

Septage Management Case Studies in Philippines and Indonesia

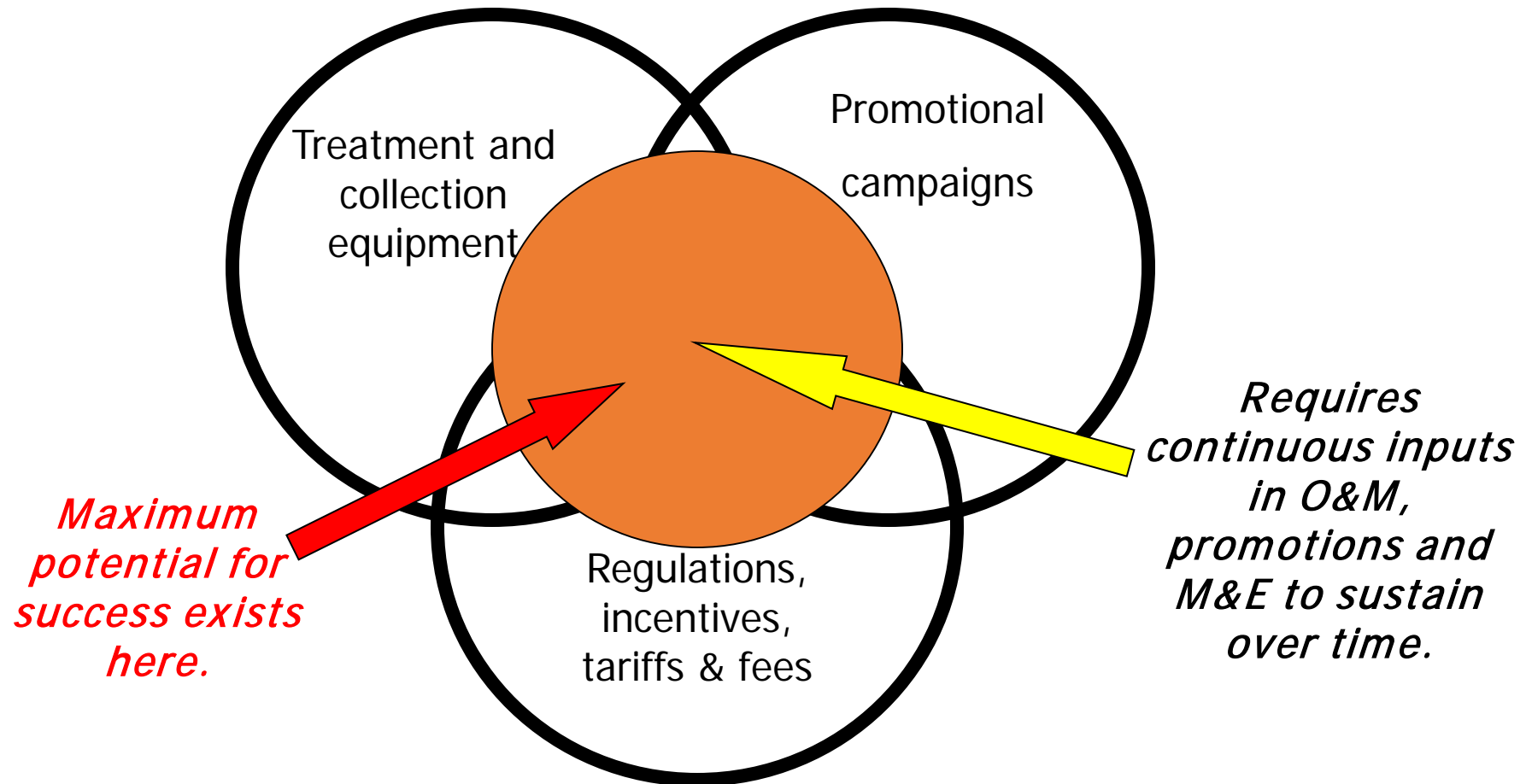
CEPT University

All India Institute of Local Self Government

Urban Development Department, Government of Maharashtra



Components of a scheduled desludging program



Model Program

***“Smaller is better
when investing in
fecal sludge
management in Asia”***

