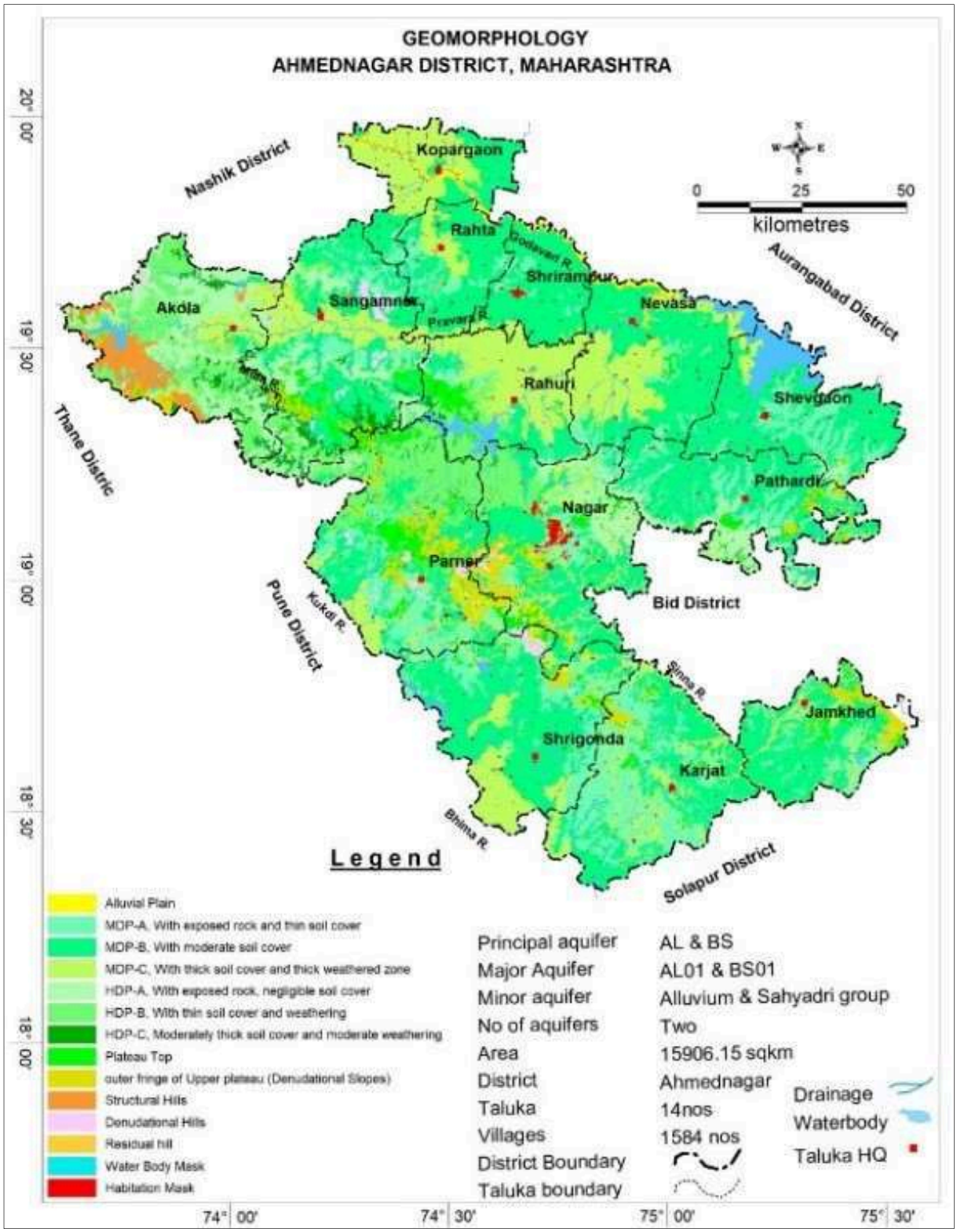

Figure 21: Geology Map of District

DRAINAGE PATTERN

The drainage of Ahilyanagar district belongs to two major river systems of Maharashtra, the Godavari with its tributaries viz., Pravara, Mula, Adula and Mahalungi in the north and the Bhima with its tributaries viz., Ghod and Sina in the south. All the rivers have sub-parallel to semi dendritic drainage pattern, and the drainage density is quite high. Based on geomorphological setting and drainage pattern, the district is divided into 80 watersheds. The Major parts of the district are covered by agriculture land with net sown area and double crop area.

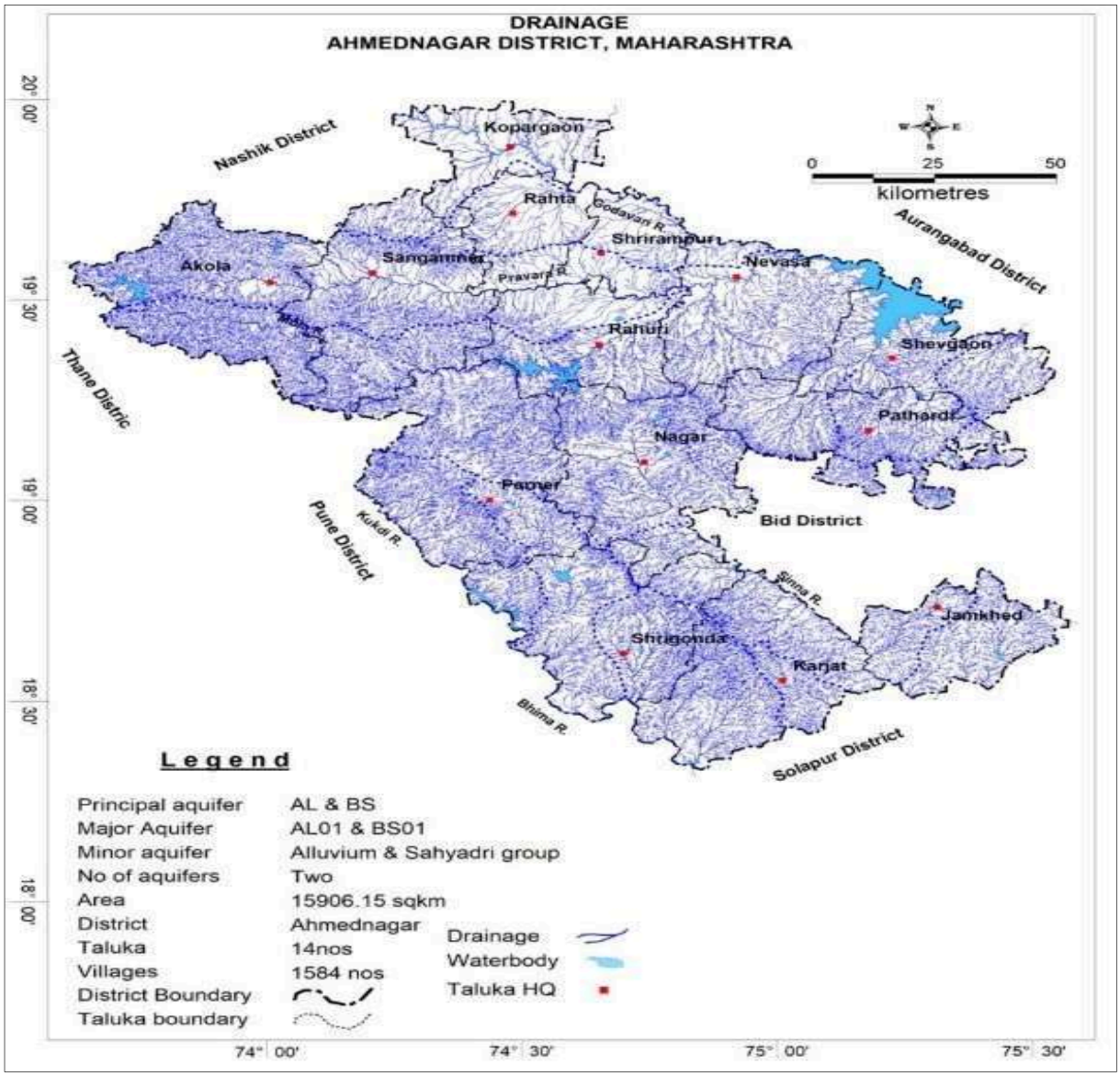

Figure 22: Drainage Pattern of District

The River Godavari

The Godavari River rises in Tryambakeshwar hills in Nashik District and on the eastern slopes of the Sahyadri. It drains by far the larger part of the district including the entire talukas of Kopargaon, Sangamner, Akola, Rahuri, Newasa, Shevgaon, the northern half of Parner and parts of Ahilyanagar and Jamkhed. The Godavari forms almost continuously the

boundary between Ahilyanagar and Chh Sambhajinagar districts. The river has an over-all length of 200 km. within the district.

The River Bhima

The Bhima originates at Bhimashankar in Nashik District and drains the southern part of Ahilyanagar district, comprising the greater part of Parner and Ahilyanagar talukas, the whole of Shrigonda, Karjat and Jamkhed talukas. The course of the Bhima in the district is continuously to the south-east. The banks of the river are generally low. The riverbed is sandy, crossed here and there by rocky barriers. The chief tributaries of the Bhima in the district are the Ghod and the Sina rivers.

The River Pravara

The Pravara River originates near the hill forts Ratangad and Kulang. It flows through the northern part of the district and major tributary of Godavari River. The upper waters of the Pravara in the amphitheatre between the Kalsubai-Baleshwar ranges have been developed into a huge reservoir lake, the lake Arthur, behind the Wilson dam near Bhandardara.

The River Sina

The Sina River originates from two main sources near Jamgaon and Jeur, located west and northeast of Ahilyanagar city, respectively. It also forms a segment of the boundary between the Ahilyanagar and Beed districts. The banks of the Sina River are low and its bed sandy. After heavy rains, its flow is somewhat rapid, as is shown by the directness of its course. During summer, the river becomes practically dry.

The River Mula

The River Mula rises on the eastern slopes of the Sahyadri between Ratangad and Harishchandragad, it flows parallel to the Pravara draining the southernmost Kotul valley of Akola Taluka. It is the major tributary of Pravara.

LAND UTILIZATION PATTERN IN THE DISTRICT: FOREST, AGRICULTURE, HORTICULTURE, MINING, ETC.

As the largest private enterprise in India, agriculture contributes one-fourth of the national GDP. Agriculture has been and will continue to be the lifeline of India economy. However, agriculture productivity and development differ very much from region to region, which needs a detail investigation. The temperature and pedagogical conditions are favourable for growing valuable crops like jawar, sugarcane, oil seeds, bajra, wheat, etc. By contrast, very low level of agriculture productivity is confined to the tehsils belonging to drought prone areas having irregular rainfall, rugged topography and poor irrigation facilities. Inadequacy of water is main hurdle in agriculture productivity. Hence, in present report an attempt has been made to assess the regional disparities in levels of agriculture productivity in Ahilyanagar District of Maharashtra.

Land utilization pattern

The district lies partly in Godavari basin and partly in Bhima basin. The northern part of the district is drained by Godavari River and its tributaries viz., Pravara, Mula, Adula and Mahalungi whereas the southern part is drained by Bhima River and its tributaries viz., Ghod and Sina. All the rivers have sub-parallel to semi dendritic drainage pattern, and the drainage density is quite high. The district is divided into 80 watersheds, based on geomorphological setting and drainage pattern.

Table 38:Taluka wise Land Use/Land Cover of District

Particulars	Area (Sq. Km.)
Barren/Unculturable/Waste land	1673.08
Agriculture land	13546.21
Built-up area	255.71
Wetlands/Water Bodies	497.44
Forest area	1075.56

Soil types of districts

Physiographically the district forms part of the Deccan Plateau. The whole district forms part of the Deccan's great trap region, and the trap rock is distinctly stratified. Throughout Ahilyanagar, the trap rock is distinctly stratified, and as in the rest of the Deccan, the alternative belts of basalt and amygdaloids preserve a striking parallelism to each other. The basaltic rock formation is intruded by dykes. The lava flows are almost horizontal in disposition, but local gentle tilting, undulations, and minor flexures are rarely seen. Compound lava (Pahoehoe flows are seen in the northern part of the district and the southern part is simple aa– lava type) in nature. Black cotton soil, river alluvium sands, gravels, silts,

and calcareous kankar. Recent Intrusive basic dykes, basalt lava flows belonging to the Deccan trap volcanic episode, associated with inter-trappean beds, red bole beds, porous ash and scoriaceous matter, etc. Cretaceous- Eocene.

