

Item 11

Water Board Permitting & TMDL Framework

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Regional Water Quality Control Board



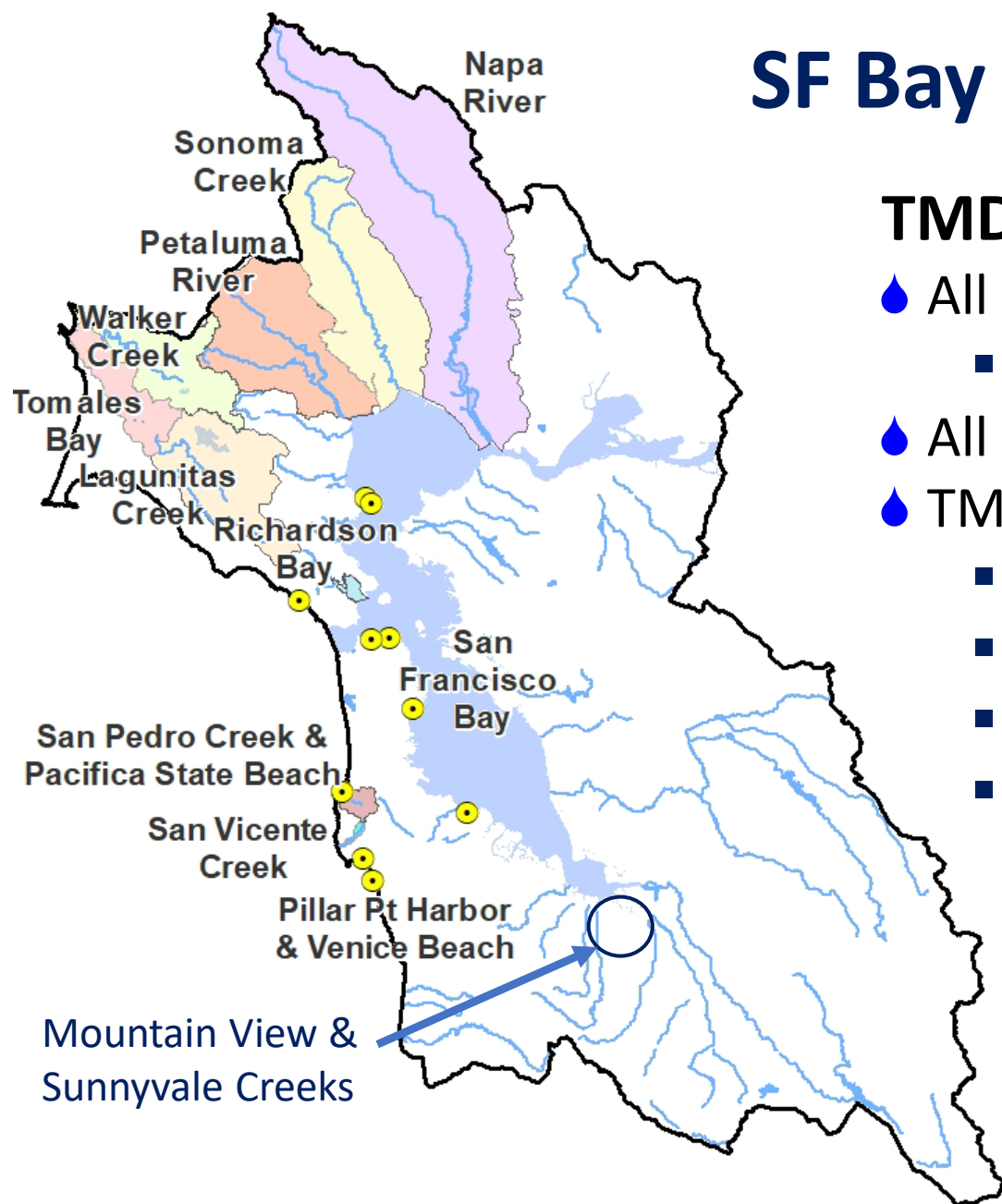
California Bacteria Summit

September 15, 2022

Outline

- 💧 SF Bay Region Bacteria (Pathogen) TMDLs
- 💧 Sources and regulatory implementation mechanisms
- 💧 Municipal stormwater issues and approach
- 💧 Recommendations

