

Infrastructure2050



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Berkeley's Vision for 2050?

Carbon Neutral – Climate Action Plan

Water Neutral, drought & flooding

1. Rainwater capture & reuse
2. Permeable surfaces
3. Grey water

Fiscally sustainable

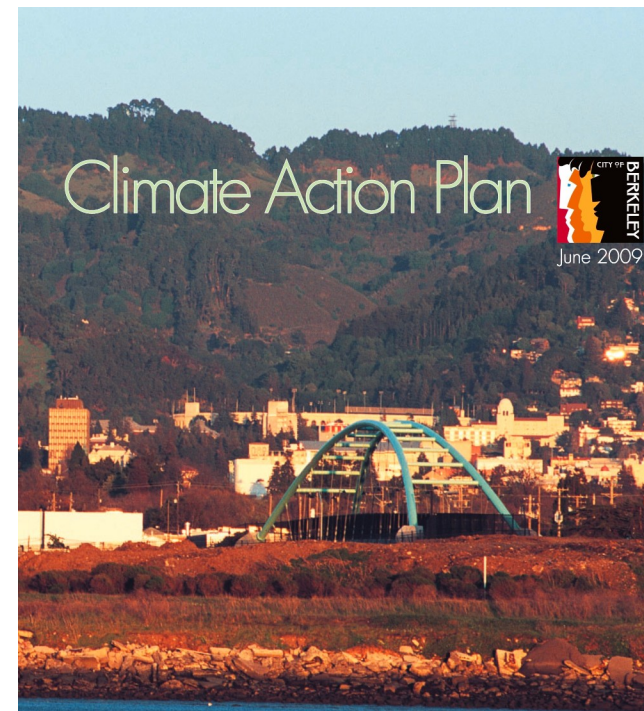
1. Durable – lower maintenance costs
 - E.g. LED street lights
 - E.g. Branch libraries seismic/energy upgrades
2. Infrastructure replacement fund

Resilient and Beautiful City

1. Undergrounding & fiber optics
2. Parks & greenways
3. Fishing pier

Climate Action

- 2050 Goal
 1. Reduce GHGs by 80%
- Progress
 1. Limited Funding



Berkeley Infrastructure

- No Goal
- No Plan
 1. Measure T1



INFRASTRUCTURE NEEDS

> \$1 Billion

Flooding &
Drought
>\$200M

Transportation
>\$200 M

Undergrounding Utilities
\$740M

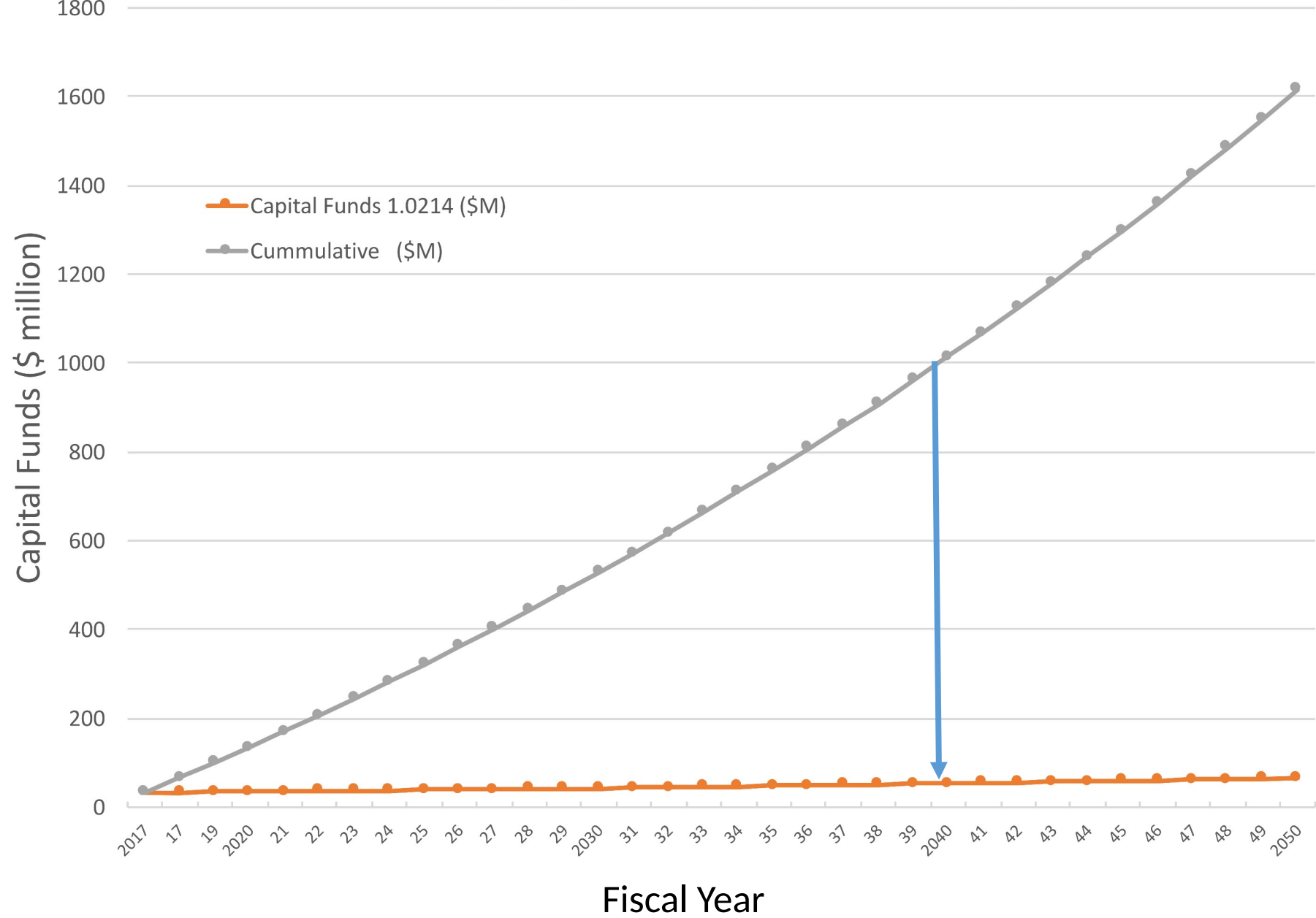
Parking
\$36M

COB Identified Capital
Needs
~\$400M

T1
\$100M

Resilience
>\$200 M

Berkeley Capital Funds (FYs2017 - 2050)



How Does Berkeley Finance Capital Projects?