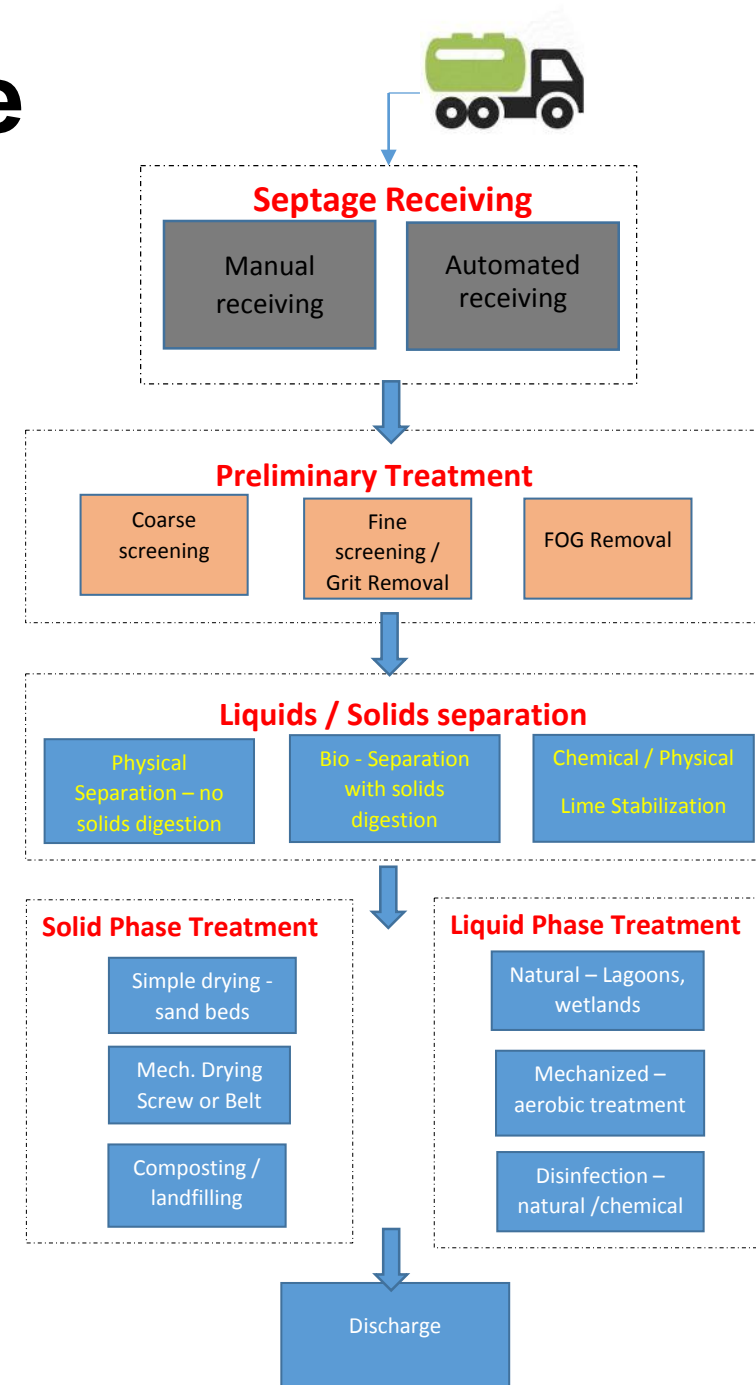


Amy Leung

Deputy Director General, East
Asia Department

Component categories in the septage treatment process

- Receiving
- Preliminary treatment
- Separation
- Solid phase treatment
- Liquid phase treatment



Philippines - 3 models of program management

- Local government run – San Fernando
- Water District run - Baliwag
- Private sector – Bay Laguna

