Proposed Prohibition On-Site Wastewater Disposal Systems (Septics) Malibu Civic Center Area

CA Regional Water Quality Control Board – Los Angeles Region

Hearing – November 5, 2009

Hearing Agenda

- Staff Presentation
  - Technical Evidence for Prohibition
  - Legal Issues
- City of Malibu
- Public (at 1:00 or later)
  - Government Representatives
  - Non-Government Organizations
  - Property Owners in Prohibition Area
  - Other Stakeholders

Proposed Amendment to *CA Regional Water Quality Control Plan (Basin Plan)*

- Prohibit on-site wastewater disposal systems (OWDSs)
- Malibu Civic Center Area
  - About 2,000 residents
  - Work force
  - Visitors

Area Subject to Prohibition ('Malibu Civic Center Area')
© 2009 Europa Technologies
Image © 2009 DigitalGlobe
© 2009 Tele Atlas
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
34°02'12.62" N 118°41'35.41" W elev 25 ft
©2009 Google
Eye alt 4871 ft

Estimated Current Flows

- 270,000 gallons per day (gpd)
  - About 400 residential properties
  - About 40 others
    - Four multi-family complexes (in Winter Canyon)
    - Businesses
    - Public facilities

Who Would Be Affected?

- Applies to all discharges in the Malibu Civic Center area:
  - Commercial and industrial facilities
  - Public facilities
  - Residential properties
- Applies to ALL discharge systems (passive convention septics to advanced treatment plants)

Types of Systems that would be Prohibited

Timing for the Prohibition

- Existing discharges: November 5, 2014
  - Repairs and upgrades allowed, provided they comply with the deadline to cease discharge by 2014
  - No expansions (projects that will increase wastewater flows allowed)
- New discharges: immediately (Nov 5, 2009)
  - No new projects*
- *No exemption for discharges in permitting 'pipeline'
  - Residential applicants
    - Nov 5, 2009 if local agency permitting <u>has not</u> been completed
    - Nov 5, 2014 if local agency permitting <u>has</u> been completed
  - Commercial applicants
    - Nov 5, 2009 if CA RWQCB <u>has not</u> deemed your RoWD (Report of Waste Discharge) adequate and complete
    - Nov 5, 2014 if CA RWQCB has deemed your RoWD adequate and complete

WARNING!
¡PELIGRO!
NO NADAR

Justification for the Prohibition

Polluted beaches	Tech Memo #3
Polluted lagoon	Tech Memo #4
Polluted groundwater	Tech Memo #2
Compliance records	Tech Memo #1
Reliance on hauling	Tech Memo #5

Malibu Lagoon

- Nutrient (nitrogen and phosphorus) loads accelerate eutrophication. (Over stimulates algae, which depletes oxygen dissolved in water.)

- Eutrophication: an increase in nutrients in an ecosystem, to an extent that increases in the primary productivity of the ecosystem. Depending on the degree of eutrophication, subsequent negative environmental effects such as anoxia and severe reductions in water quality, fish, and other animal populations may occur.

Malibu Lagoon (Tech Memo #4)

- Quantify nitrogen loads from OWDSs
- Compiled an inventory of discharges
  - 270,000 gallons per day
- Calculated nitrogen loading rates
- Evaluated groundwater flow regime
  - Amount flowing to lagoon (versus coast)
  - Attenuation (decay) between the point of release and the water table.

Malibu Lagoon (Tech Memo #4)

- **6 lb/day – restoration target*** (load allocated for OWDSs) *Total Maximum Daily Load (TMDL), US EPA, 2003
- **30 – 35 lb/day nitrogen – current load** (Tech Memo #4 findings)
- 17 to 32 lb/day – estimates by third parties
- Conclusion – Nitrogen released from OWDSs impairs aquatic life. Successfully passed external peer review.

Lagoon (Tech Memo #4) Comments

- Objection (from City) to restoration target for lagoon (e.g. staff fails to consider atmospheric sources), and to septic allocation of 6 lb/day
  - *Response: Nitrogen target and waste allocations for lagoon were already established in a TMDL.*

- Objection (from City) to staff assumption (100 gpcd*) for residential flow rates
  - *Response: Flow rates may be as high as 150 gpcd – staff was reasonable in assuming 100 gpcd.*

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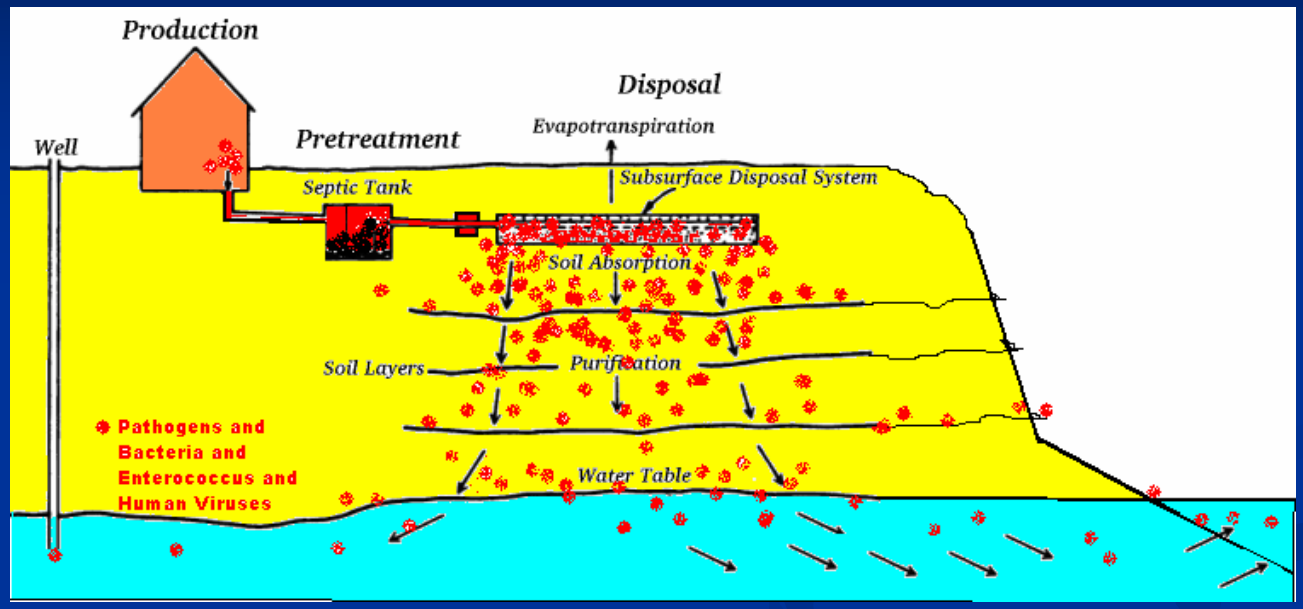
*gpcd – gallons per capita per day