The Ahmednagar plateau between Baleshwar and Harishchandragad range has an average width of 50 km. The relief of the district has an immense variety, not to be witnessed to the same extent in many other districts of the State. This is partly on account of its size and partly on account of its westerly location, immediately adjoining the crest of the Sahyadri.

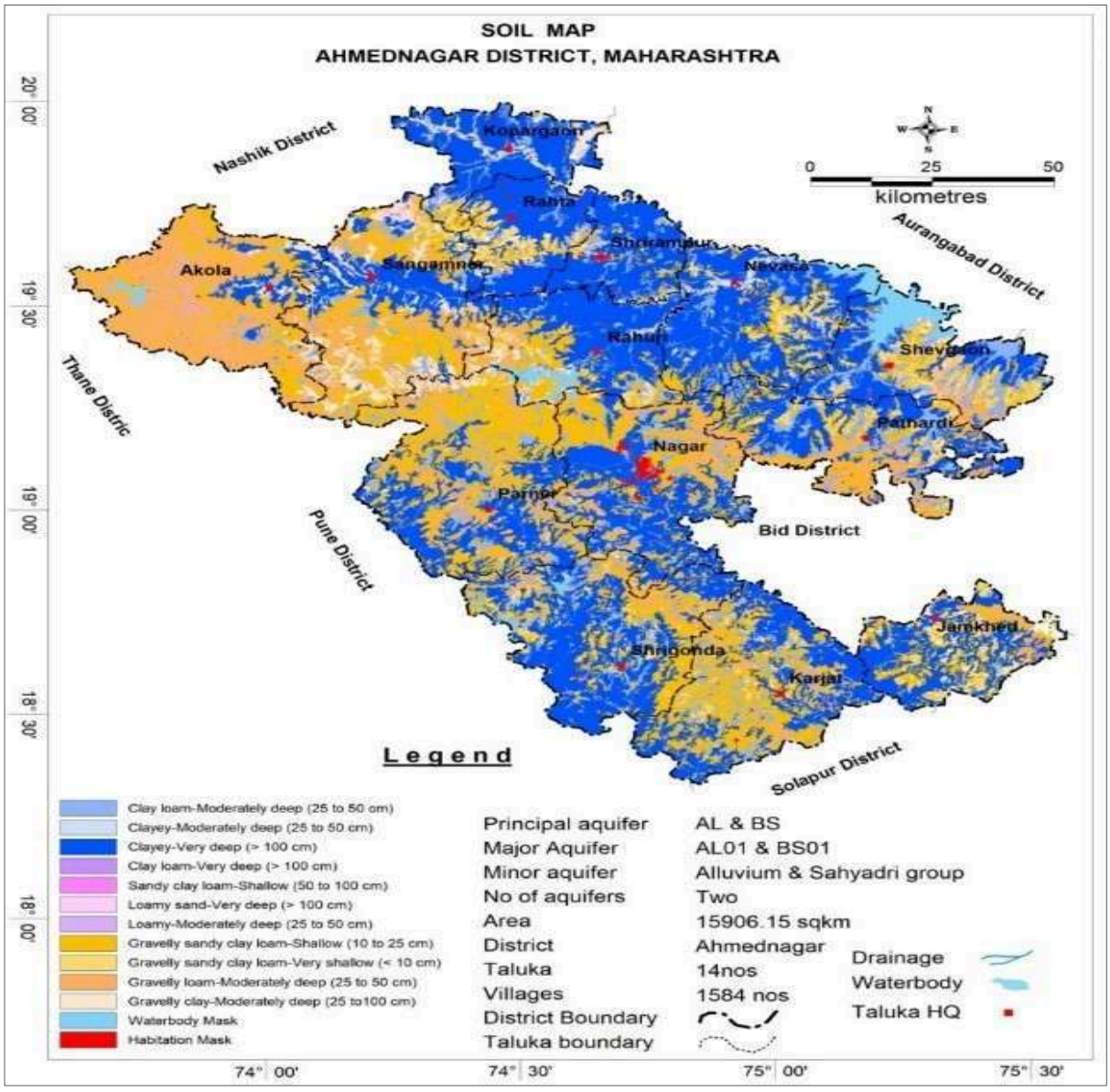

Figure 23: Soil Map of District

Table 39: The details of the soil types of district

Sr.	Soil type	Characteristics	Area (Ha.)

Sr.	Soil type	Characteristics	Area (Ha.)
1	Deep soils	• Soil depth is more than more than 90 cm to 150 cm. • Water availability period exceeding 130 days. Rahata, Kopargaon, Shrirampur, Newasa, and Rahuri areas of the district have deep soils.	2,26,330
2	Medium deep soils	• Soil depth is between 50 cm to 90 cm. • Water availability period exceeding between 110-130 days. • Akole, Sangamner, Parnerand Ahilyanagar areas of the district have medium-deep soils.	7,13,810
3	Shallow soils	• Soil depth is less than 25 cm to 50 cm. • Water availability period less than 90-110 days. • Karjat, Shevgaon, and Pathardi areas of the district have shallow soil.	6,61,580

Area, production and productivity of major crops cultivated in the Ahilyanagar district.

Table 40:Major Crops Productivity

Sr.	Crop	Area (ha)	Production (Tons)	Productivity (kg/ha)
1	Pearl millet	128.2	200	800
2	Soybean	55.5	105.8	1,400
3	Chickpea	90.5	46.2	700
4	Wheat	138.2	255	1,700
5	Sugarcane	113.7	5,985	90,000

Horticulture

Table 41: Horticultural Fruits Crops Details

Sr.	Crop	Area (ha)	Production (Tons)	Productivity (kg/ha)
1	Pomegranate	6.4	30.644	4,730
2	Lime	6.1	172.836	10,990
3	Mango	3.5	35.242	2,700
4	Sapota	3.1	59.962	5,900
5	Guava	4.2	147.217	30,670

Table 42: Horticultural Vegetables Crops Details

Sr.	Crop	Area (ha)	Production (Tons)	Productivity (kg/ha)
1	Onion	69.97	740.314	16,410
2	Tomato	4.173	50.526	27,640
3	Brinjal	1.786	24.813	19,430
4	Chilli	1.774	13.488	38,540

Table 43: Mining Details

Area Under Mining	Area in Ha.
Riverbed Scooping	419.25
Stone Mining	177.54

SURFACE WATER AND GROUNDWATER SCENARIO OF DISTRICT

Surface Water

There are four major irrigation projects, seven medium irrigation projects and 107 minor irrigation projects in the district. Mula, Bhandardara, Nilwande and Ghod are the four major irrigation projects in the district. Irrigation is also available from Gangapur, Ghod and Kukadi major irrigation projects which are in the adjoining district. The irrigation potential of the above projects is 92 thousand hectares. Visapur, Adnala, Pargaonghatsheel, Mandohol, Takilban and Mahesangvi are the medium Irrigation. Projects with 66 thousand hectares potential. There are 107 minor irrigation projects with the irrigation potential of 53 thousand hectares. Well irrigation covers about 253,000 Hectares.

Groundwater scenario

Hydrology

The entire Ahilyanagar district is occupied by the lava flows of the Deccan Trap Basalt. Deccan Trap Basalt Upper Cretaceous to Lower Eocene age is the major rock formation, covering about 8040 sq. km. area in central and the southern parts of the district. These rocks formations are intruded by the dykes of the same period. Alluvium occurs over an area of 3600 sq. km. in the northern part of the district.

Deccan Trap Basalt

The weathered and fractured part of basalt occurring in topographic lows form the main aquifer in the district. Ground water occurs under phreatic, semi-confined, and confined conditions. Generally, the shallower zones down to the depth of 35 m bgl form a phreatic aquifer. The water-bearing zones occurring between the depths of 9 and 35 m are weathered interflow or shear zones and yield water under semi-confined conditions. The yield of the dugwells ranges from 10 to 100m^3/day, whereas borewells yield is restricted upto 2.5 lps when favourably located.

Alluvium

Alluvium occurs as small patches, mostly along the river. Alluvium occurs in small areas along banks and flood plains of major rivers like Godavari, Pravara, Mula rivers and their tributaries. Coarse grained detrital material like sand and gravel usually occurring as lenses forms good aquifer. Ground water exploration in Godavari-Pravara Alluvium reveals that the thickness of alluvium is less than 40m and the aquifer thickness are ranges between 5-8 m. The yield of the dugwells ranges from 50 to 100 m^3/day.

Water level scenario

Central Ground Water Board periodically monitors the National Hydrograph Network Stations (NHNS) stations in the Ahilyanagar district, four times a year i.e. in January, May (Pre-monsoon), August and November (Post-monsoon).

Pre-Monsoon &Post-Monsoon depth to water level

During pre-monsoon, rise in water level trend has been recorded at 24 stations and ranges from 0.012 (Mandave Bk., Sangmner block) to 0.3 m/year (Ghodegaon, Newasa block). While falling trend was observed in 183 stations varying from 0.0002 (Sonegaon, Jamkhed block) to 0.77 m/year (Mathpimpri, Ahilyanagar block). Fall in water level trend >0.2 m/year is observed in 5702.83 sq km area. Rise in water level trend has been observed in isolated parts of Nevasa, Srigonda, Sangamner, Ahilyanagar, Shevgaon, Kopargaon and Srirampur Blocks.

During post monsoon, rise in water level trend has been recorded at 50 stations and it ranges between 0.001 (Ashwi Kh, Sangamner block) to 0.68 m/year (Loni Kh. Rahata block). While falling trend was observed in 160 stations varying from between 0.001 m/year (VarvandiRahuri block) to 0.91 (Jakhangaon, Nagar block). Rising water level trend has been observed in all blocks except Nagar, Rahuri, Akole and Kopargaon. Fall in water level trend >0.2 m/year is observed in 2711.03 sq km area. Significant decline, more than 0.20 m/year has been observed in almost entire Nagar block and isolated patches in Sangamner, Kopargaon, Srirampur and Karjat block.

Yield of borewells

A wide variation in yield of bore wells has been recorded in the district. The Ground Water Surveys and Development Agency (GSDA) had drilled 20,320 tubewells and borewells under various schemes for rural water supply. Wells are drilled between range of 14.60 to 352 mbgl.

Status of Groundwater development

Ground water has special significance for agricultural development in the State of Maharashtra. The ground water development in Bazada zone is feasible at those sites wherever additional recharge from percolation tanks all along places.

Current groundwater extraction is 1205.74 million cubic meters. Rahata tehsil is in ‘over exploited’ category, where Kopargaon, Rahuri, Sangamner and Shrirampur are in ‘critical’ category and Akole, Newasa, Pathardi, Shevgaon and Shrigonda are in ‘semi critical category.

The district being situated in “Rain Shadow” zone of Western Ghats, it often suffers the drought conditions. Almost entire district covering Ahilyanagar, Rahuri, Nevasa, Shevgaon, Jamkhed, Karjat, Srigonda, Pathardi and Parner Blocks comes under “Drought Area” The major parts of the district are also showing falling ground water level trends mainly in central, northern and eastern parts of the district. The ground water quality is also non-potable at many places as the concentrations of nitrate and total hardness are above desirable limit. The ground water quality is also getting affected due to industrial pollution from sugar and allied industries like Distillery and Paper. The effluent generated from these sugar and allied industries and other industries are causing environmental problems because of its improper storage and disposal without adequate treatment.