General Obligation Bonds – Tax on Property



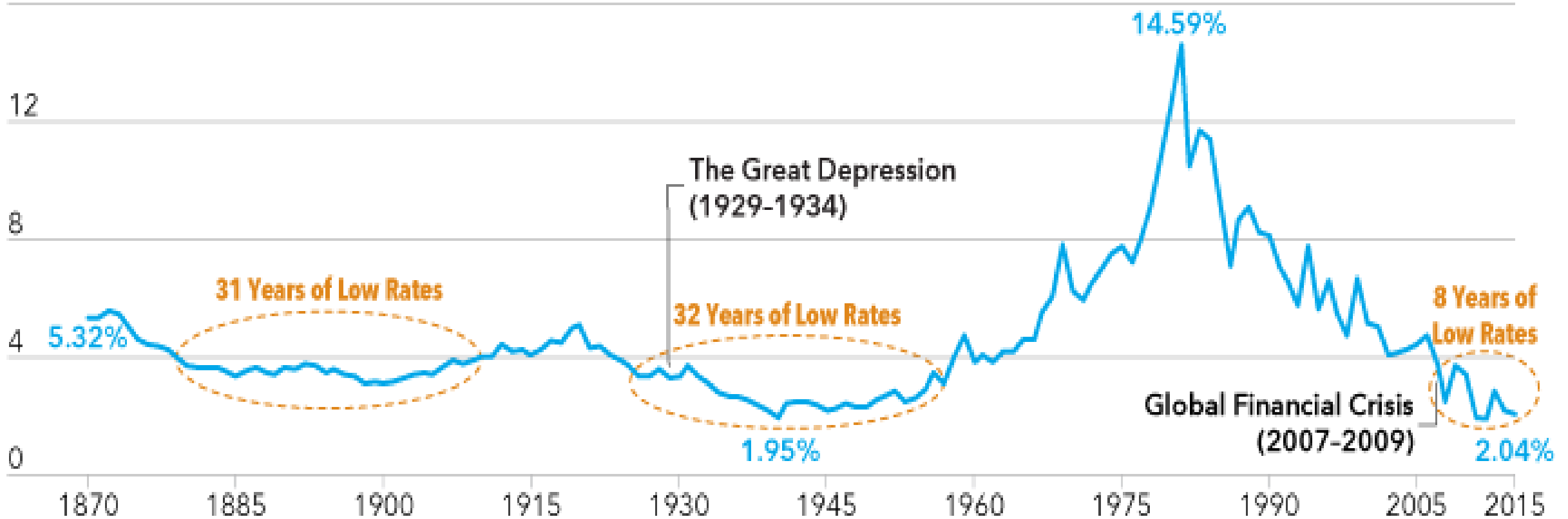
Revenue Bonds – revenue stream



To Bond or Not to Bond?

10-year Treasury Yields

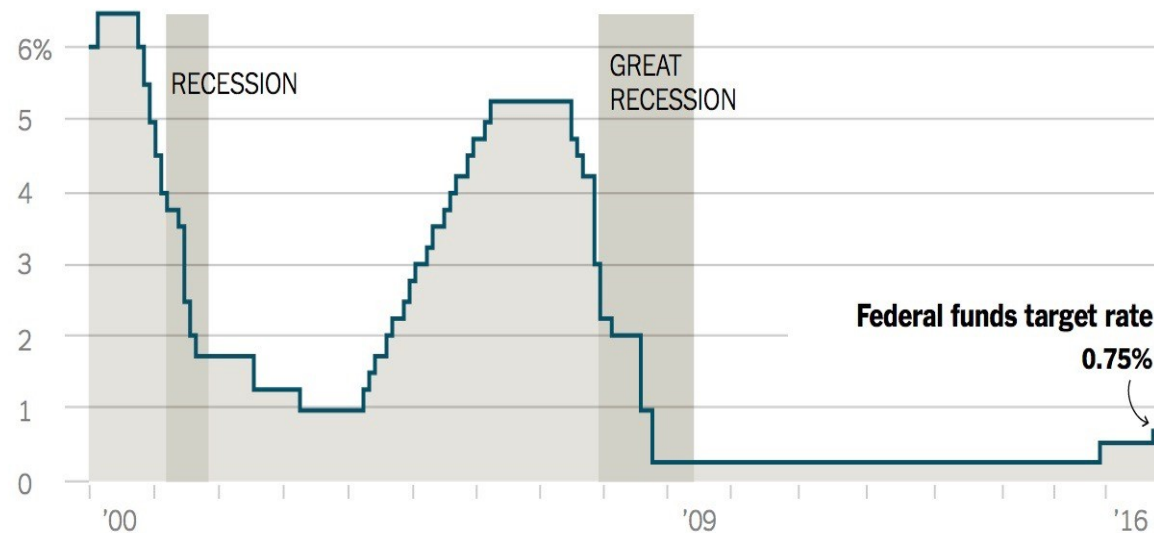
16%



From 2000 – 2016, Berkeley issued \$62 Million in New Bonds

Did its Debt Service Tax Rate go up or down?

