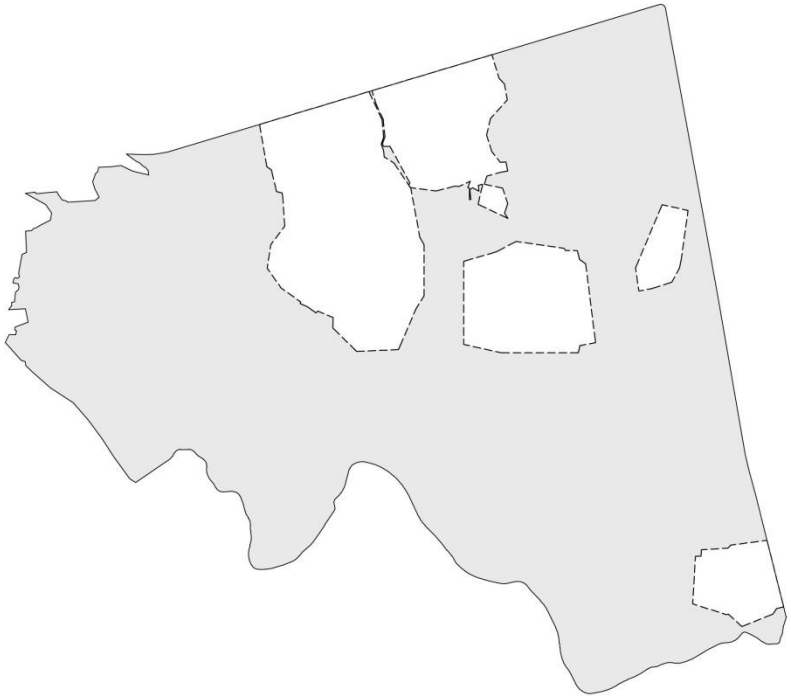
Area comparison

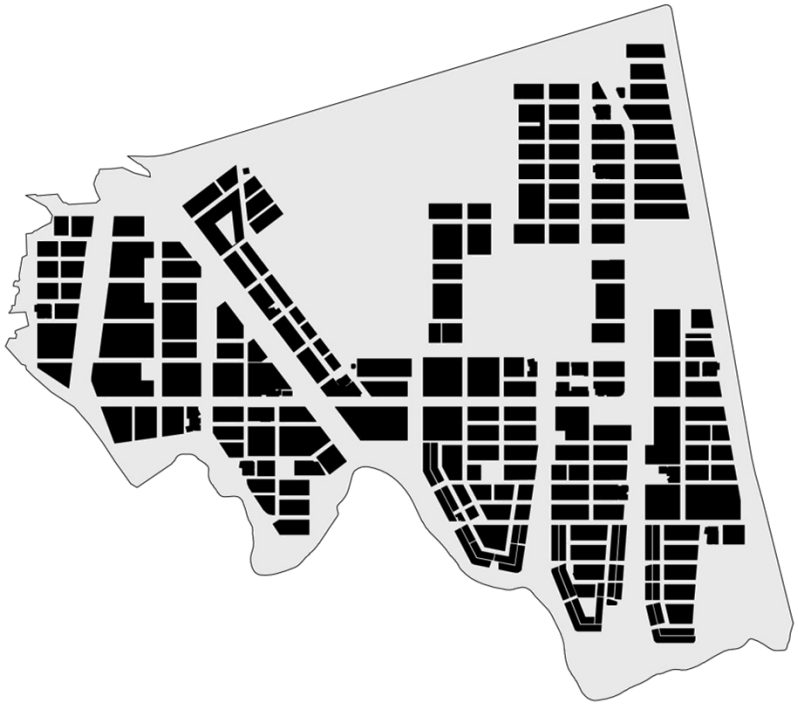


1056.39 acres
Sasaki master plan

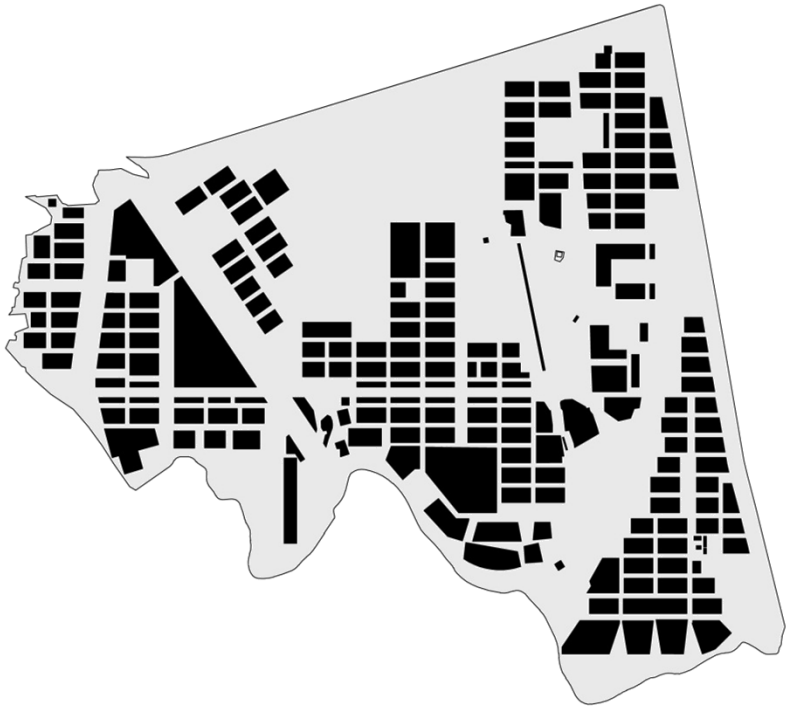


941.92 acres
Current master plan

Site area



425.26 acres =40.2%
Sasaki master plan