RAINFALL: MONTH-WISE

Table 44: Rainfall Month-wise

		June			July			August			September			October			1st June to 23 oct		
Sr.	Tahshil	Normal Rainfall	Actual Rainfall	%	Normal Rainfall	Actual Rainfall	%	Normal Rainfall	Actual Rainfall	%	Normal Rainfall	Actual Rainfall	%	Normal Rainfall	Actual Rainfall	%	Normal Rainfall	Actual Rainfall	%
1	Nagar	106.9	78.9	73.5	94.4	127.1	134.6	100.4	19.5	19.4	178.1	63.9	35.9	53.5	0.4	0.7	533.3	289.8	54.3
2	Parner	99.9	56.8	56.9	87.4	188.1	215.2	84.6	19.2	22.7	142.4	49	34.4	47.9	0.5	1	462.	313.6	67.8
3	Shrigonda	100	84.5	84.5	69.9	168.5	241.1	72.8	10.3	14.1	160.2	46.6	29.1	59.6	0.3	0.5	462.5	310.2	67.1
4	Karjat	101.9	144.2	144.5	92.3	144.1	156.3	91.4	15.3	16.7	161.8	53.3	32.9	57.2	0.2	0.3	504.6	357.3	70.8
5	Jamkhed	133.3	119.5	89.6	123.3	144.1	116.9	133	35.7	26.8	186.5	47.7	25.6	50	0.3	0.6	626.1	347.3	55.5
6	Shegaon	109.2	69.5	63.6	101.8	81.4	80	102.6	23.1	22.5	149.6	40.6	27.1	47	0	0	510.2	214.6	42.1
7	Pathardi	116.4	78.1	67.1	103.4	84.2	81.4	109.6	23.7	22.2	146.6	56.2	38.3	53	0	0	526.1	242.2	46
8	Newasa	97.1	84.5	87	90.4	69	76.3	84.6	13.8	12.6	132.7	39.7	29.9	42.7	0.3	0.7	472.5	207.3	43.9
9	Rahuri	106.1	18.6	17.5	91.2	68	74.6	65.6	23.4	27.7	149.9	49.2	32.8	58	0.3	0.5	489.8	159.5	32.6

10	Sangamner	91.9	27.7	30.1	73.5	169.6	230.7	104.9	25.7	39.2	120.2	51.8	43.1	38	0.7	1.8	389.2	275.5	70.8
11	Akola	114.4	22	19.2	141.3	475.1	336.2	104.9	73.1	69.7	127.9	49.9	39	48.5	3.2	6.6	537	623	116.1
12	Kopargaon	103.6	38.5	37.2	94.2	206.8	219.5	86.8	25.8	29.7	119.7	20.3	17	41.8	0	0	446.1	291.4	99.6
13	Shriram pur	126.2	57.9	45.9	104	81.1	78	97.6	27.5	28.2	135.2	9.8	7.2	62.4	0	0	487.5	2.7.1	42.5
14	Rahata	123	33.5	27.2	77.3	146.6	189.7	114.7	22.9	20	139	4.1	2.9	33.5	0	0	487.5	207.1	42.5

RAINFALL OF THE DISTRICT AND CLIMATIC CONDITION

Rainfall

The normal rainfall over the district varies from about 560.3 mm to 620.0 mm. The rainfall during the southwest monsoon from June to September amounts to about 90 % of the annual rainfall. September is the rainiest month.

Table 45: Normal Rainfall from various stations in the District

Sr. No.	Taluka	Normal Rainfall June-Sept (mm)	2025-26		2026-27	
			Total Rainfall June-Sept (mm)	%	Total Rainfall June-Sept (mm)	%
1	Nagar	479.8	627.7	130.8	289.4	60.3
2	Parner	414.3	510.2	123.1	313.1	75.6
3	Shrigonda	402.9	554	137.5	309.9	76.9
4	Karjat	447.4	665.7	148.8	357.1	79.8

5	Jamkhed	576.1	818.5	142.1	347	60.2
6	Shegaon	463.2	794.3	171.5	214.6	46.3
7	Pathardi	473.1	921.1	194.7	242.2	51.2
8	Newasa	429.8	679.2	158	207	48.2
9	Rahuri	431.8	438.3	101.5	159.2	36.9
10	Sangamner	351.2	335.4	95.5	274.8	78.2
11	Akole	488.5	445.1	91.1	618.8	126.7
12	Kopargaon	404.3	401.6	99.3	291.4	72.1
13	Shrirampur	463	485.7	104.9	176.3	38.1
14	Rahata	454	518.1	114.1	207.1	45.6
District		**448.1**	**583.3**	**130.2**	**299.3**	**66.8**

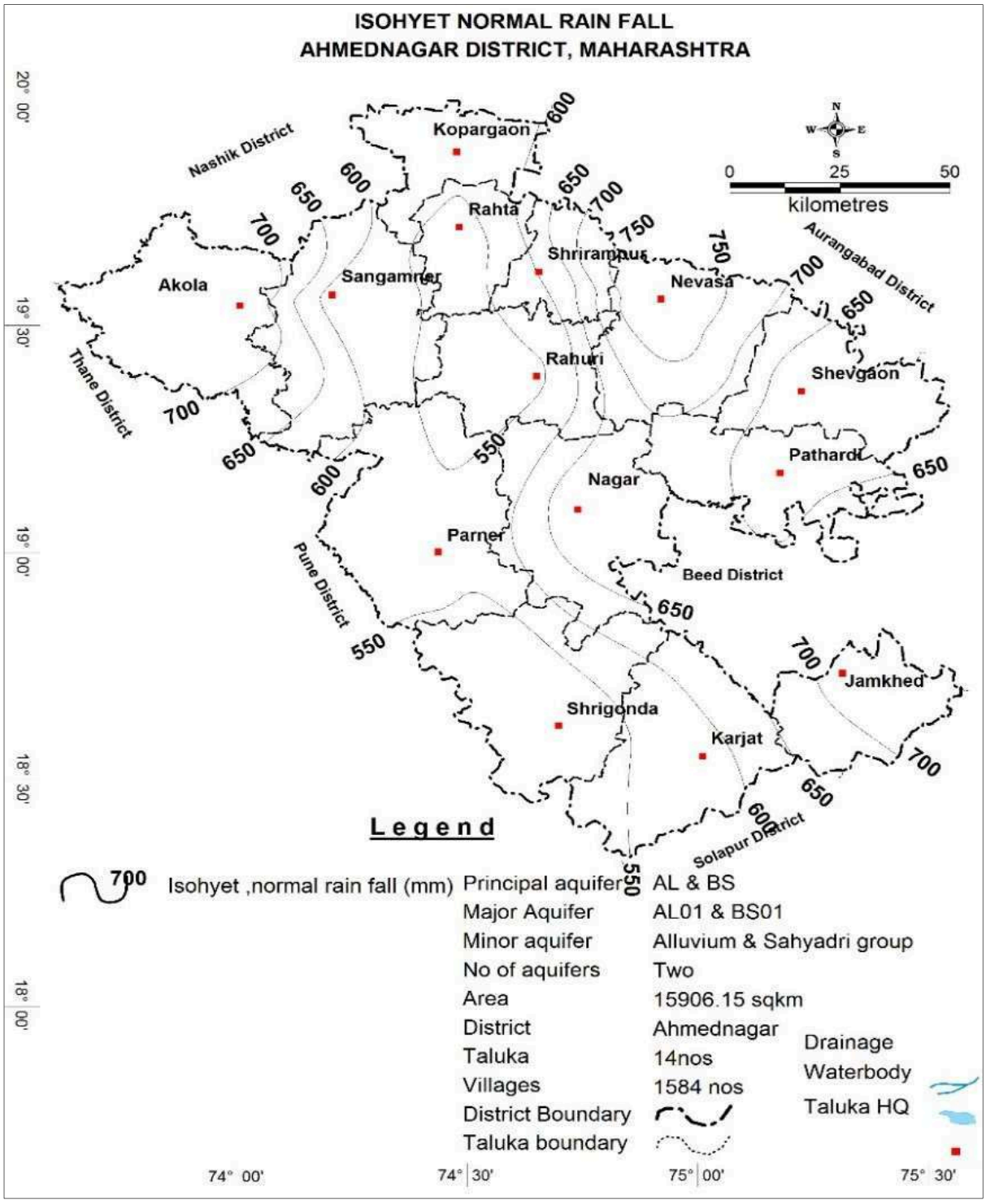

Figure 24: Isohyet Rainfall of District

Climate

The climate of the district is characterized by a hot summer and general dryness except during the South-West monsoon season. The year can be divided into four seasons. The cold season from December to February is followed by the hot season from March to the first week of June. The Southwest monsoon season is from the second week of June till the end of September while October and November constitute the post monsoon or retreating monsoon season.

The average annual rainfall in the district is 565.29 mm. The distribution of rainfall is very uneven. The Western part of Akole Tehsil gets good rainfall, and the rainfall decreases as one proceeds towards the East. The district mostly lies in the rain shadow to the East of the Sahyadries. September is the rainiest month. About 75 percent of the annual rainfall is received during the Southwest monsoon season. The variation in rainfall from year to year is large.

Seasonal temperature variation is quite large. From March onwards is a period of continuous increase in day temperatures, the nights remaining comparatively cool. May is the hottest month of the year with the mean daily maximum temperature at 38.9° C, on individual days temperatures occasionally rise to 43° or 44° C. December is the coldest month of the year with the mean daily minimum temperature at 11.7° C. Sometimes due to cold waves in Northern India the minimum temperature drops to 2° or 3° C.

DETAILS OF THE MINING LEASE OF THE DISTRICT

Table 46:Details of the Mining Lease of the District

Sr. No.	Mineral	Nameo ftheLessee	Address &Contact No.of Lessee	MiningleaseGrant Order No.& date	Area of Mining lease(ha)	Period ofMiningLease(Initial)		Period of MiningLease(1st/2nd… renewal)		Date of Commencentof Mining Operation	Status (Working/ Non-Working/Temp. Workngfor dispatch etc.)	Captive/non-captive	Obtained Environmental Clearance(Yes/No), IfYes Letter Nowith date ofgrant ofEC.	Location ofthe Mining lease (Latitude &Longitude)	Method of Mining(Open cast/ Underground)
						From	To	From	To						
1.	Stone	Ananda Namdev Karle	Chas, Tal - Nagar	Gou. Kha 4Ka./130/2020, 05/04/2024	1.20	05/04/2024	04/04/2029	-	-	05/04/2024	Working	Captive	25/08/2023	-	Open cast
2.	Stone	BalasahebArjun Pathare	Sarola Kasar, Tal - Nagar	No. Mining/ Kavi 4A/ 822/2016 dated 02/06/20	1	02/06/2016	01/06/2021	02/07/2026	01/07/2031	02/06/2016	Working	Captive	03/08/2022	-	Open cast

Sr. No.	Mineral	Name of the Lessee	Address &Contact No of	Mining lease Grant Order No.& date	Area of Mine	Period of Mining lease (Initial)		Period of Mining Lease (1st/2nd… renewal)		Date of Commencement of Mining	Status (Working/ Non-Working	Captive/non-captive	Obtained Environmental Clearance (Yes/No	Location of Mi	Method of Mining(
				16											
3.	Stone	Keshav Bhausaheb Kale	Sarola Kasar, Tal - Nagar	No. Mining/ Kavi 4A/1503 /2016 dated 13/10/2016	2.78	13/10/2016	10/10/2021	11/03/2026	18/06/2028	13/10/2016	Working	Captive	20/06/2022	-	Open cast
4.	Stone	Balasaheb genu Lotake	Khandala Tal - Nagar	No. Mining/ Kavi 4A/ 842/2016 dated 07/06/2016	0.96	07/06/2016	06/06/2021	02/07/2026	02/07/2031	07/06/2016	Working	Captive	16/07/2015	-	Open cast
5.	Stone	Dipak Ramchandra Dare	Dehere, Tal - Nagar	No. Mining/ Kavi 4A/ 167/2016 dated 22/02/2016	1	22/02/2016	21/02/2021	31/10/2025	24/03/2027	22/02/2016	Working	Captive	15/03/2022	-	Open cast
6.	Stone	Machhindra Lakshman Kotkar	Ghospuri Tal - Nagar	No. Mining/ Kavi 4A/ 201/2016 dated 26/02/2016	1.27	26/02/2016	25/02/2021	02/07/2031	01/07/2031	26/02/2016	Working	Captive	16/07/2015	-	Open cast
7.	Stone	Majid Akbar Khan	Kapurwadi Tal - Nagar	Mining/ Kavi 4A/ 366/2016 dated 23/03/2016	1.6	23/03/2016	22/03/2021	16/07/2026	17/10/2028	23/03/2016	Working	Captive	20/06/2022	-	Open cast