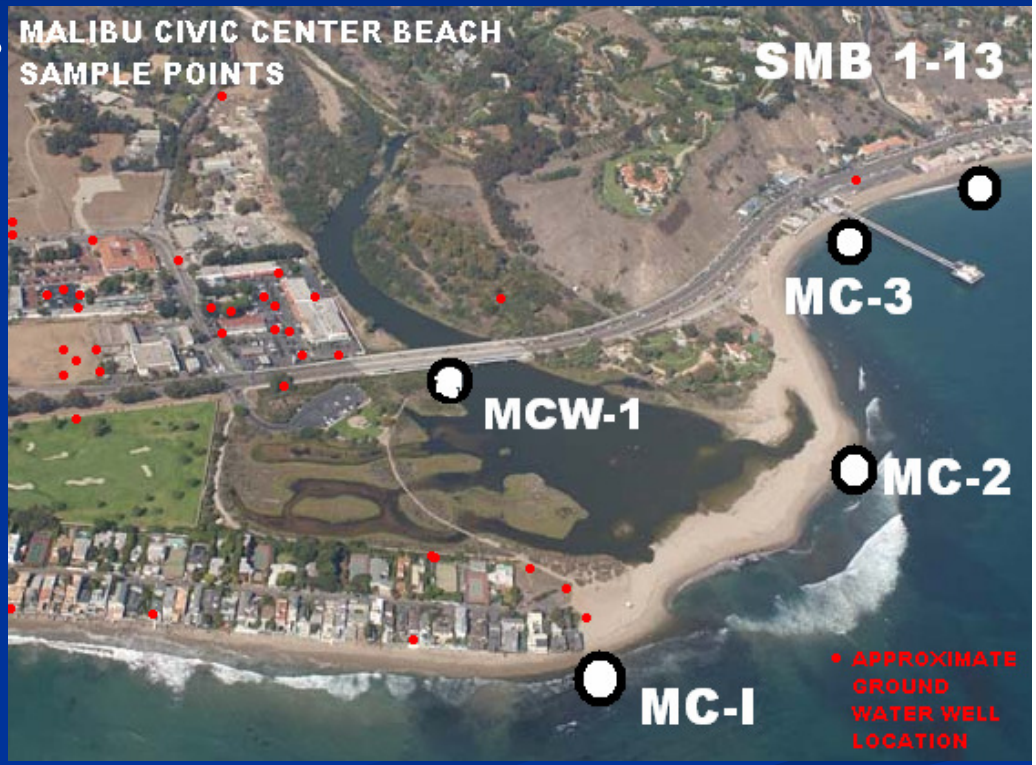
Human Pathogens and OWDSs



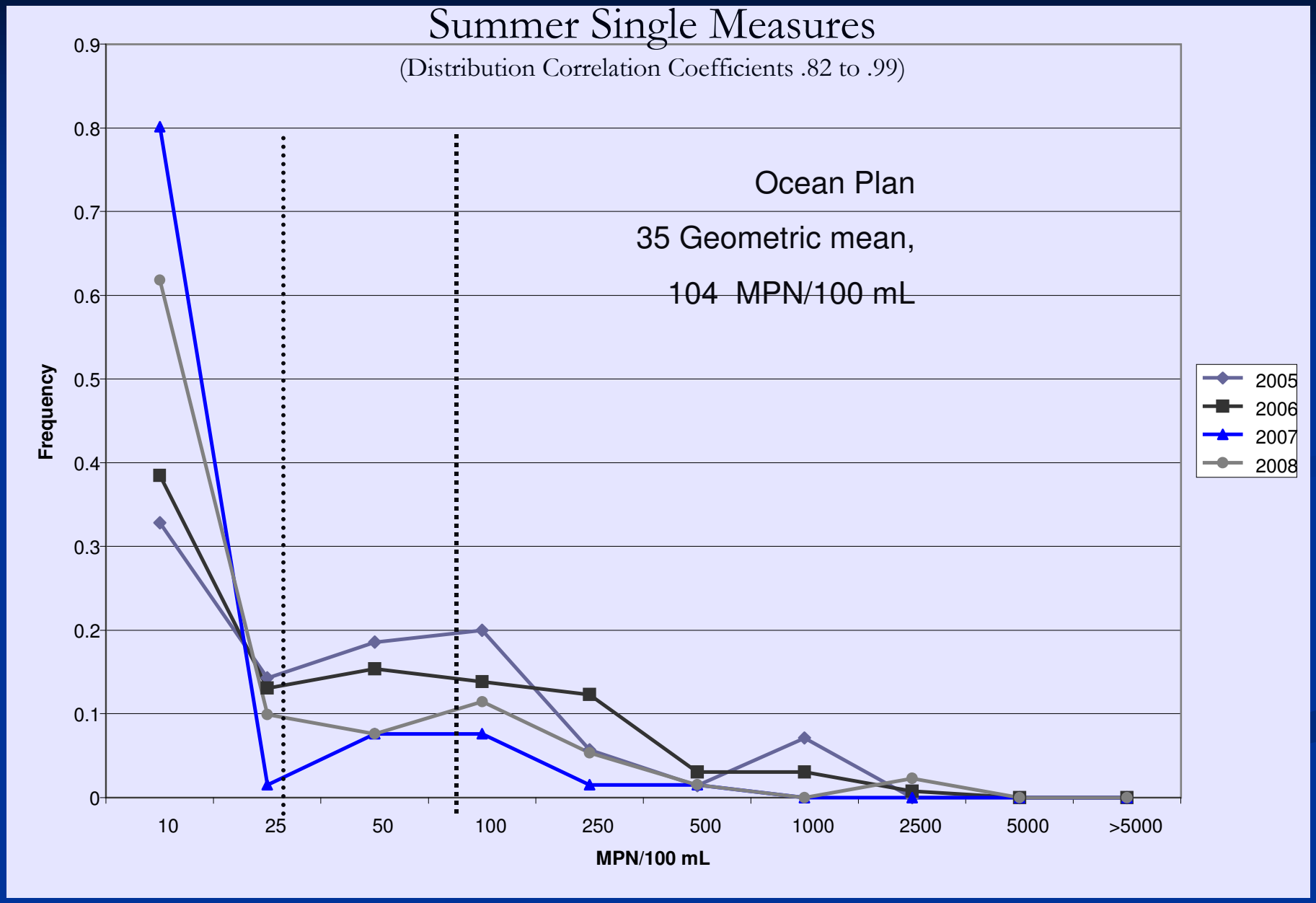
- Illness is transmitted by human waste, unless pathogens are removed by treatment or passage through the soil.
- Staff looked at evidence of release of pathogens from OWDSs, of beach water quality, and of illness related to those bacteria levels.

Release of pathogens from OWDSs

- Wells: 76% greater than 35 MPN/100 mL enterococcus
- Flow: 42% of groundwater comes from OWDSs and 92% of that to beach (Stone 2004)
- Flow path: Stone, Questa, Tetratech, 4 TMDLs, Vergets, Izbicki



Surfrider Beach Enterococcus Interval Frequency for May-October



Local Epidemiology Study

- 22,085 swimmers were studied between June and September 1995 at local beaches (including Surfrider) largely without breached conditions.

Significant Respiratory Disease	Fever with vomiting, diarrhea or stomach pain	Criteria: Additional illness among swimmers
45 per1,000 swimmers	30 per 1,000 swimmers	19 per 1,000 swimmers

Comment: More evidence is needed to relate OWDS to beach Pathogens

- 1985 LA County Health to Supervisors

"[the] survey found 40% of the properties were illegally discharging wastewaters to the groundsurface."

"In 1983 storms..239 beach front systems were destroyed…raw sewage drained onto the beach."

"Overall…58.8% of Malibu properties are beachfront and… 45.5% of those have failed"

Evidence relating OWDS and beach Pathogens

- 1985 LA County Health to Supervisors
- 1983 EPA enterococcus standard/ 2001 Ocean Plan

"Enterococcus concentrations correlate with gastrointestinal illness…at beaches…with and without an identifiable source of human sewage"

"The criteria ….is a geometric mean of 35 MPN/100mL and an instantaneous maximum of 104 MPN/100mL …. resulting in 19 additional illnesses among swimmers in marine waters."

Evidence relating OWDS and beach Pathogens

- 1985 LA County Health to Supervisors
- 1983 EPA enterococcus standard/ 2001 Ocean Plan
- 1992 Warshall for City

- "Most beachfront systems…dispose.. vertically through a "bottomless sand filter."
- "In…the 'Civic Center'…the proposed sewage treatment designs….need to be considered with land use planning, not after it…"

Septic Systems and Pathogens

- 1983 EPA enterococcus standard/ 2001 Ocean Plan
- 1985 LA County Health to Supervisors
- 1992 Warshall for City
- 1996 303(d) list
- 1999 Malibu Epidemiology Study
- 2002-2006 TMDLs

- Federally designated as an waterway impaired. Among lost beneficial uses are recreation, eutrophication/aesthetics and shell fish harvesting

- Santa Monica Bay Bacteria Wet and Dry weather, Malibu Nutrient and Malibu Creek and Lagoon Bacteria TMDLs all attribute loading to OWDSs.