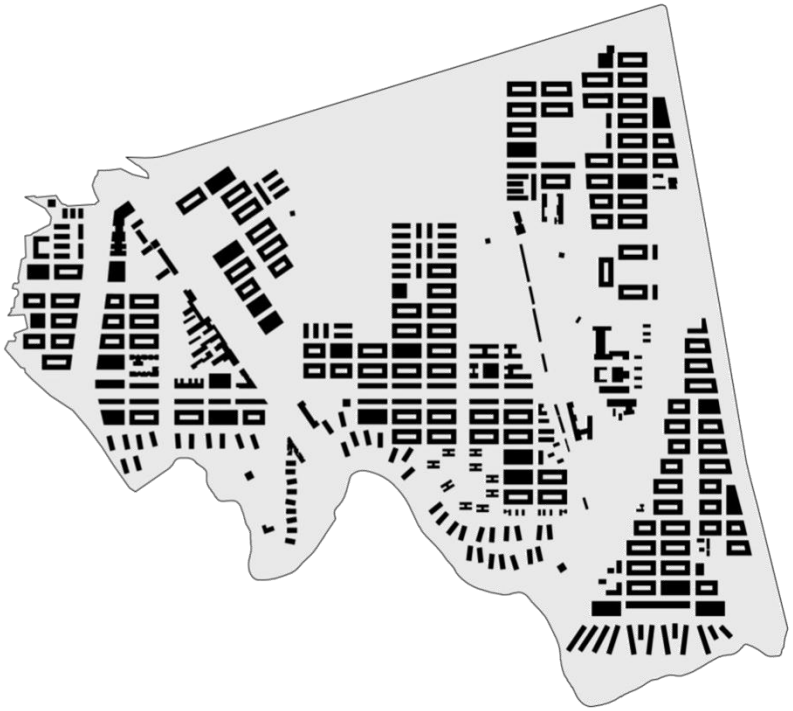


396.83 acres = 42.1%
Current master plan

Developable parcels

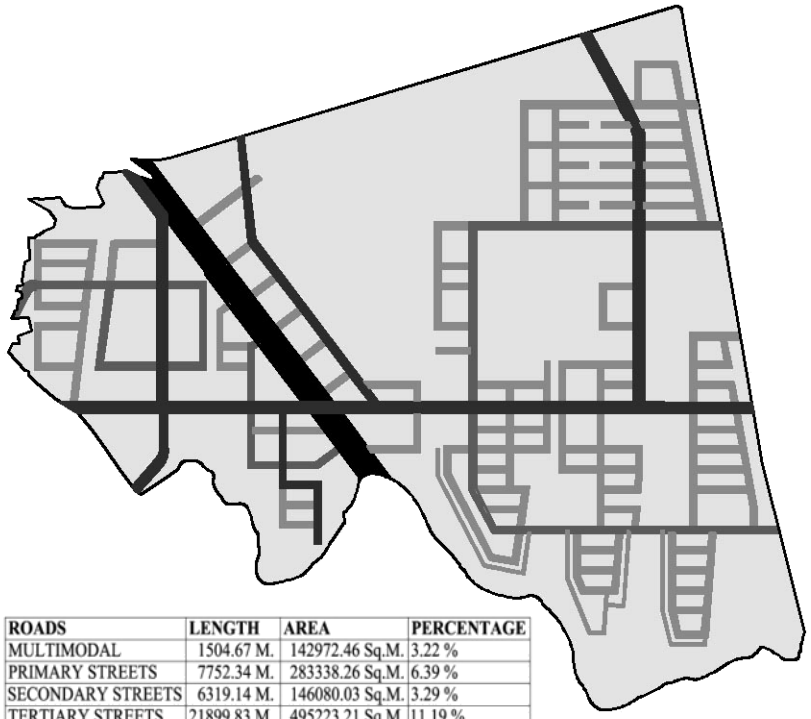


280.06 acres = 26.5%
Sasaki master plan



253.98= 26.9%
Current master plan

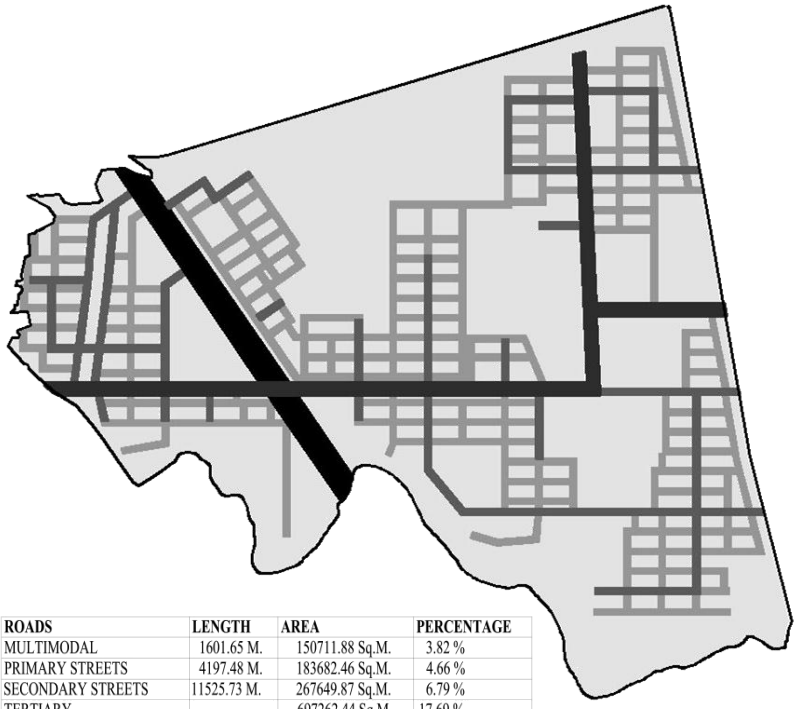
Building footprint



ROADS	LENGTH	AREA	PERCENTAGE
MULTIMODAL	1504.67 M.	142972.46 Sq.M.	3.22 %
PRIMARY STREETS	7752.34 M.	283338.26 Sq.M.	6.39 %
SECONDARY STREETS	6319.14 M.	146080.03 Sq.M.	3.29 %
TERTIARY STREETS	21899.83 M.	495223.21 Sq.M.	11.19 %
TOTAL	**37475.98 M.**	**1006076.82 Sq.M.**	**24.09 %**

