

Current Status of Myanmar on Sewage and Sanitation

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Related Organizations to Sewage and Sanitation

Organization Name	No. of Townships	Estimated Population (Million)	Type of Sanitation Facilities Used
Nay Pyi Taw Development Committee	8	0.924	septic tank system, Pit Latrine with slab a wastewater treatment plant
Yangon City Development Committee	33	5.5	a sewerage system, septic tank system, Pit Latrine with slab a waste water treatment plant, an industrial wastewater treatment plant
Mandalay City Development Committee	6	2.498	septic tank system, Pit Latrine with slab
Department of Development Affairs	283	49.455	septic tank system, Pit Latrine with slab, others

Percentage of household population:

Using improved
sources of drinking
water

Using sanitary
means of excreta
disposal

Using improved sources
of drinking water and
using sanitary means of
excreta disposal

State/Region

Kachin	89.3	92.1	83.3
Kayah	69.6	81.2	59.7
Kayin	51.1	73.6	42.1
Chin	86.5	86.9	79.9
Mon	86.3	91.2	78.4
Rakhine	57.7	48.0	30.1
Shan(North)	81.4	68.3	59.7
Shan(East)	99.0	92.1	91.0
Shan(South)	89.0	85.6	78.5
Ayeyarwaddy	79.4	83.1	66.2
Bago(East)	83.5	79.8	73.0
Bago(West)	91.2	88.4	81.3
Magwe	79.3	84.2	66.5
Mandalay	81.9	91.1	76.6
Sagaing	86.6	90.9	80.1
Tanintharyai	72.7	84.4	63.5
Yangon	92.5	93.8	88.0