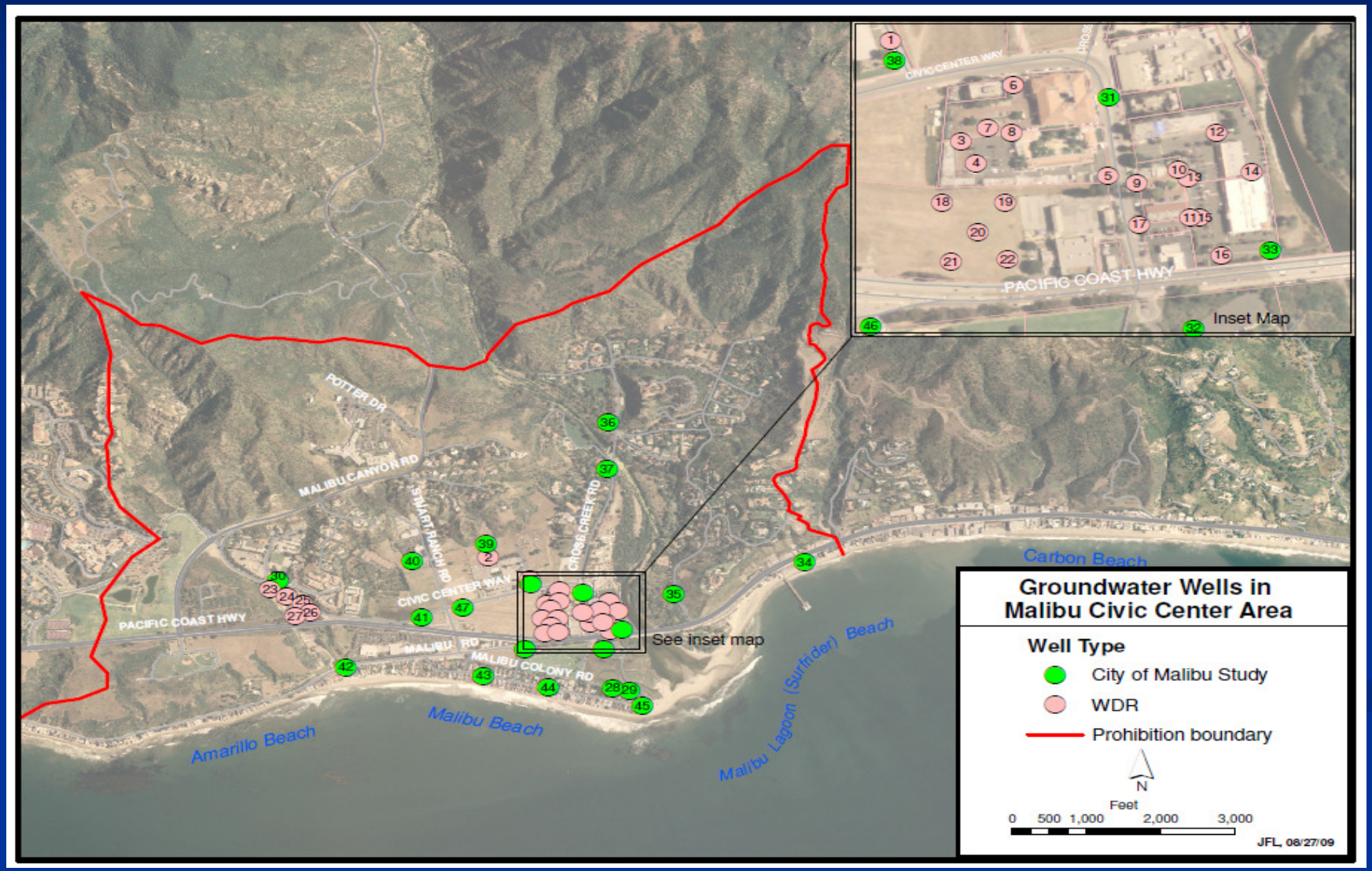
Septic Systems and Pathogens

- 1983 EPA enterococcus standard/ 2001 Ocean Plan
- 1985 LA County Health to Supervisors
- 1992 Warshall for City
- 1996 303(d) list
- 1999 Malibu Epidemiology Study
- 2002-2006 TMDLs
- Malibu Lumber/ La Paz/ Whole Foods/ Malibu Mesa/ Malibu Towing WDR applications

- Notice of Violation of TMDL limits in stormwater permit for Malibu beaches.

- City approves CEQA applications for more than 50,000 additional gpd for construction without a regional wastewater plan for existing discharges

Tech Memo #2
Pathogens and Nitrogen in Wastewaters Impair Underlying Groundwater as a Potential Source of Drinking Water



METHODS AND PROCEDURES

- Collect and review data from 56 groundwater monitoring wells in the study area
- Analyze data for fecal coliform, total coliform, total nitrogen (nitrate + nitrite), total nitrogen (ammonia + nitrate + nitrite)
- Groundwater quality failed to meet drinking water standard – Maximum Contaminant Levels (MCL)

Summary of 1,016 Groundwater Samples from 56 Wells

	Fecal Coliform	Total Coliform	Nitrate + Nitrite	Ammonia+ Nitrate+Nitrite
MCL	0	0	10	10
Concentration Range	0 – 140,000 MPN/100ml	0 – 16,000,000 MPN/100 ml	0 – 120 mg/l	0 – 120 mg/l
Total Samples Analyzed	1,016	1,016	1,012	1,012
# Samples failed to meet MCL	383	576	322	400
% Samples failed to meet MCL	38%	57%	32%	40%

Summary of Groundwater Quality by Wells

	Fecal Coliform	Total Coliform	Nitrate + Nitrite	Ammonia+ Nitrate+Nitrite
Total number of wells	56	56	56	56
Number of wells failed to meet MCL	47	56	24	34
% wells failed to meet MCL	84%	100%	43%	61%

Tech Memo #2
CONCLUSION

Pathogens and nitrogen in wastewater released from OWDSs impair underlying groundwater as a potential source of drinking water

Groundwater (Tech Memo #2) Comments

- Groundwater is unsuitable as a potential source of drinking water

Response: MUN beneficial use and emergency demand

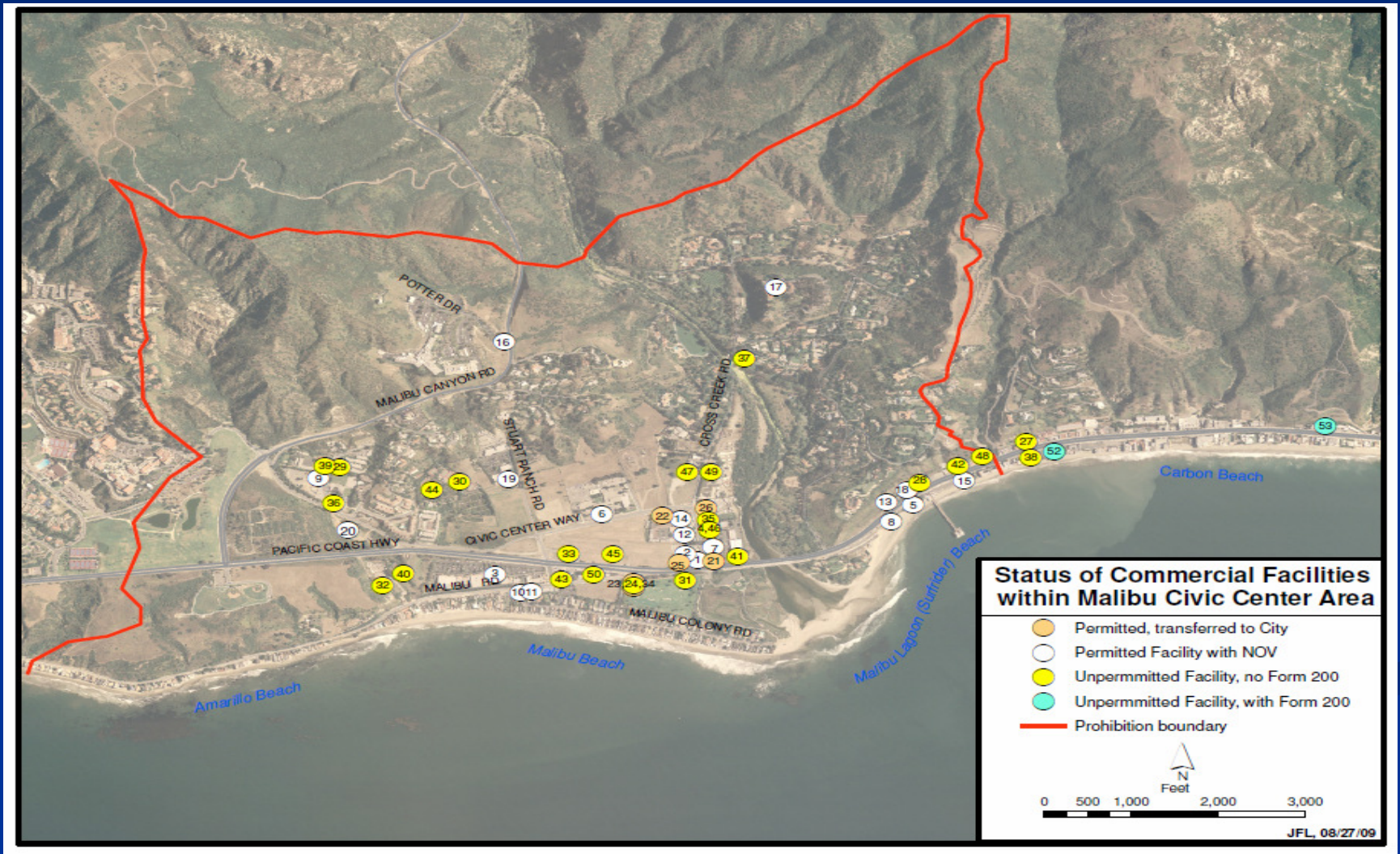
- Other sources of nitrogen impacting groundwater, including agriculture/livestock, lawn fertilization and storm water

Response: No direct pathway to the groundwater. Septic discharge is the primary nitrogen source.