Sr. No.	Mineral	Name of the Lessee	Address &Contact No of	Mining lease Grant Order No.&	Area of Mine	Period of Mining lease (Initial)		Period of Mining Lease (1st/2nd… renewal)		Date of Commencement of	Status (Working/ Non-Working	Captive/non-captive	Obtained Environmental Clearance(Yes/No	Location of Mi	Method of Mining(
8.	Stone	Minanath Eknath Dusunge	Kapurwadi, Tal - nagar	19/11/2016	0.80	19/01/2016	18/11/2021	16/07/2026	17/10/2028	19/0/12016	Working	Captive	02/09/2022	-	Open cast
9.	Stone	Arifbhai Abbasbhai Vijapura	Gat No-358,Ghumari Tal - Karjat	No. Gaukh/ Kavi 4B/190/2023 dated 23/02/2023	2.50	23/02/2023	22/02/2028	-	-	23/02/2028	Working	Captive	01/06/2022	-	Open cast
10.	Stone	DattatrayaPanditrao Khaire, Santosh B Shete, Kishor B Jadhav And Raosaheb B Shete	Bhorwadi, Tal - Nagar	No. Gaukh/ Kavi 4B/460/2023 dated 16/05/2023	1	16/05/2023	15/05/2028	-	-	16/05/2023	Working	Captive	12/12/2022	-	Open cast
11.	Stone	Vijay Uttam Thokal and Dnyandeo Ravsaheb Kale	Ghospuri, Tal - nagar	No. Gaukh/ Kavi 4K/25/2024 dated 12/01/2024	1.20	12/01/2024	11/01/2029	-	-	12/01/2024	Working	Captive	21/07/2023		Open cast
12.	Stone	PopatraoKeruji Karle	Khandala, Tal - nagar	No. Gaukh/ Kavi 4k/675/2	1.24	15/12/2023	26/11/2028	-	-	15/12/2023	Working	Captive	18/05/2023		Open cast

Sr. No.	Mineral	Nameo ftheLessee	Address &Contact No.of	MiningleaseGrant Order No.& date	Area of Mining	Period ofMininglease(Initial)		Period of MiningLease(1st/2nd… renewal)		Date of Commencementof Mining	Status (Working/ Non-Working	Captive/non-captive	Obtained Environmental Clearance(Yes/No	Location ofthe Mi	Method of Mining(
				023 dated 13/12/2023											
13.	Stone	BALASAHEB NIVRUTTI KACHARE	Ranjangaon, Tal-Newasa	No. Gaukh/Kavi 4k/331/2024 dated 06/11/2024	1.97	06/11/2024	05/11/2029	-	-	06/11/2024	Working	Captive	22/02/2023	-	Open cast
14.	Stone	BalkrushnaBapuraoGhalme& RaychandBapurao Shelke	Tandli Dumala TAL-Shrigonda	No. Gaukh/Kavi 4B/356/2023 dated 06/04/2023	2	06/04/2023	05/04/2028	-	-	06/04/2023	Working	Captive	27/03/2022	-	Open cast
15.	Stone	Balasaheb Yashvant Arote	Jamgaon, Tal. Akole	No. Mining/Kavi 4A/335/2017 dated20/03/2017	2.97	20/03/2017	19/03/2022	17/06/2026	07/02/2028	20/03/2017	Working	Captive	20/06/2022	-	Open cast
16.	Stone	Dattatray Baburao Lalge	Patharwadi Tal. Parner	No. Gaukh/Kavi 4B/344/2023 dated 03/04/2023	2.01	03/04/2023	02/04/2028	-	-	03/04/2023	Working	Captive	No/SIA/MH/MIN/163127/2020, Dt.31/03/2021	-	Open cast
17.	Stone	Dipak D	Bhoyare Ganga	Gaukh/Kavi	1	06/07/	05/07/20	-	-	06/07/2022	Working	Captive	06/12/2021	-	Open cast

Sr. No.	Mineral	Nameo ftheLessee	Address &Contact No of	MiningleaseGrant Order No.& date	Area of Mine	Period ofMininglease(Initial)		Period of MiningLease(1st/2nd… renewal)		Date of Commencentof Mining	Status (Working/ Non-Worki	Captive/non-captive	Obtained Environmental Clearance(Yes/N	Location ofth eMi	Method of Mining(
		Lanke and Jaya D Lanke	rda, Tal. Parner	4B./715/ 2022 Dt. 06-07-2022		2022	27								
18.	Stone	Ambadas Haribhau Madke,	Ranjangaon Mashid Tal. Parner	No. Mining/ Kavi 4A/ 978/2015,date29/ 09/2015	2	29/ 09/ 2015	28/09/2020	16/07/2026	15/07/2031	29/09/2015	Working	Captive	16/07/2015	-	Open cast
19.	Stone	Ankush C Rokade & Manohar C Rokade	Raytale, Tal - Parner	Gou. Kha 4B./734/ 2022 dated 15-07-2022	1.19	15/ 07/ 2022	14/07/2027	-	-	15/07/2022	Working	Captive	01/06/2022	-	Open cast
20.	Stone	Nitin Balasaheb Takawane&Jalindar Eknath Shelke	Yadavwadi Tal. Parner	Gou. Kha 4K./129/ 2023 dated 15-04-2024	1.46	05/ 04/ 2024	04/03/2029	-	-	05/04/2024	Working	Captive	08/02/2024	-	Open cast
21.	Stone	Sandip Yashwant Gawali & Swapnil Yashwant Gawali	Yadavwadi, Tal. Parner	Gou. Kha 4B./1204 / 2022 dated 30-12-2022	2.01	30/ 12/ 2022	29/12/2027	-	-	30/12/2022	Working	Captive	25/07/2022	-	Open cast
22.	Stone	Nitin Harichandra	Kadus TAL-PARN	No. Gou. Kha 4B./620/	1.95	25/ 08/ 202	24/08/2028	-	-	25/08/2023	Working	Captive	18/05/2023	-	Open cast

Sr. No.	Mineral	NameoftheLessee	Address &Contact No.of	MiningleaseGrant Order No.& date	Area of Mining	Period ofMininglease(Initial)		Period of MiningLease(1st/2nd… renewal)		Date of Commencementof Mining	Status (Working/ Non-Working	Captive/non-captive	Obtained Environmental Clearance(Yes/No	Location ofth eMi	Method of Mining(
		Gaikwad Hemlata S Pawar Nikhil S Pawar And Pratik S Pawar	ER	2023 dated 25/08/2023		3									
23.	Stone	Aditya Shivaji Lagad	Rehkuri, Tal-karjat	No Gou. Kha 4B./260/2023 dated 21/03/2023	1	21/03/2023	20/03/2028	-	-	21/03/2023	Working	Captive	15/07/2022	-	Open cast
24.	Stone	Ajit Sunil Darekar	Walvad, Tal - Karjat	Gou. Kha 4B./858/2022 dated 25/08/2022	115/3	25/08/2022	24/08/2027	-	-	25/08/2022	Working	Captive	07/12/2021 SIA/MH/MIN/218400/2021	-	Open cast
25.	Stone	Lila Subhash Toradmal	Supe, Tal. Krjat	No. GouKha 4B./623/2023 dated 01/09/2023	1	01/09/2023	31/08/2028	-	-	01/0/9/2023	Working	Captive	10/09/2022	-	Open cast
26.	Stone	Shradha GulabraoTanpure	Walvad, Tal. Karjat	Gou.Kha 4B./857/2022dated 25/08/2022	1	25/08/2022	24/08/2027	-	-	25/08/2022	Working	Captive	18/06/2022 SIA/MH/MIN/230240/2022	-	Open cast

Sr. No.	Mineral	Name of the Lessee	Address &Contact No of	Mining lease Grant Order No.& date	Area of Mine	Period of Mining lease (Initial)		Period of Mining Lease (1st/2nd… renewal)		Date of Commencement of Mining	Status (Working/ Non-Working	Captive/non-captive	Obtained Environmental Clearance(Yes/No	Location of Mi	Method of Mining(
27.	Stone	Viraj Vishwas Maral & Vinod Vishwas Maral	Yeswadi, Tal. – Karjat	Gou.Kha 4K./30/ 2024 dated 19/01/2024	2	19/01/2024	18/01/2029	-	-	19/01/2024	Working	Captive	05/01/2024	-	Open cast
28.	Stone	Virchand Haridev Khatri	Supe, Tal. – Karjat-	Gou.Kha 4K./26/ 2024 dated 12/01/2024	2	12/01/2024	11/01/2029	-	-	12/01/2024	Working	Captive	18/06/2023	-	
29.	Stone	Swapnapurti Stone Crusher	Gadadhe Akhada, Tal. Rahuri	Gou.Kha 4K./390/ 2023 dated 26/06/2023	1	26/06/2023	18/06/2028	-	-	26/06/2023	Working	Captive	18/06/2023	-	Open cast
30.	Stone	karita Sangita Kunkulol & Vasudha Mundada	Nimbhere Tal. Rahuri	Gou.Kha 4K./607/ 2022 dated 15/07/2022	1	15/07/2022	14/07/2027	-	-	15/07/2022	Working	Captive	23/08/2021	-	Open cast
31.	Stone	Tulsabai Shankar Gite	Sonoshi, Tal. Sangamner	No.Min/ Desk 4D/133/ 2023 dated 28/03/2023	1	28/03/2023	27/09/2028	-	-	29/06/2022	Working	Captive	23/02/2023	-	Open cast
32.	Stone	Vikrant Somnath	Pimpale ,Tal.Sa	No.Min/ Desk 4D/72/2	1.80	19/03/202	11/03/20	-	-	-	Working	Captive	31/03/2022	-	Open cast

Sr. No.	Mineral	Nameo ftheLessee	Address &Contact No.of	MiningleaseGrant Order No.& date	Area of Mining	Period ofMininglease(Initial)		Period of MiningLease(1st/2nd… renewal)		Date of Commencementof Mining	Status (Working/ Non-Working	Captive/non-captive	ObtainedEnvironmental Clearance(Yes/No	Location ofth eMi	Method of Mining(
		Dhone	ngamner	024 dated 19/03/2024		4	29								
33.	Stone	Sakhahari Babanshermale	Paregaon Kh., Tal. Sangamner	No.Min/Desk 4D/428/2023 dated 01/11/2023	1	01/11/2023	31/10/2028	-	-	-	Working	Captive	No/SIA/MH/MIN/231415/2022, dated 01/06/2022	-	Open cast
34.	Stone	Raju HaribhauKankate	Karule, Tal. Sangamner	No.Min/Desk 4D/682/2022 dated 22/11/2022	1.16	22/11/2022	21/11/2027	-	-	-	Working	Captive	29/07/2022	-	Open cast
35.	Stone	Nitin BanudasAutade	Kauthe Kamaleshwar, Tal. Sangamner	No. Mining/Kavi 4D/178/2024 11/08/2024	2	11/08/2024	09/08/2029	-	-	11/08/2024	Working	Captive	04/06/2021	-	Open cast
36.0.	Stone	Kasam Dadamiya Mujawar	Pimple, Tal.Sangamner	No. Mining/Kavi 4A/823/2016 02/07/2016	4	02/07/2016	01/06/2021	11/12/2025	10/12/2030	02/07/2016	Working	Captive	16/07/2015	-	Open cast
37.	Stone	Santoshdagduthikekar	Belapur, Tal. - Akole	No. Mining/Kavi 4A/823/2016	3.40	29/08/2023	15/07/2026	16/06/2026	15/07/2031	-	Working	Captive	24/10/2025	-	Open cast

Sr. No.	Mineral	Name of the Lessee	Address & Contact No of	Mining lease Grant Order No. & date	Area of Mine	Period of Mining lease (Initial)		Period of Mining Lease (1st/2nd… renewal)		Date of Commencement of Mining	Status (Working/ Non-Working	Captive/non-captive	Obtained Environmental Clearance (Yes/No	Location of Mi	Method of Mining (
				02/07/2016											
38.	Stone	Priyanka Kishor yadav	Nandurpathar, Tal. - Parner	No. Gaukh/ Kavi 4K/71/2025 03/04/2025	1.20	03/04/2025	02/04/2030	-	-	03/04/2025	Working	Captive	21/07/2023	-	Open cast
39.	Stone	Bhausaheb Vitthal Ambade	Ranjangoan, Tal. Newasa	No. Gaukh/ Kavi 4K/70/2025 03/04/2025	3.98	03/04/2025	02/04/2030	-	-	03/04/2025	Working	Captive	08/02/2024	-	Open cast
40.	Stone	Macchindrapagire	KapurwadiTal.Nagar	No. Gaukh/ Kavi 4A/1060/2017 18/11/2017	0.6	दि. 18/11/2017	17/11/2022	13/05/2025	12/05/2030	18/11/2017	Working	Captive	16/07/2015	-	Open cast
41.	Stone	Prasad gorkshanath beard &Balasaheb Arjun Pathare	Mandvetal – nagar	No. Gaukh/ Kavi 4K/141/2019 Date - 08/09/2019	4	दि. 08/02/2019	07/02/2024	02/07/2026	01/07/2031	08/02/2019	Working	Captive	03/08/2022	-	Open cast
42.	Stone	Suresh Dyandevwarule	PokhardiAhilyanagar	No. Gaukh/ Kavi 4B/07/2025 Date - 13/05/20	0.65	13/05/2025	12/05/2030	-	-	13/05/2025	Working	Captive	16/07/2025	-	Open cast

