

New Stormwater Treatment Regs and Science



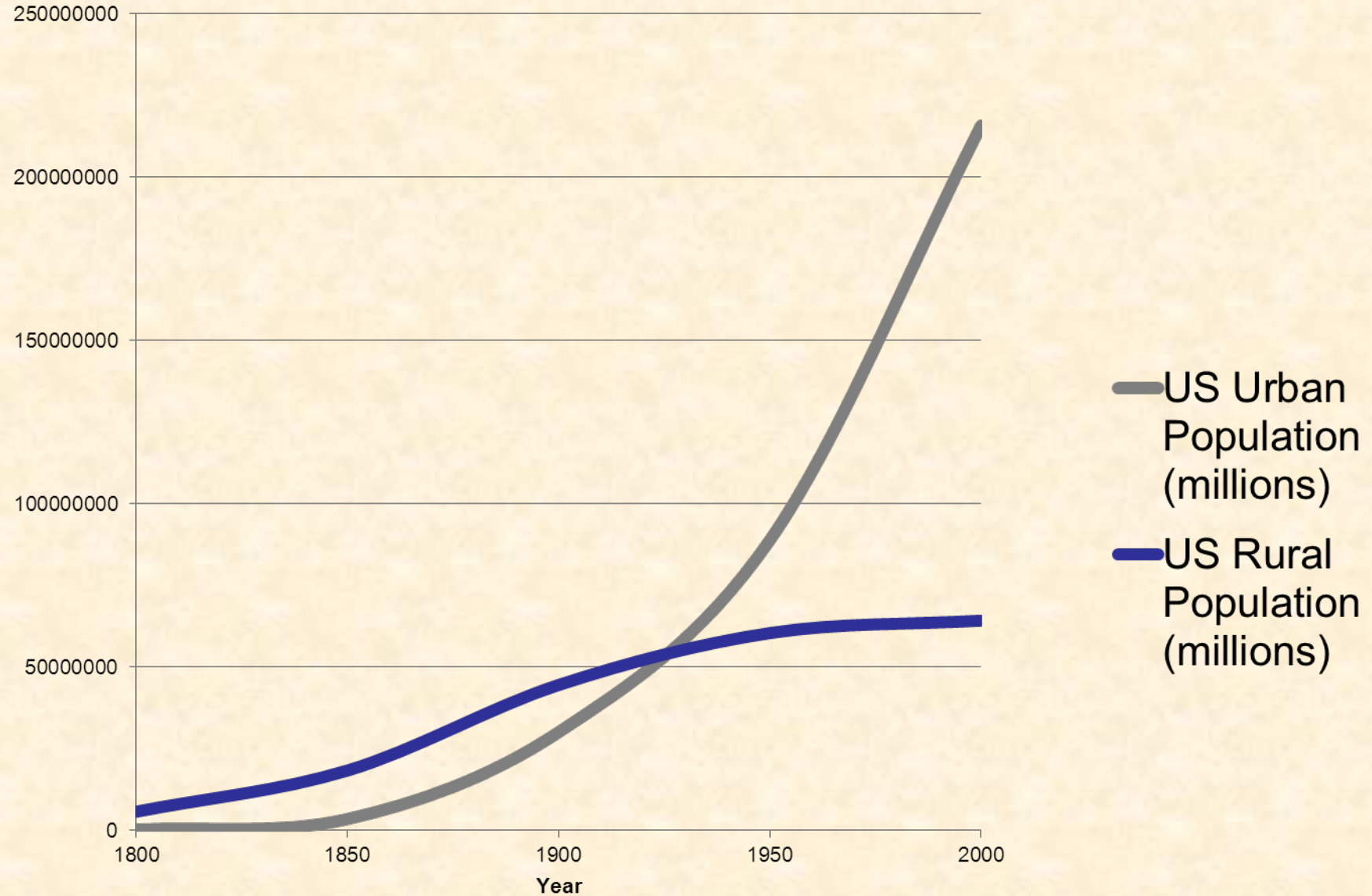
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San Francisco Bay
Regional Water Quality Control Board

Overview

- **Note from the past**
- **Planned municipal stormwater permit changes**
- **Looking to the future**

US Cities – Population Change









NYC – Five
Points. Mullen's
Alley, ca. 1890



Central Park, New York (built 1859)