- Methodology: (1)Ammonia (2)duplicate wells

Response: (1)Nitrification consistent with permitting (2) Conclusion remains the same with 3 wells double counts

Tech Memo #1
Dischargers Have Poor Records of Compliance with Regional Board Orders



Summary of Violations 2004-2009

Facility	TSO**	Non Submittal	Late Submittal	Non-reported Parameters	Discharge Violations	Perjury Statement	Material Change	Total Violation Counts
Fire Station No. 88*					**77**	**1**	**1**	**79**
HRL Laboratories		3	2			1		6
Jack In The Box		**25**						**25**
Malibu Administrative Center*					44	1	1	46
Malibu Colony Plaza	**2**	**3**	**9**		**39**	**1**	**1**	**55**
Malibu Beach Inn	**2**	**3**		**4**	**33**	**1**		**43**
Malibu Country Mart I	1	5	13	133		1		153
Malibu Country Mart II	1	5	14	133		1		154
Malibu Country Mart III	1	5	13	133		1		153
Malibu Lumber					**18**	**1**	**1**	**20**
Malibu Pier State Park*		**4**	**7**		**1**	**1**	**1**	**14**
Malibu Shores Motel		2	9		13	1	1	26
Malibu Creek Plaza Shopping Center (Malibu Village)	**1**		**3**		**38**			**42**
Malibu Water Pollution Control Plant*			**9**	**400**	**235**			**644**
Miramar Investment Co.		24						24
Morton Gerson Property		5	16		2			23
Prudential Malibu Realty			4					4
LA County Public Works Road Maintenance Yard*		1		3	120	1	1	126
Serra Retreat Center		24						24
Surfrider Beach*			4		3	1		8

Tech Memo #1 Conclusion

All Permitted dischargers have poor records of compliance with Regional Board Orders

Compliance (Tech Memo #1) Comments

- Objection to prohibition – suggest improvement in permitting, reporting, communication and compliance

Response: Repeat violations, startup and maintenance problems

- Revision to violations summary table

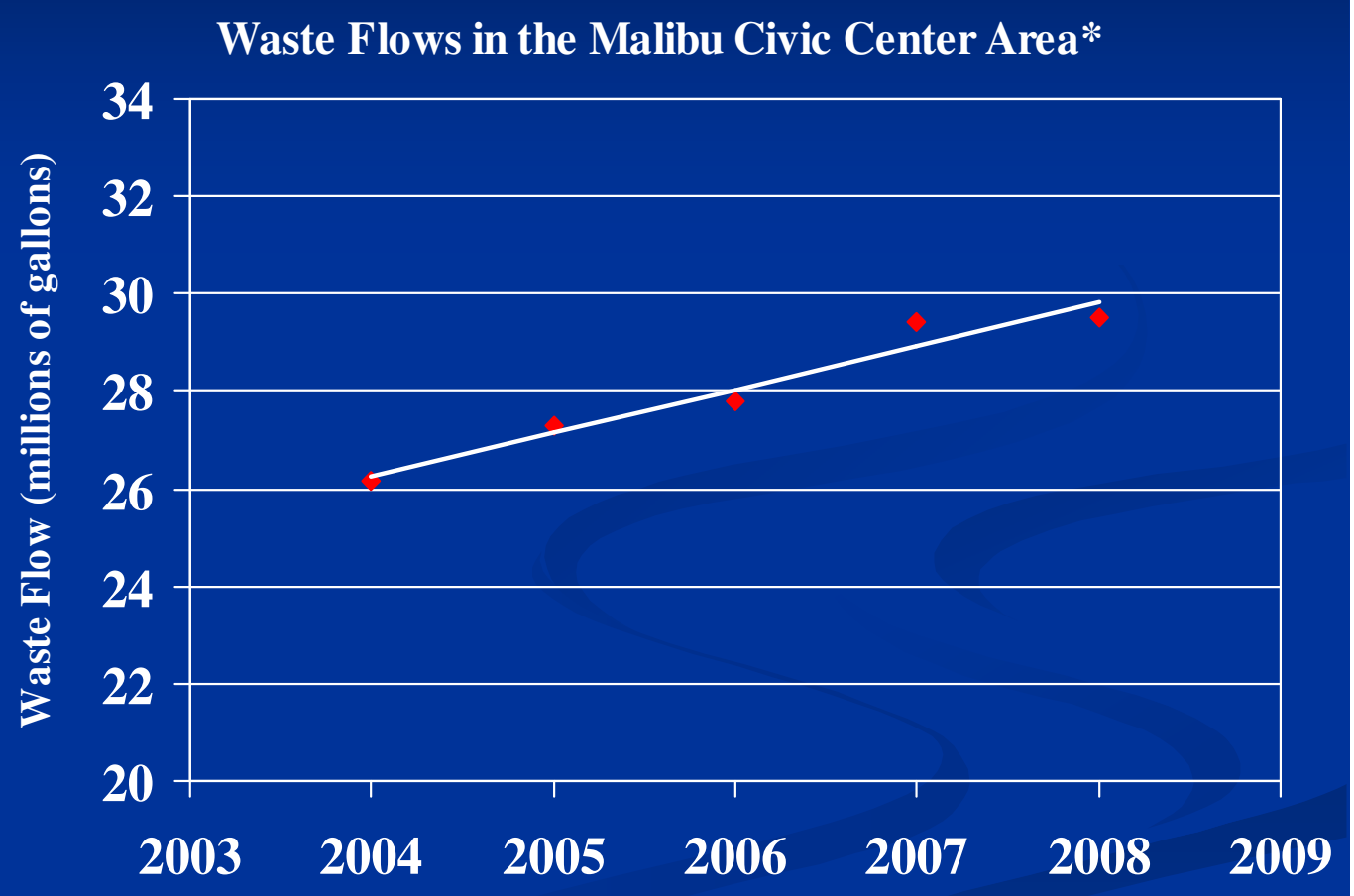
Response: Separate non-reported parameters and discharge violation. Revisions for HRL, Malibu Colony Plaza

Hauling Practices (Tech Memo #5)

- Land uses generate more wastewater than can be transmitted into the subsurface.
- Increasing reliance on hauling raw sewage off-site:
  - Carson (Joint Water Pollution Control Plant)

