

water life
systems



Creating & Monitoring Strategic Water Reserves
For A Water-Secure Future, With COVID-19
Detection and Disinfection – The VAR Perspective








Utilizing IoT Connected Sensor Technology

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Water Life Systems Inc CA, USA & RSA



Potential Business Model Innovations

Business Model Example	Core Business Model Innovation
 (1) Advertising model <i>Leverages public infrastructure as an advertising asset</i>	Revenue stream (generates new ways for customers to pay for value)
 (2) Product-as-a-service model <i>Enables customers to buy performance instead of products</i>	
 (3) Civic crowdfunding model <i>Pools resources from many payers to fund public infrastructure</i>	
 (4) Cross-subsidization model <i>Purposefully engages customers with different price sensitivities</i>	
 (5) Customer experience center model <i>Offers companies a chance to demonstrate the innovative nature of their products</i>	Customer relationship (provides new ways to connect with customers)
 (6) Toilet engine model <i>Retrofits existing infrastructure and equips new builds with innovative technology</i>	Value proposition (opens up new ways to deliver value)
 (7) Integrated utility services model <i>Provides utilities with a way to benefit from off-grid activity</i>	

Early Adopter Strategy

Directly enter mass market, leveraging pockets of early adopters in the core

Time to enter the core is **now**: core is ready, excited for product and sanitation ecosystem supports the switch ; decision-making taking place requires **immediate action** to avoid missing out on opportunity

- Opportunity to achieve scale more quickly
 - Drives both higher cost efficiency from the beginning and facilitates reaching core areas of need faster
- However, will need a solid partner willing to invest at risk ahead of demand

Early Adopter Customer Segments

Short-list of early adopters considered in geographic framework and deep dive selections

= indicates segment selected for deep dive

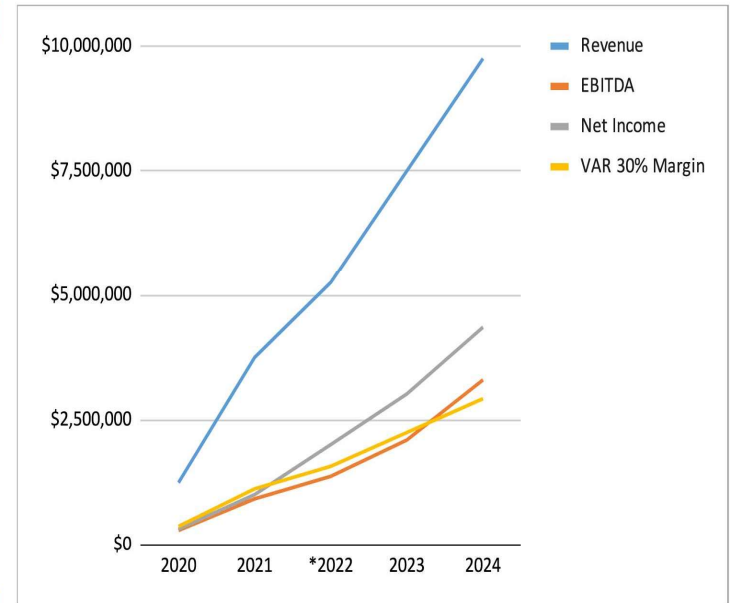
Geographic market	Segment	Overarching criteria
Blue: Mature economies building to an inflection	Military remote sites	Segments with current burning platform and clear procurement path , high visibility /potential to drive aspiration and ability to be a trendsetter and unlock both mature/developing markets
	Green buildings (commercial & mixed)	
	National and state parks	
	Green consumers	
	RV parks	
Green: High RT need and set for improvement now	Roadside rest stops	Segments with high willingness to take the plunge , current burning platform and clear procurement path , high visibility /potential to drive aspiration and ability to influence broader mass market
	Tourism/religious sites	
	Eager or high-profile municipalities	
	Rural hospitals	
	Trains	
Yellow: High RT need, but requires effort to unlock	Rural schools	Beta test segments with clear potential for government/aid organization support , to capture learnings for broad rollout
	Refugees	
	Container-based sanitation	

WLS & VAR Partner South Africa Financial Projections

Financial projections for Water Life Systems Inc South African Operations
 Current self funding investment of \$250,000. Not including ownership staff time.