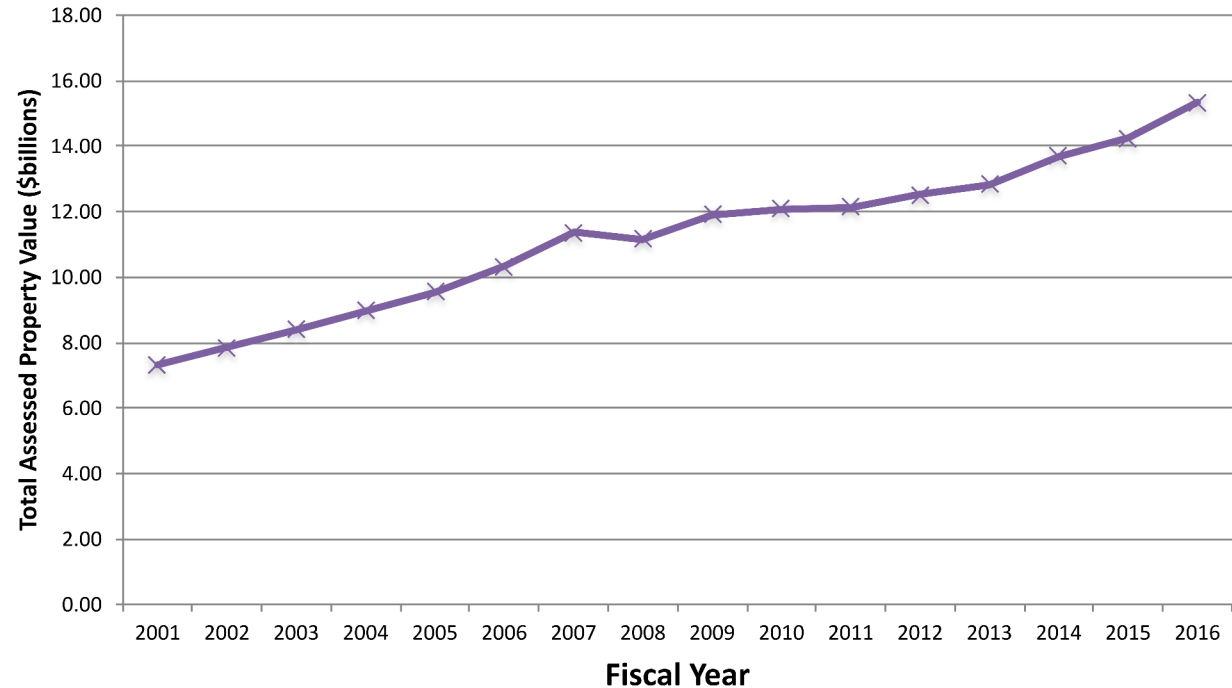
The Federal Reserve raised its target rate for only the second time in more than a decade.



Note: Graphic shows the Federal Funds Target Rate previous to the December 2008 rate change; since then it is the upper limit of the Federal Funds Target Range.

By The New York Times | Source: Federal Reserve

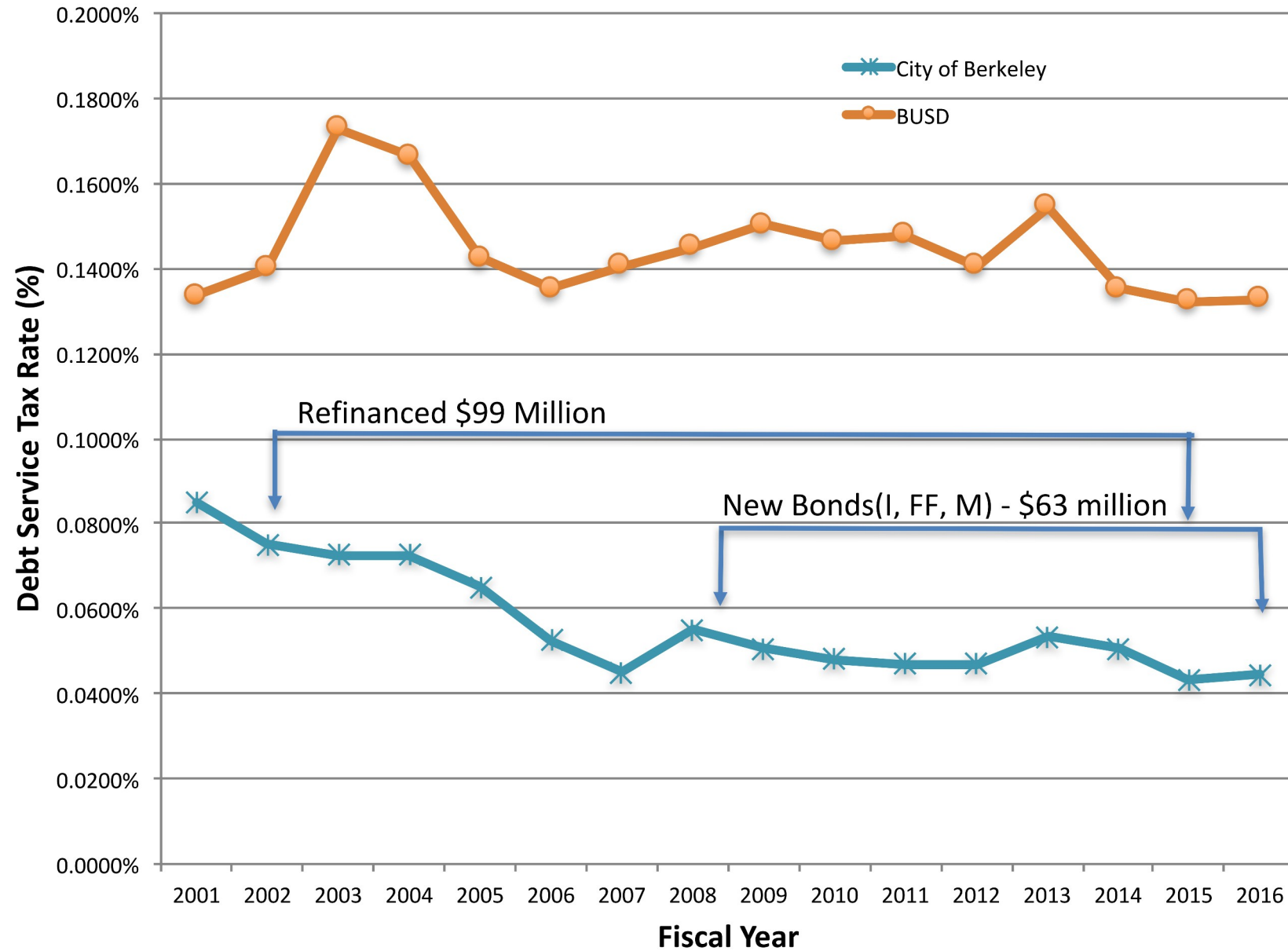
COB Assessed Property Values for FYs2001 - 2016)