Sr. No.	Mineral	Name of the Lessee	Address & Contact No of	Mining lease Grant Order No. & date	Area of Mine	Period of Mining lease (Initial)		Period of Mining Lease (1st/2nd… renewal)		Date of Commencement of Mining	Status (Working/ Non-Working	Captive/non-captive	Obtained Environmental Clearance (Yes/No	Location of Mi	Method of Mining (
				25											
43.	Stone	Padmavati Stone crusher from Shri. Adityabasaheb Ghodke	Ghospuri Ahilyanagar	No. Gaukh/ Kavi 4K/182/ 2026 Date - 09/09/2026	2.40	09/09/2026	09/09/2031	-	-	10/09/2025	Working	Captive	11/08/2026		Open cast
44.	Stone	Shri. Suresh Bapurao saykar and Shri. Samir amrutlal doshi	Yeswadi karjat	No. Gaukh/ Kavi 4K/36/2025 Date - 30/05/2025	3.56	30/05/2025	29/05/2030	-	-	29/05/2030	Working	Captive	09/10/2026		Open cast
45.	Stone	Ketan devidas kharat	Rehekuri karjat	No. Gaukh/ Kavi 4K/106/ 2026 Date - 22/04/2026	1.20	23/04/2026	22/04/2031	-	-	23/04/2026	Working	Captive	01/12/2025		Open cast
46.	Stone	Sanjay dharamchand mandge	Valvad karjat	No. Gaukh/ Kavi 4K/125/ 2026 Date - 26/05/2026	2.00	26/05/2026	26/05/2031	-	-	26/05/2026	Working	Captive	05/12/2025		Open cast
47.	Ston	Santosh	Rehekuri	No.	3.4	09/	09/0	-	-	09/09/2	Worki	Capti	10/05/20		Open

Sr. No.	Mineral	Nameo ftheLessee	Address &Contact No.of	MiningleaseGrant Order No.& date	Area of Mine	Period ofMininglease(Initial)		Period of MiningLease(1st/2nd… renewal)		Date of Commencentof Mining	Status (Working/ Non-Working	Captive/non-captive	ObtainedEnvironmental Clearance(Yes/No	Location ofth eMine	Method of Mining(
	e	Dyandev jadhav	rikarjat	Gaukh/ Kavi 4K/185/ 2026 Date - 09/09/2026	0	09/ 2026	9/2031			026	ng	ve	26		cast
48.	Stone	Mayur Naamdev auti and ashokpandurang bhosle	Astagaonparner	No. Gaukh/ Kavi 4k/173/2025 Date - 13/11/2025	2	13/ 11/ 2025	26/05/2026	-	-	13/11/2025	Working	Captive	08/10/2025		Open cast
49.	Stone	Vaishnavi stone industries	Sideshwarwadiparner	No. Gaukh/ Kavi 4K/170/ 2025 Date - 03/11/2025	1.80	04/ 11/ 2025	02/11/2030	-	-	04/11/2025	Working	Captive	03/10/2025		Open cast
50.	Stone	Sudershanpopatnarsale and datattrayshripadnimse	Goregaon parner	No. Gaukh/ Kavi 4K/42/2026 Date - 24/02/2026	1.59	24/ 02/ 2026	23/02/2031	-	-	24/02/2026	Working	Captive	05/12/2025		Open cast
51.	Stone	Mangal murti stone crusher from sardar pathan	Astagaonparner	No. Gaukh/ Kavi 4k/41/2026 Date - 24/02/2026	4.08	24/ 02/ 2026	23/02/2031	-	-	24/02/2026	Working	Captive	16/07/2025		Open cast

Sr. No.	Mineral	Name of the Lessee	Address &Contact No of	Mining lease Grant Order No.& date	Area of Mine	Period of Mining lease (Initial)		Period of Mining Lease (1st/2nd… renewal)		Date of Commencement of Mining	Status (Working/ Non-Working	Captive/non-captive	Obtained Environmental Clearance (Yes/No	Location of Mi	Method of Mining(
52.	Stone	Nitin balasaheb takawane and jalindar eknath shelke	Panoli pamer	No. Gaukh/ Kavi 4B/187/2026 Date - 10/09/2026	2	10/09/2026	09/09/2031	-	-	10/09/2026	Working	Captive	23/02/2026		Open cast
53.	Stone	Bhausaheb Vitthal ambade	Ranjangaon Newasa	No. Gaukh/ Kavi 4K/70/2025 Date - 30/04/2025	3.98	03/04/2025	02/04/2030	-	-	03/04/2025	Working	Captive	08/02/2024		Open cast
54.	Stone	Prasad Nivrutti kale	Nagapur newasa	No. Gaukh/ Kavi 4B/88/2025 Date - 26/12/2025	1.00	27/12/2025	26/12/2030	-	-	27/12/2025	Working	Captive	23/08/2021		Open cast
55.	Stone	Bhausaheb sopanso nawane	Morya chincho renewasa	No. Gaukh/ Kavi 4K/1630/2016 Date - 15/12/2016	1.00	15/12/2016	14/12/2021	19/01/2026	12/01/2031	15/12/2026	Working	Captive	08/07/2016		Open cast
56.	Stone	Bapusaheb Dattatray karle	Padali Jamkhed	No. Gaukh/ Kavi 4K/74/2025 Date - 25/04/20	2.11	25/04/2025	24/04/2030	-	-	24/04/2030	Working	Captive	25/08/2023		Open cast

Sr. No.	Mineral	Nameo ftheLessee	Address &Contact No.of	MiningleaseGrant Order No.& date	Area of Mine	Period ofMininglease(Initial)		Period of MiningLease(1st/2nd… renewal)		Date of Commencementof Mining	Status (Working/ Non-Working	Captive/non-captive	Obtained Environmental Clearance(Yes/No	Location ofth eMi	Method of Mining(
				25											
57.	Stone	Keshav Bhausaheb Kale	Waladgaon shriram pur	No. Gaukh/ Kavi 4K/1504 /2016 Date - 19/10/2026	2.36	13/10/2016	12/10/2021	11/03/2026	25/07/2028	13/10/2016	Working	Captive	16/07/2025		Open cast
58.	Stone	Jyotidilipmahale	Waladgaonshrirampur	No. Gaukh/ Kavi 4B/192/2026 Date - 28/09/2026	2.33	29/09/2026	28/09/2031	-	-	29/09/2026	Working	Captive	05/12/2025		Open cast
59.	Stone	Kasamdadamujawar	Pimplesangamner	No. Gaukh/ Kavi 4K/823/ 2016 Date - 02/06/2016	2.15	02/06/2016	01/06/2021	30/09/2025	29/09/2030	27/07/2020	Working	Captive	16/07/2015		Open cast
60.	Stone	Vishal Bhikaji Bhusal	Pimplesangamner	No. Gaukh/ Kavi 4D/53/2025 Date - 03/06/2025	3.00	03/06/2025	02/06/2030	-	-	03/06/2025	Working	Captive	09/10/2023		Open cast
61.	Stone	Anant Shankarkad	DolasneSangamner	No. Gaukh/ Kavi 4D/120/	3.50	14/11/2025	08/09/2029	-	-	28/09/2029	Working	Captive	21/07/2025		Open cast

Sr. No.	Mineral	Nameo ftheLessee	Address &Contact No.of	MiningleaseGrant Order No.& date	Area of Mining	Period ofMininglease(Initial)		Period of MiningLease(1st/2nd… renewal)		Date of Commencement of Mining	Status (Working/ Non-Working	Captive/non-captive	Obtained Environmental Clearance(Yes/No	Location ofth eMi	Method of Mining(
				2025 Date - 13/11/2025											
62.	Stone	Damodar Dattu done	Pimple Sangamner	No. Gaukh/ Kavi 4B/22/2026 Date - 06/02/2026	1.00	06/02/2026	04/02/2031	-	-	06/02/2026	Working	Captive	03/10/2025		Open cast
63.	Stone	Vaishnav rajkumarMurtadak	Pimple sangamner	No. Gaukh/ Kavi 4K/174/2018 Date - 01/02/2018	1.62	01/02/2018	31/03/2023	25/03/2026	23/03/2031	01/02/2018	Working	Captive	02/11/2017		Open cast

DETAILS OF ROYALTY OR REVENUE RECEIVED IN LAST THREE YEARS

The royalty rates vary on the type of mineral exploited. The rates for royalty for different minor mineral are tabulated below.

Table 47: The rates for royalty for different minor mineral

Sr.	Type of Mineral	Royalty rate per Brass (Rs.)
1	Black stone	600/-
2	Murrum	600/-
3	Ordinary Soil	240/-

4	Sand	As per Upset price comes through Auction Process

The Revenue & Forest Department, Government of Maharashtra, had set the revenue collection targets for entire Maharashtra State and accordingly it was distributed to every district for every financial year wise. Accordingly, every district tries to achieve the targets given by Revenue Department. The details of the target set by Revenue Department and against which revenue collected in Ahilyanagar District is tabulated below.

Table 48:Details of revenue or royalty collected from 2023-2024 to 2025-26

Sr.	Financial Year	Target given by State Revenue Department (In Lac.)	Revenue Collected (In Lac.)	Percent Revenue Collected
1.	2023-24	12600.00	15147.46	120.22
2.	2024-25	17500.00	13762.59	78.64
3.	2025-26	24000	15393.51	64.14
4.	2026-27	18000	3890.08	21.06

DETAILS OF PRODUCTION OF MINOR MINERALS IN LAST THREE YEARS

Mineral produced in last three years

Table 49: Details of the Production of Minor Mineral in last 3 years

		For the Financial Year 2023-24	For the Financial Year 2024-25	For the Financial Year 2025-26
Name of Minerals		**Production (Brass)**	**Production (Brass)**	**Production (Brass)**
1	Gitty/Building Stone	1214506	877883	155440
2	Murum	1221200	1409101	1554391
3	Stone Bricks/ Bricks earth	215016	16954	0

4	Ordinary Clay	0	0	4612
5	Ordinary Sand	89318	20269	152702
	Total	**2740040**	**2324207**	**1867145**

MINERAL MAP OF THE DISTRICT

There are no major mineral deposits in the district. There is abundant quantity of stone, murrum and soil deposits available. They are using for construction of road, bridges and buildings in district.