*Projected Breakeven Year

Water Life Systems Inc	2020	2021	*2022	2023	2024
Revenue	\$1,250,000	\$3,750,000	\$5,250,000	\$7,500,000	\$9,750,000
COGS	\$360,000	\$900,000	\$1,200,000	\$1,550,000	\$2,000,000
VAR 30% Margin	\$375,000	\$1,125,000	\$1,575,000	\$2,250,000	\$2,925,000
Gross Revenue	\$515,000	\$1,725,000	\$2,475,000	\$3,700,000	\$4,825,000
<i>(Gross Margin %)</i>	41.20%	46.00%	47.14%	49.33%	49.49%
SG&A	\$220,000	\$800,000	\$1,100,000	\$1,600,000	\$1,525,000
EBITDA	\$295,000	\$925,000	\$1,375,000	\$2,100,000	\$3,300,000
<i>(Operating Margin %)</i>	23.60%	24.67%	26.19%	28.00%	33.85%
Net Income	\$321,000	\$1,010,000	\$2,008,500	\$3,020,000	\$4,351,500
<i>(Net Margin %)</i>	25.68%	26.93%	38.26%	40.27%	44.63%
Ave. Customer Acquisition Cost (CAC)	\$10,000	\$10,000	\$10,000	\$9,000	\$9,000
Avg. # of New Customers Assumed	2	5	7	10	13
Funding Required To Meet Growth Goals	\$400,000	\$2,100,000	\$0	\$0	\$0



Customer ROI	\$	Unit
Avg Price of System	\$750,000	per unit (unit average for one customer sale)
Avg Price of service	\$750	per month SaaS, maintenance and monitoring fees
Estimated Annual Return for Customer	\$259,000	revenue and costs saved
Estimated Customer ROI (%)	34.00%	annually

(in USD)



WLS Can Accelerate Revenue Growth With Partners

- **WLS Has Third Party Vendors In Place For Increased Production**
- **Systems Development Is A Short Cycle**
- **WLS Has South African Production/Assembly Interests If Needed**
- **Additional African Markets Available For Exclusive Territory Rights**
- **Incentives For Large Contracts - Systems Capacities Are Scalable For Large Contracts**

3 Key Opportunities

For All Opportunities: Potential to reduce cost, operational complexity, and security risks

- **Informal Settlements / Refugee Camps**
 - *Work with current collaborators*
 - *Work with United Nations and other International NGO organizations*
- **Other Government Sponsored Procurement**
 - *Work with government to introduce systems into Tourism site revamp*
 - *Work on Public Service related procurement (e.g. hospitals, schools, etc.)*
- **Military Housing**
 - *Install systems in housing and base developments*

Water Life Systems (WLS) Solutions Provide Compelling Value For Camps / Informal Settlements

RT has compelling value prop for filling the void of basic sanitation in camps lacking sewer, septic—but some considerations to ensure product success



Must be **cost-competitive**

- Could consider partnerships with NGOs, aid orgs to subsidize, and/or contributing to fund pilots



Must ensure adequate **safety for women**

- UNHCR guidelines suggest internal locking



Must be **resilient to heavy usage**



Must be **handicap-accessible**



Based on personal preferences, may need to be for **individual family**



Must be **modular** and able to be transported for use in other camps when one is closed down



Must have clear training/instructions on how to use

- Can consider training some **community advocates**

WLS South Africa Headquarters – Cape Town

Areas visited in Cape Town



Gugulethu, Cape Town

Gugulethu is a low-income township located 20KM from Cape Town's coast. Area has been built up with RDP provided housing but has informal settlements mixed in.



Langa, Cape Town

Langa is located 15KM from Cape Town's coast and is a suburb designated for black Africans pre-apartheid. Houses in the area were single units provided by the government with informal residences mixed in.



Khayelitsha, Cape Town

Khayelitsha is a township located 30KM from Cape Town's coast. It is reported to be the largest and fastest growing township in Cape Town with closely placed RDP houses and informal units.

Cape Town Demographics



3.7 million people live in Cape Town.



N/A



~9% of users in Cape Town have unimproved toilet access.

88% have flush toilets connected to sewerage

Cape Town Characteristics Affecting Tech Features

Tech Feature Implication

Water access in Cape Town is consistent and guaranteed by the municipality.

Neighborhoods are connected in rows to main sewer line with blockages reported as common.

Items such as sanitary pads, newspaper and trash were reportedly flushed.

Municipal-provided toilets reportedly stripped of valuable metal components and often destroyed.