The Fens, Boston



1919: Central Park, New York



1920: Columbus Park, Chicago



Columbus Park Refectory, Chicago

Muni Stormwater Permit Elements

Municipal
Operations

New and Re-
Development

Pesticides
Trash / PCBs
Mercury

Illicit
Discharge
Elimination

Industrial/
Commercial
Controls

Public
Information &
Participation

Allowed
Nonstormwater

Construction
Site Control

Monitoring

Trash Load Reduction

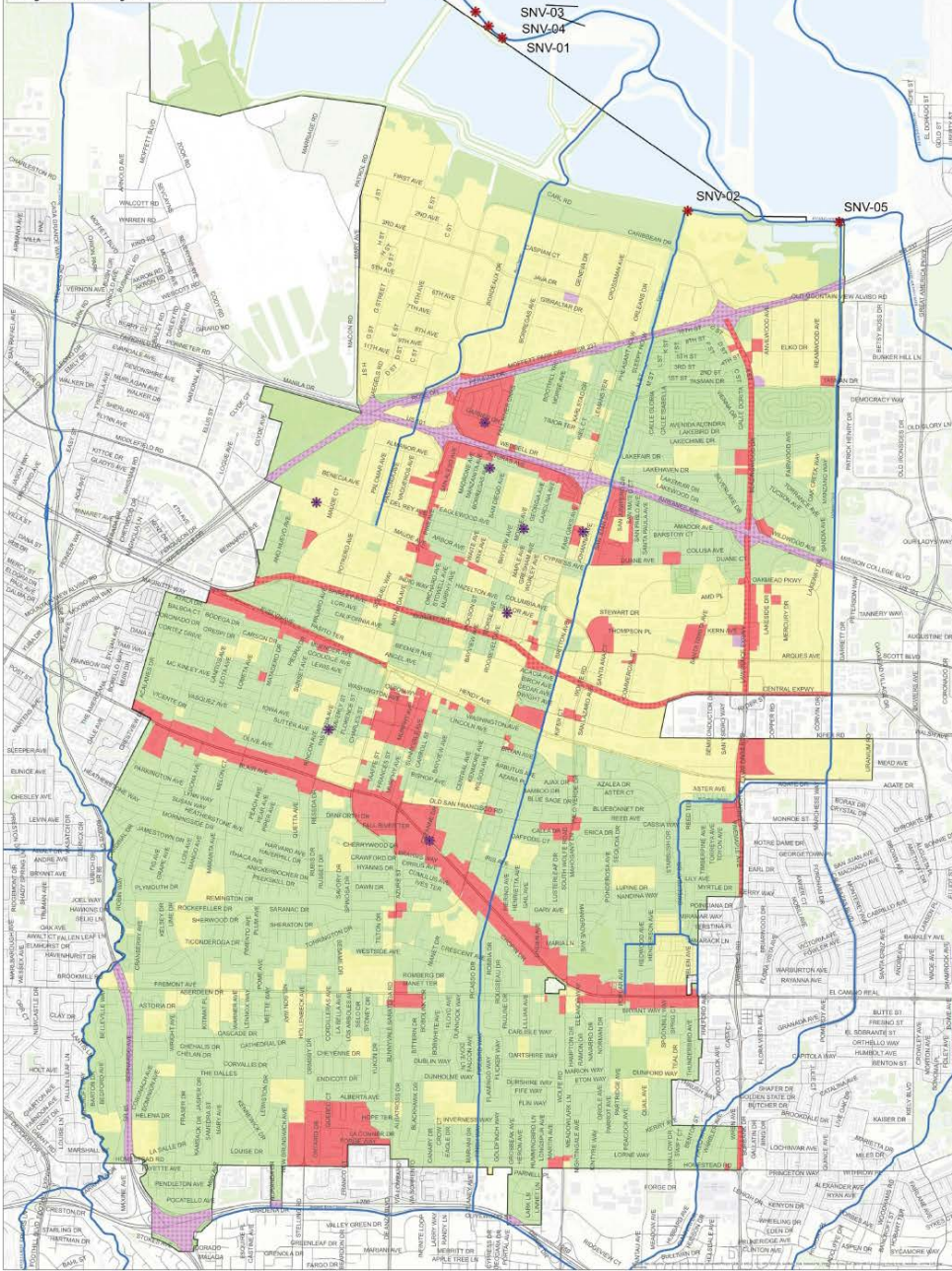
Milestones - Schedule

- 60% by July 2016?
- 70% by July 2017
- 80% by July 2019?
- 100% (no adverse level) by July 2022

- Percent of trash generation areas converted to low trash generation with full trash capture or verified equivalents
- Contributions from private land