MULTI MODAL CORRIDOR
PRIMARY ROAD
SECONDARY ROAD
TERTIARY ROAD

248.60 acres = 23.5%
Sasaki master plan

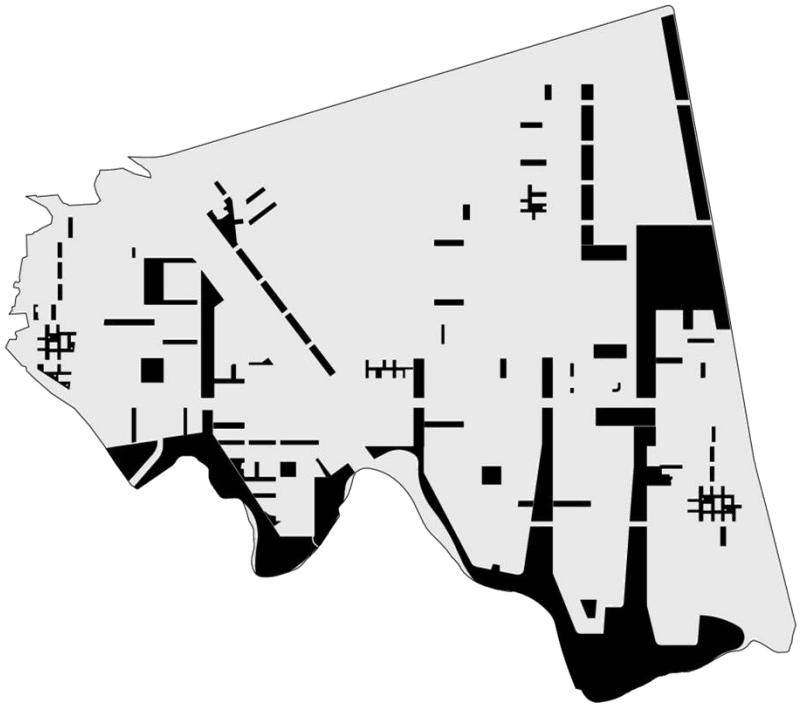


ROADS	LENGTH	AREA	PERCENTAGE
MULTIMODAL	1601.65 M.	150711.88 Sq.M.	3.82 %
PRIMARY STREETS	4197.48 M.	183682.46 Sq.M.	4.66 %
SECONDARY STREETS	11525.73 M.	267649.87 Sq.M.	6.79 %
TERTIARY		697262.44 Sq.M.	17.69 %
TOTAL		**1299306.65 Sq.M.**	**32.96 %**

MULTI MODAL CORRIDOR
PRIMARY ROAD
SECONDARY ROAD
TERTIARY ROAD

321.06 acres = 34%
Current master plan

Roads



219.20 acres = 20.7%
Sasaki master plan



210.06 acres = 22.3%
Current master plan

Green spaces under ownership

Infrastructure feedback

Annual rainfall
2300 mm/2.3 m/ 90.55 inches

Total surface water
1. Softscape area (green + gaothan +padit + powerlines + peripheral area) x annual rainfall x run off coefficient

plus

2. Hardscape area (buildings + roads + multimodal corridor) x annual rainfall X run off coefficient

Total surface water
1.Softscape
3061042.64 sq. m x 2.3 m x 0.5= 35,20,199.04 cu m

plus

2. Hardscape
2327159.59 sq. m x 2.3 m x 0.8= 42,81,973.65 cu m

Total rainwater
78,02,172.69 cu m = 7802172690 lts = 7802 million lts

Peak 24 hour rainfall
994 mm/0.994 m/ 39.13 inches

Total surface water
1. Softscape area (green + gaothan +padit + powerlines + peripheral area) x peak 24 hour rainfall x run off coefficient

plus

2. Hardscape area (buildings + roads + multimodal corridor) x peak 24 hour rainfall in run off coefficient

Total peak 24 hour surface water
1. Softscape
3061042.64 sq. m x 0.994 m x 0.8= 2434141.11 cu m

