Item 11
Water Board Permitting & TMDL Framework

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California Bacteria Summit

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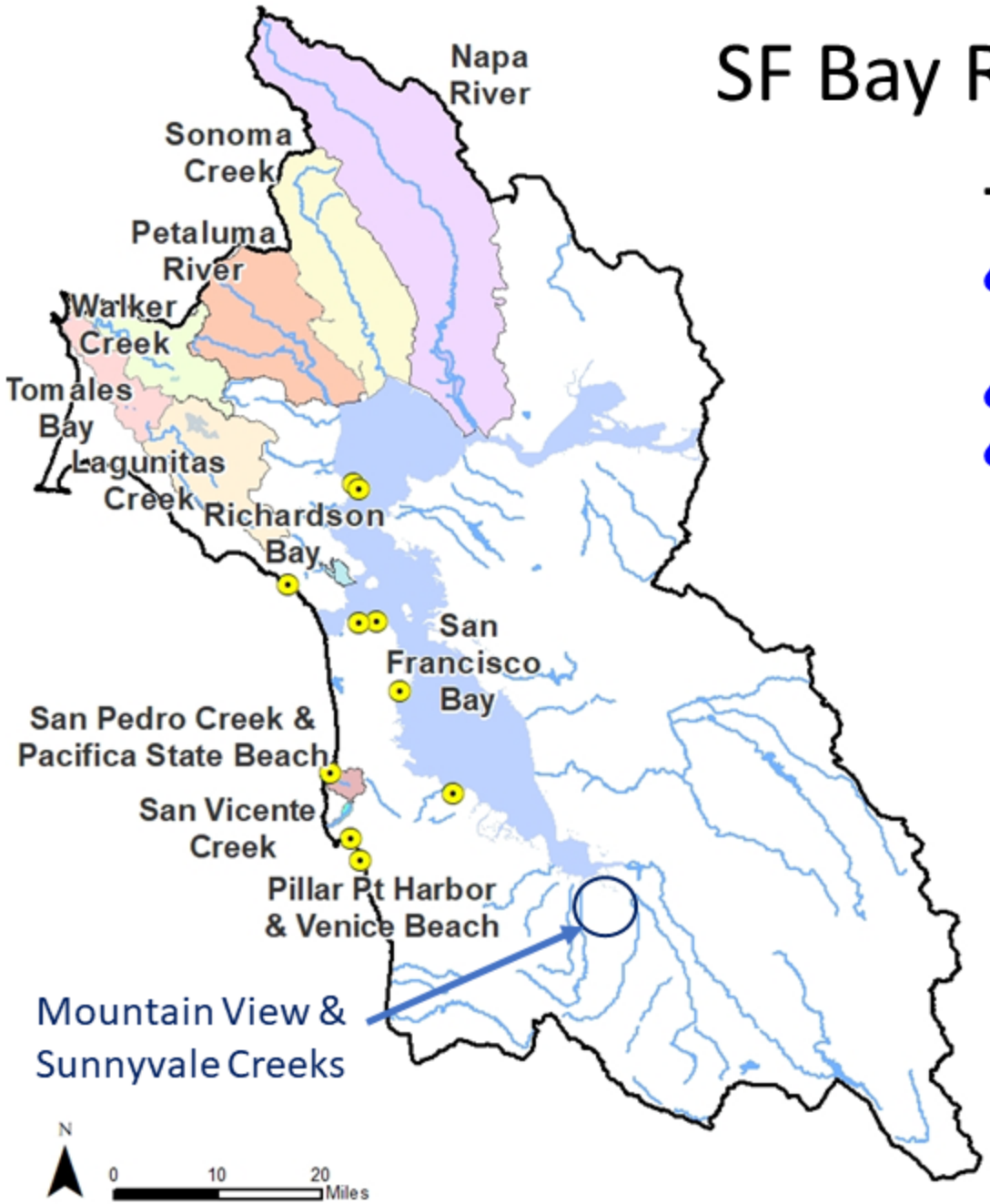
Outline