City of Sunnyvale Trash Generation Areas



Legend

Trash Generation Areas

Category

- Low
- Medium
- High
- Very High

★ On-Land Trash Cleanup
★ Creek/Shoreline Hotspot
 - - - - - Parcel Boundary
 - - - - - Non-Jurisdictional
 (Dot color = Generation Category)

— Streets
 — Agency Boundary
 — Creeks



Data Sources:
 Streets and City Boundary: Santa Clara County
 Creeks: Santa Clara Valley Water District
 Background: ESRI World Topographic Map

Map Created By:
 City of Sunnyvale, Environmental Services Department

Date:
 December 2, 2013

SF Bay PCBs TMDL (10 kg/y)

Urban Runoff Requirements

- Wasteload allocation
 - 2 kg/y
- Load estimate
 - 20 kg/y

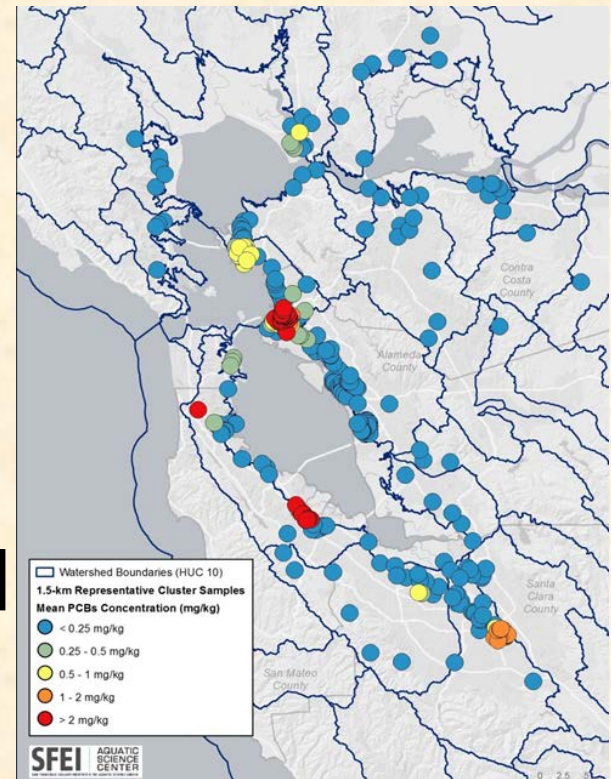


- TMDL calls for focused implementation in MRP 2.0

PCBs Reduction (C.12)

Short-Term Load Reductions

- Reduce loads by 0.5 kg?
 - Years 1 - 2
- Reduce loads by 3.0 kg?
 - Years 3 - 5
- Via source control, enhanced O&M, and/or treatment (green infrastructure)



PCBs Reduction

Green Infrastructure Plans

- Long-term PCBs load reduction via retrofit with green infrastructure
- Robust plans within permit term
 - Total reductions = 3 kg/y by 2040?
- Begin implementation during MRP 2.0 permit term



PCBs Reduction

Manage PCBs in building materials?

- Many 1950 - 1980 buildings used PCBs caulk
- Estimate of PCBs in caulk in Bay Area buildings >10,000 kg!



New and Redevelopment

- Maintain existing low impact development (LID) requirements
 - $\geq 10,000$ ft² of new or replaced impervious surface
 - $\geq 5,000$ ft² of new or replaced impervious surface at auto-related sites (e.g., parking lot)
- Mechanism to modify bioretention soil specs
- Hydromodification
- Watershed-scale green infrastructure rather than more stringent site requirements



New and Redevelopment Green Infrastructure Plan

Goal = gray to green, over time

- Early buy-in from governing body
- Watershed (drainage area) scale green infrastructure implementation scenarios
- Identify and prioritize areas with potential for LID retrofit
- Map and track
- Implementation goals
 - Impervious surface retrofitted “greened”
 - Flow and pollutant reductions



New and Redevelopment Green Infrastructure Plan

- Identify ‘crosswalks’ with related planning processes
 - Complete streets, transit oriented development, etc.
 - Address funding issues (e.g., grant requirements)
- No missed implementation opportunities during permit term
 - List of potential alternative compliance projects







Green Roof, Chicago City Hall. 2005.



New Seasons Market
Portland, Oregon



Cisterns

Chicago Green Technology Center, West Side, July 2003



03 16 2004



Photo by Prof. C. Benton



Boston Fens 1880 and 2002





**Boston Fens
Multiple Uses
2003.**