Area

Urban	93.2	94.4	88.8
Rural	77.6	80.4	65.2

Improved sanitation facility

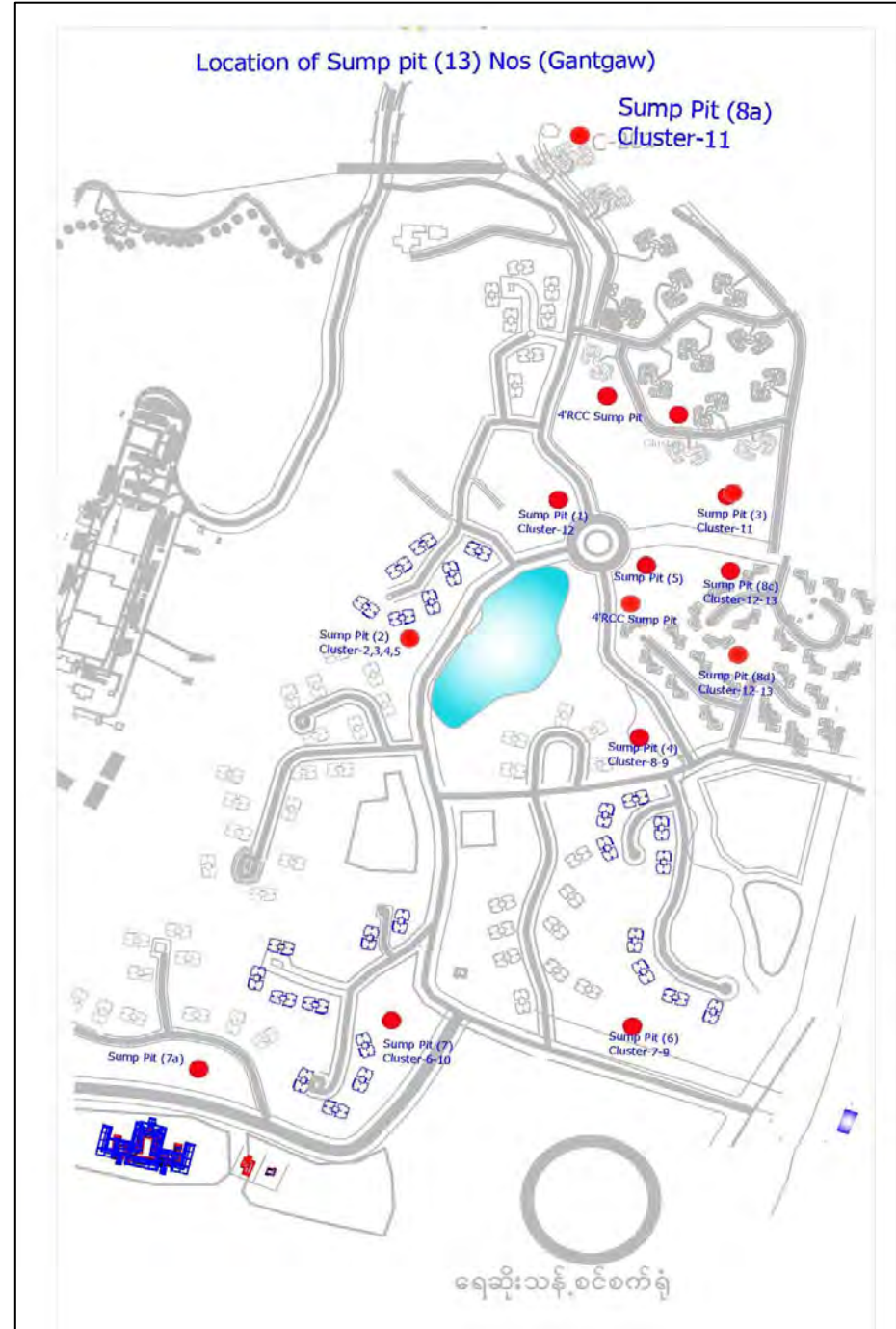
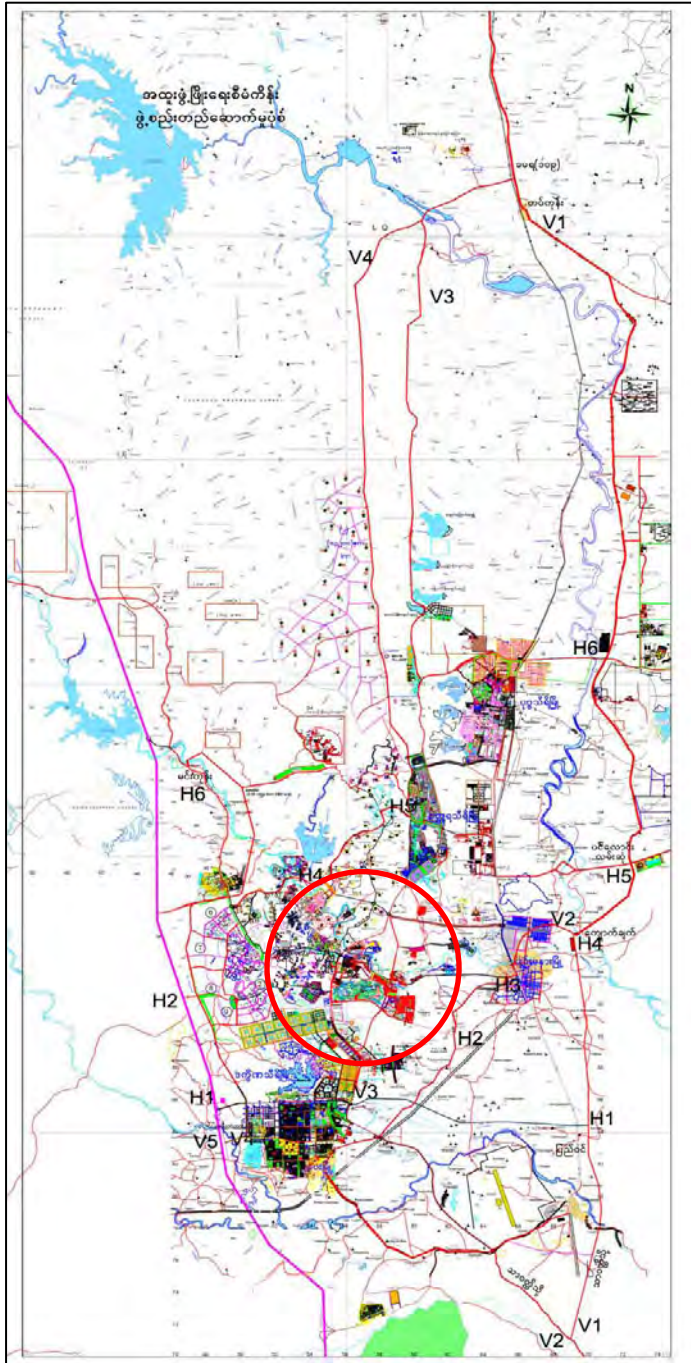
	Flush/pour flush to:		Ventilated Improved pit latrine	Pit latrine with slab	Composting toilet	Total
	Piped sewer system	Septic tank				
State/Region						
Kachin	0.0	31.6	5.7	53.9	0.9	92.10
Kayah	0.0	4.8	0.4	74.3	1.7	81.20
Kayin	0.0	2.2	1.2	69.4	0.7	73.50
Chin	0.0	0.3	5.6	76.8	4.2	86.90
Mon	0.0	2.9	12.9	75.0	0.4	91.20
Rakhine	0.0	1.0	1.6	41.6	3.9	48.10
Shan(North)	0.0	16.0	3.6	42.8	6.0	68.40
Shan(East)	0.0	71.0	0.4	20.6	0.1	92.10
Shan(South)	0.3	11.7	5.0	68.1	0.6	85.70
Ayeyarwaddy	0.0	3.7	0.9	77.1	1.4	83.10
Bago(East)	0.2	9.6	0.8	69.3	0.0	79.90
Bago(West)	0.0	0.6	1.3	85.8	0.8	88.50
Magwe	0.0	7.0	4.3	71.5	1.3	84.10
Mandalay	0.0	17.5	8.5	65.0	0.0	91.00
Sagaing	0.0	2.1	1.5	86.8	0.5	90.90
Tanintharyai	0.0	20.7	6.4	55.3	1.9	84.30
Yangon	7.3	38.8	0.9	46.7	0.2	93.90
Area						
Urban	3.6	32.3	4.8	53.5	0.3	94.50
Rural	0.0	6.0	3.1	69.8	1.4	80.30