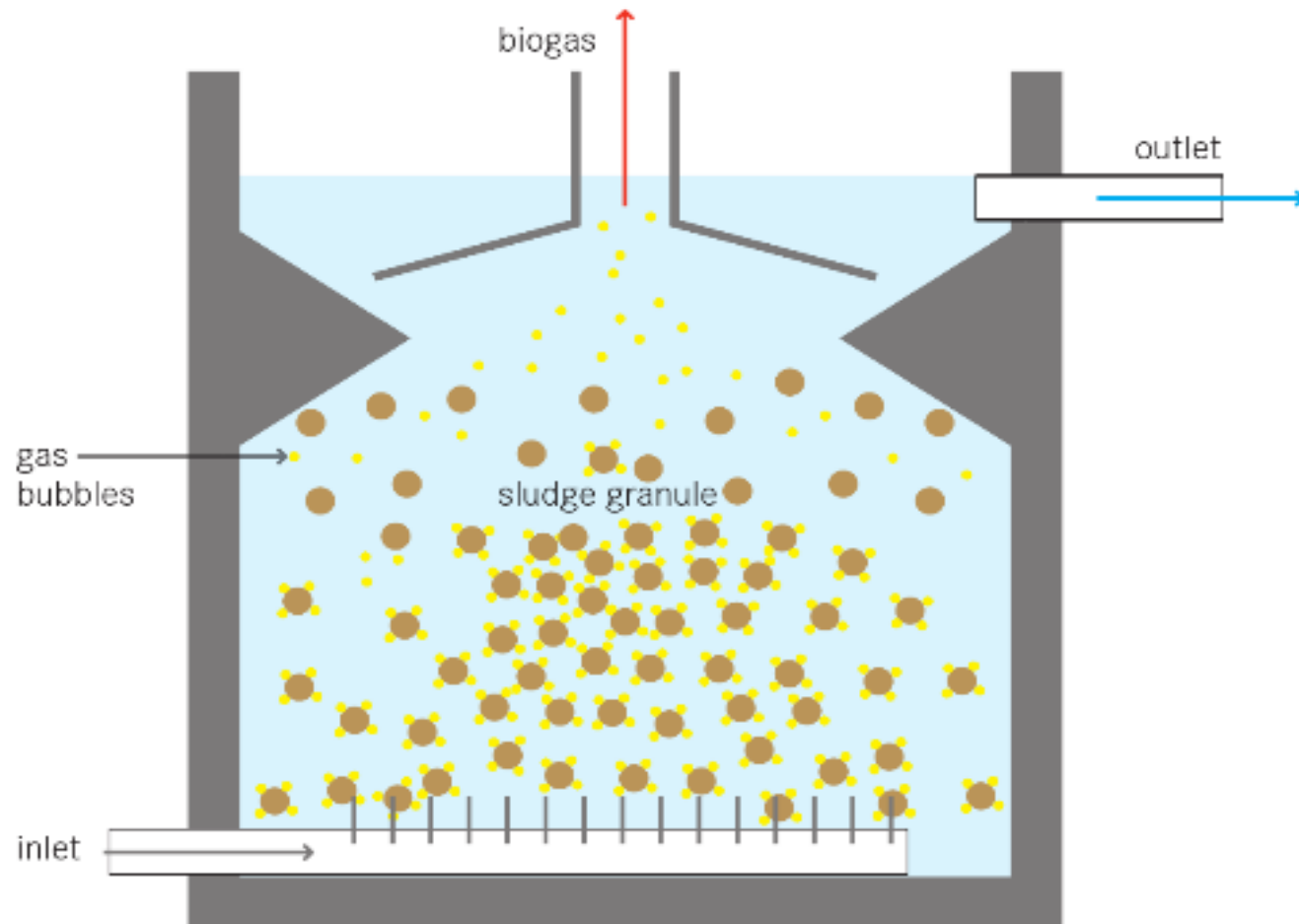


San Fernando City – LGU managed

- Design and construction services by local contractors
- Desludging by existing service providers
- City conducts promotions campaigns and collects fees
- Contracts out to desludgers for certain sections of the city



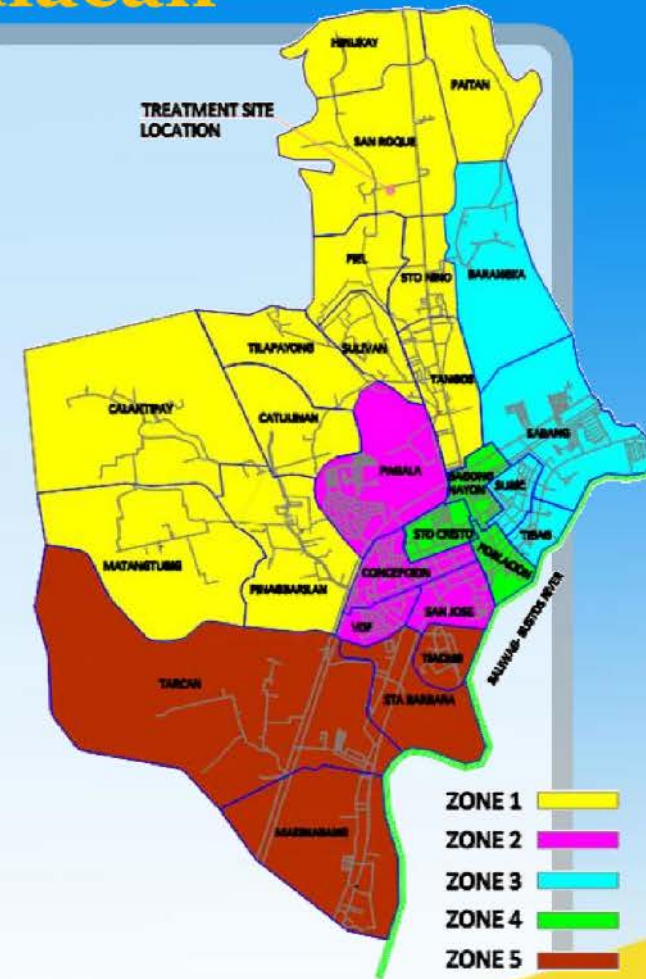
UASB



Water Utility Managed – Baliwag

The Service Area: Baliwag, Bulacan

- Located in the westernmost part of Bulacan province
- 52 kms north of Manila which takes approximately 1 hour travel time to get there.
- With a total land area of approximately 4500 hectares consisting of 27 Barangays with a population of 160,000
- Has a fairly level land suited for agricultural crop production
- Financial, Commercial & Educational Center for the province of Bulacan



"Service is our Business"

