Public Works Agency

Department Title
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Stormwater Pollution Prevention

September 21, 2015

Presentation for

Oak Park Community

Outline

- **Background**
- **2015 Source ID Study Results**
- **CCTV of Storm Drains**
- **2015 Infiltration Testing Results**
- **Evaluation of Community Comments**
- **Intermission and Submittal of Comments**
- **Discussion**

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Malibu Creek Watershed Total Maximum Daily Loads (TMDLs)

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TMDL	Effective Date	Promulgating Agency
Nutrients*	March 21, 2003	US EPA
Bacteria*	Jan. 24, 2006	LARWQCB
Trash**	July 7, 2009	LARWQCB
Benthic Community & Nutrients**	July 2, 2013	US EPA

LARWQCB – Los Angeles Regional Water Quality Control Board
US EPA - U.S. Environmental Protection Agency

* Included in current Ventura Countywide Municipal Stormwater Permit (LARWQCB's enforcement mechanism)
** to be included in the Permit expected renewal in 2015

Municipal Stormwater Permit

- Cities, County, and District are required to
  - Prohibit non-stormwater discharges **into** municipal storm drains or receiving waters (e.g., creeks, rivers, etc.);
  - Eliminate discharges from municipal storm drain that cause or contribute to a violation of water quality limits; and
  - Implement Total Maximum Daily Loads (TMDLs) requirements.

Permit Enforcement

- Civil Penalties for Non-Compliance
  - Up to $27,500/day
- Criminal Penalties for Non-Compliance

