

Sabesp

The Clean Stream Program

Programa Córrego Limpo



Diretoria Metropolitana

June 21, 2018



Program Goals and Stakeholders



Improve the water quality of urban streams in the city of São Paulo by eliminating the discharge of wastewater and the trash into them, **in order to increase the community's life and environmental condition**



**No Wastewater
and no trash**



Summary balance 2007 - 2017

SABESP
R\$ 254 milhões
US\$ 67 million

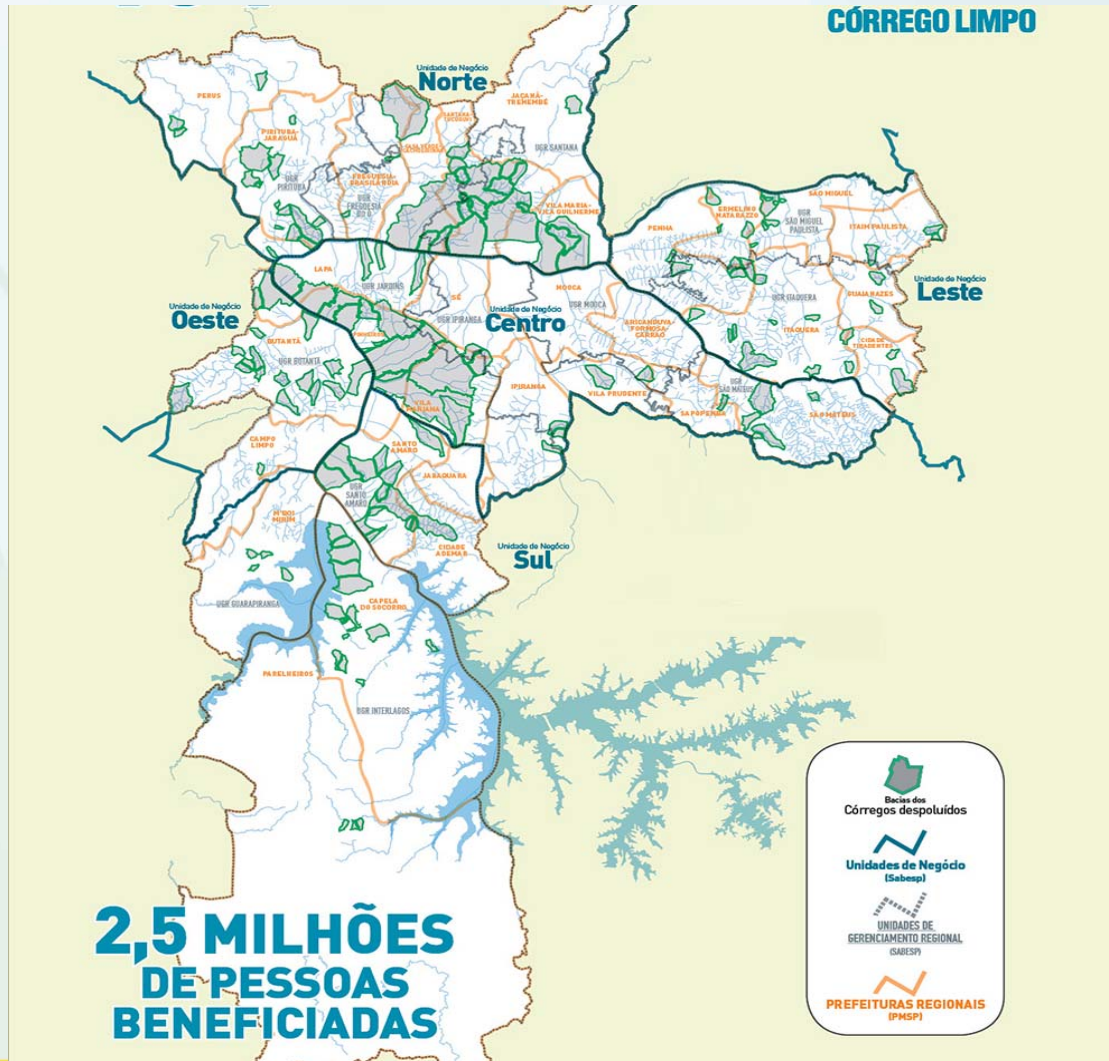


151
Cleaned Streams

Population:
2,5 million

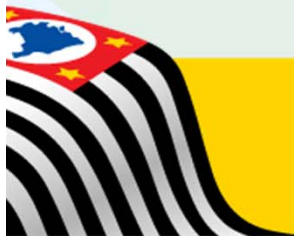


Streams Map





Tenente Rocha Stream

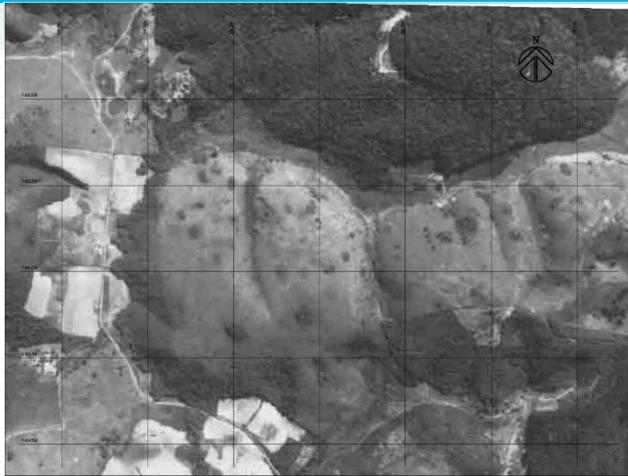