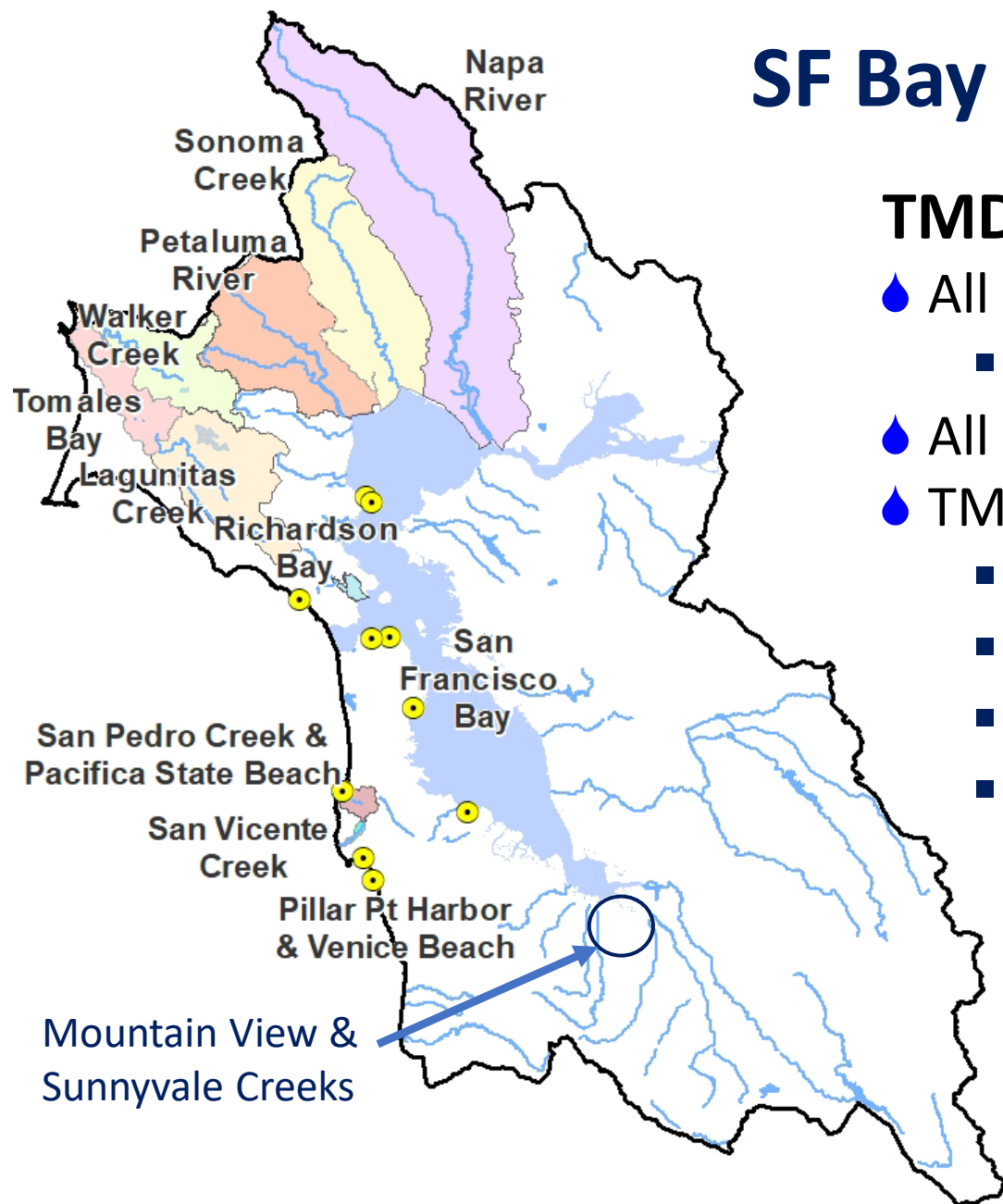
SF Bay Region Pathogen/Bacteria TMDLs



TMDLs

- 💧 All but one are based on contact recreation beneficial use
 - Tomales Bay = shellfish
- 💧 All concentration-based or other non-mass load TMDL
- 💧 TMDL for most = water quality objective (WQO)
 - E Coli for freshwater
 - Enterococcus for marine
 - Tomales Bay = closure days (30)
 - San Pedro Creek & Pacifica State Beach
= reference exceedances days

SF Bay Region Pathogen/Bacteria TMDLs



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Allocations

- 💧 Most = TMDL = WQO
- 💧 Zero for unpermitted human waste discharges
 - Based on Basin Plan Prohibition

SF Bay Region Pathogen/Bacteria TMDLS

Sources

- 💧 On-site wastewater treatment systems (septic systems)
- 💧 Small wastewater treatment systems
- 💧 Sanitary sewer collection systems
- 💧 Municipal runoff
- 💧 Confined animal facilities (cows/horses)
- 💧 Grazing lands
- 💧 Boats
- 💧 Wildlife