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Medea Creek: *E. coli*

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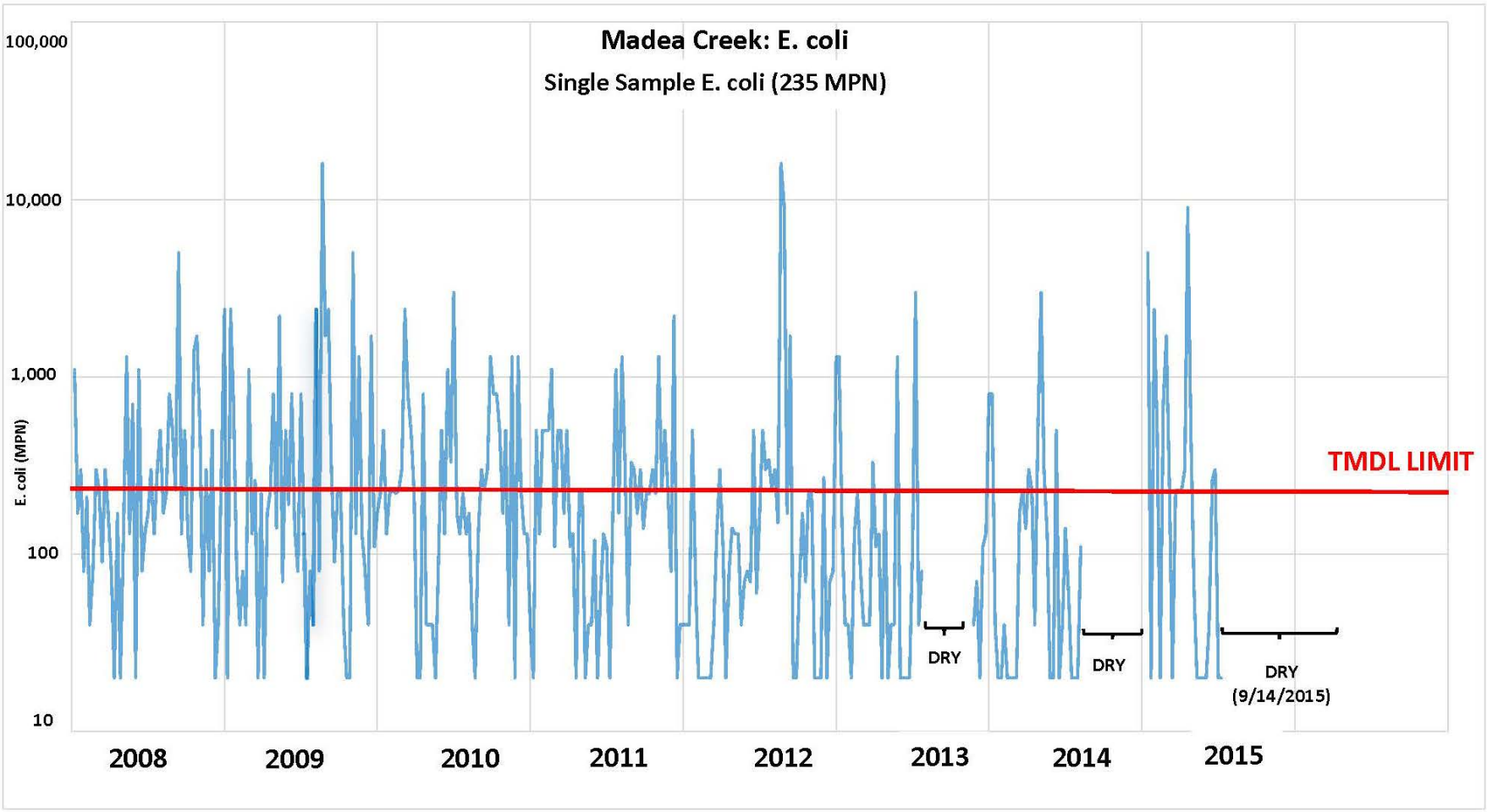
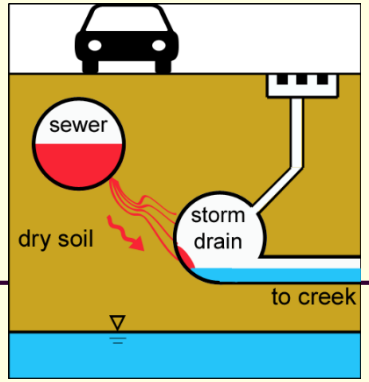
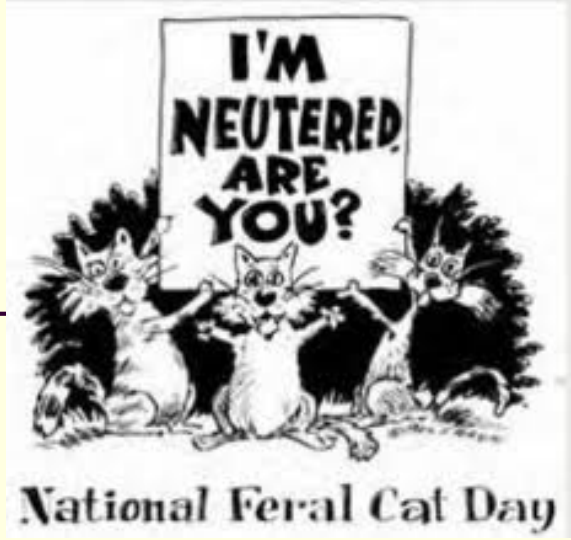
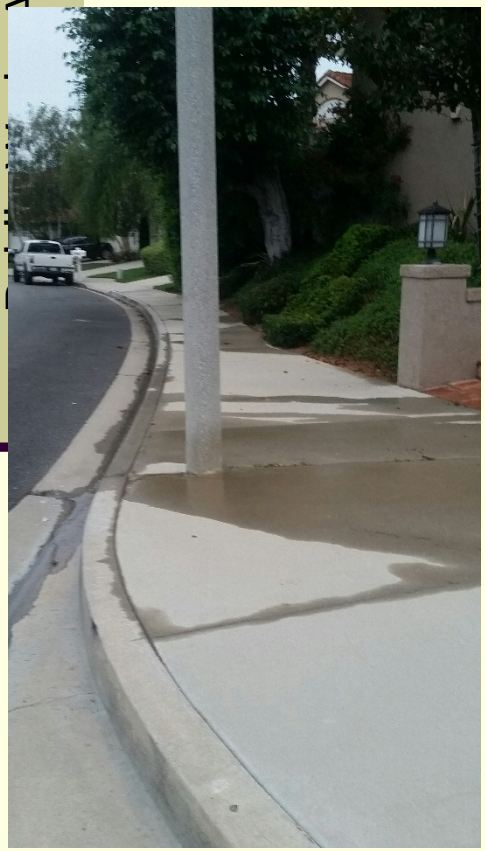



sewer
dry soil
storm drain
to creek


I'M NEUTERED ARE YOU?
National Feral Cat Day




Please Do Not Feed Pigeons Or Squirrels

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2015 Source ID Study Flow Monitoring

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- Visual observations
  - 24 locations;
  - Mondays & Thursdays for 5 weeks (July/August, 2015);
- Installed level loggers for continuous monitoring to identify flow patterns (12 different sites).