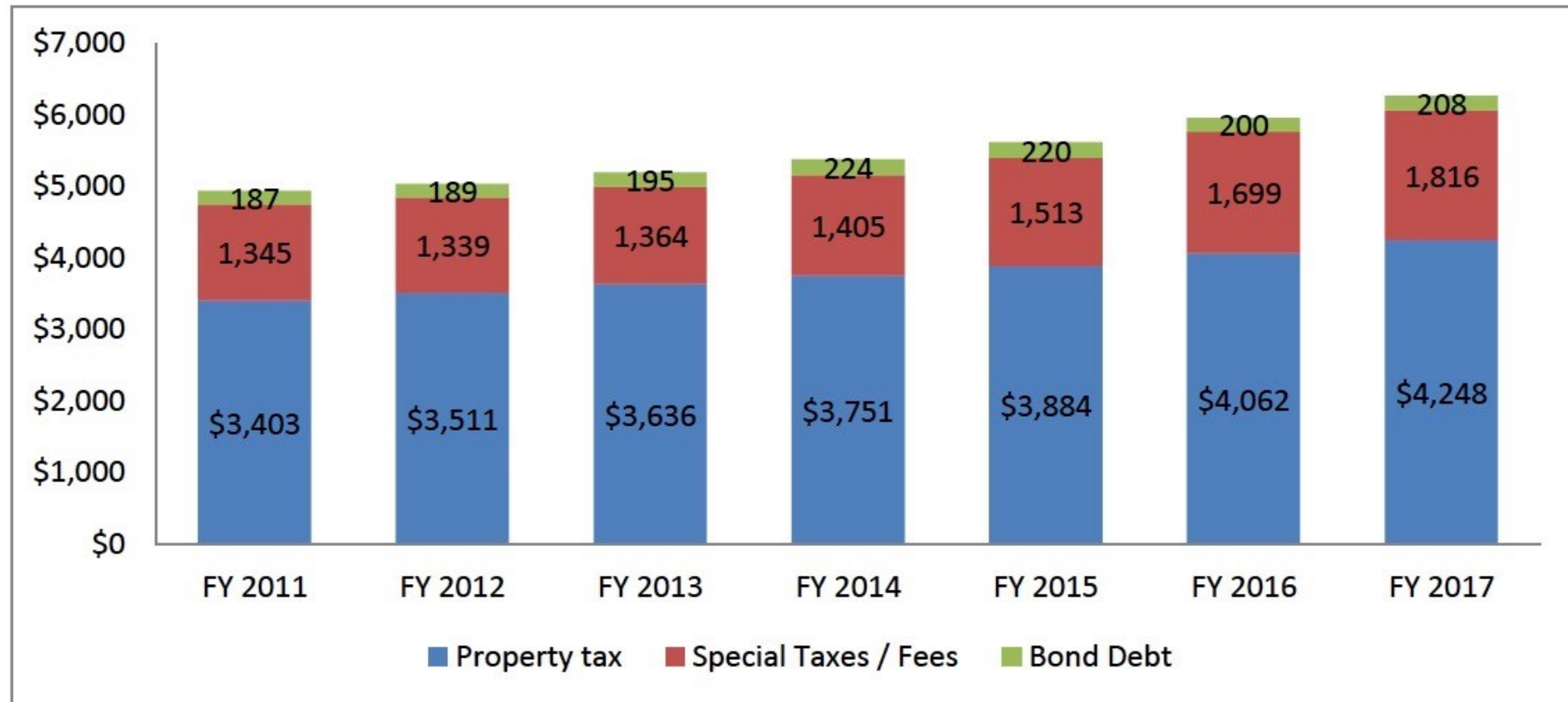
Comparison Taxes and Tax Rates for 2000/1 to 2016/17 (141 Parkside Drive)

Year	Countywide Property Tax based on AV (\$)	COB Tax Rate (%)	COB Tax Amount (\$)	BUSD Tax Rate (%)	BUSD Tax Amount (\$)
2000/1	\$5,369	0.0867%	\$465	0.1250%	\$671
2016/17	\$6,991	0.0445	\$311	0.1327%	\$927
% Change	+30.2%	-48.7%	-33.1%	+6.2%	+38.2%

Comparison of Voter Approved Debt Service (Tax Rates)