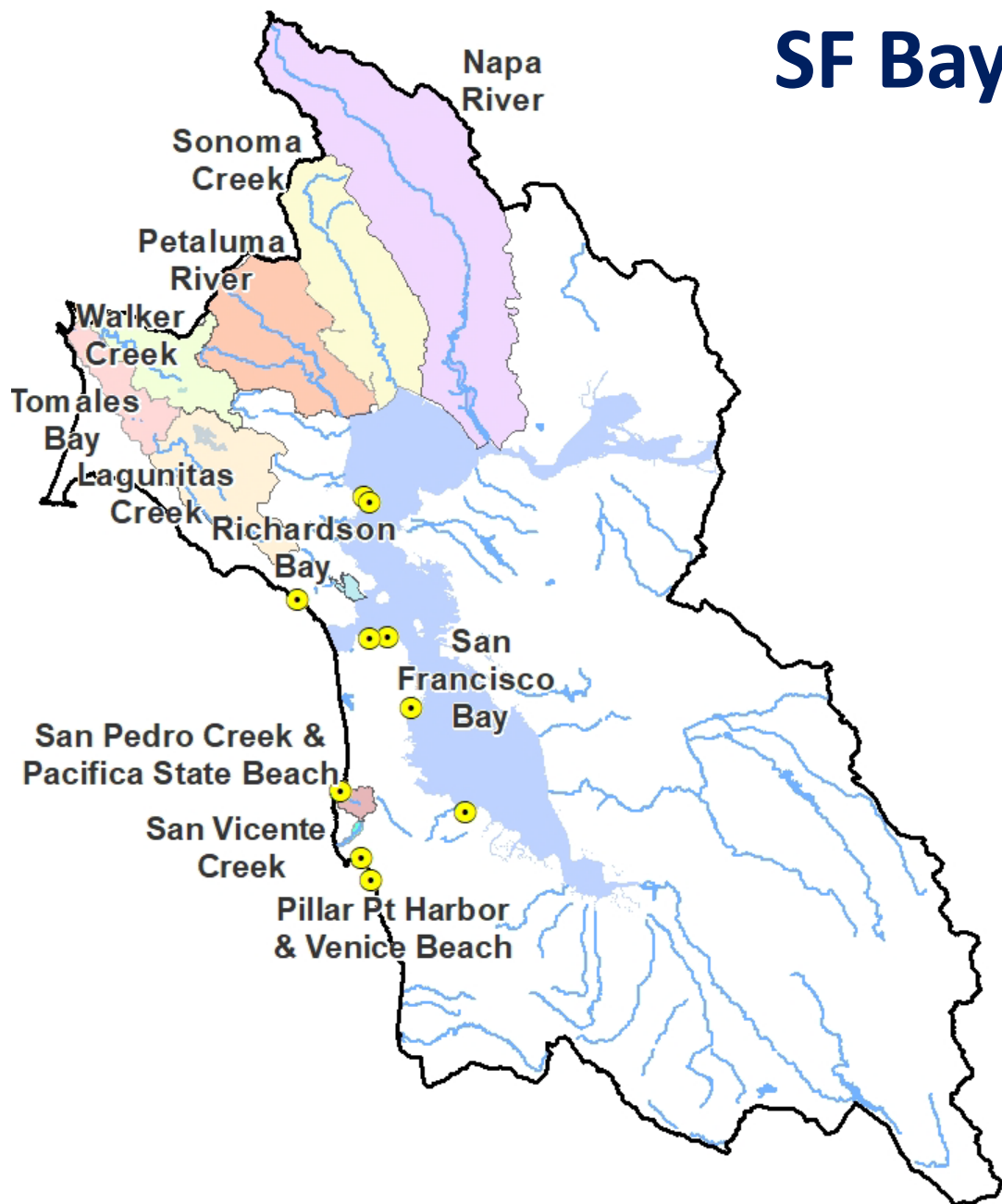


SF Bay Region Pathogen/Bacteria TMDLS

Approach

- 💧 Phased adaptive implementation
- 💧 Require plans as a tool but avoid approval
- 💧 Start with permit with specified tasks and level of performance
- 💧 Monitor, review, and then adapt in subsequent permit

Not possible to predict success a priori, but can ensure accountability, trackability, reportability, and audibility