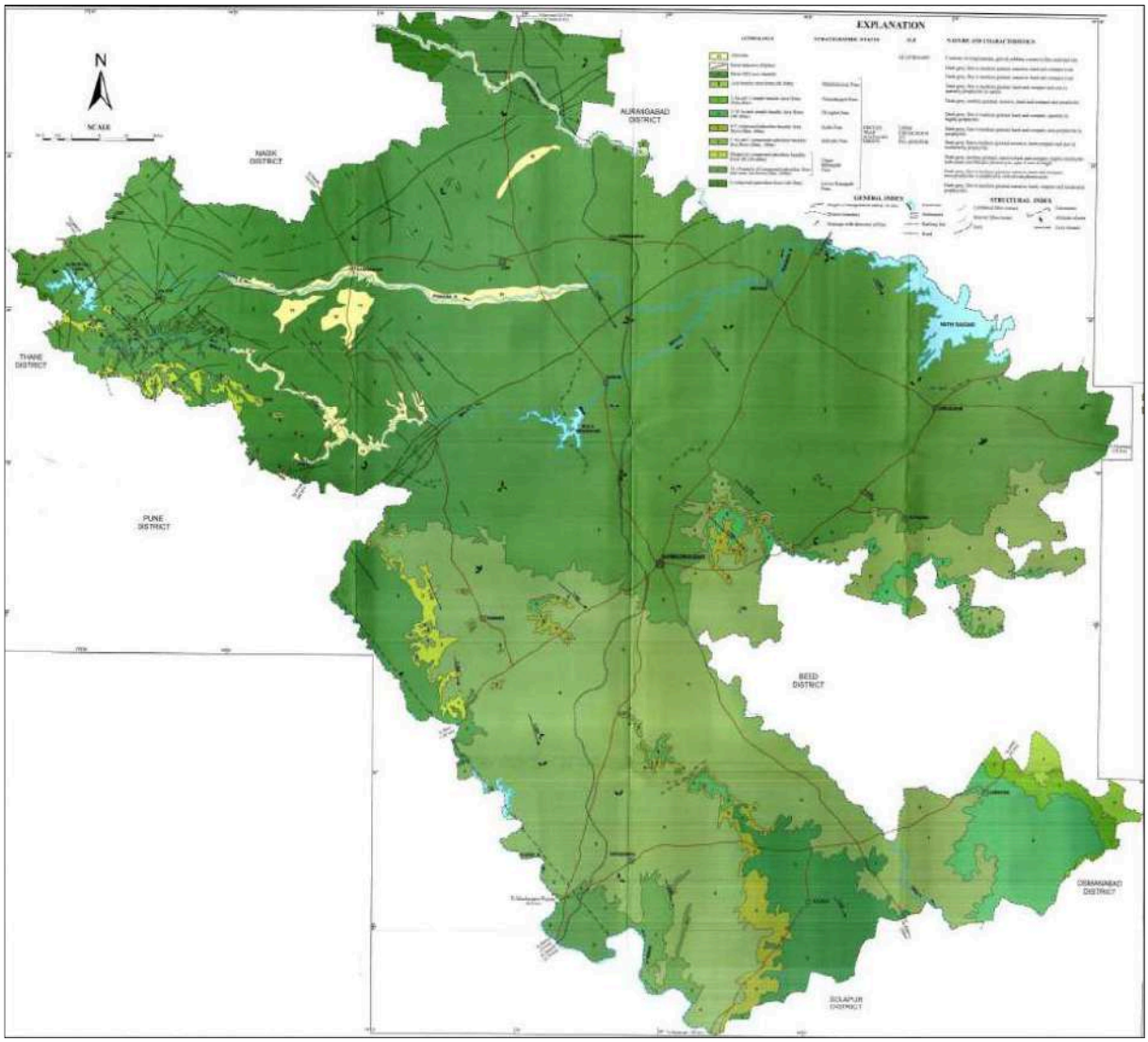

Figure 25: Mineral Map

LIST OF LETTER OF INTENT (LOI) HOLDERS IN DISTRICT

Table 50:List of Letter of Intent holders in District

Sr.	Name Of Applicant	Village	Taluka	Gat No	Area (Ha)	LOI	Yearly Production nccording to Mining Plan
1	2	3	4	5	6	7	8
1	Shri. Vishal Preamnand Ujagare	Ralegan	Ahilya nagar	295	3.15	No.Mining/Desk.4 K/01/2026, Date-05/01/2026	
2	Nira narmada infratech and Engineering for prof. Sheetal Nakul Kadu	Gadadhe Akhada	Rahuri	81/1/1/ 1/1/3 and 81/1/1/ 1/1/3	2.73	No.Mining/Desk.4 K/02/2026, Date-05/01/2026	
3	Shri. Kailas Baghwan Darade and Other 01	Palvewa di	Pathard i	21	2.16	No.Mining/Desk.4 K/03/2026, Date-05/01/2026	
4	Shri Mirabai Baghwan Darade	Kharvan di	Pathard i	233/3	2	No.Mining/Desk.4 K/04/2026, Date-05/01/2026	
5	Shrim. Depika deepak dare	Dehre	Ahilya nagar	279/1/1	2.97	No.Mining/Desk.4 K/05/2026, Date-10/03/2026	
6	Shri. Nitin Balasaheb takavne and other 01	Panoli	Parner	105	2.32	No.Mining/Desk.4 K/06/2026, Date-05/01/2026	
7	Shri. Uday Bhausaheb munde	Sasewadi	Ahilya nagar	328	3.08	No.Mining/Desk.4 K/07/2026, Date-10/03/2026	
8	Shri. Uday Bhausaheb munde	Ladjalga on	Shevga on	209	3.86	No.Mining/Desk.4 K/08/2026, Date-05/01/2026	

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Sr.	Name Of Applicant	Village	Taluka	Gat No	Area (Ha)	LOI	Yearly Production nccording to Mining Plan
9	Shri. Uday Bhausaheb munde	Hakewadi	Pathardi	30	4.34	No.Mining/Desk.4K/09/2026, Date-05/01/2026	
10	Sai Stone Crusher And sand manufacturing to Shri. Santosh sopanrao group and other 01.	Gatewadi	Parner	137	2	No.Mining/Desk.4K/10/2026, Date-10/03/2026	
11	hindvi stone industries From Shri Bhanudas parshuramsasane	Dehre	Ahilyanagar	262/B/2/2 and 262/B/2B/3	2.03	No.Mining/Desk.4K/11/2026, Date-05/01/2026	
12	Shri Padmavati Stone Crusher – Mr. Aditya Abasaheb Ghodke	Ghospuri	Ahilyanagar	568	2.4	No.Mining/Desk.4K/12/2026, Date-05/01/2026	
13	Shri Bhausaheb Vitthal Ambade	Ranjangaon	Nevasa	266 and 265/2/B	2.2	No.Mining/Desk.4K/13/2026, Date-05/01/2026	
14	Mr. Dhananjay Keru Thikekar and one other.	Belapur	Akole	268	4.13	No.Mining/Desk.4K/14/2026, Date-05/01/2026	
15	Mr. Vikas Abasaheb Lotke and 12 others	Khandala	Ahilyanagar	367	10.1	No.Mining/Desk.4K/15/2026, Date-10/03/2026	
16	Smt. Swati Mohan Supekar and one other	Patharwadi	Parner	961	2.22	No.Mining/Desk.4K/16/2026, Date-05/01/2026	
17	M/s. Mahalaxmi Vishwa Pvt. Ltd., Mr. Machhindra Bhimrao Davane.	Yesavdi	Karjat	118/1	2.81	No.Mining/Desk.4K/17/2026, Date-05/01/2026	
18	Mr. Santosh	Belapur	Akole	267	4.13	No.Mining/Desk.4	

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Sr.	Name Of Applicant	Village	Taluka	Gat No	Area (Ha)	LOI	Yearly Production nccording to Mining Plan
	DagduThikekar					K/18/2026, Date-05/01/2026	
19	M/s Rajnandini Stone Crusher LLP: Shri Pramod Dnyandev Nimse and one other.	Mandve	Ahilya nagar	362	2.64	No.Mining/Desk.4 K/19/2026, Date-05/01/2026	
20	Mr. Ganesh Kisan Fatangare	Pokhari Baleshwar	Sangamner	178	2.68	No.Mining/Desk.4 K/20/2026, Date-05/01/2026	
21	Shri Appa Anna Dhotre and 5 others	Morayachinchore	Nevasa	38	3.54	No.Mining/Desk.4 K/21/2026, Date-05/01/2026	
22	Mr. Devin Ramchandra Kable and 5 others	Khambe	Sangamner	22/1.	4.15	No.Mining/Desk.4 K/22/2026, Date-05/01/2026	
23	Mr. Ketan Devidas Kharat	Rehekuri	Karjat	132/2	132/2	No.Mining/Desk.4 K/23/2026, Date-05/01/2026	
24	Mrs. Hina Nazimoddin Kazi	Padali	Jamkhed	435/1	2.92	No.Mining/Desk.4 K/24/2026, Date-05/01/2026	
25	Mr. Dnyaneshwar Asaram More	Vambori	Rahuri	473/2	2.72	No.Mining/Desk.4 K/25/2026, Date-05/01/2026	
26	Mr. Shrikant TrimbakGomase and one other	Pimple	Sangamner	326/2/6	2.1	No.Mining/Desk.4 K/26/2026, Date-05/01/2026	
27	Mr. Dnyandev Bajirao Kavade	Baburdi Bend	Ahilya nagar	38	2.72	No.Mining/Desk.4 K/27/2026, Date-05/01/2026	
28	Mr. Nitin Nivrutti Wakale	Jalalpur	Karjat	409/1/B	409/1/B	No.Mining/Desk.4 K/28/2026, Date-	

Sr.	Name Of Applicant	Village	Taluka	Gat No	Area (Ha)	LOI	Yearly Production nccording to Mining Plan
						05/01/2026	
29	Mr. Uday Bhausaheb Munde	Madad Gaon	Ahilya nagar	285	3.05	No.Mining/Desk.4 K/29/2026, Date-23/01/2026	
30	Mr. Parasram Parvati Bhagat	Kapurwa di	Ahilya nagar	91/B	5.86	No.Mining/Desk.4 K/30/2026, Date-23/01/2026	
31	Shri Baban Vishwanath Dhomse and 2 others	Shahjapu r	Koparg aon	88/1	2.76	No.Mining/Desk.4 K/31/2026, Date-23/01/2026	
32	Shri Bhausaheb Shankar Nangare	Supe	Karjat	229/1 and 229/2	2.07	No.Mining/Desk.4 K/32/2026, Date-23/01/2026	
33	Shri Satyajit BalasahebArote	Kalamb	Akole	8	2.07	No.Mining/Desk.4 K/33/2026, Date-17/02/2026	
34	Shri Dhanraj BalasahebArote	Kalamb	Akole	7	2.07	No.Mining/Desk.4 K/34/2026, Date-17/02/2026	
35	Shri Balasaheb Yashwant Arote	Jamgaon	Akole	52/1	2.07	No.Mining/Desk.4 K/35/2026, Date-17/02/2026	
36	Shri Balasaheb Janardhan Murdare	Nandur Nimba Daitya	Pathard i	273	2.07	No.Mining/Desk.4 K/36/2026, Date-23/01/2026	
37	Shri Keshav Bhausaheb Kale	Sarola Kasar	Ahilya nagar	342 and 344	3.58	No.Mining/Desk.4 K/37/2026, Date-23/01/2026	
38	Shri Gauri Keshav Kale	Sarola Kasar	Ahilya nagar	306	6.87	No.Mining/Desk.4 K/38/2026, Date-23/01/2026	

District Survey Report for Ahilyanagar

Sr.	Name Of Applicant	Village	Taluka	Gat No	Area (Ha)	LOI	Yearly Production nccording to Mining Plan
39	Shri Chetan Balasaheb Gund	Katalvedha	Parner	373	2	No.Mining/Desk.4K/39/2026, Date-27/01/2026	
40	Shri Govardhan Balasaheb Gund	Katalvedha	Parner	373	2	No.Mining/Desk.4K/40/2026, Date-27/01/2026	
41	Smt. Shakuntala Pandit Vitkar	Jamkhed	Jamkhed	509/2	2.8	No.Mining/Desk.4K/41/2026, Date-17/02/2026	
42	Shri Varun Vaibhav Karpe and two others (for M/s Rudrashakti Infra)	Paregaon Khurd	Sangamner	215/1/2	3.07	No.Mining/Desk.4K/42/2026, Date-17/02/2026	
43	Shri Subhash Dada Kale and Shri Sampat Dada Kale	HivareZhare	Ahilyanagar	182	2.54	No.Mining/Desk.4K/43/2026, Date-17/02/2026	
44	Shri Anil Ashok Kharade	Valvad	Karjat	124	2	No.Mining/Desk.4K/44/2026, Date-17/02/2026	
45	M/s D.C.S. Limited	Kurund	Parner	229	2	No.Mining/Desk.4K/45/2026, Date-15/04/2026	
46	Shri. Shrikant Trimbakgomase& one	Pimple	Sangamner	326/2/6	1.20	No.Mining/Desk.4B/127/2026, Date-09/06/2026	
47	Shri. Soma Vishnu lalge	Pimprijalasen	Parner	1134	1.09	No.Mining/Desk.4B/132/2026, Date 12/06/2026	
48	Shri. Amol Vitthal Bengde& Other	Chinchale	Rahuri	163/1	1.00	No.Mining/Desk.4B/137/2026, Date 22/06/2026	