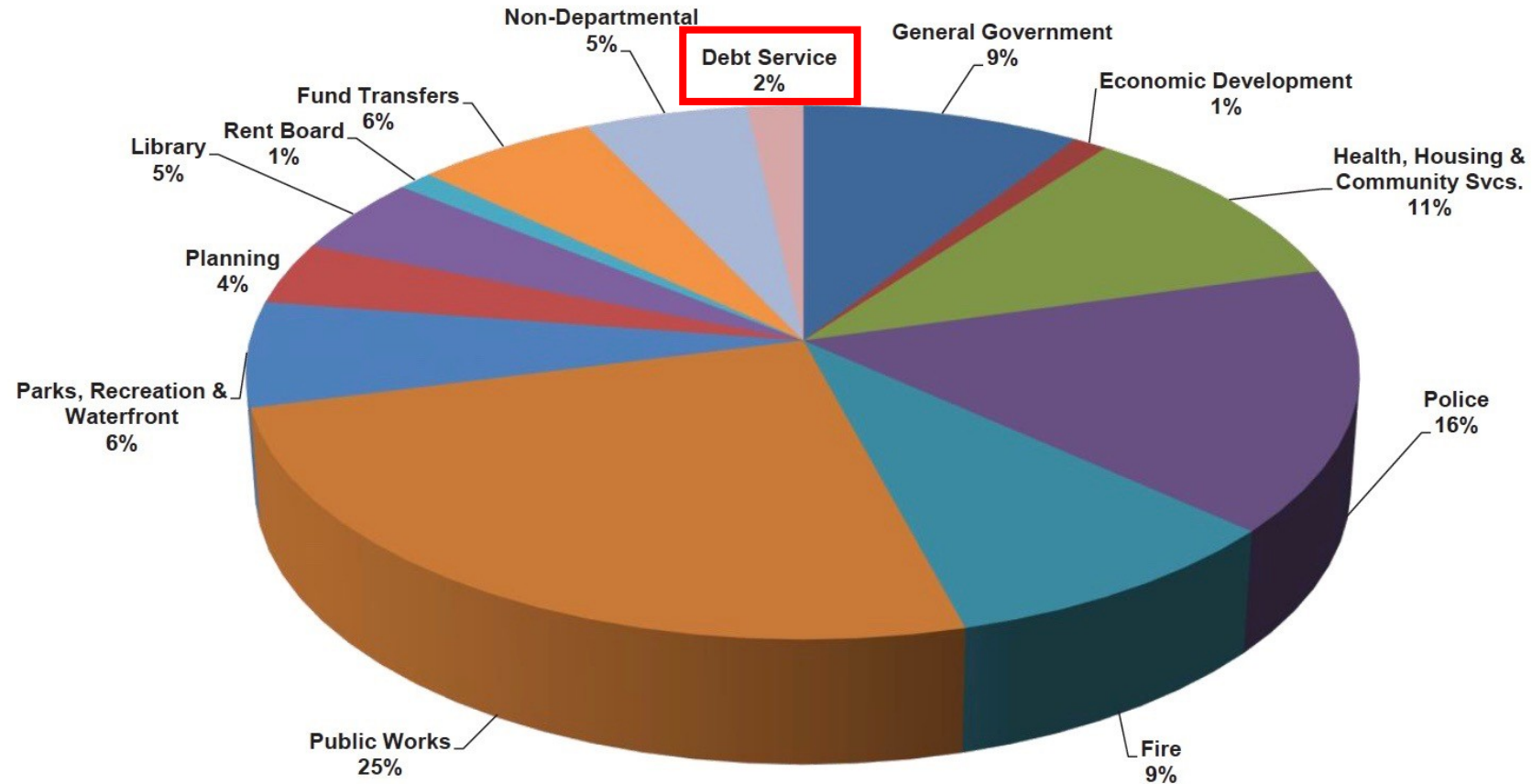


Annual Berkeley Property Taxes: FYs2011 -17 (average assessed value – 1900 ft2)



Debt Service is 2% of Total Budget

**All Funds Expenditures by Department
FY 2016 & FY 2017 Biennial Budget
\$783,375,227 (Gross)
\$673,572,076 (Net)**



Berkeley, Sewage and San Francisco Bay



Berkeley and other East Bay cities have reached a settlement with the EPA to upgrade their sewer lines, which should prevent raw sewage from spilling into the bay during storms. Photo: dogefrost

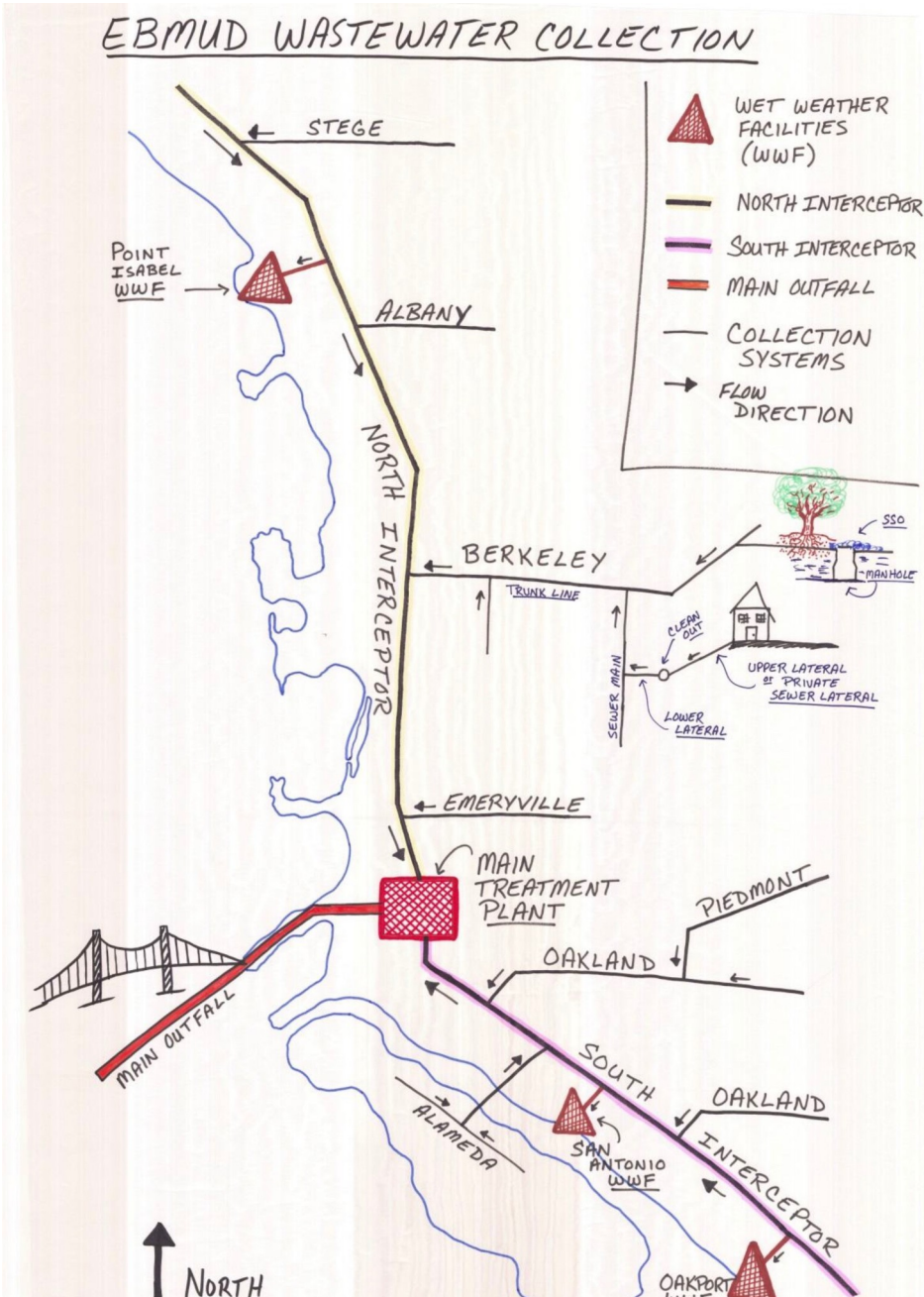
REVENUE BONDS?