Source / Regulatory Mechanism

On-site treatment systems / OWTS-Policy Waiver of WDRs

Small treatment systems / Waste Discharge Requirements (WDRs)

Sanitary sewer systems / Prohibition / General WDRs

Municipal runoff / Stormwater NPDES Permit

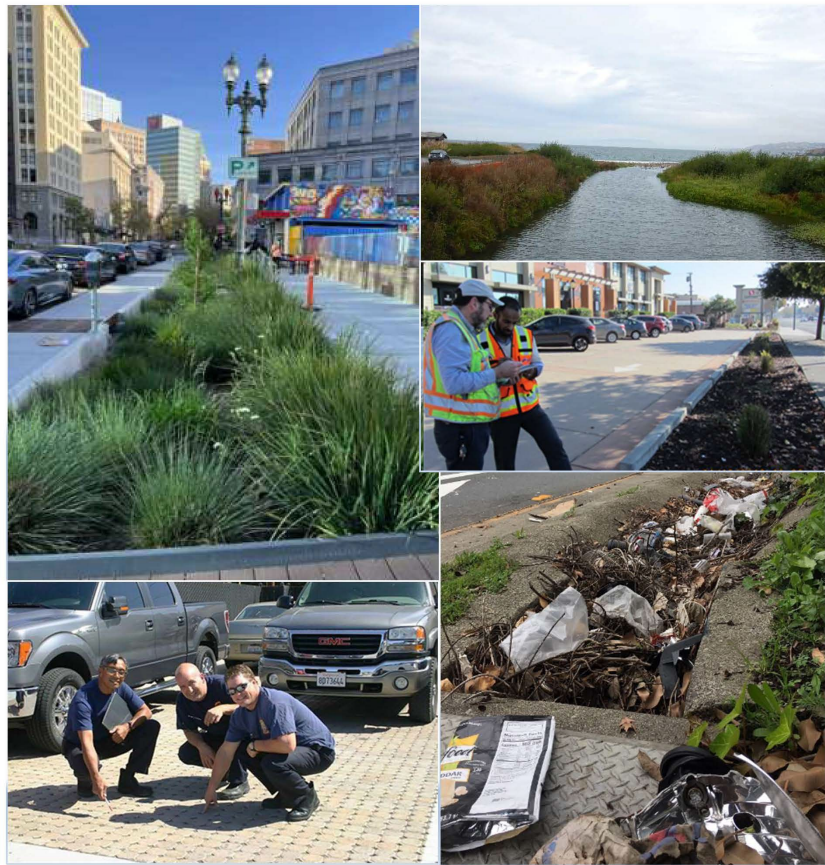
Confined animal facilities / General WDRs

Grazing lands / General Conditional Waiver of WDRs

Boats / Discharge Prohibition

California Regional Water Quality Control Board
San Francisco Bay Region
Municipal Regional Stormwater NPDES Permit