Supporting Findings

- Water access in Cape Town was reported as consistent with prices for water ranging 1,000–1,500ZAR (\$75–113 USD) per month in townships.
- Water from public toilets is free and is collected and stored. Currently, no limit on access or number of times toilets can be visited.
- Houses in townships are connected in rows to main sewer line. When blockage occurs it affects all houses in connected row.
- Blockages are reported as more common in winter when more people are staying inside or living in home.
- Users reported that newspaper is often used in place of toilet tissue.
- Sanitary pads and trash is often flushed leading to blockages that affect all units using same connection to main sewer line.
- It is reported by companies supplying portable toilets to municipality for use in townships that they are stripped of metal components.
- Toilets in townships and informal settlements are often destroyed as occupants expect better service provision from the municipality.

WLS Solutions for South African Tech Challenges

○ **Water Access & Usage Challenges**

- *Distributed sanitation and drinking water supply systems are IoT sub-metered for data/revenue collection, priced competitively*
- *System water supply is supplemented with city/ground/surface*

○ **Neighborhood Design Challenges**

- *Distributed systems create more independent sewage plumbing micro-grid networks that isolate blockages/system failures*
- *Solar power configuration for consistent Renewable Power*

○ **Non-Excrement / Trash Flushing Challenges**

- *All flushed trash is pre-filtered for removal or macerated before entering treatment system to prevent failures.*
- *System effectively processes virtually all micro-material derived from market sold products including plastics, pharma, metals, ect.*

○ **Municipal Toilet Vandalism/Theft**

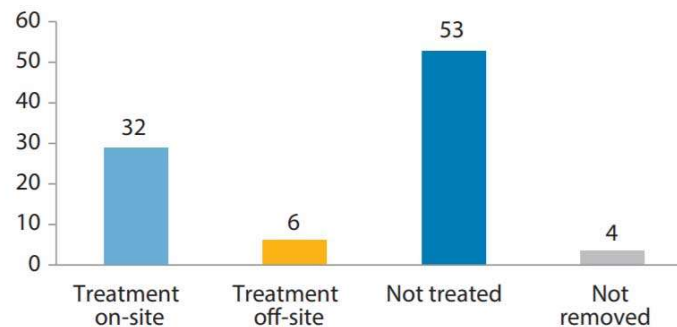
- *Washrooms and Mechanical rooms designed to withstand prison populations with anti-vandalism features*



The Problem With Sludge – That WLS Treatment Methodology Doesn't Have...

- Data presented of a recent qualitative assessment from the Bill & Melinda Gates Foundation show that of 309 sites assessed in 8 states of India, 30 locations in Nepal, and 10 in Pakistan, with a sludge volume of 5–700 cubic meters per day, less than 40% of the sludge (wastewater collected from the on-site container units) was treated by any means.
- More than 50% of the sludge was removed but not treated (**Figure**).
- **Thus, to address the sanitation issue, WLS has developed a Zero Sludge Production Treatment Methodology and integrated Nutrient Recovery for agriculture and additional revenue stream applications.**

Figure: Overview of Service Provision across the Sanitation Value Chain, Sites Assessed (%)



Source: Presentation by Roshan Raj Shrestha of Bill & Melinda Gates Foundation at the Business Leaders' Policy Dialogue on Accelerating Sanitation for All, Tokyo Japan, 30 August 2019.

Competitors – All Have Problems That WLS Solves

All competitors have combinations of sludge, low treatment capacity, cost, lack of IoT monitoring, and other solution design deficiencies.

Five Featured CPT Case studies



Mission: To provide value-based, cost-effective, scalable and sustainable solutions for people at the base of the pyramid



Mission: To constantly innovate and apply science and technology to develop solutions against the pressing needs of the society



Mission: To serve one million users daily through state-of-the-art, well-maintained toilet infrastructure by 2020 through integration of smart technology and generation of user insights