The Clean Stream Program

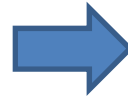
Challenges and Actions



Metropole – population growth



1940

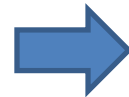


2005

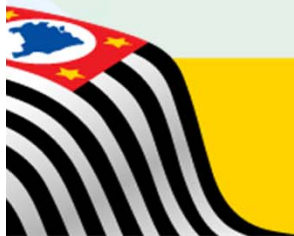
TIETE PROJECT ACTIONS



1979



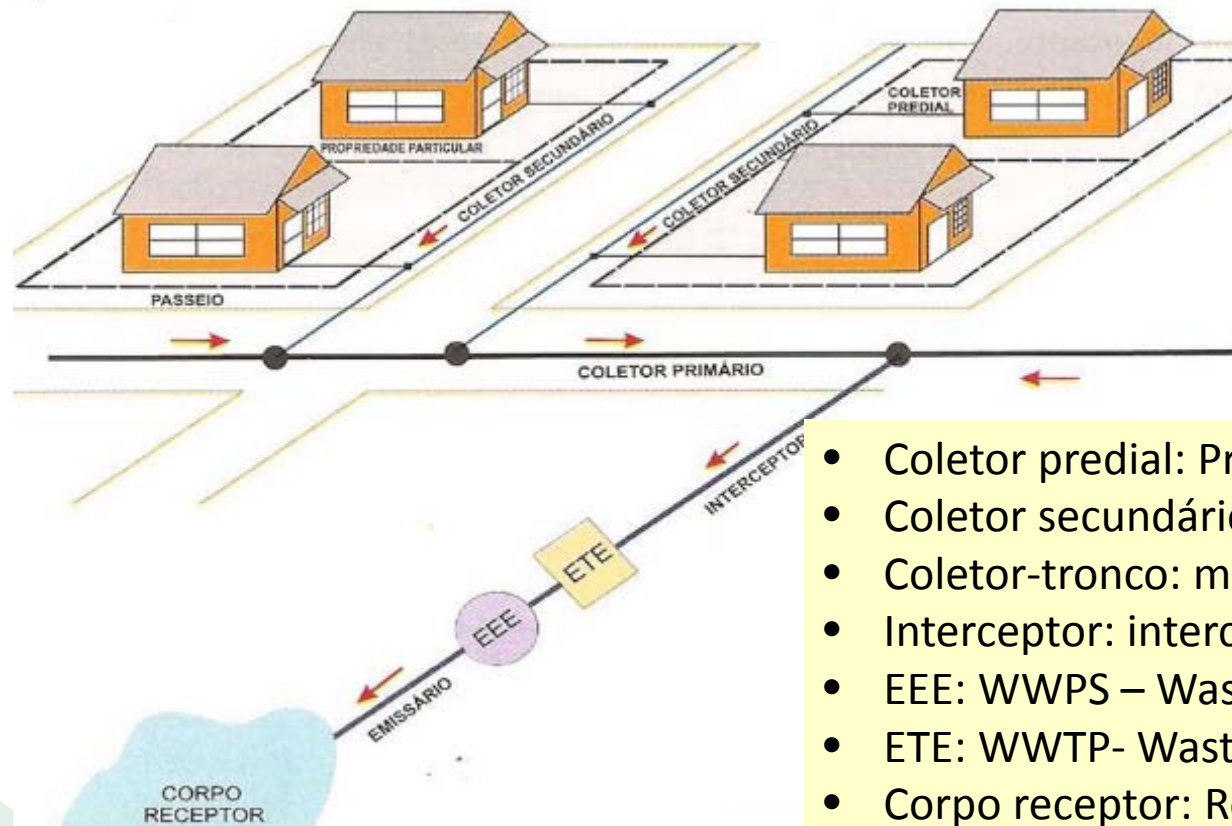
2008



Then, Why we have a Cleaned Stream Program?



Gravity

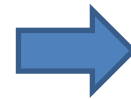
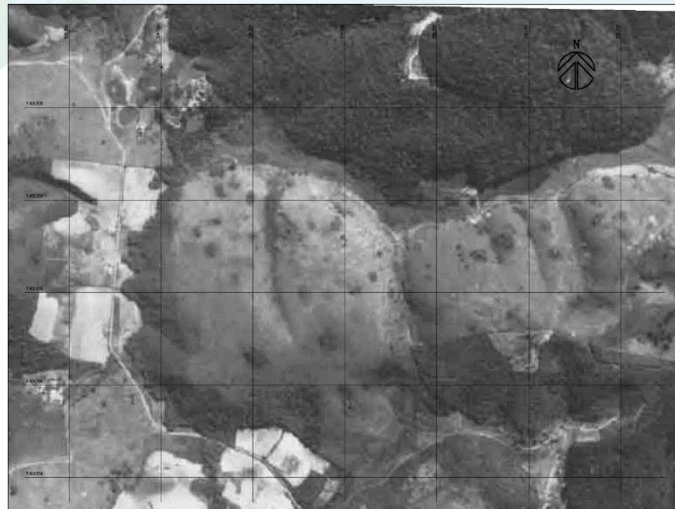


- Coletor predial: Private lateral
- Coletor secundário: wastewater network
- Coletor-tronco: main collector
- Interceptor: interceptors
- EEE: WWPS – Wastewater Pumping Station
- ETE: WWTP- Wastewater Treatment Plant
- Corpo receptor: Receiving waterbody

Reference: https://www.google.com.br/search?rlz=1C15QJL_pt-BRBR775BR775&biw=1138&bih=764&tbm=isch&sa=1&ei=fYsIW_rIA8WWwgTaoYiACQ&q=sistema+de+esgotamento+sanit%C3%A1rio&og=sistema&gs_l=img.1.0.35i39k1j0i9.33878.34951.0.37719.7.7.0.0.0.148.778.3j4.7.0....0...1c.1.64.img..0.7.776...0i67k1.0.59iK6xxZS-k#imgrc=73nWtYt08MhDcM:



Metropolitan Challenges – population growth



1940

**Impediments to
build the
sewage system**



2005

💧 **Removing and Relocating
people occupying stream
margins**



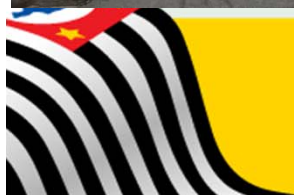
Metropolitan Occurrences

Oil at sewage network;

