

Dumaguete City – FSM Case Study

Topic: Faecal Sludge Management – City-wide Programs for Organized Desludging

Location: Dumaguete City, Philippines

Video : <https://youtu.be/HPzZmenBkiY>

Units to which the case study is related: Organization, Finance, technology, Operation and Maintenance

Key Words: Dumaguete, tariff, septage, citywide, organized desludging

Dumaguete City started planning their septage management program in 2006, but due to a conflict with the host community, it was not until 2009 when septage started flowing. The host community was appeased through the promise of employment and investment, which the city has made good on. It is safe to say that 6 years later, the host community is truly happy with the program. This was a clear case of turning the NIMBY syndrome (not in my back yard) to PIMBY, or Please put it in my back yard. Since the facility was constructed, the road into the community was repaired and a health center was established. All from the revenue of the septage management program.

This is a joint effort by the City government and the Dumaguete City Water District. The City operates the treatment plant and the Water District conducts the desludging. A tariff of 2 pesos (about 5 US cents) was added to the water bill for each cubic meter of water consumed (about one US dollar per family per month). Water district coverage is at about 95%, so adding the fee to the water bill made sense. The program was funded through the City's own internal resources. No outside funding was required for the facility construction or purchase of trucks. The initial investment was fully recovered after 4 years of operation. Meanwhile, the Water District scaled up their efforts. They developed their own laboratory which became accredited for water and wastewater analysis. They adopted their database to include septage services, and began conducting the service.

The city utilized a bottom up approach to developing the program. They conducted a stakeholders meeting and assigned a Technical Working Group to make recommendations on technical issues. A local ordinance was drafted and approved, which became the model ordinance adopted by the Philippines Department of Health. The ordinance is printed in their Operations Manual on the Rules and Regulations Governing Domestic Sludge and Septage, Philippines Department of Health, 2008.

At the same time, they formed a sub group to concentrate on the promotions campaign. The group developed problem statements and then transformed these into messages. Messages made it into posters and flyers, and even community theater. The outputs were pretested and adjusted based on the results of the pretest. Then the outputs were launched. One of the main outputs was a poster showing the right and wrong style of septic tank and encouraging people to desludge their septic tank. Once deployed, a crew went out over the following month to verify that the posters were still where they were supposed to be.

The poster was replicated widely and even was used in Cambodia (see figure 1).

Ang Husto nga Septic Tank

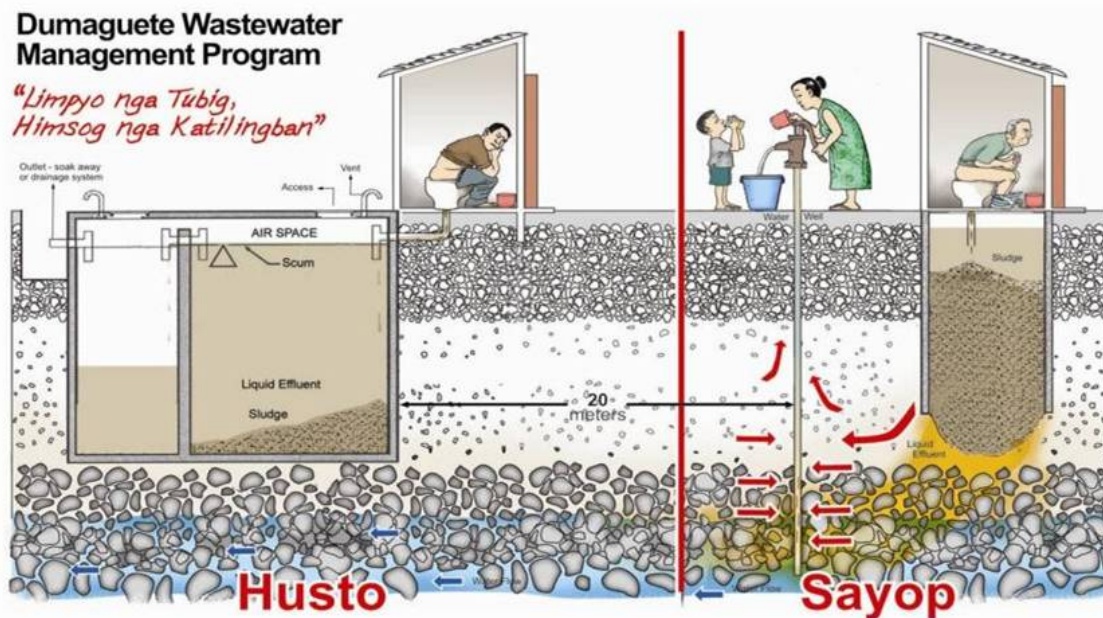


Figure 1. Dumaguete city promotions campaign poster illustrating the right and wrong septic tank.

The service started out as a scheduled desludging program. First, the city was subdivided into zones and a schedule was developed. A promotions campaign was conducted that raised interest and awareness of the program. Over time, the promotions efforts were stopped and the percentage of people availing of the service while the truck was in their neighborhood decreased. Eventually, it no longer made sense to send the truck, so the program shifted to an on-demand model. Due to recent interest however, anecdotal evidence indicates the city is back on track with scheduled desludging.

The collections program operates with 7 trucks of between 1.5 cubic meters and 6 cubic meter capacity. They have a motor pool that conducts both routine and major repairs. Tanks are fabricated on-site with a staff welder for significant cash savings. One full time mechanic manages the motor pool while relying on some of the helpers from time to time.

The site for the treatment plant is a 2-hectare lot located on the banks of the Okoy river. Due to flood concerns, a dyke was installed protecting the site from a 100-year flood event. The treatment plant uses a collection station with trash screen and grit chamber, followed by series of lagoons and wetlands to achieve very high levels of wastewater treatment. Incoming waste is at about 9,000 mg/l of biochemical oxygen demand (BOD) and 15,000 mg/l of total suspended solids (TSS). Effluent BOD and TSS are both typically less than 20 mg/l. Not bad for a totally passive system. There are 19 workers employed to operate and maintain the facility. This includes operators, security guards and landscape staff.