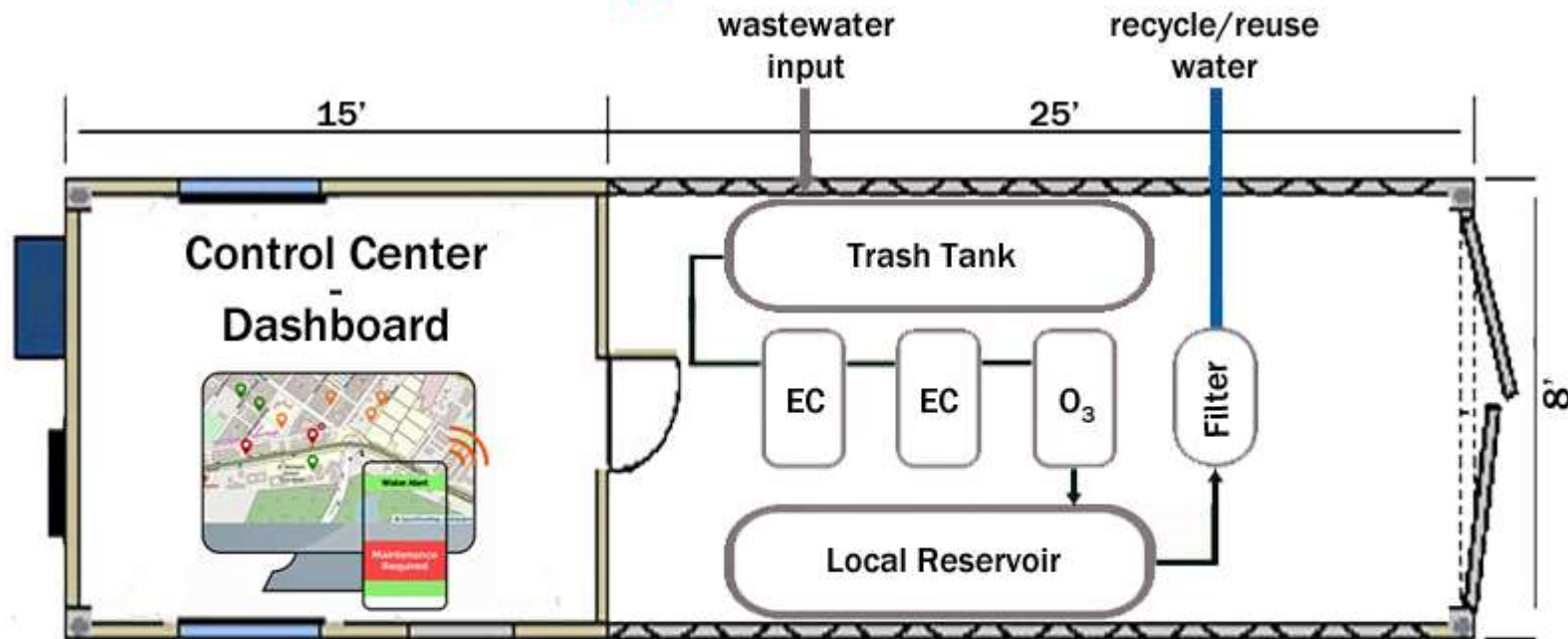
Mission: To achieve emancipation through entrustment, entitlement, and empowerment



Mission: To supply and service portable restrooms from the most visited to the remotest areas of the globe, and to constantly improve on it



ISO 30500 Integrated Treatment Unit



Technical Specifications

- 30,000 E. Coli CFU's reduced to less than 10 in a few minutes.
- Low Voltage DC produces biocides in solution that effectively eliminates bacteria and Micro-Organisms.
- Low Voltage DC produces ozone in solution that removes color, odor, tastes and polishes to drinking water standards.
- Remote monitoring of electronic bacteria detector, water quality and water quantity.

Manage Remotely

Remote monitoring via cloud, smart device of water use. Notification of system status for maintenance and operation.

Reduce Costs and Improve Efficiency

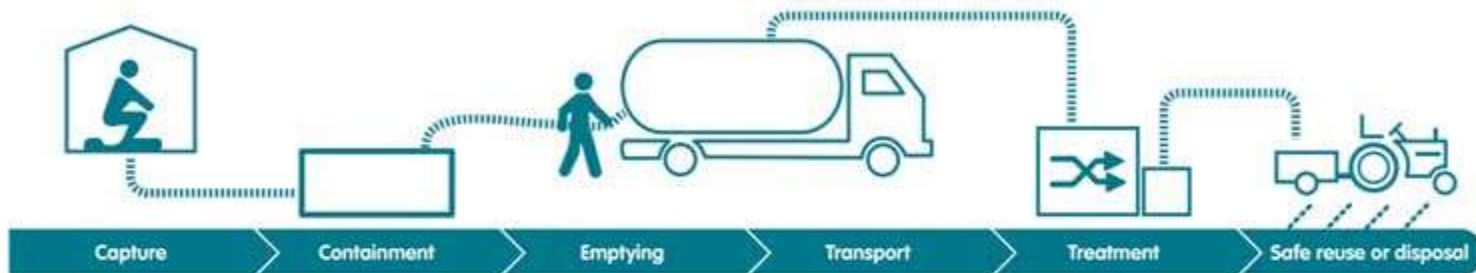
Up to 85% water conservation. Low power, solar and mains balancing operation with low maintenance requirements.