plus

2. Hardscape
2327159.59 sq. m x 0.994 m x 0.8= 1850557.31 cu m

Total rainwater
42,84,698.42 cu m = 4284698420 lts = 4284 million lts

Rainfall calculations

Palava
Area - 4.45 sq. km

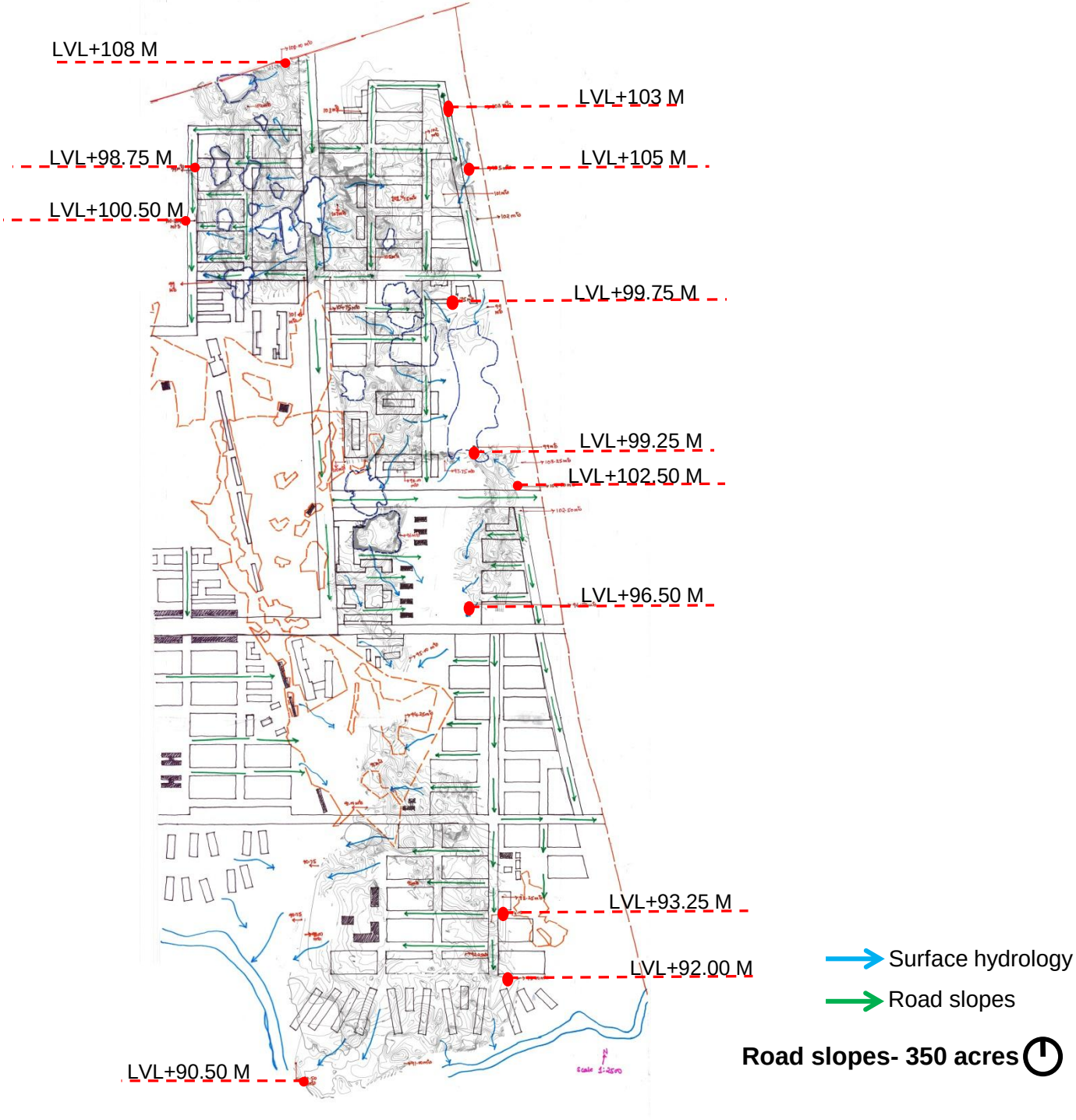
Water demand= 135 lts/day/person

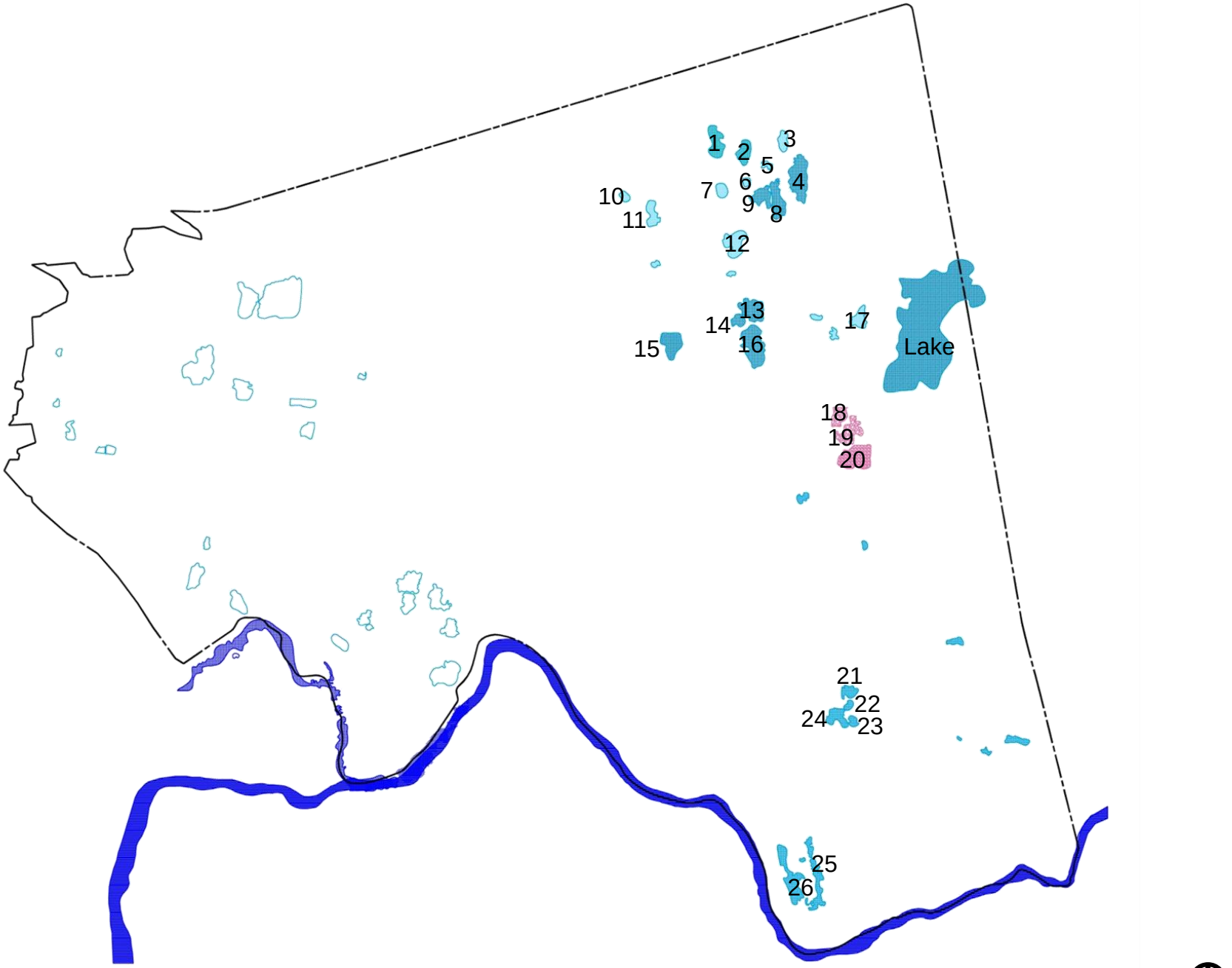
Total population of the site would be= 1,76,000
Water demand= Total populationX135lts/day/personX365days
= 1,76,000 x 135 x 365
= 8,67,24,00,000 lts/year (8672.40 ML/ year)

Landscape requirement= AreaX5 lts/sq m/day X 250 days
= 917192.86 sq mX 5 X 250
= 1,14,64,91,075 lts/year
= 1146.4 ML/ year

Total water requirement= 8672.4+ 1146.4
= 9818.8 ML/ year

Water requirement-
Drinking/Irrigation/Other uses


LVL+108 M
LVL+103 M
LVL+98.75 M
LVL+105 M
LVL+100.50 M
LVL+99.75 M
LVL+99.25 M
LVL+102.50 M
LVL+96.50 M
LVL+93.25 M
LVL+92.00 M
LVL+90.50 M
Surface hydrology