Unimproved sanitation facility

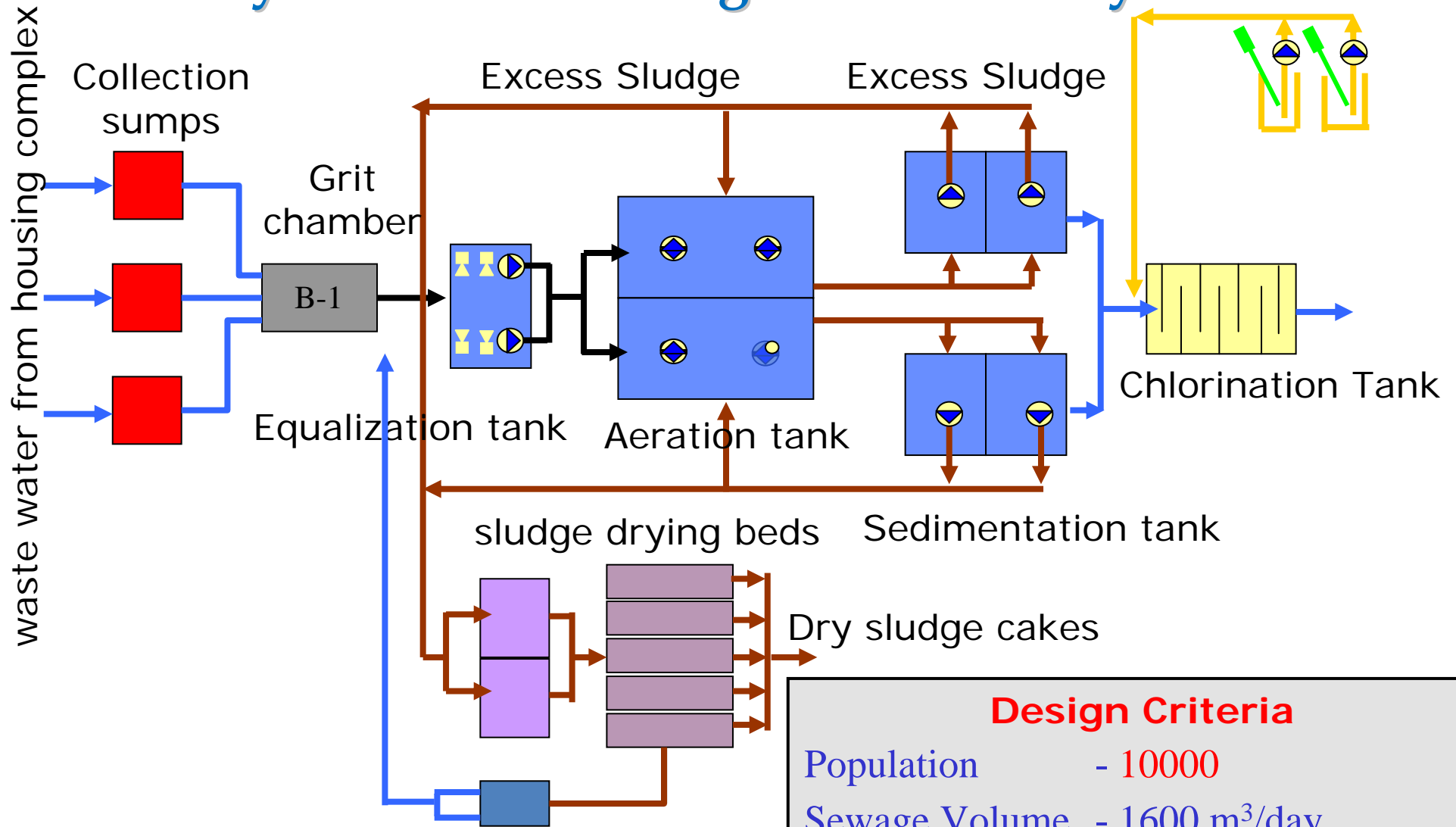
State/Region	Flush/ pour flush to some- where else	Pit latrine without slab/ open pit	Bucket	Hanging toilet/ hanging latrine	Other	No facilities/ Bush/field	Total
Kachin	0.6	6.8	0.0	0.1	0.4	0.0	7.90
Kayah	3.0	15.1	0.0	0.0	0.7	0.0	18.80
Kayin	0.0	18.5	0.0	0.1	7.9	0.0	26.50
Chin	0.4	3.0	0.0	0.3	9.2	0.3	13.20
Mon	1.3	1.9	0.3	1.4	3.9	0.0	8.80
Rakhine	0.4	10.6	0.1	0.2	40.7	0.0	52.00
Shan(North)	0.8	27.3	0.0	0.0	3.1	0.5	31.70
Shan(East)	0.9	4.0	0.0	0.1	2.9	0.0	7.90
Shan(South)	6.7	7.5	0.1	0.0	0.2	0.0	14.50
Ayeyarwaddy	2.1	9.3	0.0	0.8	4.7	0.0	16.90
Bago(East)	0.1	8.4	0.0	0.3	5.6	5.7	20.10
Bago(West)	0.0	9.1	0.0	0.0	2.4	0.1	11.60
Magwe	0.0	5.7	0.0	0.0	10.1	0.0	15.80
Mandalay	0.2	1.5	0.0	0.0	6.9	0.2	8.80
Sagaing	0.4	2.5	0.0	0.0	6.2	0.1	9.20
Tanintharyai	5.1	3.0	0.0	3.9	3.6	0.0	15.60
Yangon	2.0	3.0	0.0	5.0	0.5	0.4	10.90
Area							
Urban	1.6	2.6	0.0	0.4	0.8	0.2	5.60
Rural	0.9	8.0	0.0	0.3	9.7	0.7	19.60