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



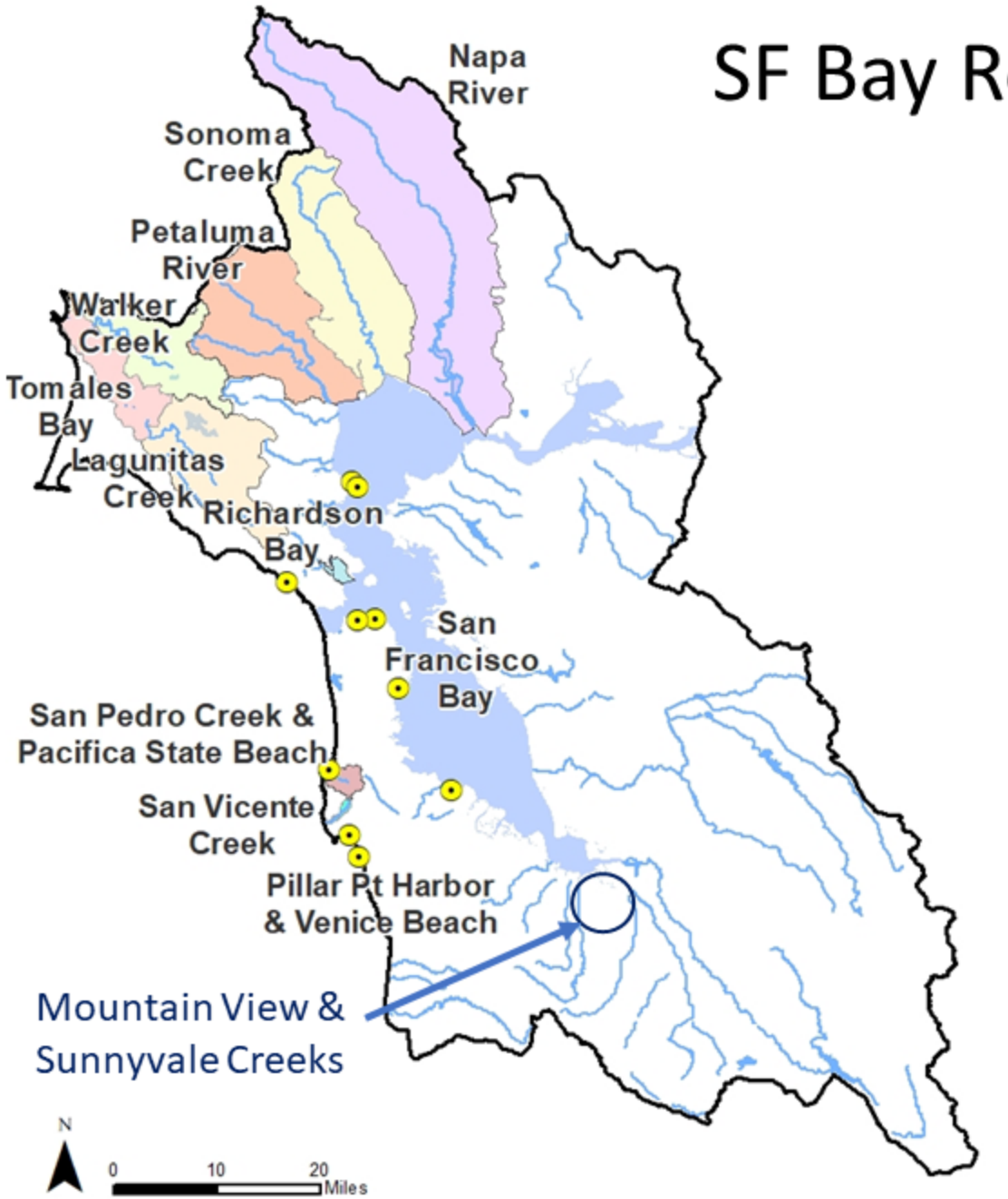
SF Bay Region Pathogen/Bacteria TMDLS

TMDLs

- All but one are based on contact recreation beneficial use
  - Tomales Bay based on 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