District Survey Report for Ahilyanagar

Sr.	Name Of Applicant	Village	Taluka	Gat No	Area (Ha)	LOI	Yearly Production nccording to Mining Plan
49	M/s Sona Stone &Agrigate(C/O) Mozibyasin shaikh	Goregaon	Parner	1666	2.00	No.Mining/Desk.4 B/144/2026, Date 02/07/2026	
50	Shri. Dattatray Jayram Rokde &other 2	Raitale	Parner	407/1,407/2 408/3/2	3.18	No.Mining/Desk.4 B/145/2026, Date 03/07/2026	
51	M/s Sona Stone &Agrigate(C/O) Mozibyasin shaikh	Goregaon	Parner	1666	2.00	No.Mining/Desk.4 B/160/2026, Date 27/07/2026	
52	Shri. Karan Prakash Patil	Rui	Rahata	538/2/1	4.00	No.Mining/Desk.4 B/171/2026, Date 18/08/2026	
53	Shri. Prajwal Somnath Godse	Talegaon	Sangamner	302/5,302/6	1.42	No.Mining/Desk.4 B/171/2026, Date 13/08/2026	
54	Shri. Ganesh Ramchandra Lamkhade	Babhulwade	Parner	443	2.40	No.Mining/Desk.4 B/173/2026, Date 31/08/2026	
55	Shri. Macchindra Bhimrao Davane	Yeswadi	Karjat	118/1	2.82	No.Mining/Desk.4 C/05/2026, Date 22/01/2026	
56	Shri. Santosh Babaji Dhumal	Rehekuri	Karjat	118/1	1.92	No.Mining/Desk.4 C/16/2026, Date 30/01/2026	
57	Pandit Hanumant Vitkar	Jamkhed	Jamkhed	509/2	2.00	No.Mining/Desk.4 C/18/2026, Date 02/02/2026	
58	Ramesh Shivaji Yeole and other 01	Jamgoan	Parner	356	4.41	No.Mining/Desk.4 C/52/2026, Date	

Sr.	Name Of Applicant	Village	Taluka	Gat No	Area (Ha)	LOI	Yearly Production nccording to Mining Plan
						27/02/2026	
59	Sunil Gangadhar Aaher	Khandarmalwadi	Sangmner	805/2/3	1.00	No.Mining/Desk.4C/88/2026, Date 10/03/2026	
60	M/s DCS Limited Parner	Kurund	Parner	228	2.00	No.Mining/Desk.4C/98/2026, Date 25/03/2026	
61	Kaveri Vishnu Gaikwad	Handalwadi	Pathardi	101	2.00	No.Mining/Desk.4C/103/2026, Date 06/04/2026	
62	Vikas Bhagwant Adhav	Arangoandumala	Shrigonda	387	4.00	No.Mining/Desk.4C/108/2026, Date 17/04/2026	
63	Dipika Dipak Dare	Dehre	Ahilyanagar	279/1/1	2.97	No.Mining/Desk.4C/188/2026, Date 11/09/2026	
64	Shubham Chandrakant Kauthale	Devdaithan	Shrigonda	873/1/1	1.00	No.Mining/Desk.4C/197/2026, Date 12/10/2026	

TOTAL MINERALS RESERVES AVAILABLE IN THE DISTRICT

Table 51:Total Minerals Available in District

Mineral	Mineral Reserves in Million Tonnes
Sand	11.48 (Approx.)
Stone	89.48 (Approx.)

QUALITY/ GRADE OF MINERAL AVAILABLE IN DISTRICT

The quality of stone available in the Ahilyanagar district is building-grade stone, confirming IS standards IS: 7779 (Part II/Sec 3) of 1979.

USE OF MINERAL

Basalt stone and weathered basalt (Murrum) is used for building, construction works, road works as an aggregate

DEMAND AND SUPPLY OF THE MINERAL IN LAST THREE YEARS

Basalt stone with variable sizes from 6mm, 12mm, 20mm, 40mm, 60mm, 100mm, Grit, are used for construction and road works as an aggregate material. Ahilyanagar district has remarkable market requirement of building stone material for construction activity. This demand is perpetual market requirements depending on growth of infrastructural index of the area, state and country. Requirement of the stone material may also vary with the quality of the stone material which consist of strength, durability, hardness, toughness, specific gravity, porosity etc.

Table 52: Demand quantity of the mineral in the last three year

Sr.	District	Particulars	2023-24(Quantity in Brass)	2024-25(Quantity in Brass)	2025-2026(Quantity in Brass)
1.	Ahmednagar	Public Works Department (PWD)	116400	116400	128040
2.		Irrigation Department	114000	114000	125400
3.		Domestic Requirement including Govt. Contractors, Local Lease/ Quarry Operators	144000	144000	165000
4.		NHAI/Central Road Fund	146400	146400	161000

Sr.	District	Particulars	2023-24(Quantity in Brass)	2024-25(Quantity in Brass)	2025-2026(Quantity in Brass)
5.		Railway	40000	40000	45000
6.		All Nagarpalika	25000	25000	30000
7.		Gharkul		40583	48000
Total			**560800**	**560800**	**702440**

Table 53: Supply quantity of the mineral in the last three years

Sr.	District	Particulars	2023-24(Quantity in Brass)	2024-25(Quantity in Brass)	2026-26(Quantity in Brass)
1.	Ahmednagar	Public Works Department (PWD)	9500	9500	119000
2.		Irrigation Department	2550	2550	90000
3.		Domestic Requirement including Govt. Contractors, Local Lease/ Quarry Operators	130457	130457	161000
4.		NHAI/Central Road Fund	53144	53144	60000
5.		Railway	5000	5000	100000
6.		All Nagarpalika	13500	13500	11000
7.		Gharkul	92250	92250	41000
Total			**306401**	**306401**	**582000**

MINING LEASES MARKED ON MAP

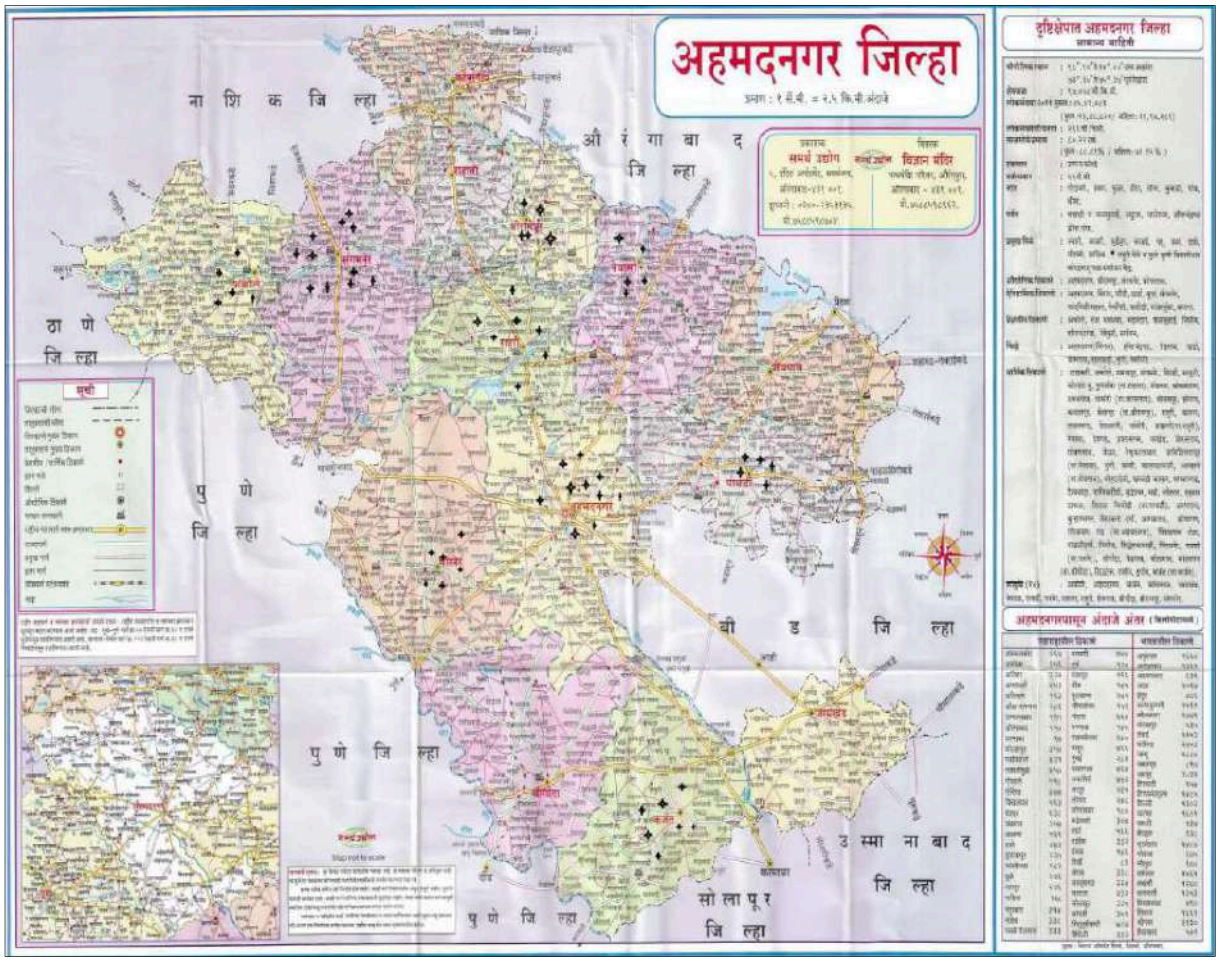

Figure 26:Mining leases marked on Map

DETAILS OF AREA OF WHERE THERE IS A CLUSTER OF MINING LEASES VIZ. NO. OF MINING DETAILS

There is not any cluster formation.

DETAILS OF ECO-SENSITIVE AREA, IF ANY, IN THE DISTRICT;

Jaikawadi Bird Sanctuary Eco-Sensitive Zone

The Jaikawadi Bird Sanctuary Eco-Sensitive Zone (ESZ) is located in the Aurangabad and Ahmednagar districts of Maharashtra, encompassing an area of 341.05 square kilometres. Situated approximately at coordinates 22°32′ N and 70°08′ E, the sanctuary forms an essential part of the Nathsagar Reservoir, created by the Jayakwadi Dam on the Godavari River. This sanctuary plays a crucial role in conserving a unique wetland ecosystem, serving as a habitat for a wide variety of flora and fauna. It hosts over 234 species of birds, including both

resident and migratory species such as flamingos, bar-headed geese, storks, and herons. The aquatic environment also supports 67 species of fish, contributing to the biodiversity and ecological balance of the region. Additionally, the area is rich in plant diversity with 215 documented taxa, including 17 angiosperms (flowering plants) and 2 pteridophytes (ferns and related species).

The designated Eco-Sensitive Zone surrounding the sanctuary ranges from 0 to 500 meters from its boundary. This buffer zone was notified by the Ministry of Environment, Forest and Climate Change (MoEF&CC) under the Environment (Protection) Act, 1986, with the dual purpose of conserving this critical habitat and regulating activities that may pose a threat to its ecological integrity. Within the ESZ, certain activities such as industrial development, mining, and unregulated tourism are either prohibited or strictly regulated to prevent environmental degradation. Traditional livelihood practices and eco-friendly development are encouraged to maintain a sustainable balance between conservation and human presence. The notification aims to ensure long-term protection of the sanctuary's biodiversity and to uphold the ecological functions of this significant wetland region.