ISO 9001:2008 Certified



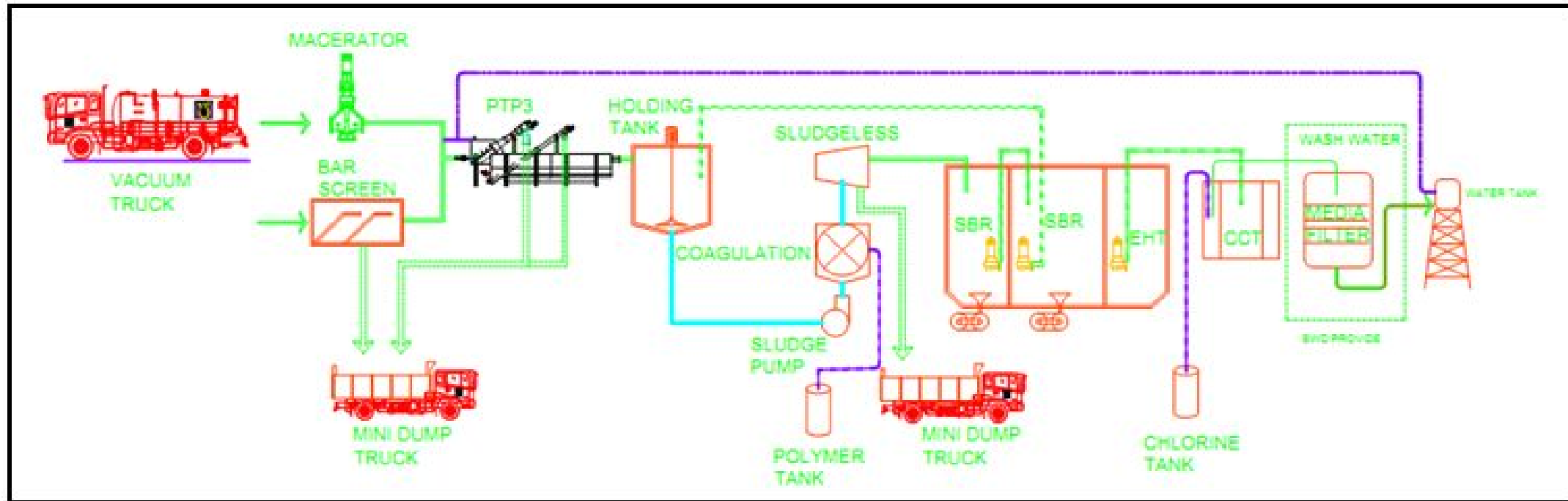


Figure 7. A schematic of the SpTP



Bay Laguna

- Private company owned and operated
- \$1.7 million investment
- Service area: 1 city and 3 municipalities
- LGUs pass local ordinance and fee schedule, private company does the rest



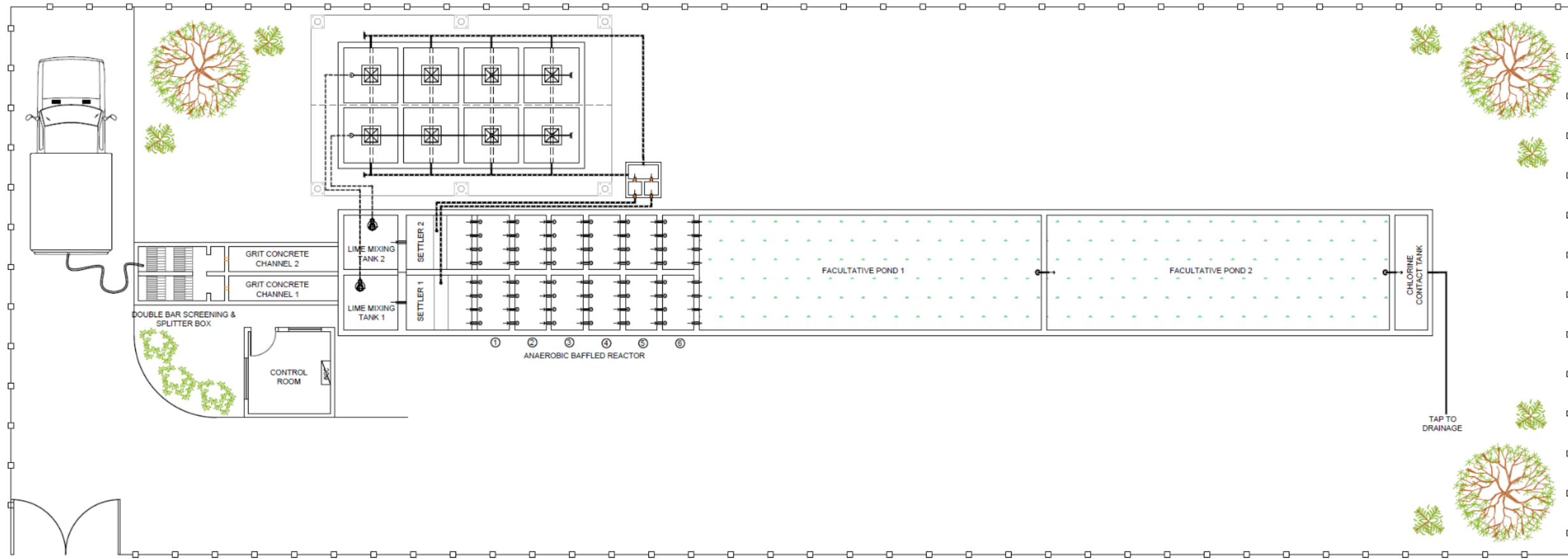
Dumaguete – Water utility and City have joint management