Berkeley Violates Clean Water Act

2014 – Consent Decree requires COB
Reduce inflow and infiltration
Reduce sanitary sewer overflows
Repair and replace aging sewer pipelines

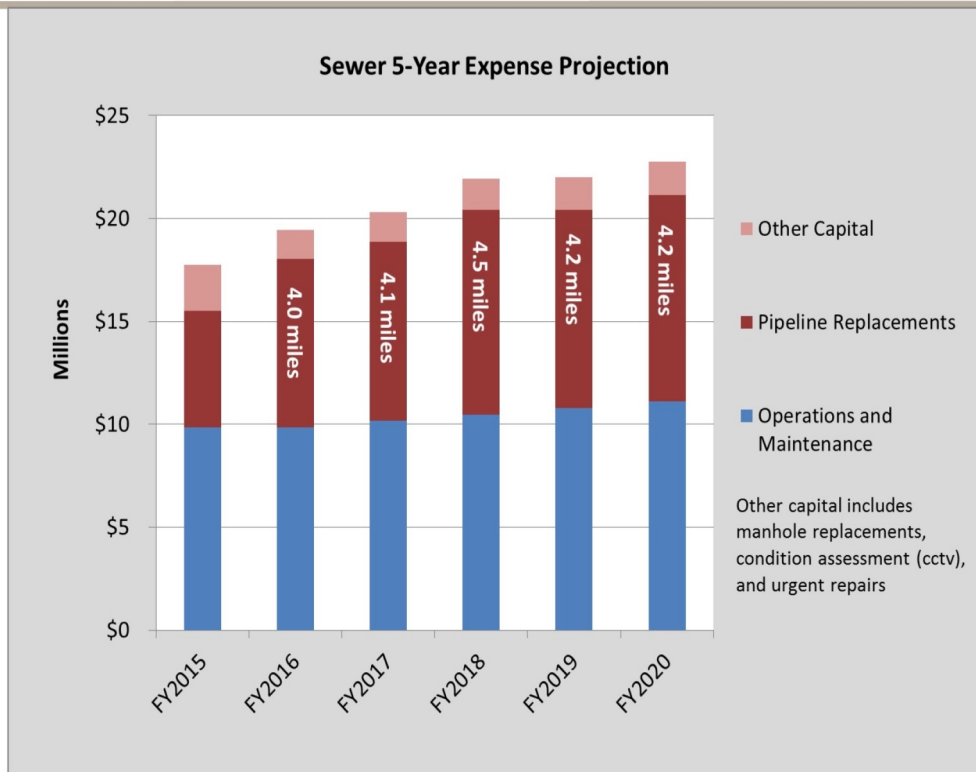
2026

Replace 50 miles of sewer pipeline -> **\$100M**
Replace all noncompliant manholes
Perform annual assessment on 25 miles of sewers
Increase maintenance activities



COB Proposed: Sanitary Sewer Capital Spending

Funding Needs Projection



Capital Project

- ~4 miles/yr of pipeline replacement
- Fund with \$100M Revenue bond – similar to new parking garage
- Use sewer fee increase to pay bonds

Benefits

- complete project in 5 vs 10 years
- Less pollution in SF Bay
- Lower maintenance costs?
- Lower peak sewer fees?