Order No. R2-2022-0018
NPDES Permit No. CAS612008
May 11, 2022



Discharge Prohibition
Effectively prohibit discharges of non-stormwater

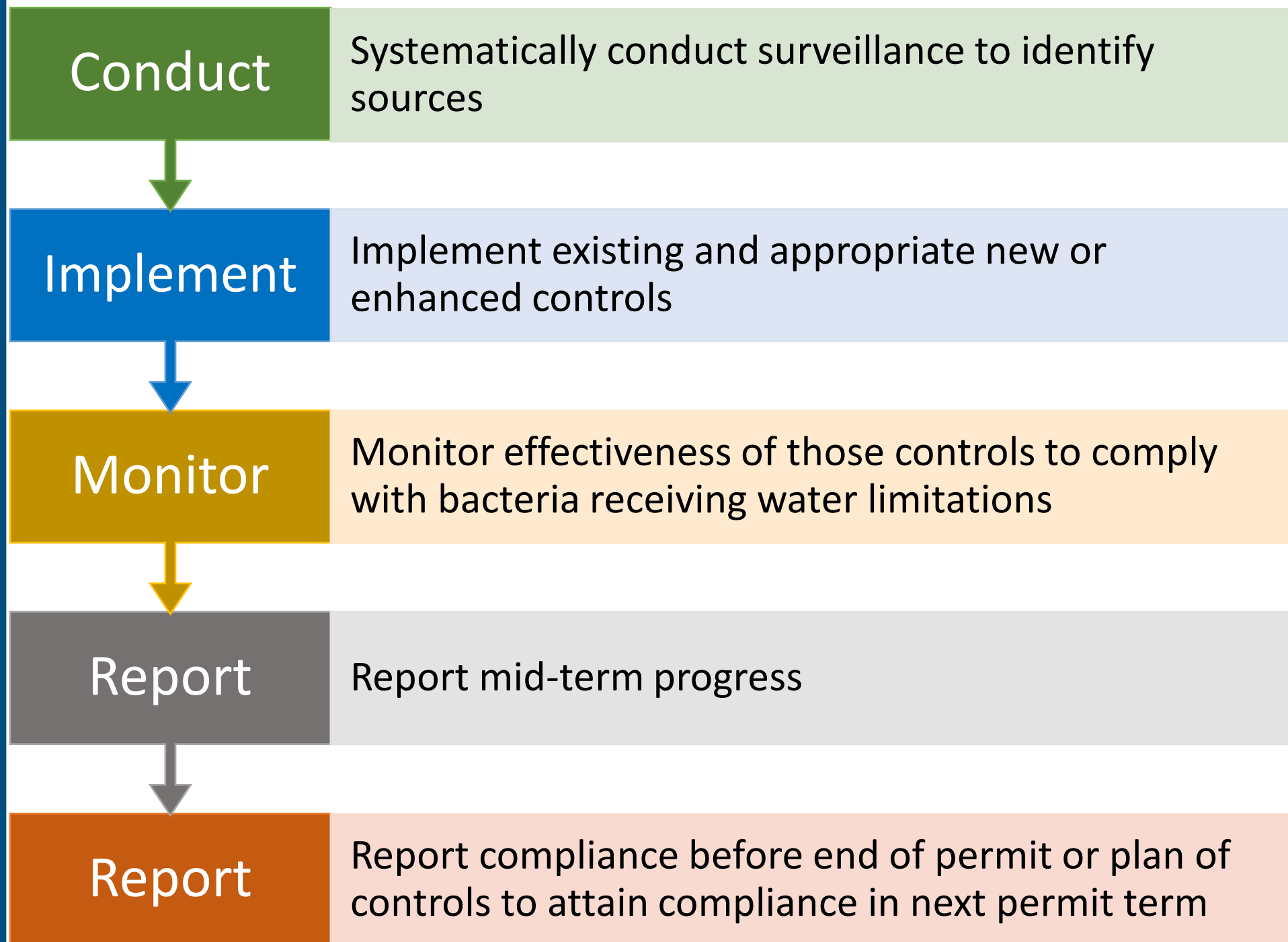
Receiving Water Limitation
Do not cause violations of water quality objectives

Demonstrate compliance via compliance with specific TMDL-based provision(s) or one triggered by impairment*

Bacteria Control for Impaired Water Bodies

* Mountain View – Sunnyvale Creeks

MRP Approach Control Controllable Sources



Controllable Sources to MS4s

- 💧 Direct sources of human waste
 - encampments, recreational vehicle discharges
- 💧 Sanitary sewers
 - overflows, illicit connections, possibly exfiltration
- 💧 Pet waste
- 💧 Trash and trash receptacle leachate
- 💧 Wash waters (municipal operations / businesses)
- 💧 Wildlife waste associated with human activities



MRP Approach

- 💧 Submitted plan(s) reviewed, but not approved
- 💧 Permit specifies actions and implementation levels
 - Based on, but not limited to, submitted plan(s)
 - Specific to source and program categories
- 💧 Illicit discharges detection and elimination
 - “Effectively prohibit” non-stormwater discharges
 - Legal authority - surveillance - response - enforcement

Key Points

- 💧 Animal waste not just human waste is of concern
- 💧 Levels of bacteria in runoff are 10 to 100 times WQOs; sewage levels are 10 billion to 100 billion times higher
- 💧 Levels in receiving waters are likely not associated with discrete ongoing discharges of untreated raw sewage
- 💧 MS4 bacteria sources and discharges are episodic
 - Except for illicit connection or ongoing discharge of sewage

Key Points

- 💧 Not possible to model sources and loading of bacteria in MS4s using watershed pollutant loading models
 - Bacteria discharges are spatially and temporally variable
- 💧 Mapping of potential source areas and targeting of control efforts can be tracked and analyzed using GIS
- 💧 Treatment of runoff to reduce fecal indicator bacteria levels below water quality objectives is not feasible
- 💧 Effective control requires comprehensive surveillance and source identification and control program

Recommendations



Establish standard baseline and enhanced implementation levels for source controls



Establish performance measures for “effectively prohibit” discharges



Determine best attainable receiving water conditions



Consider water quality standards (variance) in parallel w/above or subsequently