KalsubaiHarishchandragad Wildlife Sanctuary Eco-Sensitive Zone

The Kalsubai Harishchandragad Wildlife Sanctuary Eco-Sensitive Zone (ESZ) is situated in the Ahmednagar district of Maharashtra, covering an expansive area of 361.71 square kilometres. the Kalsubai Harishchandragad Wildlife Sanctuary located in Akole and Rajur Tehsils of Ahmad nagar District and shares boundary with Igatpuri Taluka of Nashik District, Shahapur and Murbad Talukas of Thane District and Junnar Taluka of Pune District in the State of Maharashtra. This sanctuary is nestled in the Western Ghats, a globally recognized biodiversity hotspot, and is rich in both floral and faunal diversity. The sanctuary is primarily characterized by Southern Tropical Semi-Evergreen Forests, which host a variety of tree species such as Teak, Ain, Hirda, Beheda, Awala, and several others, contributing to a dense and diverse canopy.

the Sanctuary and the adjoining area is home to wildlife comprising Leopard Giant Squirrel (Ratufa indica) Wild Boar (Sus scrofa), Blacknaped Hare (Lepus nigricollis), Wild Cat (Felis chaus), Hyaena (Hyaena hena), Bonnet Macaque (Macaca radiate) and with about 130 different avi- fauna including Peacock, Purple Heron (Ardea purpurea), Kites such as the Black-Shouldered Kite (Elanus caeruleus), Black Kite (Milvus migrans), Brahminy Kite (Haliastur Indus) Jungle Fowl such as the Red Junglefowl (Gallus gallus), and Grey Junglefowl (Gallus sonneratii), Koel (Eudynamysscolopacea), Spotted Owlet (Athene brama), Kingfishers such as Oriented Dwarf Kingfisher (Ceyx erithacus), Common Kingfisher (Alcedo atthis), Storkbilled Kingfisher (Halcyon capensis), White Throated Kingfisher (Halcyon smyrnensis), Black capped Kingfisher (Halcyon pileat), Pied Kingfisher (Ceryle rudis), etcThe wildlife in the sanctuary includes Leopards, Giant Squirrels, Wild Boars, and Black-naped Hares, among others.

The area is also home to a wide variety of bird species, enhancing the sanctuary's role as a key habitat for both floraand fauna. The sanctuary supports 24 villages primarily involved in agriculture, making it essential to balance human activities with conservation efforts in the surrounding area.

The Eco-Sensitive Zone extends from 1.6 to 4.0 kilometers around the sanctuary's boundary. The purpose of this ESZ notification is to safeguard the rich biodiversity of the Western Ghats, while regulating development activities in the surrounding areas. By implementing strict regulations, the ESZ aims to protect the sanctuary from industrial activities, urban sprawl, and other potentially harmful developments. The notification ensures that the

surrounding regions maintain their ecological balance, fostering sustainable coexistence between human communities and wildlife.

Great Indian Bustard Wildlife Sanctuary

The Great Indian Bustard Wildlife Sanctuary Eco-Sensitive Zone (ESZ) is located at the junction of Ahmednagar and Solapur districts in Maharashtra, covering an area of 366.72 square kilometres. This sanctuary is home to the critically endangered Great Indian Bustard, along with other key species such as the Blackbuck, Common Langur, Indian Fox, and Golden Jackal. The sanctuary's rich biodiversity makes it a crucial site for conservation efforts, particularly for endangered species that depend on the vast, open landscapes of this region.

The sanctuary also supports a wide variety of plant species, including several medicinal and native plants, which contribute to the ecological balance of the area. The Eco-Sensitive Zone (ESZ) extends from 0 to 400 meters around the sanctuary's boundary, designed to protect this delicate habitat.

The purpose of this ESZ notification is twofold: first, to protect the habitat of the Great Indian Bustard and other wildlife species that rely on this sanctuary for survival, and second, to regulate industrial and developmental activities in the surrounding areas. By establishing this ESZ, the government aims to mitigate the negative impacts of human encroachment, including agriculture, construction, and industrialization, which could threaten the sanctuary's biodiversity. The regulation of these activities ensures that the sanctuary remains a safe haven for the wildlife it supports, while maintaining the ecological integrity of the region

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 Open cast manual method. The air borne particulate matter generated by mining and handling operations, transportation and screening of stone chips at cm sheris the main air pollutant, The emissions of Sulphur dioxide ([12]S02) s Oxides of Nitrogen ([13]NOX) contributed by tractor trolley. As the number of trips of tractor trolley is less, the pollutant levels are well within prescribed limits. P District Survey Report is prepared in accordance with Para7(iii)(11)of S.O.3611(E) dated 25th July 2018 of Ministry of Environment, Forestand Climate Change Notification, New Delhi reduction of impacts on air environment has been carried out taking in to consideration proposed production and net increase in emissions. Air pollution sources in the operating mine are classified into three categories

A. Pointsources

B. Areasources

C. Linesources

[12] SO_2- Sulfur Dioxide

[13] NOX- Oxides of Nitrogen

Drilling & blasting and crusher operations of the mine are considered as point sources

As the cumulative impacts for cluster of stone quarries are to be considered, thus the cluster of stone mines is described as are a sources.

Transportation of stone chips from mining pit to crusher is considered as line sources

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

NoiseEnvironment:AnticipatedImpacts

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

- Transportation Vehicles / tractor trolley
- Drilling & Blasting
- 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:

Miningactivitiescauseadverseimpactsduetominedrainageandsiltationduetostormwater.

Theimpactonwaterenvironmenthasbeenconsideredunderthefollowingheads:

- Water consumption
- Mineseepageandimpactonground water
- Impactonsurfacewaterbodies
- Stormwatermanagement

SoilEnvironment:AnticipatedImpacts:

Most of the stone quarries are operated at the barren area where out crops of basalt are Exposed having very thin layer of soil and over burden. This soil is removed and stacked separately for plantation around peripheral area of 7.5m.

LandUse:

These stone quarries are very small in area. After removal of stone these abandoned quarries are used as water tank for irrigation purpose by lessee.

Forest:

No mining quarry is permitted from 10 km distance from Wildlife Sanctuary boundary in the district.

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 point
- Dust extractors during crushing / screening
- Routine grading of haul roads and periodic removal of accumulated dust and debris
- Regular maintenance of the tractor trolley.
- Practicing wet drilling.
- Controlled blasting using delay detonators.
- Controlled blasting using delay detonators.
- Usage of sharp drill bits for drilling of holes
- Avoiding of overloading of 1OT tippers and covering of loaded tippers with tarpaulins during stone chip 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 and mine machinery like drill operations 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, super vision and execution of each blast and using milli-second (M.S) delay detonator sand proper stemming to prevent blow out of holes.

0 1 quarry as per method of approval within time frame prescribed and approved by authority.

Risk Assessment and Disaster Management Plan:

RiskAssessment

The proposed project involves Stone mining through semi mechanized Open cast mining. The anticipated risks are mentioned below:

Inundation:

There is no chance of inundation of mine pits from surface waters such as rivers or nallas as it is situated along away from river. The lease holder is located in the Kolhapur district of Maharashtra and the area in general receives appreciable amount of rainfall, which is in the range of l150mm (annual average).

Pit slope & dump slope failures:

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

Blasting:

Controlled drilling and blasting using delay detonators is proposed

Surface Fire:

There are non gait able materials in Basalt deposit .Sufficient fire extinguishers of suitable type and make will be made available at strategic ocations in the mine lease are at control any fire/ explosion incident.

Dust from the screening & crushing operations:

The hazardous 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 substantial 11 y 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 belts rounding the plant area will further suppress the spread of air borne 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 earmuffs. The noise created is harmful to anyone who is within zone around screening & crushing machine sat 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 wm be provided with earmuffs.

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 all owed inside the designated noisy area.

In most cases this will be the operators. The risk is highest to alder machines. Newer large machines are provided with sound insulated systems which control the noise levels to acceptable levels. Other control measures will in clued training operator sand providing them with ear protection, although he later should only be seen as an intern imprecations 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 below.

Loading:

The main hazard associated with loading is the Mineral falling on to the loading labour tractor, tractor toppling overdue to uneven ground, failure of hydraulic systems. Good housekeeping practices, regular cleaning of the haulage road sand regular maintenance of the tractors, loading operation sunder 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 in competent drivers, brake failure, lack of all-around visibility from the driver's position, access to the cab, vehicle movement particularly reversing, rollover, 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 cab so large vehicles. Visibility defects car tube 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 areas hall be set out as ate sting 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 raid also company employees working in such areas may also be at risk.

Explosives:

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

Housekeeping:

The provision and maintenance of as affiant healthy work place is the most basic principle of health and safety. Dirty and untidy workplaces or walk ways contribute to a very large proportion of trip and fall accidents. In the context of surface mining the provision of well-defined road ways and walk ways 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 walk ways being unsuitable for use.

The Work:

The application of risk assessment depend 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 are view of the knowledge, experience and training of that 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. Acknowledgeable, experienced well-trained and competently supervised work force will be at a lower risk of accidents occurring than apoorly trained and badly supervised workforce. Forth is purpose, all the supervisory and managerial staff qualified under[14]MMR1957shall only be employed?

Co-ordination:

A competent person should be given the responsibility for overseeing and coordinating work as required under the Maharashtra Minor Mineral (Extraction & Development) Rule2013. It is essential that the coordinator sure 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.

Equipment's:

The prerequisite for the risk assessment is that equipment's are suitable for the work being

[14]MMR-Maternal Mortality Rate

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 short fall. Other inter 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, running mps 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 there should values of health standards should be made applicable.

Personal Protective Equipment (PPE):

The [15] PP we should be of good construction, wherev e r possible is I certified, suitable for the hazard. 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 the nasan intern arrangement untiled the 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 area sand over suitable Roadways. Adopting one way traffic movement systems are preferred to two directional traffic systems. The risk of accident suet traffic movement is much less with a one- w a y 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 an e word eve loping 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 aid stone sure the driver has all round visibility. Designing and implementing one-way traffic systems and ensuring that open edges of road ways 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

[15] PPE- Personal Protective Equipment

condition, particularly the braking system will go a long way to help the diver control the vehicle. Well-designed access and working platforms will also reduce the possibility of a fall.

Surveying:

Surveyinghasitshazards,forexamplesurveyorsarelikelytobeseriouslyinjuredifftheyfallfromheigh tsorarethrownoutofoverturningvehicles.Sincethehazardsarecreatedbygroundformationitisunlik elythattheycanberemoved.

Thosenormallyatriskwouldbethesurveyingteamofthesurveyorandassistants.Individualsworking attheedgeofverticalfaceoronverysteepundulatinggroundareatgreaterriskthanthoseworkingonlev elground.Drivingoversteeproughterrainismoredangerousthandrivingovergentleslopes.Itisneces sarytogiveclearpositiveinstructionandensurevehiclesusedtogainaccesstotheareastobesurveyeda rewellmaintainedand suitablefortheterrainoverwhichaccessistobegained.

Clearance:

Clearancecoversalltheactivitiesassociatedwithpreparingasitereadyforlayingoutprimaryroadsfor workingaface.Theprimaryhazardsarebeingstruckbyfallingtreesanddebrisfromdemolitionof buildings,useofpowersaws,equipmentusedintheremovalofthetoplayersofearthandtrucksusedtoc onveyittostorageareas,andthepossibilityofbeingstruckbytrucks.
Thehazardsarecreatedinclearingthesite.Whiletheclearingofthesitecannotbeavoidedadoptingthesa festmethodstocarryouttheworkcancontrolhazards.Forexample,fullytrainedpersonsshouldbeusedin treefellingoperations.Well-
maintainedfullyprotectedpowersawsshouldbeused,andtheoperativesshouldwearfullpersonalpro tectione.g.,safetyhelmets,eardefenders,faceshields,gloves,fullprotectionforlegs(trousers)andboo ts.

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.

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
- Accident due to heavy mining equipment; 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.
- Firefighting 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. 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 noes 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 3persons 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 it stipe & capacity and it ems 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 representative soft he mine workers to ameliorate the situation of panic, tension, sentiments, grievance sand misgiving screamed 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 andothers for their Catering & Refreshment services.

DETAILS OF OCCUPATIONAL HEALTH ISSUES IN THEDISTRICT. (LAST FIVE-YEAR DATA OFNUMBEROFPATIENTSOFSILICOSIS& TUBERCULOSISISALSONEEDSTOBESUBMITTED)

Not Available

PLANTATIONANDGREENBELTDEVELOPMENTINRESPECTOFLEASESALREADYGRANTEDIN THEDISTRICT:

District administration on yearly basis collects the compliance w.r.t. green clearance along with photographic evidence of plantation and safety measures the green belt development plan along with quarry owners individually and with their associations. District has developed a very handsome inventory of trees with pollution control measure implementation system.

SD
District Mining Officer
Ahilyanagar

SD
Additional Collector
Ahilyanagar