Allocations

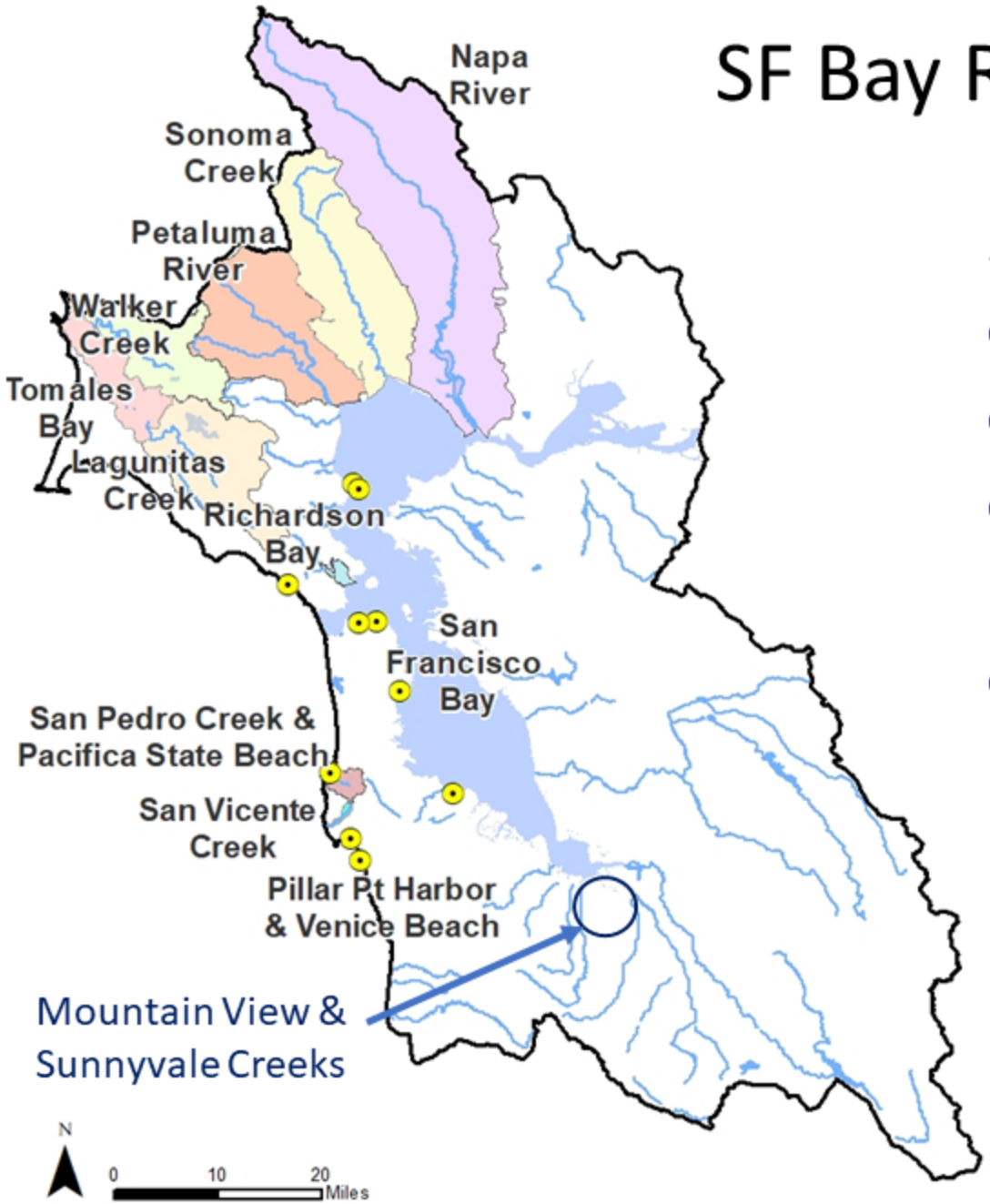
- Most = TMDL = WQO
- Zero for unpermitted human waste discharges
  - Based on Basin Plan Prohibition