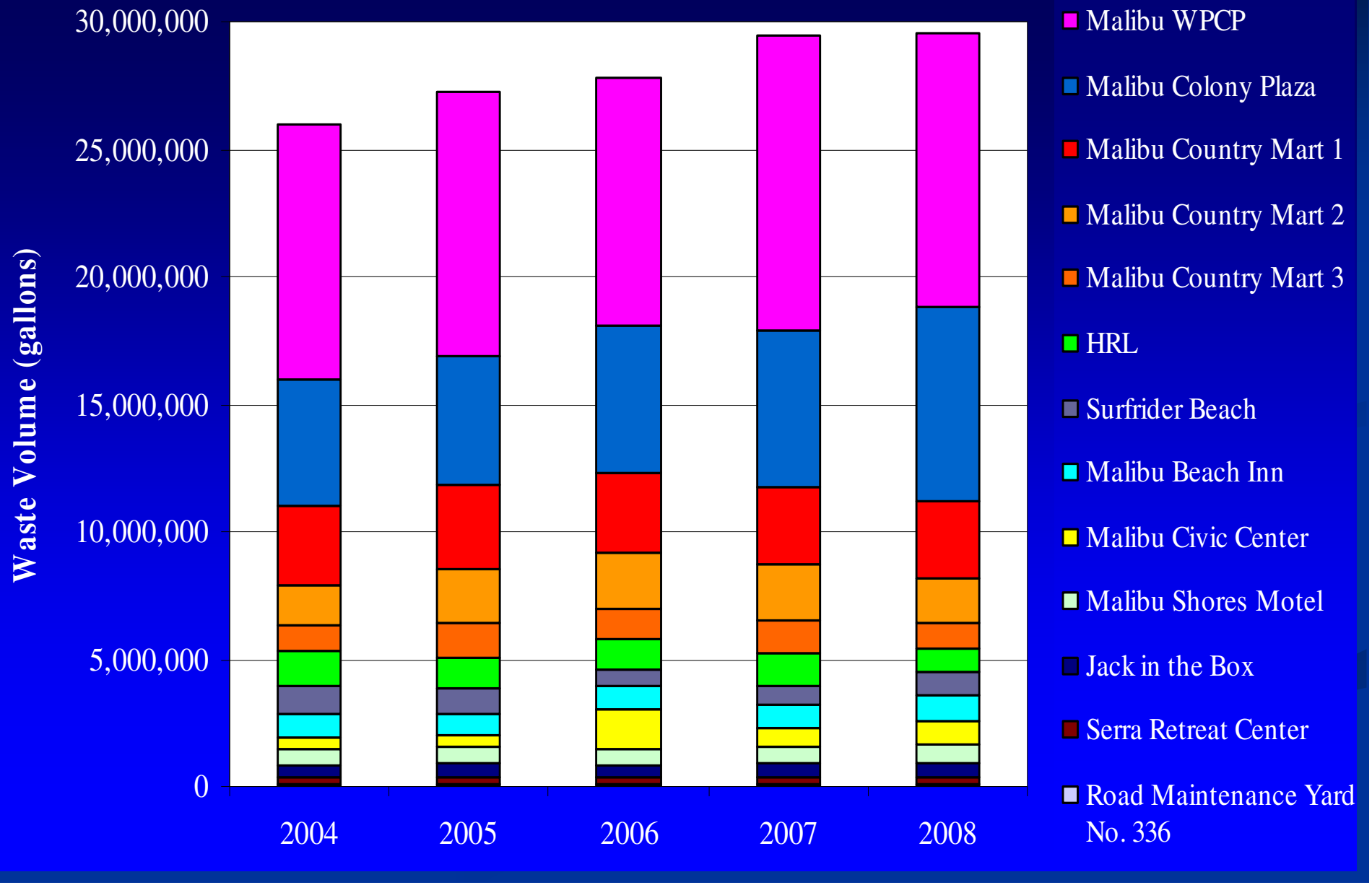
Waste Flow – Select Dischargers

- >13% increase from 2004 to 2008



*Using original data set based on assumptions made by CA RWQCB staff. New information recently provided for Malibu Colony Plaza waste flow volumes is analyzed in slide 49.

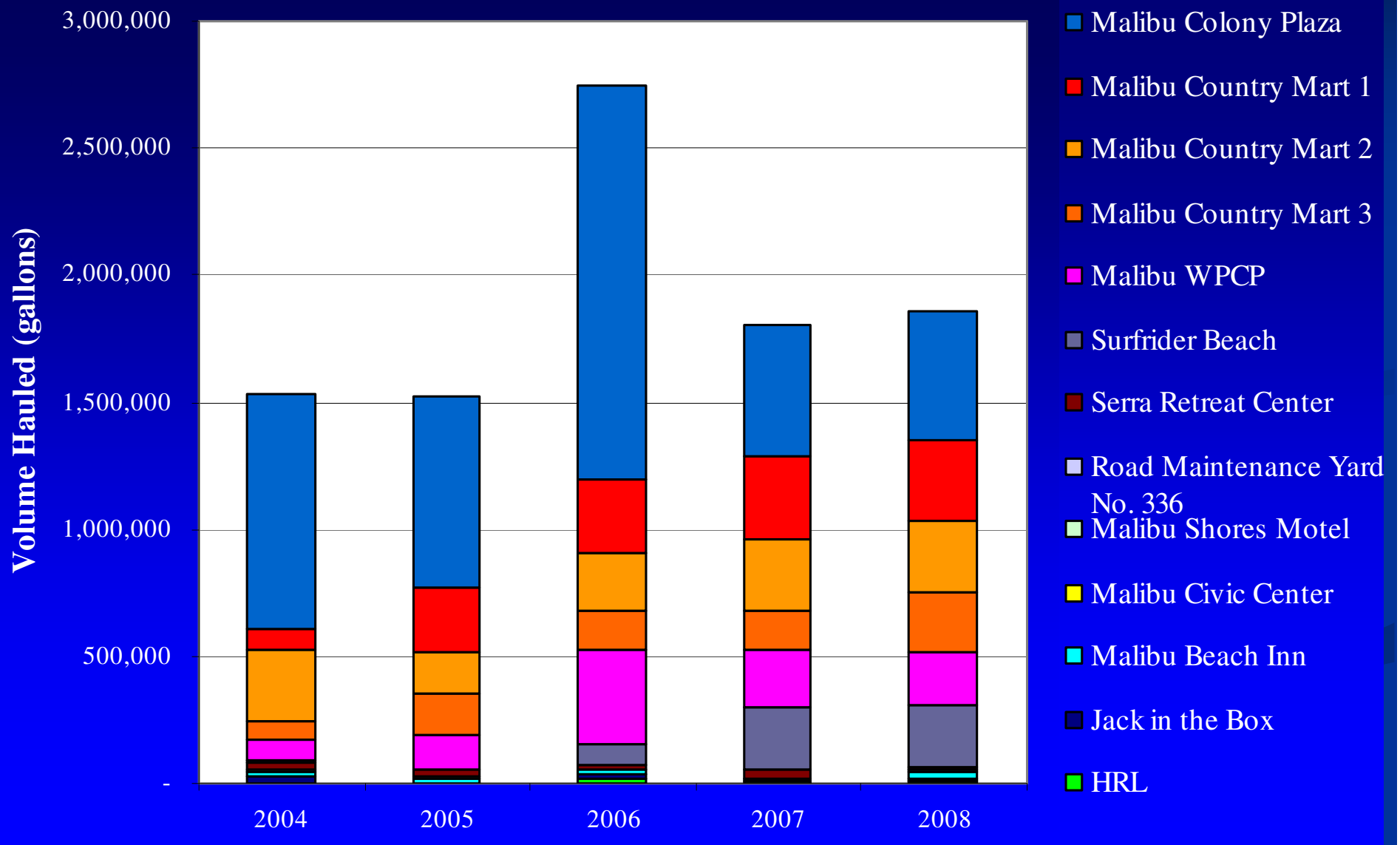
Waste Flow – Select Dischargers



Hauling – Select Dischargers

- Over 6% of raw sewage is hauled off site.
- > 21% increase from 2004 to 2008

Hauling – Select Dischargers



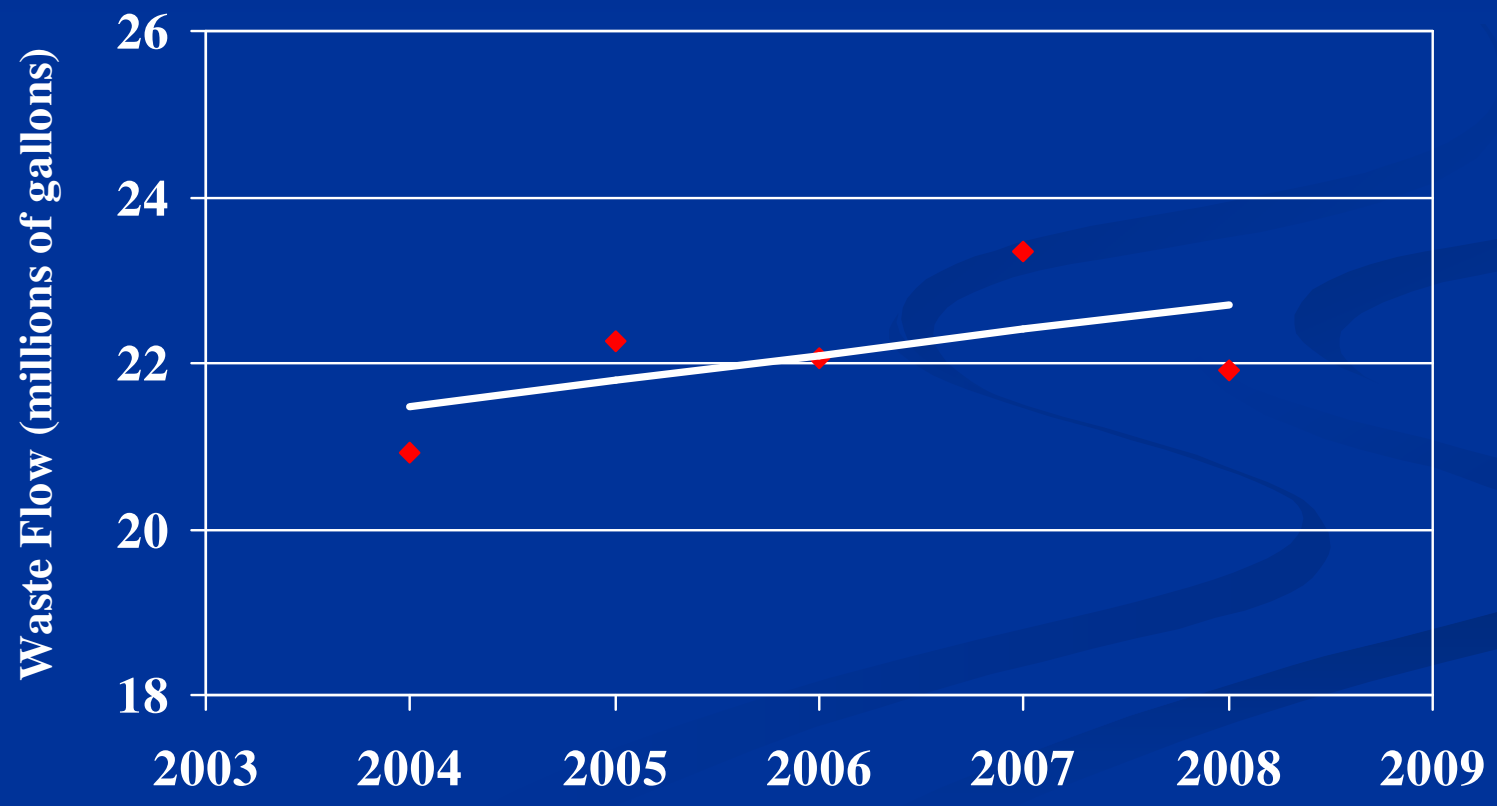
Wastewater Flow and Hauling (Tech Memo #5) Comments

- City – Asked that we use LA Co Waterworks District #29 data.
  - *Response: Agree.*
- City – Most spills cited occurred outside of the prohibition area (e.g. Paradise Cove)
  - *Response: Agree – staff eliminated spill data that had been in July 31st draft. However, within the prohibition boundaries, hauling is critical to preventing spills from stressed systems.*
- Malibu Bay Company – disputed numbers.