💧 Repairs and cleanings at the sewage network;

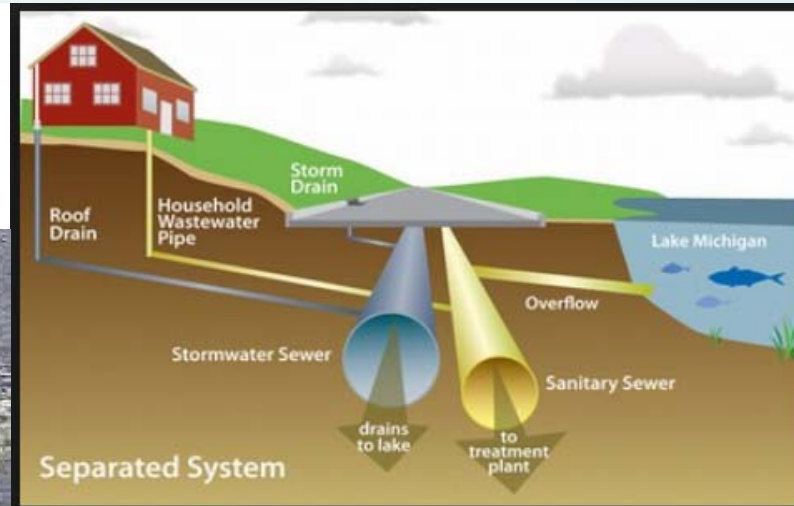


💧 Promote the connection of laterals to the network;



Brazil: Separated System (Wastewater and stormwater)

Stormwater in the Wastewater System

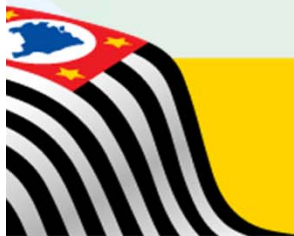


Wastewater in the Stormwater System



Reference:
<https://www.villageofshorewood.org/505/Sanitary-Sewer-System>

💧 Eliminating the clandestine wastewater connections in stormwaters pipelines

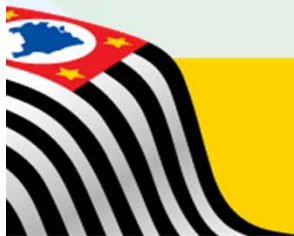


Metropolitan Occurrences



Trash and diffuse pollution carried by rainwater and street cleaning

- 💧 Cleaning riverbanks and riverbeds
- 💧 Community Education





Collaborative Governance Program



💧 Keeping the streams cleaned depends on community participation





- ◆ Repairs and cleanings in the sewage lines;
- ◆ Promote the connection of laterals to the sewage lines;
- ◆ Eliminating the clandestine sewage connections in stormwater pipelines
- ◆ Collaborative Governance Program (community education and engagement).



- ◆ Cleaning riverbanks and riverbeds;
- ◆ Removing and relocating people occupying stream margins



The Clean Stream Program

Tracking and management



Indicator: Biochemical Oxygen Demand (BOD)



BOD: Measurement of the oxygen needed by bacteria to consume organic matter
mg/l
Goal: BOD < 30 mg/l

Visual Indicators

- No odor
- Clear water
- No Trash
- No Bush
- Aquatic life – plants and small fishes