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

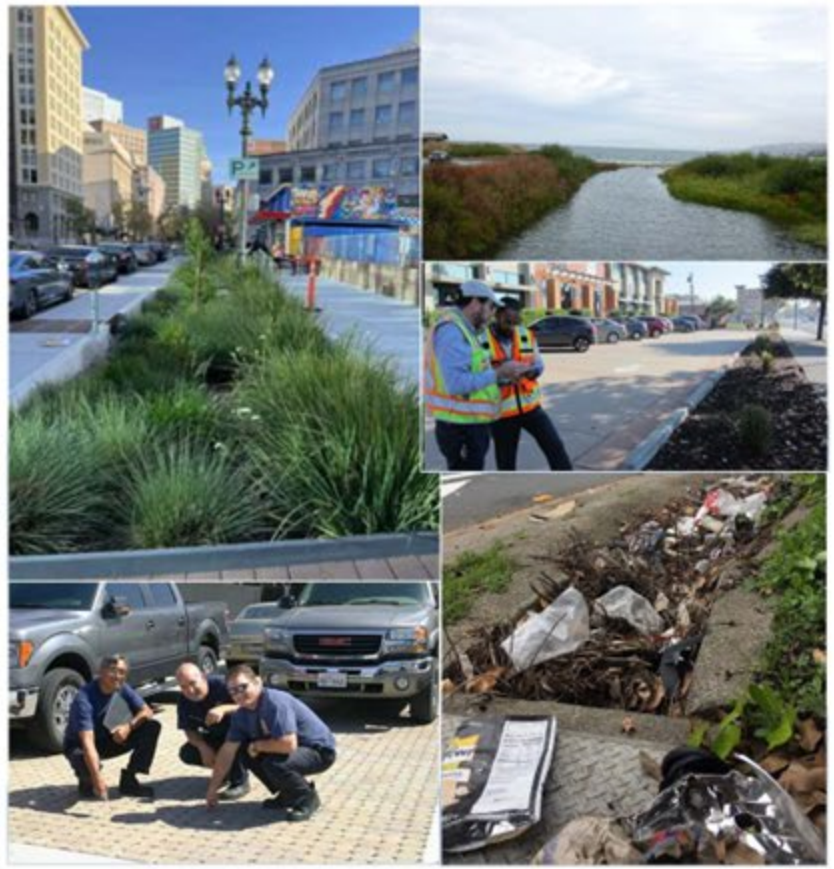
Not possible to predict success a priori, but can ensure accountability, trackability, reportability, and audibility

Source / Regulatory Mechanisms

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

Municipal Regional Stormwater Permit (MRP) Approach – Control Controllable Sources

- Implement existing and appropriate new or enhanced controls
- Systematically conduct surveillance and monitoring to identify sources
- Monitor effectiveness of those controls to comply with bacteria receiving water limitations
- Report mid-term progress
- Report before end of permit
  - Document compliance or plan and schedule of additional controls to attain compliance as soon as possible in next permit term

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
- Source controls
- Illicit discharge 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 levels in raw sewage are 10 billion to 100 billion times higher
- Levels in receiving waters are likely not associated with discrete ongoing discharges of untreated raw sewage
- Bacteria sources and discharges in municipal stormwater runoff and dry weather discharges are episodic
  - Except where there is an 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 discharge volumes are highly variable (spatially and temporally)
- Mapping of potential sources areas and targeting of control efforts can be tracked and analyzed using geographic information systems
- Treatment of runoff to reduce bacteria levels below water quality objectives is not feasible (*cannot disinfect*)
- Effective control of bacteria sources and discharges requires a 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" non-stormwater discharges

Determine best attainable receiving water conditions

Consider (new) water quality standards (and variance) subsequently or in parallel with above