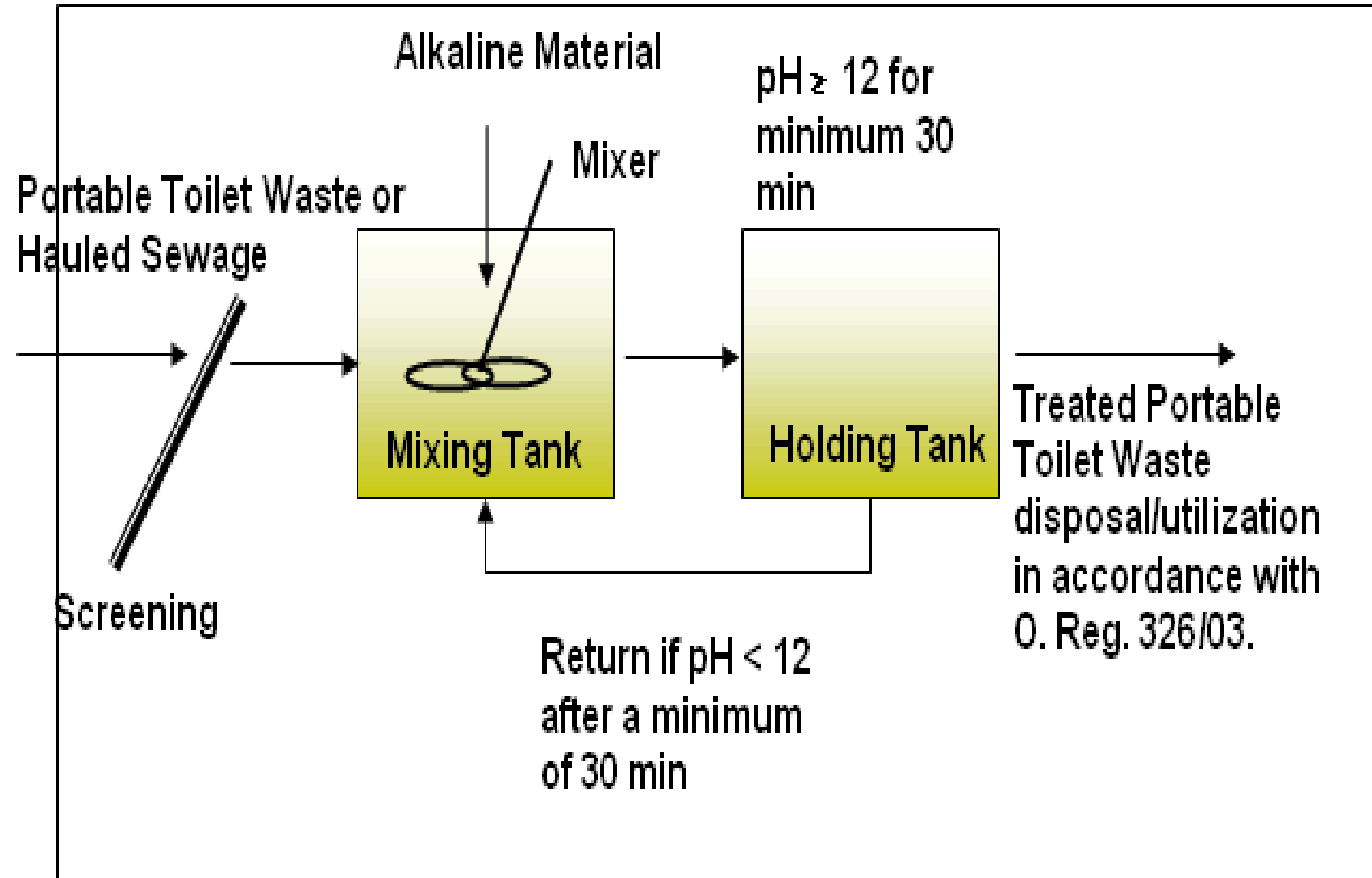
Lime stabilization plant – Tacloban Philippines