Road slopes
Road slopes- 350 acres


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
Lake
18
19
20
21
22
23
24
25
26
Reservoirs for usable water + storm water holding

Water bodies	Area	Depth assumed	Volume in (cu m.)
1	3296.93	3 m	10190.79
2	2292.87	3 m	6878.61
3	1484.66	3 m	4453.98
4	5857.43	4 m	23429.72
5	558.25	3 m	1674.75
6	522.80	3 m	1568.4
7	1267.57	3 m	3802.7
8	2517.88	4 m	10071.52
9	3494.61	4 m	13978.44
10	718.95	3 m	2156.85
11	2105.64	3 m	6316.92
12	3660.32	3 m	10980.96
13	3777.55	3 m	11332.65
14	1197.88	3 m	3593.64
15	3688.98	3 m	11066.94
16	6204.18	3 m	18612.54

Water bodies	Area	Depth assumed	Volume (cu m.)
17	2040.93	3 m	6122.79
18	2127.58	8 m	17020.64
19	3582.27	8 m	28658.16
20	5781.67	8 m	46253.36
21	1440.77	2 m	2881.54
22	619.65	2 m	1239.3
23	2350.24	2 m	4700.48
24	712.78	2 m	1425.56
25	3945.59	3 m	11836.77
26	5127.41	3 m	15382.23