Wastewater Flow and Hauling (Tech Memo #5) Comments

Waste Flows in the Malibu Civic Center Area

Excluding Malibu Colony Plaza -- 5% increase



Surfrider Beach

CEQA and the Environmental Staff Report

- Several statutes and regulations dictate the contents of our environmental review document.
  - Title 14, California Code of Regulations, section 15251(g): The Regional Board's Basin Planning Program is a CEQA certified regulatory program
  - Title 23, CCR, section 3777: The State Board's CEQA regulation for exempt regulatory programs requires certain elements.
  - Title 14, CCR, section 15187: CEQA guidelines for the evaluation of a performance standard requires certain elements as well.

- But Water Code section 13360 prohibits the Regional Board from dictating the manner of compliance.

Alternatives to the Prohibition

- Continued hauling – *not reasonable*
- Initiative by local entity – *not recommended*
  - City
  - Existing or newly formed utility
  - Existing or newly formed water authority
  - Public benefit (non-profit) corporation
  - Privately-run organizations (for-profit corporations, partnerships, proprietors)
- No action – *not recommended*

Potential Methods of Compliance

- Conceptual projects to comply with 5-year schedule in prohibition by Nov 2014.
  - Centralized, integrated water resources facilities
  - Interceptor sewers
    - Export to Castellemare (Hyperion sewer)
    - Export to Tapia
  - Decentralized facilities

Estimated Capital Costs of Conceptual Projects

Component	Centralized, Integrated Facilities	Interceptor Sewer to a:		Decentralized Facilities
		Hyperion Connection	Tapia Connection	
Local Sewer System	$7,800,000	$7,800,000	$7,800,000	$7,800,000
Interceptor Sewer	--	$49,000,000	$72,500,000	--
Treatment Plant(s)	$5,900,000	--	--	$5,800,000
Recycled Distribution System	$3,000,000	0	0	$3,000,000
Total	$16,700,000	$56,800,000	$80,300,000	$16,600,000

Potential Significant Effects

- Potential adverse significant effects from construction of compliance project
  - Water flow, change of quality of GW (sec. 3)
  - Land use (sec. 8)
  - Transportation/Circulation (sec. 13)
  - Parks and recreation areas (sec. 14, 19)
  - OWDS abandonment (septic tanks, seepage pits) (sec. 16)

Overriding Considerations

- Compliance with the prohibition will have substantial benefits to water quality and will enhance beneficial uses, resulting in positive social, environmental, and economic benefits.
- The benefits outweigh the potential unavoidable environmental effects because of them are temporary, associated with the construction of a compliance project.

Structure of the Prohibition

- Timing – 2014 deadline
- Boundaries
  - Eastern
  - Western
  - Beach front
- Exemptions
  - Other than maintenance and repair, no exemptions are proposed.

Structure does not exempt:

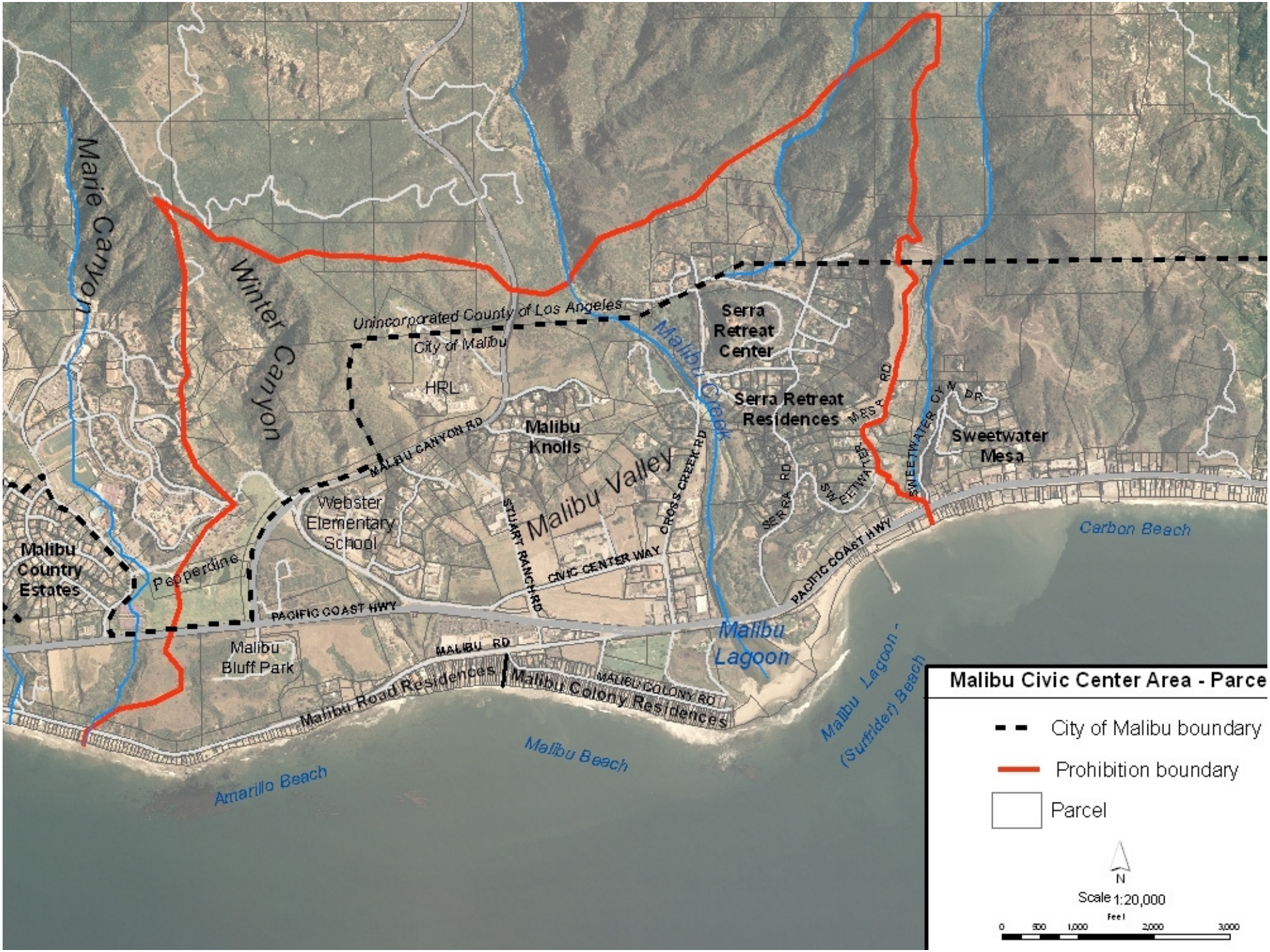
- Increased flows from existing homes or commercial facilities
  - *Informally, Malibu has submitted a request.*
- New projects in a local agency's permitting pipeline
  - *Staff has asked for a list of such projects, for Board consideration.*
- Future zero discharge projects

Objections to Boundaries

- Western boundary – contract to exclude Winter Canyon
  - Pepperdine
  - Our Lady of Malibu Church
  - MWPCP (Malibu Water Pollution Control Plant) – some of the residents (one of four HOAs, Embree)
  - Winter Canyon Plant (Malibu Colony Plaza)
  - Malibu Towing

Area Subject to Prohibition ('Malibu Civic Center Area')
© 2009 Europa Technologies
Image © 2009 DigitalGlobe
© 2009 Tele Atlas
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
34°02'12.62" N 118°41'35.41" W elev 25 ft
©2009 Google
Eye alt 4871 ft