California Water Cycle

Drought



Rain Dance



Flooding in Berkeley



Permeable Surfaces: Reduce Flooding

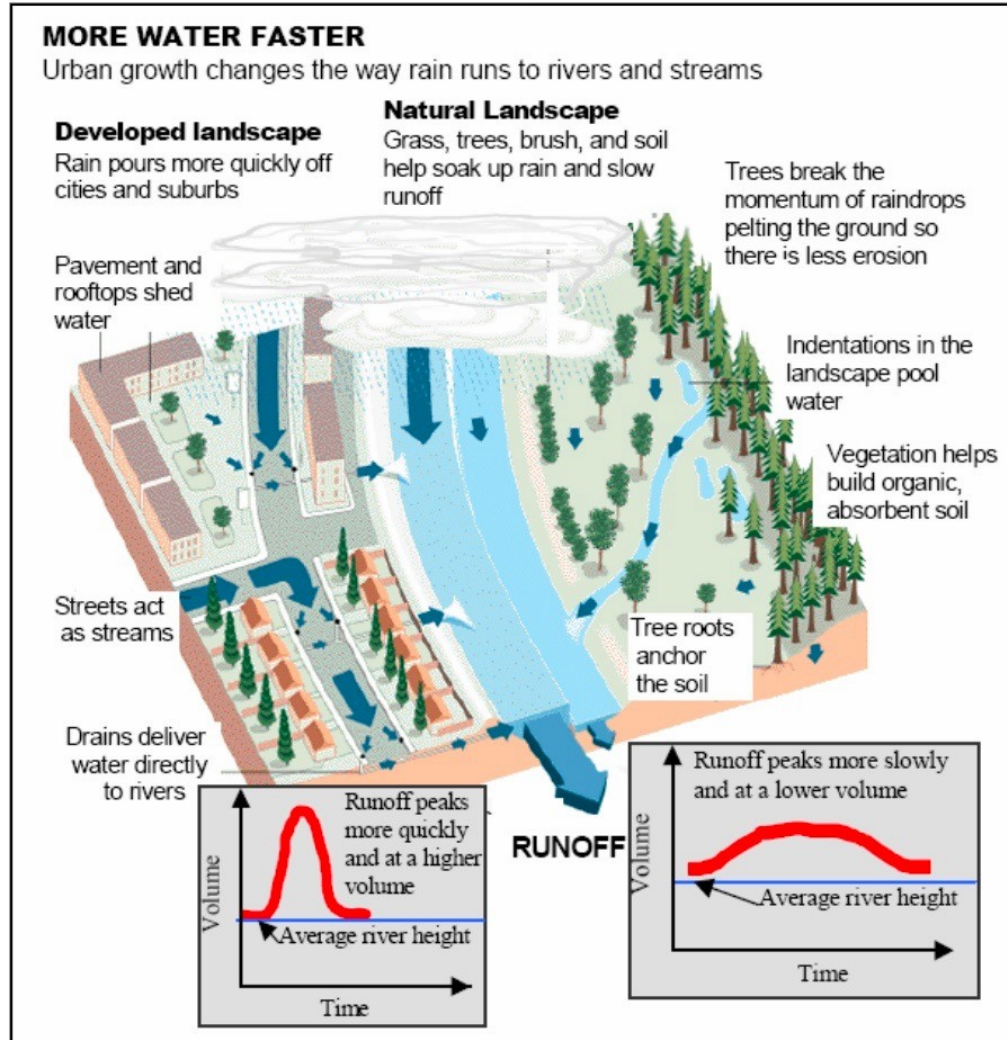
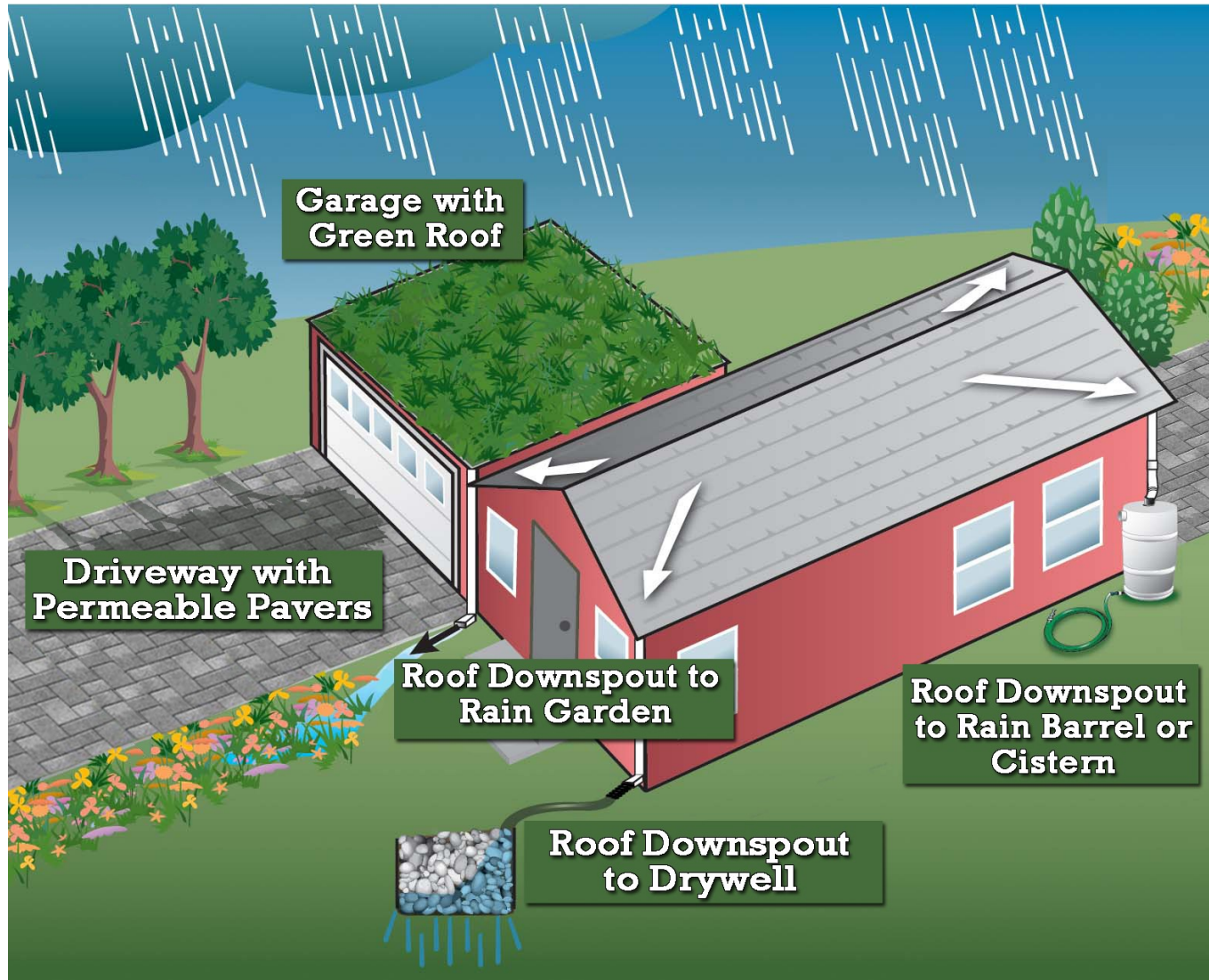


Figure 2-3, Urbanization Effect on Runoff Volumes and Rates



Rainwater Capture and Reuse



Seismic Rebate – 1992 Transfer Tax

Very Successful

- Over 60% of private residences have participated
- Number of participants is declining