Technology

The ISO 30500 Integrated Treatment Unit is a revolutionary closed loop wastewater treatment system designed to treat rain, grey, and black water to the highest standard for reuse.

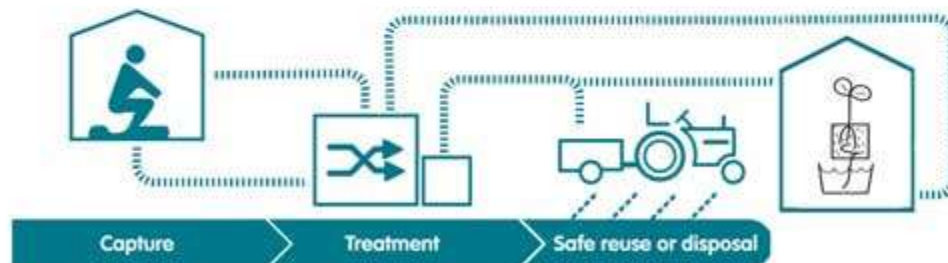
ISO 30500 + Container Aeroponics Farm Systems

To meet the UN's Sustainable Development Goal of safely managed service delivery, all SDMs must involve a chain that stretches from the individual in a household to some form of communally or professionally owned and managed infrastructure



ABOVE: CHAIN OF FUNCTIONS IN A SAFELY MANAGED SANITATION SYSTEM. A SEPTIC TANK OR PIT IS EMPTIED BY A VACUUM TRUCK, WHICH DELIVERS WASTE TO A TREATMENT PLANT FOR EVENTUAL REUSE IN AGRICULTURE. SOURCE: BAETINGS, 2018.

Water Life Systems Inc reconfiguration of safely managed service delivery utilizing the ISO 30500 PODFlush technology, shortening the SDM chain which reduces cost and carbon footprint.

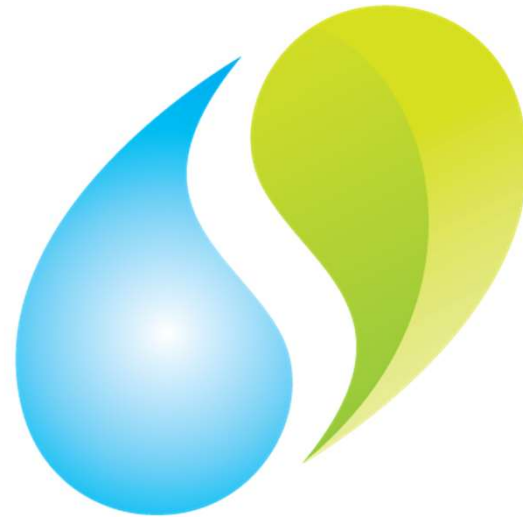


ABOVE: SHORTER CHAIN OF FUNCTIONS IN A CLOSEDLOOP SANITATION AND CONNECTED AEROPONICS GROW CONTAINER. THE SEPTIC TANK CONTAINS THE TREATMENT SYSTEM THAT DISCHARGES ANY PREDEFINED WATER QUALITY, INCLUDING, BUT NOT LIMITED TO, POTABLE/DOMESTIC AND IRRIGATION. ZERO SLUDGE PRODUCTION. NUTRIENT RECOVERY FOR REUSE. COSTS AND CARBON FOOTPRINT SIGNIFICANTLY REDUCED.

More Strategic Advantages Through Water Life Systems Inc Solutions

- Real-Time Digital Liquid And Air COVID-19 & Other Pathogen Microchip Sensors And Disinfection
- We are below or price competitive with every other solution
- Commissioning And Operational Costs Significantly Less Than Other Treatment And Monitoring Systems
- Multiple Revenue Streams Now – Waste, Water, Agriculture, IoT Data
- Ability To Retro Fit New Technology As It Comes Out - Will Not Be Outdated, Including Attachable Aeroponic/Hydroponic Container Farms
- Less Complex To Run And Faster Installation To Go Live
- Remote IoT Monitoring And Operational Change Capabilities
- Longer Asset and Operational Life Than Other Treatment And Water Monitoring Systems
- Multinational Company To Assist In Design, Installation And Consulting
- Increased Government Support & Improved Regulations Across Multiple Existing And Emerging Segments
- Active And Fast Growing Off-Grid Utilities Ecosystems To Tap Into & Add Resiliency

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Creating & Monitoring Strategic Water Reserves For A Water-Secure Future, With
COVID-19 Detection and Disinfection – The Value-Added Reseller Perspective
Utilizing IOT Connected Sensor Technology

*Your consideration is greatly appreciated. Please contact
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