Total volume of all pond/ditches for 350 acres
= 2,75,630.24 cu m
= 275.63 MLD

Reservoirs for usable water + storm water holding

Palava
Area - 4.45 sq. km
Population density - 40,000 per sq. km

Assumptions
Water supply - 135 lcpd

Wastewater generation - 100 lcpd *(about 80% of water use)*

Total sewage generation quantity - 18,000 cu m i.e. 18 MLD

Eco filtration process

Area required for Palava:
18,000 sq. m (4.5 acres)

Capital expenditure per MLD:
Rs.70 lakh

Maintenance cost per cu.m per day:
Rs. 2

Sludge
Nil

Man power/maintenance requirements
Unskilled

Electricity requirements
None

Quality of water
Meets CPCB standards

Source-SERI,Dr. Sandeep joshi,Pune

SIBF (Solid Immobilized Bio-Filter)

Area required for Palava :
72,000 sq. m (18 acres)

Capital expenditure per MLD:
Rs.1.8 crore

Maintenance cost per cu.m per day:
Rs. 3

Sludge
Nil

Man power/maintenance requirements
Unskilled – 1 shift a day

Electricity requirements for 100 cu.m/day
25 kwh /day

Quality of water
Meets CPCB standards

Source- SIBF systems, Navin singh,,Pune

Activated Sludge

Area required for Palava :

Capital expenditure per MLD:
Rs. 2 -2.5 crores

Maintenance cost per cu.m per day:
Rs. 20

Sludge
0.6 kg/kg BOD

Man power/maintenance requirements
Skilled and continuous requirement

Electricity requirements for 100 cu.m/day
160 - 180 kwh /day

Quality of out put water
Meets CPCB standards

Sewage treatment

Sno.	Parameters		Stream Stds	Irrigation/Gardening Stds
1.	pH	:	5.5 - 9.0	5.5 - 9.0
2.	B.O.D. at 27 °C, 5 days	:	30 mg/l	100 mg/l
3.	C.O.D.	:	250 mg/l	-
4.	Suspended solids	:	100 mg/l	200 mg/l
5.	Total dissolved solids	:	2100 mg/l	2100 mg/l
6.	Oil and grease	:	10 mg/l	10 mg/l