EXISTING SEWERAGE SYSTEM IN NAY PYI TAW

- 20% of new constructed area of Nay Pyi Taw using sewage treatment plant (Aerobic System)
- 80% using Septic Tank (Anaerobic System) and Pit Latrine with slab
- Sewage collection is combined system
- Sewer pipes are directly connected with waste water treatment plant



Layout Plan of Sewage Treatment System



Design Criteria	
Population	- 10000
Sewage Volume	- 1600 m ³ /day
Outlet BOD	- 20mg/L
Daily BOD Loading-	400 Kg BOD /day

EXISTING SEWERAGE SYSTEM IN YANGON CITY

- **conventional sewerage system**, consists of :-
 - Gravity sewers
 - 39 pneumatic ejector stations
 - Air distribution main
 - Two sewage force mains and outlet
- At present, covers only 4.33 km² area
- serves about **350,000 peoples only 7%** of the city population and rest are using **Septic Tank System**
- Daily Volume of sewage disposal - 111840 gal

Major Issues in Existing Sewerage System

System was constructed since 1888

- To establish proper treatment process for the existing sewerage system.
- To expand and set up the existing sewerage system.
- To improve urban sanitation environment in Yangon City Area

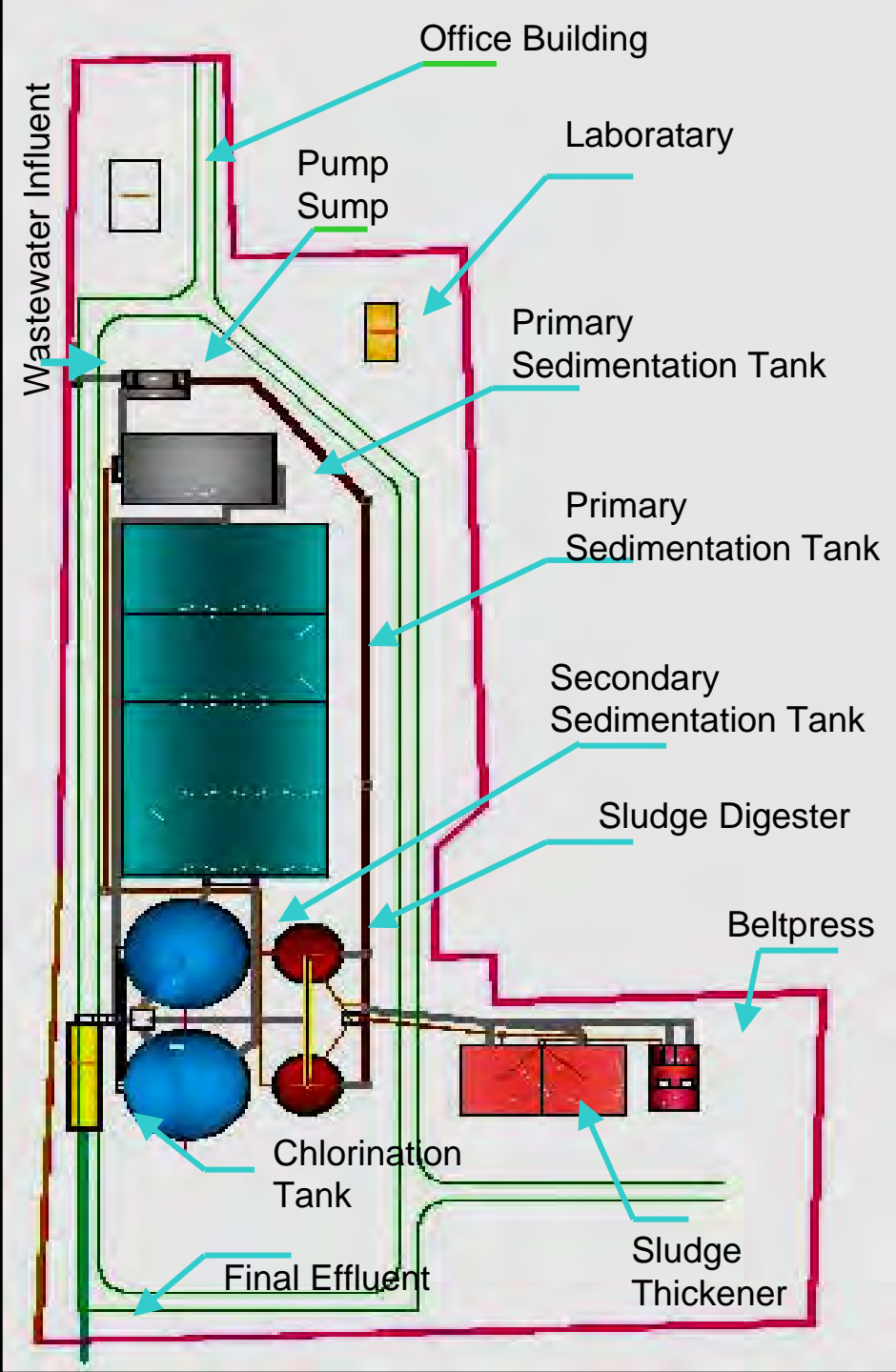


Layout Plan of Sewage Treatment Plant

(YCDC constructed a sewage treatment plant at 2004)

Design Criteria:

- Area of Plant - 5.56 acres
- Design population - 300,000
- Daily wastewater discharge - 14775 m³/day
- BOD influent - 600mg / L
- BOD effluent - 60 mg / L
- Suspended solid influent - 700 mg / L
- Suspended solid effluent - 40 mg / L



Installation of Sewage Treatment Plant

Primary Sedimentation Tank



Aeration Tank



Secondary Sedimentation Tank



Digester Tank



Existing System in Mandalay City

Sewage Disposal System in Mandalay

- Volume of Night Soil per day - 15000 gal / day
- Treatment System - Oxidation Pond
- Nos of Pond - 1 No
- Capacity of Oxidation Pond - 0.45 MG
- Total Nos of Masonary Latrine & Septic Tank - 38004 Nos
- Total Nos of Fly Proof Pit Latrine - 45945 Nos

Industrial Wastewater Treatment and Disposal System In Industrial Zone

- Treatment System - Stabilization Pond
- Nos of Pond - 6 Nos
- Capacity of Oxidation Pond - 15 MG
- Size of Pond - 400 acre



WASTEWATER DISCHARGE PIPES FROM FACTORIES



DIGESTION POND



PUMP HOUSE



DIGESTION POND

Issues and Challenges

- Treatment Plants still costly
 - even MCDC does not have proper treatment plant
 - Township Development Committees under DDA don't have any treatment plant
- Lack of Budget, Technology and Experience
- Facing environmental related issues
 - Small and Medium Industrial zones are almost impossible to use proper treatment system on waste disposal

NEED FOR FUTURE

- (only government responsibility for sanitation)
- UPDATE BYE LAW
- INGOs, UN agencies
- PRIVATE SECTOR participation



Thank You