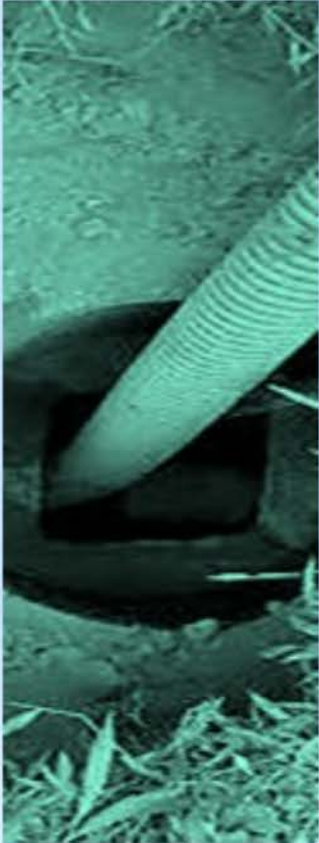
Tacloban Lime Stabilization treatment facility



Lime Stabilization



Indonesia – Current situation



The service chain is not yet integrated

- ❑ No / unclear responsibilities & lack of regulations
- ❑ No monitoring / law enforcement on pollution control
- ❑ No commitment by decision makers

Resulting in..

- ❑ Low demand for improved sanitation systems
- ❑ Septic Treatment Plants under utilized investments
- ❑ Large contamination of surface /ground water
- ❑ Dumping septage in rivers by private sector



Indonesia – Current situation



Progress as of Feb 2016

- ❑ Improved FSM (Regular Desludging “RD”) started in 10 cities
- ❑ Ministry of Public Works already prepared RD guidelines
- ❑ Cost recovery tariff calculated and accepted by local s/holders
- ❑ Android (smart phone) app for census on accessibility of septic tanks under development (field testing)
- ❑ Local regulations for RD in place or under development
- ❑ Contracts by RD operator with private sector ongoing
- ❑ Close Collaboration with GOI, WB/WSP, Dutch donors and ADB



Desludging techniques



Improper: good at removing liquids but leaves most of the solids behind. Results in very weak waste strength.

Proper: worker uses long handle digging bar to break up sludge masses. Adds water to create a slurry, then pumps.