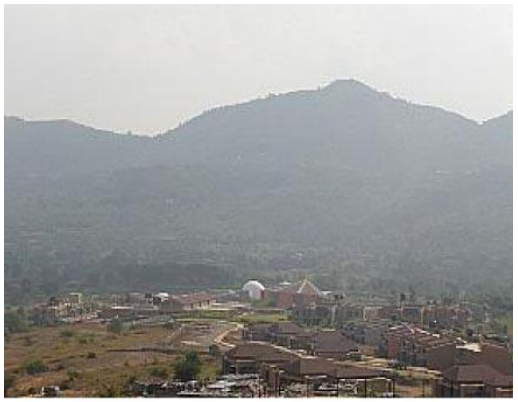
CPCB norms







Art of Living Ashram, **Bangalore**
Design flow: 4,00,000 lts/day
Installed 2009







Chinmaya Vibhooti Ashram, Mulshi, Pune (PBB):
1,50,000 lts/day
Completion:2009

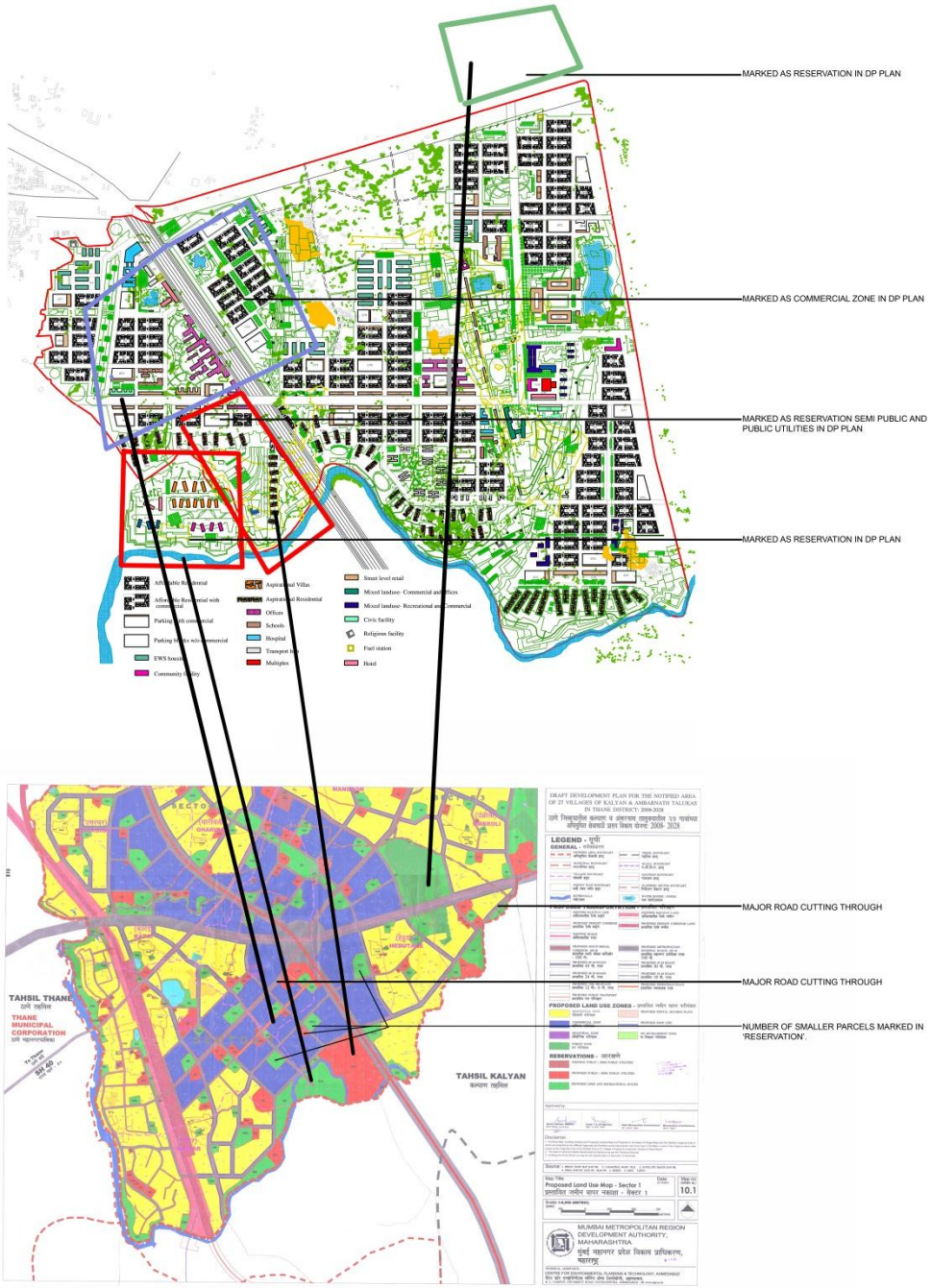
Examples: SIBF system (Mr. Navin Singh)

	At	To treat	Location	Capacity	Since
1	Sanjay Athavale's home	Sewage	Kothrud, Pune	1 m^3 / 1000 litres	2 yrs
2	Nichrome Packaging Solutions	Sewage	Shirwal	10m^3	3 yrs
3	Navrachana School	Sewage	Baroda	50m^3	5 yrs
4	Bosch Chassis Systems India Ltd.	Sewage	Jalgaon	120m^3	15 yrs
5	Technova Imaging Systems Pvt. Ltd.	Effluent	Taloja	135m^3 (sewage equivalent / s.e.)	7 yrs
6	Morde Foods (dismantled)	Effluent	Manchar	300 m^3 (s.e.)	7 yrs



Nichrome Packaging Solutions, **Shirwal**
10 cu. m
Installed 2008

Examples: Eco filtration system (SERI)


MARKED AS RESERVATION IN DP PLAN
MARKED AS COMMERCIAL ZONE IN DP PLAN
MARKED AS RESERVATION SEMI PUBLIC AND PUBLIC UTILITIES IN DP PLAN
MARKED AS RESERVATION IN DP PLAN
MAJOR ROAD CUTTING THROUGH
MAJOR ROAD CUTTING THROUGH
NUMBER OF SMALLER PARCELS MARKED IN 'RESERVATION'.
TAHSIL THANE
THANE MUNICIPAL CORPORATION
TAHSIL KALYAN
LEGEND - सूची
GENERAL
PROPOSED LAND USE ZONES - प्रस्तावित जमीन वापर परिक्षेत्र
RESERVATIONS - आरक्षणे
Proposed Land Use Map - Sector 1
MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY, MAHARASHTRA