PSI & MCC

Urban Sanitation Market Research
FSM3 – January 18 2015

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MCC MONROVIA CITY CORPORATION

- Municipal authority with mandate to provide WM services
- Keep Monrovia Clean, Green and Safe
- $28 million portfolio aimed at primary, secondary waste and FSM
- **FISH** – Fostering Innovative Sanitation and Hygiene
  - £1.2 million from the African Water Facility
  - Aims to increase access to improved sanitation for up to 280,000 of urban poor
  - Focused on non-sewered areas of city
  - Will build/renovate 12 public toilets in 4 slum communities, pilot communal septic facilities
  - Build the country's first FS treatment and fertilizer processing plant

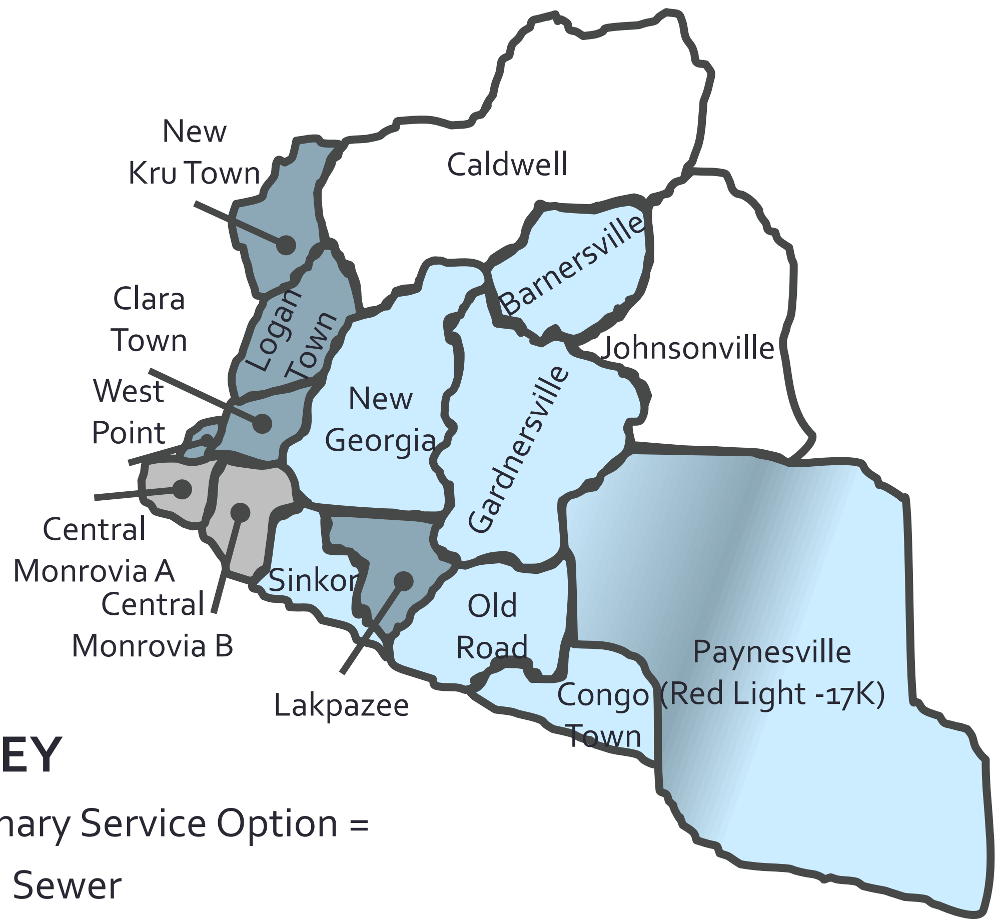
PSI POPULATION SERVICES INTERNATIONAL

- Social marketing and social franchising expertise
- Harness the power of the private sector to increase access to health products and services
- Emphasis on deep understanding of target audience
- 12 country market-based approaches to sanitation, both rural and urban
- 4(+) country FSM projects in India and West Africa

MONVROVIA

- Capital city of Liberia, historically a “fragile state”
- >1 million residents, 36% shared, 20% OD
- 70% informal settlements
- Sanitation investment less than 0.1% of GDP

FSM CONTEXT



KEY

Primary Service Option =

- Sewer
- Septic
- Community (Formal & Informal), Other

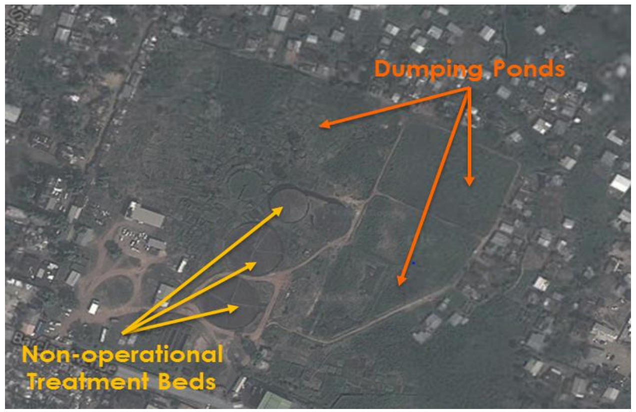
	Population (2014 Est.)*	Est. Daily Toilet Waste
Clara Town	64K	27K gal
Lakpazee	46K	19K gal
Logan Town	64K	27K gal
New Kru Town	85K	36K gal
Paynesville (Red Light)	17K	7K gal
West Point	35K	15K gal
Total Target Population	**311K**	**130K gal**