Manhole installation alternative

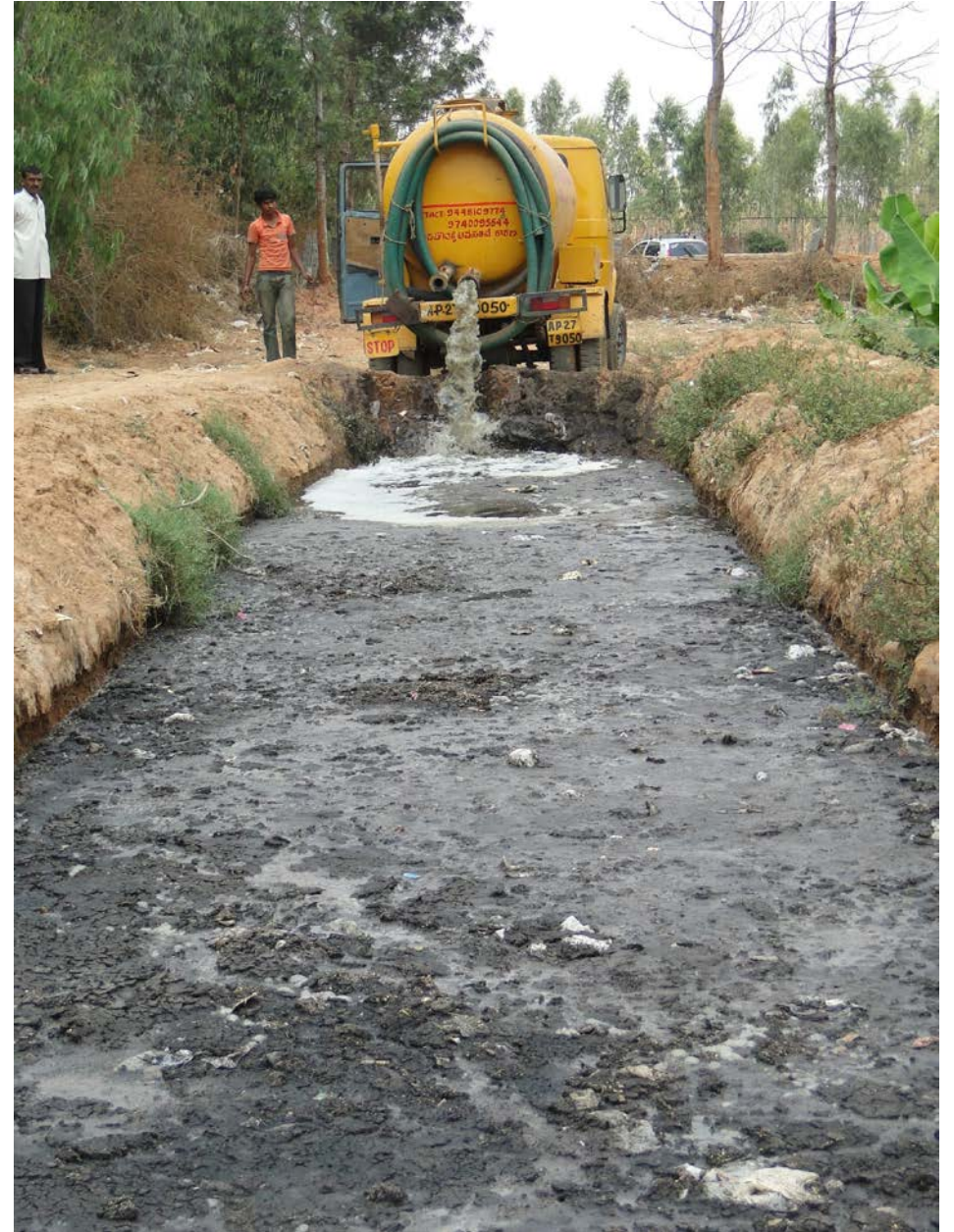


Desludging in densely populated Jakarta

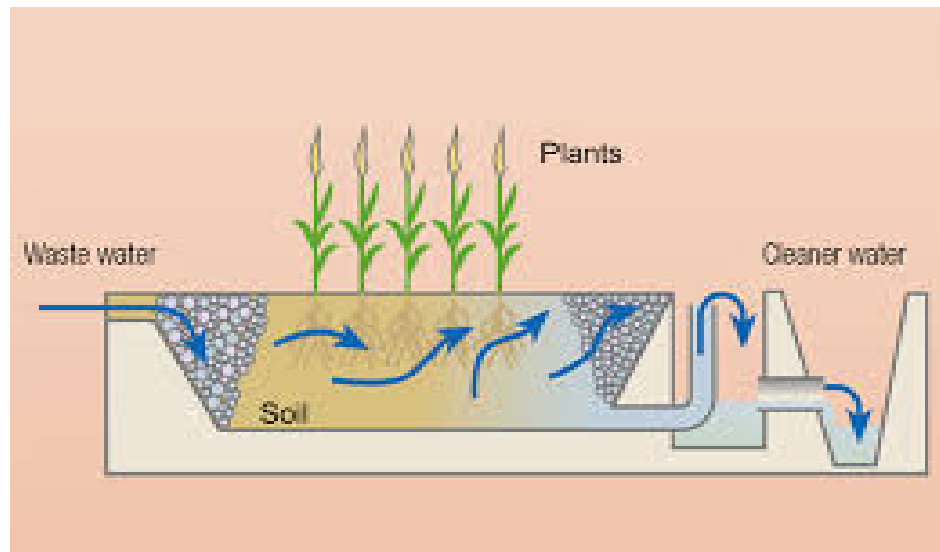
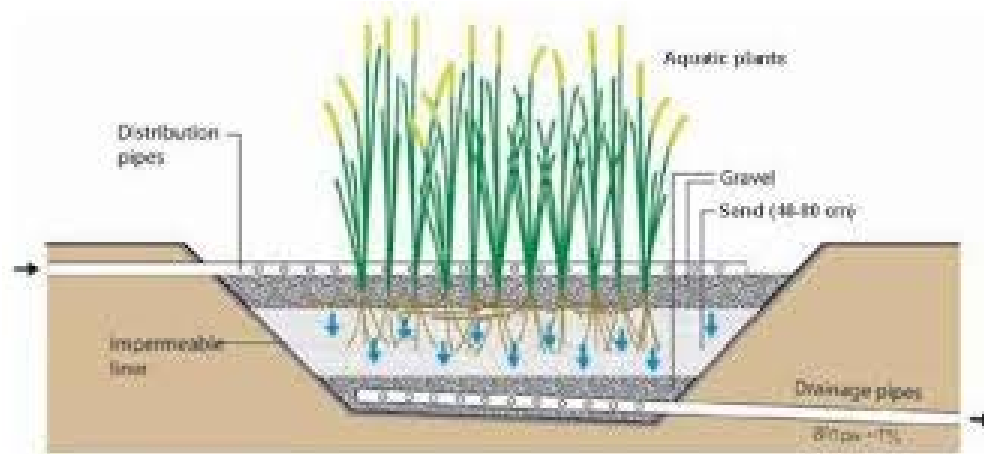


Direct burial of septage

- Soils are not too clayey
- Soils are not too sandy
- Groundwater is not too shallow
- Site is well away from drinking water wells or aquifers used for drinking water