Expand Rebate to include Climate and Water Goals

- energy efficiency
- solar power
- water conservation, rainwater capture & reuse

Requires Ballot Measure

- No tax increase

Drought/Flooding – Special GO Bond

Slow down runoff

- Permeable Surfaces
- Water retention and capture systems
- Water conservation Incentives

EBMUD

- Incentives to capture and reuse rainwater
 - E.g. solar and recycling incentives

Berkeley

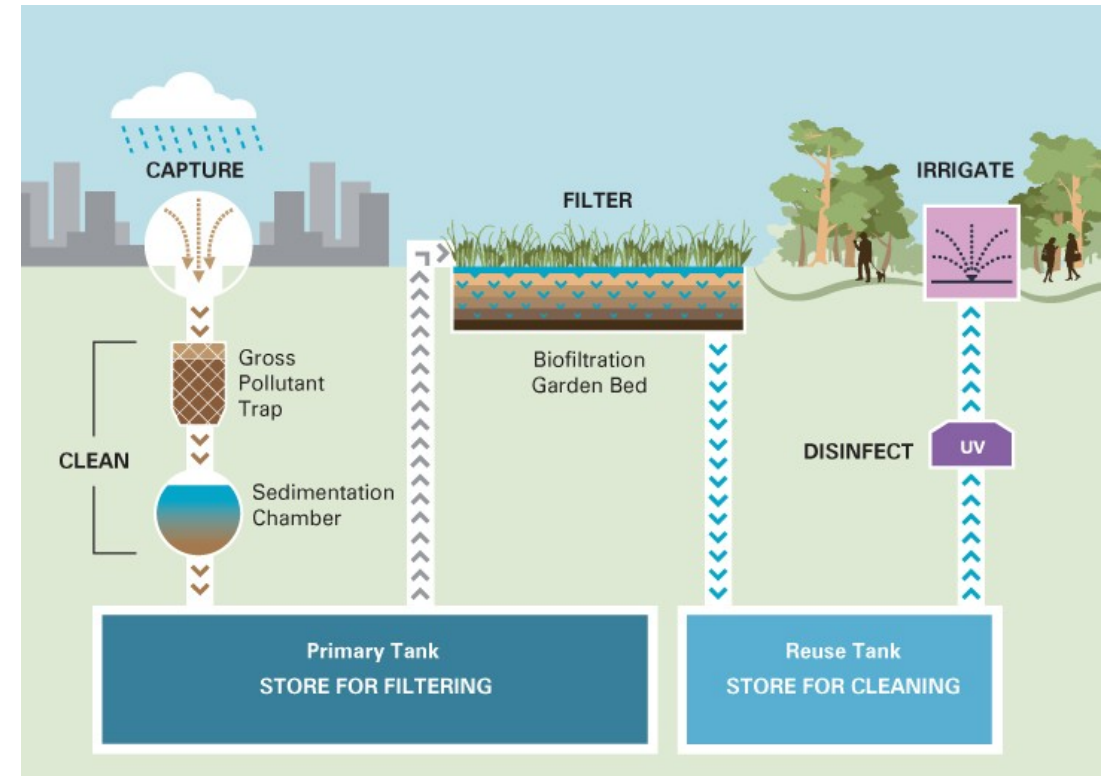
- New multiunit buildings
 - require onsite storm water capture & storage

Permeable Surfaces and Rainwater Retention & Reuse

Berkeley 2016



Berkeley 2050



30 Year Capital Financing Plan

(\$33M x 30 yrs = \$1 Billion)

GO Bonds

- Assessed Values → x4 - Measure T1
- Ask Voter to set Debt-Service Rate at FY2000 value of 0.0867%
- Drought/Flooding Bond

Revenue Bonds

- Use \$5M capital steam in sewer fund to issue Revenue bonds

UUT increase by 2.5% to 10%

- Use \$4.7M increase to fund revenue bonds for undergrounding collectors & arterials
- Dedicate 1/3 of current UUT to undergrounding residential streets
- Ask Utility & Insurance Companies to subsidize residential undergrounding

Property Transfer Tax

- Broaden Seismic Exemption to include energy & water efficiency

Partnerships

- EBMUD, Utilities, Insurance Companies

COB + EBMUD Partnership

1. Adopt goals for Water Use/Reuse

- Water neutral by 2050?

2. Develop Incentives (ala solar, energy, and recycling programs)

- rain water capture & reuse
- water conservation
- Permeable surfaces
- Upfront financing (ala Solar City)

3. Adopt program to reduce storm water infiltration into sewer system

- Sewer fund – adequately funded
- Storm drain fund - no money
- Integrated problem

The End

Water Neutral by 2050

Water capture & Reuse

Permeable Surfaces

Slow Runoff and Recharge Aquifers

Reduce Flooding and Mitigate Drought

Capital Project: Sewer Pipeline Replacement

EPA Settlement

- Mandates 4.2 mi/y = \$8.4 million

Operating Budget

- ~5M/yr → 2.5 miles of pipeline replacement
- **Shortfall = \$3.4 M/yr**

Two Options

- Raise sewer fees?
 1. Keep to original schedule
- **\$100M Revenue bond?**
 1. Complete project faster
 2. Less pollution

Berkeley's Sanitary Sewer Service Rates

(Adopted by Council in June 2015)

Single Family

FY 2016	+46.0%
FY 2017	+24.2%
FY 2018	+14.2%
FY 2019	+7.0%
FY 2020	+3.6%
Total	+131%

COB signs Consent Decree with US EPA to stop the release of partially treated sewage into SF Bay

2014 – Consent Decree requires COB

- Reduce inflow and infiltration
- Reduce sanitary sewer overflows
- Repair and replace aging sewer pipelines

2026

- Replace 50 miles of sewer pipeline
- Replace all noncompliant manholes
- Perform condition assessment on 25 miles of sewer annually
- Increased required maintenance activities