- Based on 2008 census data of 970K scaled by 1.13x to 1.1 M
- Credit to Hope Consulting Ltd.

INITIAL FINDINGS

- Limited FSM
- Poorly designed toilets and management models
- Lack of consumer focus
- Limited land availability/tenure
- Limited capital for entrepreneur entry
- Limited reuse
- Lack of coordination between public and private actors
- Weak policies and regulations

MCC is building a new treatment facility that is critical to the value chain economics as the existing facility is non-operational



EXISTING TREATMENT

- Proper treatment facilities are essentially non-existent
- Existing LWSC facilities only include "storage ponds" where waste is not treated safely as homes, fields and schools are located next to the facility
- Current dumping charges are $20 per load
- Sewer does not work effectively in bringing waste to the treatment site, instead overflowing or draining into canals that lead to the river or ocean

PLANNED TREATMENT

- MCC via the AWF FISH project is building a 300-360K gallon treatment facility, expected to be finished in the next year
- Feasibility studies are still being conducted but end output should be a usable fertilizer
- Facility will not serve entire market, requiring additional investment with a focus on decentralized models

Investments in collection capacity and new collection methods will be needed to serve the BoP at scale

- Current and planned capacity (assuming 2 runs a day) is ~39K gallons a day, which is ~30% of the daily waste generated by target communities
- Current capacity is primarily large vacuum trucks which are not able to easily access many locations in target communities creating a need for a hub and spoke collection model to leverage this capacity
- The established truckload price is $150 per truckload with a range of $100 to $200

Collection & Transport Provider Overview

	Provider	Primary Customers	Capacity
Current	LWSC	Commercial	1 - 2,500 gallon truck
	NC Sanitators	Private & commercial	2 – 3,000 gallon trucks
	Libra	Private & commercial	2 – 3,000 gallon trucks
	Duala Group	Own port-a-potties	3 - 500 gallon tugs
	UNMIL	UN compounds only	Multiple large trucks
Planned	MCC	TBD	1 - 2,500 gallon truck 2 - 50 gallon tugs

While the potential market for reuse may exist, significant barriers will likely need to be overcome to develop a profitable market

	Market Players	Barriers to Usage	Potential Market Size
Rubber Plantations	▪ Firestone Rubber Corp. ▪ Liberian Agricultural Company ▪ Guthrie (Goodrich) ▪ LIBCO ▪ Cavalla ▪ Sinoe Rubber Corp. ▪ Agro, Inc. ▪ Rubber Planters Assoc.	▪ Perception that synthetic fertilizer is needed to speed tree growth ▪ Quality concerns ▪ Volume minimums	~2,500 tons*
Palm Oil Plantations	▪ Golden Veroelum Inc. ▪ Equatorial Palm ▪ Agro, Inc. ▪ Sime Darby ▪ Sinar Mas	▪ Perception that synthetic fertilizer is needed to speed tree growth ▪ Quality concerns ▪ Volume minimums	~600 tons**
Other Farmers	▪ Farmers Association	▪ Perception of using human waste of food products ▪ Quality concerns	TBD***

*Assumes Firestone is ~50% of production on 200 square miles

**Assumes 27K hectares = 104 square miles, and utilizes similar amounts of fertilizer as rubber trees

***Not enough available information to estimate usage in this market

PROPOSED MODEL

- Privately-owned and operated community-based toilets
  - Improved toilet and management model, single units
  - Focus on quality and customer service, network of entrepreneurs
  - $1,311 estimated annual profit per toilet, break-even 5 mos 100 users per toilet
- PBCs for FSM
  - ~2,417 metric tons of safe sludge collection annually
  - ~$510 annually for waste collectors
  - MCC waste treatment and reuse facility

PBCs

- Collection* – PBC between PSI and emptiers of the franchise toilets
- Transportation – PBC between MCC and waste transporters
- Treatment – PBC between treatment plant operator and MCC
- Disposal/Reuse* – PBC between treatment plant operator and MCC

COMMENTARY

- PSI role less hands-off than expected
- Reuse not an immediate priority; phase-in
- Challenge of lack of disposal sites – FISH will help
- Not much interest from private sector to engage in PPPs
- Ebola crisis

QUESTIONS?

Special thanks to the BMGF and DfID