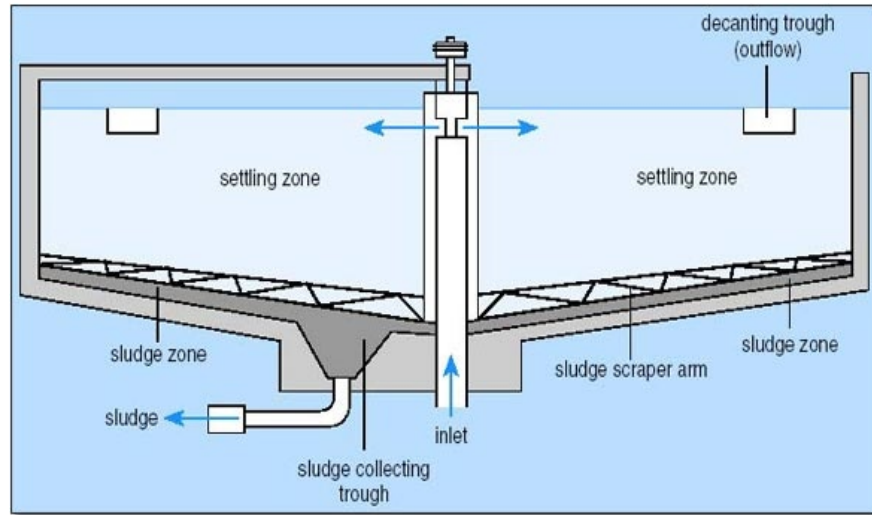


Vertical and horizontal flow constructed wetlands

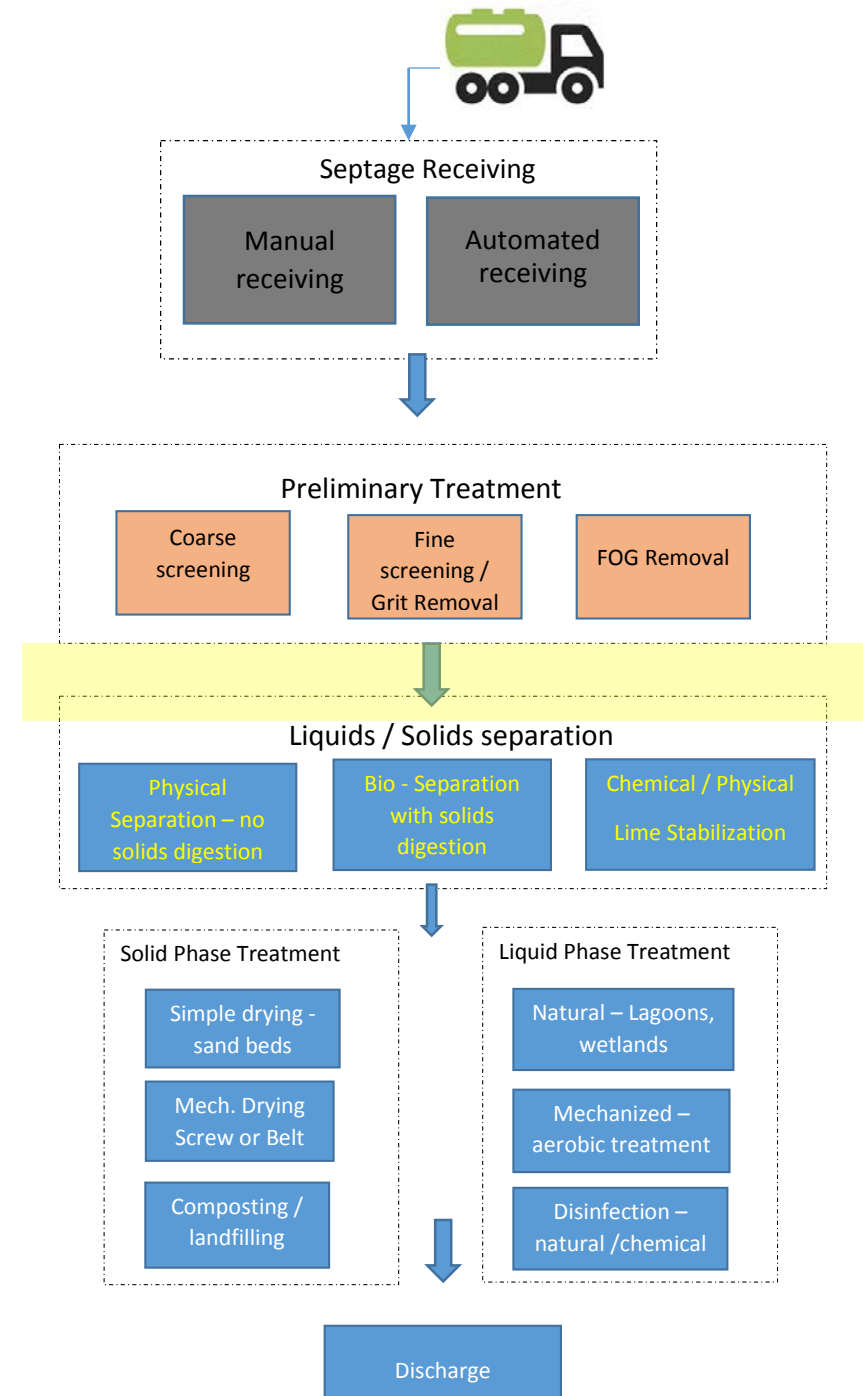


Physical separation

Sedimentation tank



Screw press



Thank You!

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