Tracking | Instant prober



The Clean Stream Program

Results achieved



Mandaqui Stream



2011, September
BOD 240 mg/l

Area: 12 square miles
Population: 460,000



2018, April
BOD 21 mg/l

- **6 miles sewage network**
- **455 connections**



Uberaba Stream: Pinheiros Afluent

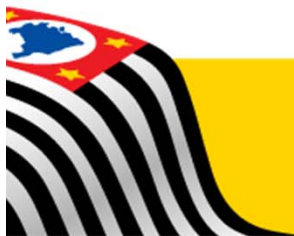


2009, March
BOD = 85 mg/l

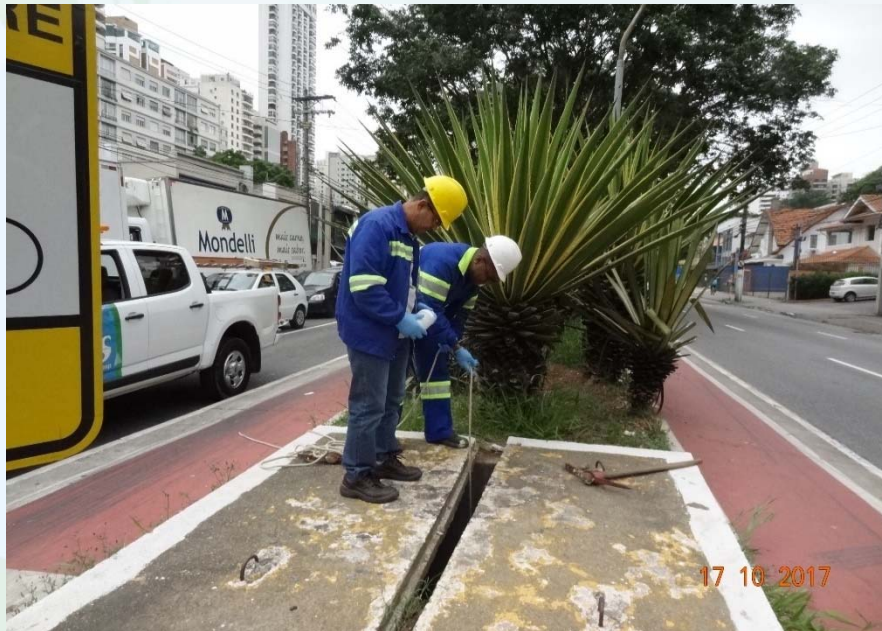


2018, April
BOD = 16 mg/l

- Area: 6 square miles
- Population: 240,000
- 0,8 mile of sewage network



Pacaembu Stream



2016, August
BOD = 140 mg/l

- Area: 1,5 square mile
- Population: 28,000
- 56 miles sewage lines



Pacaembu Reservoir

2018, March
BOD = 10mg/l



Main Success Factors



**Partnership
between Sabesp
and Municipalities**



**Education and
community
engagement**



Funding



Tiete Project



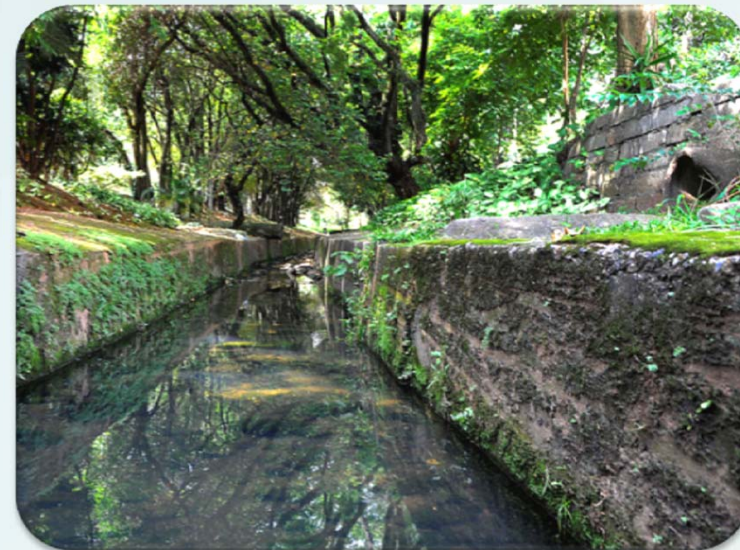
**Relocation of
people living at
stream margins**



**Continuous
tracking and
management**



Then,
Why we have a Cleaned Stream Program?
It's the guarantee that all of the sewage system was done and our maintenance and operation are working very well
It's about public health, environment and the the community's quality of life



THANK YOU VERY MUCH!

Valéria Moia Monte Alegre Angeli
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