Malibu Civic Center Area
City of Malibu boundary
Prohibition boundary
N
Scale 1:20,000
feet
Marie Canyon
Winter Canyon
Unincorporated County of Los Angeles
City of Malibu
HRL
Malibu Knolls
Malibu Creek
Serra Retreat Center
Serra Retreat Residences
Sweetwater Mesa
Malibu Valley
Malibu Country Estates
Pepperdine
Webster Elementary School
Malibu Bluff Park
MALIBU CANYON RD
STUART RANCH RD
CIVIC CENTER WAY
CROSS CREEK RD
SERRA RD
SWEETWATER MESA RD
SWEETWATER CYN DR
PACIFIC COAST HWY
MALIBU RD
MALIBU COLONY RD
Malibu Lagoon
Malibu Lagoon - (Surfrider) Beach
Carbon Beach
Malibu Road Residences
Malibu Colony Residences
Malibu Beach
Amarillo Beach


Malibu Civic Center Area - Parce
City of Malibu boundary
Prohibition boundary
Parcel
N
Scale 1:20,000
Feet
0 500 1,000 2,000 3,000
Marie Canyon
Winter Canyon
Unincorporated County of Los Angeles
City of Malibu
HRL
Serra Retreat Center
Serra Retreat Residences
Malibu Creek
Malibu Knolls
Malibu Valley
Sweetwater Mesa
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STUART RANCH RD
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CROSS CREEK RD
SERRA RD
SWEETWATER MESA RD
SWEETWATER CTY DR
PACIFIC COAST HWY
MALIBU RD
MALIBU COLONY RD

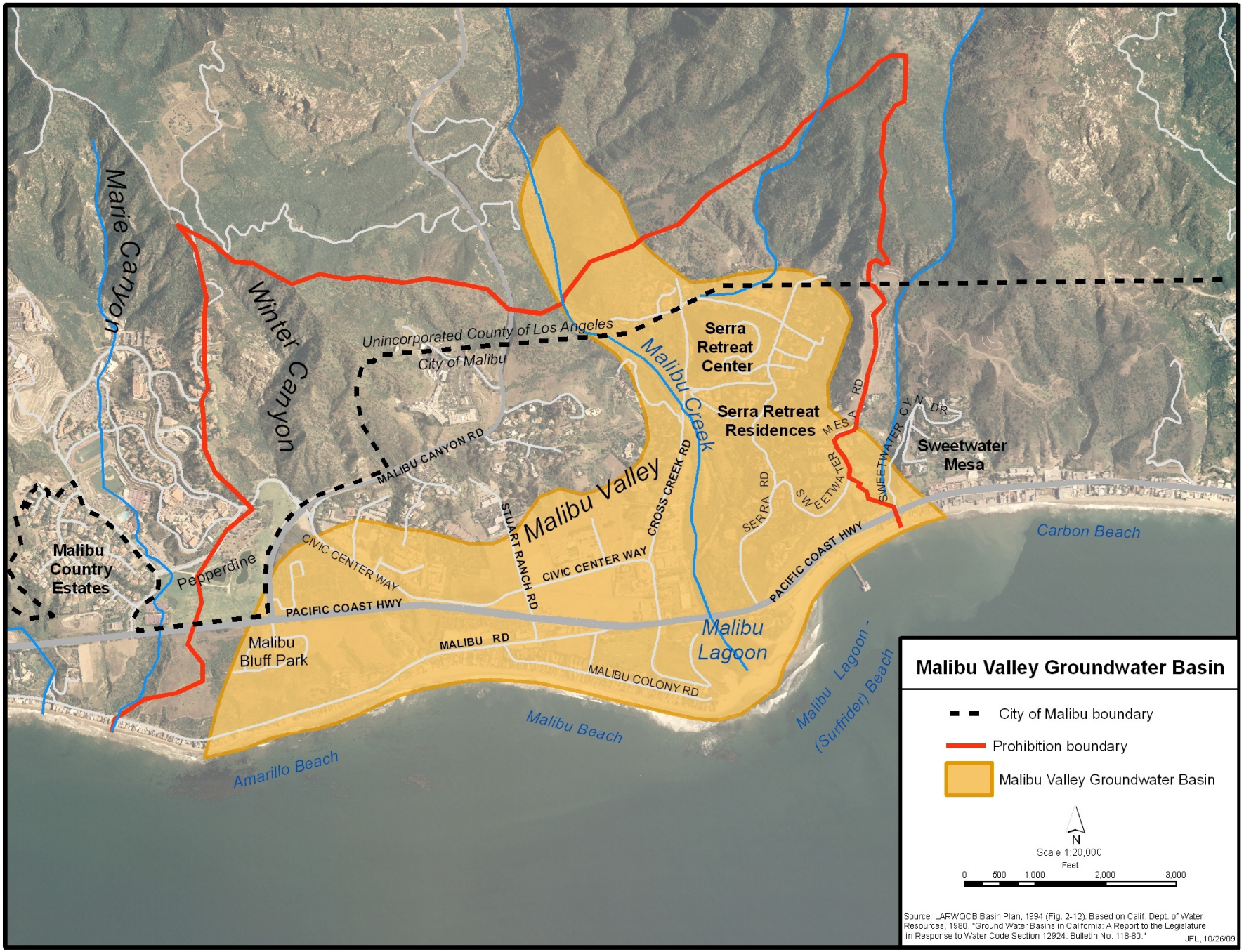
Objections to Winter Canyon

- Winter Canyon groundwater does not affect Malibu Lagoon.
  - *Response: Concur. (Other factors drive staff's recommendation).*
- Winter Canyon groundwater does not affect the beaches. No evidence of impairment on Amarillo Beach.
  - *Response: Groundwater is polluted. Although staff concurs that there is no Amarillo beach monitoring station, the stream in lower Winter Canyon still discharges into ocean. Surrounding beaches are impaired.*

Monitoring Stations near Malibu Civic Center Area
Monitoring Station
Prohibition boundary
N
Scale 1:30,000
Feet
0 500 1,000 2,000 3,000 4,000
JFL, 10/30/09
Marie Canyon
Winter Canyon
Malibu Creek
Malibu Valley
MALIBU CANYON RD
CIVIC CENTER WAY
PACIFIC COAST HWY
MALIBU RD
CROSS CREEK RD
SERRA RD
SWEETWATER MESA RD
Malibu Lagoon
Malibu Lagoon - (Surfrider) Beach
Carbon Beach
Malibu Beach
Amarillo Beach
Puerco Beach
SMB-1-11
SMB-1-12
SMB-MC-1
Winter Canyon Discharge Point

Objections to Winter Canyon

- Groundwater is not suitable for drinking water.
- Groundwater in Winter Canyon is not part of Malibu Valley Groundwater Basin.
  - *Response: In accordance with the Basin Plan, staff has included Winter Canyon.*


Marie Canyon
Winter Canyon
Unincorporated County of Los Angeles
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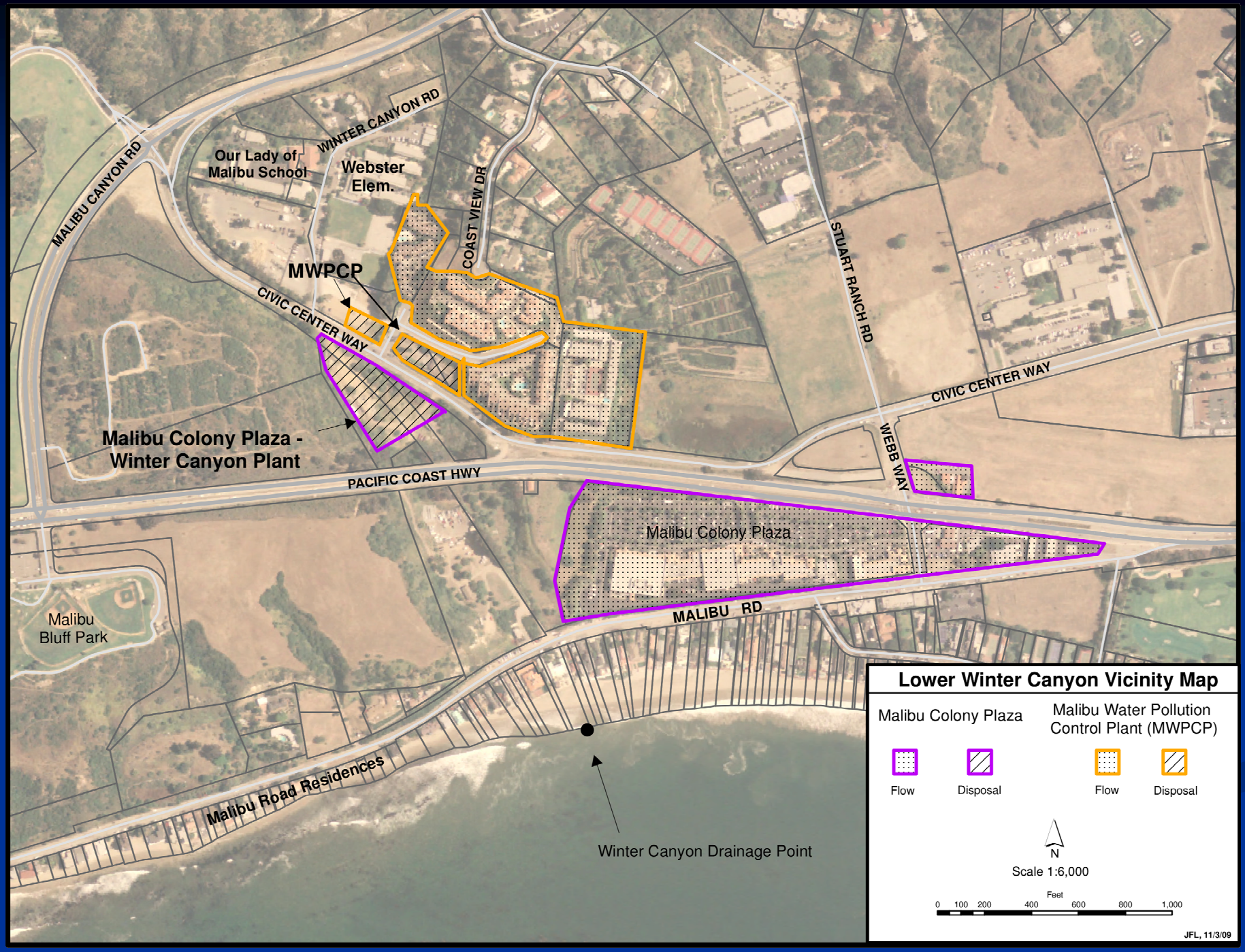
CROSS CREEK RD
MALIBU RD
MALIBU COLONY RD
SERRA RD
SWEETWATER MESA RD
SWEETWATER CYN DR
Malibu Valley Groundwater Basin
City of Malibu boundary
Prohibition boundary
Malibu Valley Groundwater Basin
N
Scale 1:20,000
Feet
0 500 1,000 2,000 3,000
Source: LARWQCB Basin Plan, 1994 (Fig. 2-12). Based on Calif. Dept. of Water Resources, 1980. "Ground Water Basins in California: A Report to the Legislature in Response to Water Code Section 12924. Bulletin No. 118-80."
JFL, 10/26/09

Objections to Winter Canyon

Other staff responses:

- *Approximately 50,000 gpd of wastewater flow:*
  - *Four multi-family complexes*
  - *Church, two elementary schools, nursery school*
  - *Includes transfer of sewage from Malibu Colony Plaza*
- *Concerns about sustainability:*
  - *High operating costs (MWPCP)*
  - *Capital costs*
    - *$2.6 million to replace MWPCP – 2021 life expectancy*
    - *$2.25 million recent incremental expenditures for Colony Plaza/Winter Canyon Plant – 2031 life expectancy*


Lower Winter Canyon Vicinity Map
Malibu Colony Plaza
Malibu Water Pollution Control Plant (MWPCP)
Flow
Disposal
Flow
Disposal
N
Scale 1:6,000
Feet
0 100 200 400 600 800 1,000
JFL, 11/3/09
MALIBU CANYON RD
WINTER CANYON RD
Our Lady of Malibu School
Webster Elem.
COAST VIEW DR
MWPCP
CIVIC CENTER WAY
STUART RANCH RD
CIVIC CENTER WAY
WEBB WAY
Malibu Colony Plaza - Winter Canyon Plant
PACIFIC COAST HWY
Malibu Colony Plaza
MALIBU RD
Malibu Bluff Park
Malibu Road Residences
Winter Canyon Drainage Point

Timing

- 2014 deadline is feasible.
  - Supported by:
    - Santa Monica Bay Restoration Commission
    - BayKeeper
    - Heal the Bay
    - Surfing Association
  - Opposed by:
    - City
    - School District
    - Most WDR Dischargers
    - Most Other Dischargers and Many Other Stakeholders

Other Concerns

- Take a collaborative approach
- Unfair to dischargers with significant OWDS investments
- Objections to the process (noticing, outreach, TMDLs, peer reviews)
- Tapia
- Berm
- Serra Retreat compliance
- Legal issues

Conclusion

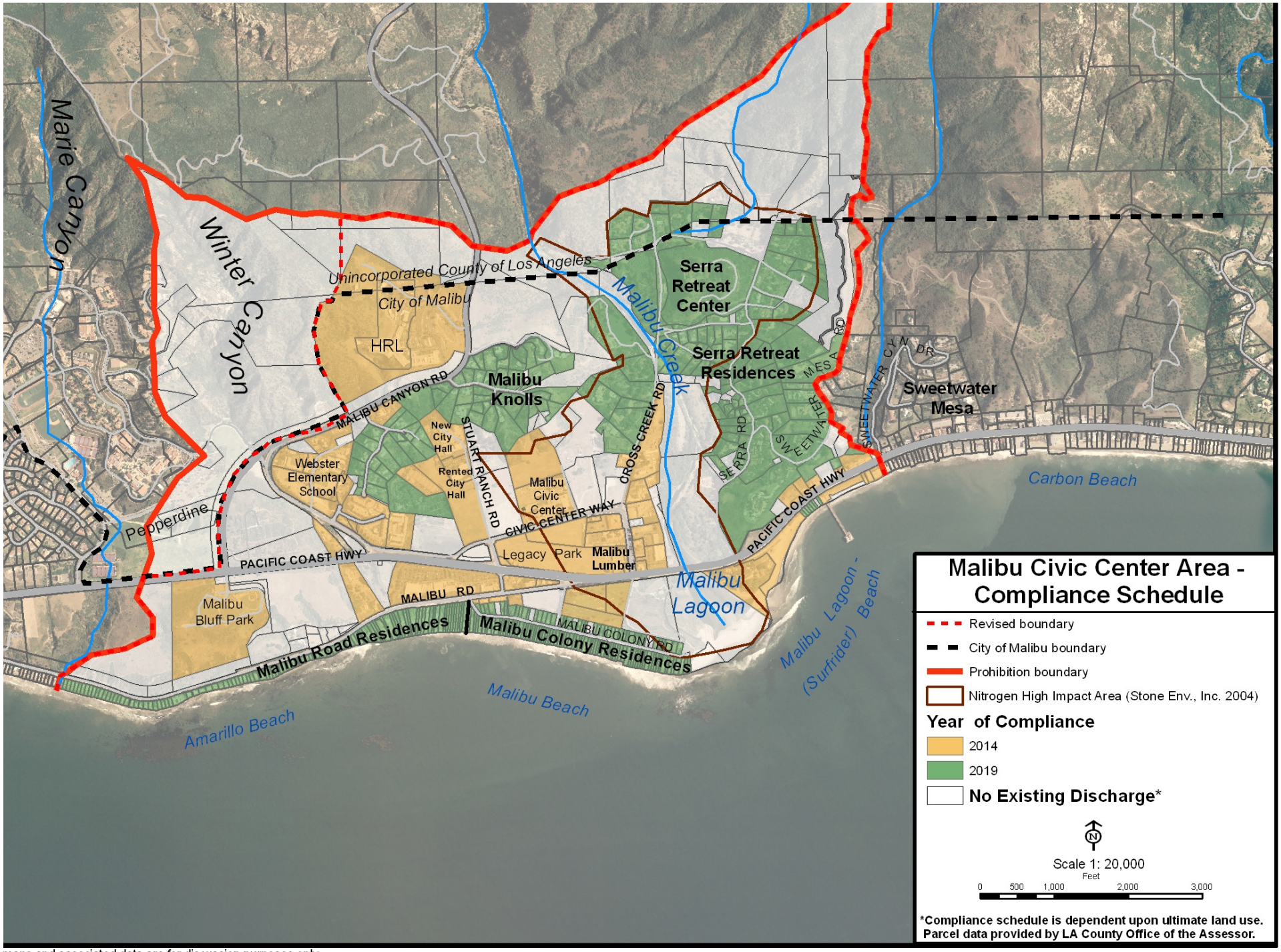
In the proposed prohibition area:

- OWDSs impair:
  - Beaches
  - Malibu Lagoon
  - Groundwater
- Dischargers under Regional Board Orders have poor compliance records
- 'Hauling' – there is heavy reliance by many dischargers on hauling, in order to handle flows that cannot be discharged on their sites or nearby disposal fields.

Recommendation

Adopt Resolution to:

- Certify substitute environmental documentation
- Prohibit discharge from OWDSs:
  - Covering all dischargers (no exemptions, except for repairs and replacements)
  - Timing
    - Nov 5, 2009 new dischargers
    - Nov 4, 2014 for existing dischargers



maps and associated data are for discussion purposes only.

JFL, 11/2/09