2015 Source ID Study Bacteria Monitoring

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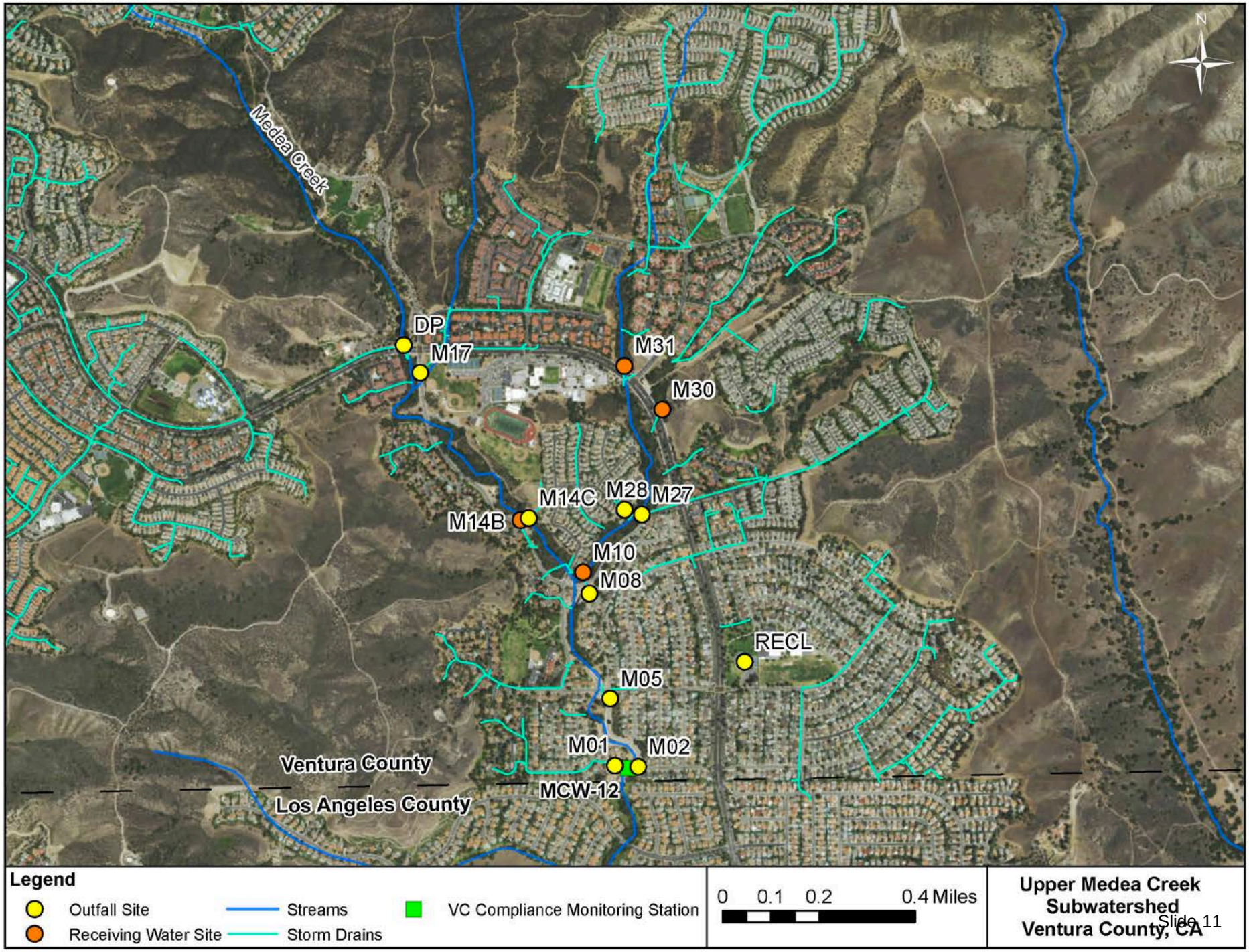
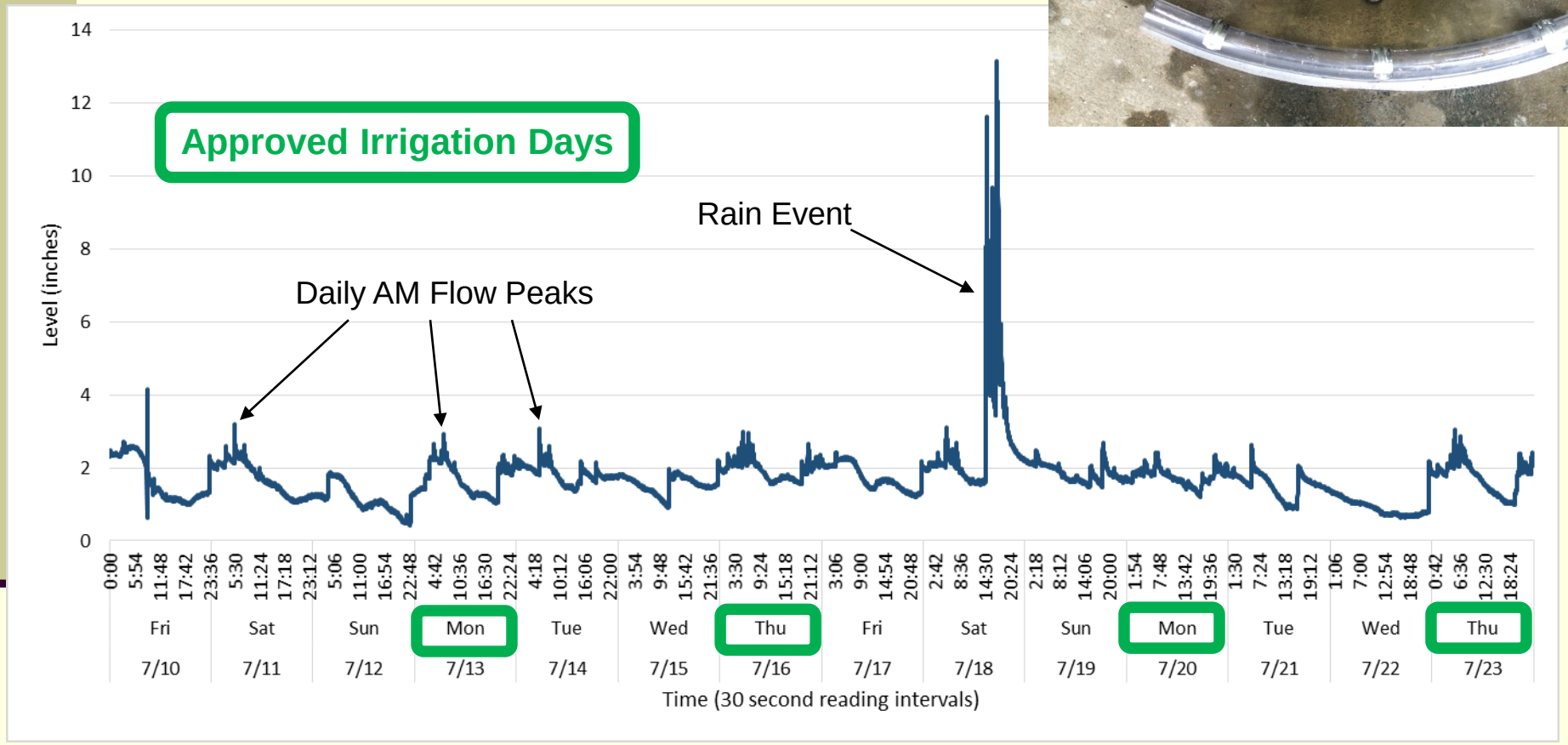
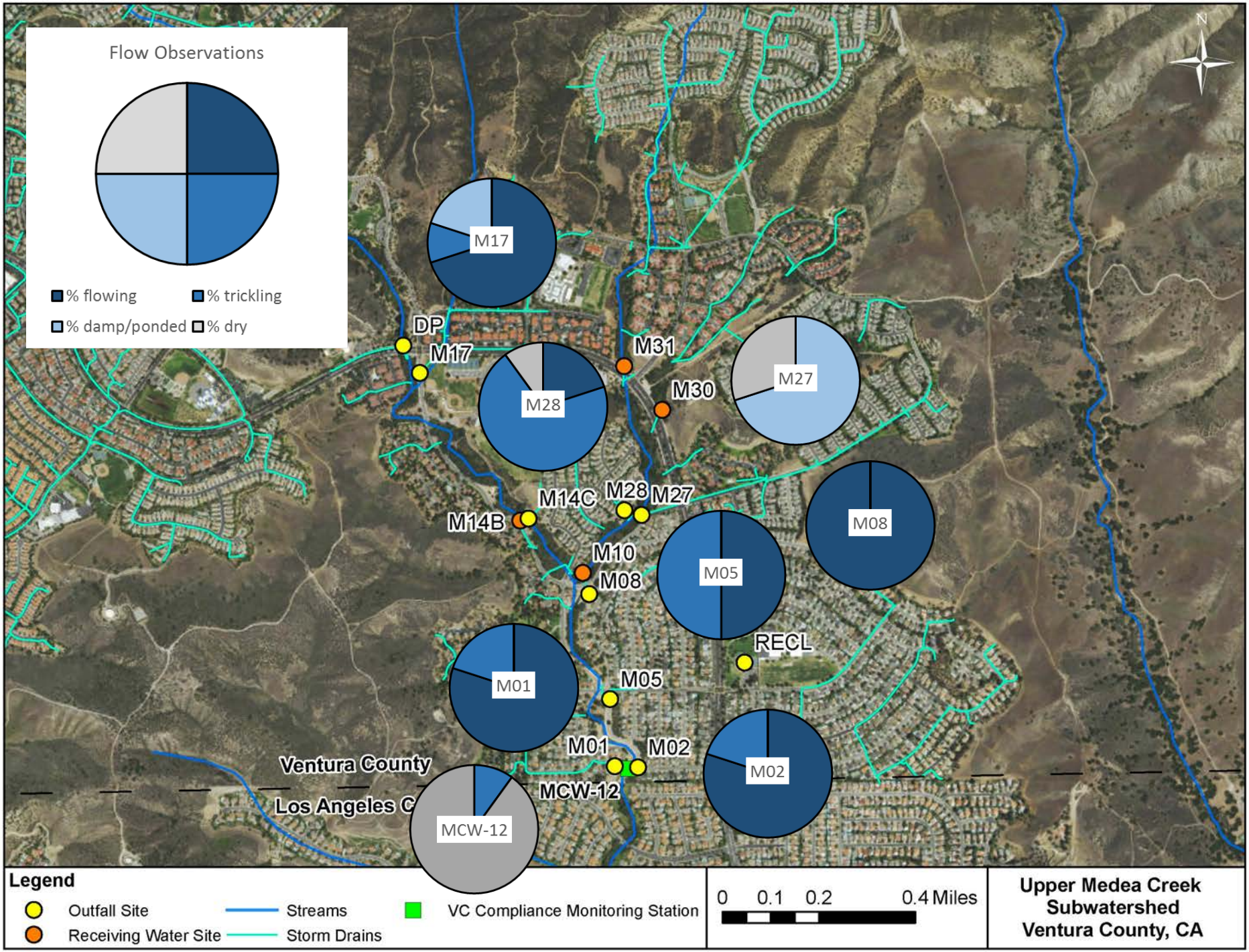
- Collected Water Samples
  - Mondays & Thursdays for 5 weeks (July/August, 2015)
  - 18 locations within Medea Creek and Lindero Creek watersheds including duck pond and reclaimed water
  - Over 180 samples
  - Bacteria levels measured in all samples


Medea Creek
DP
M17
M31
M30
M14C
M28
M27
M14B
M10
M08
RECL
M05
M01
M02
MCW-12
Ventura County
Los Angeles County
N
Legend
Outfall Site
Receiving Water Site
Streams
Storm Drains
VC Compliance Monitoring Station
0 0.1 0.2 0.4 Miles
Upper Medea Creek Subwatershed
Ventura County, CA

Flow Monitoring



Example of flow monitoring data from outfall M01


Flow Observations
% flowing
% trickling
% damp/ponded
% dry
N
M17
DP
M17
M31
M28
M30
M27
M14C
M28
M27
M14B
M10
M08
M08
M05
RECL
M01
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0 0.1 0.2 0.4 Miles
Upper Medea Creek Subwatershed
Ventura County, CA

Bacteria Testing Results

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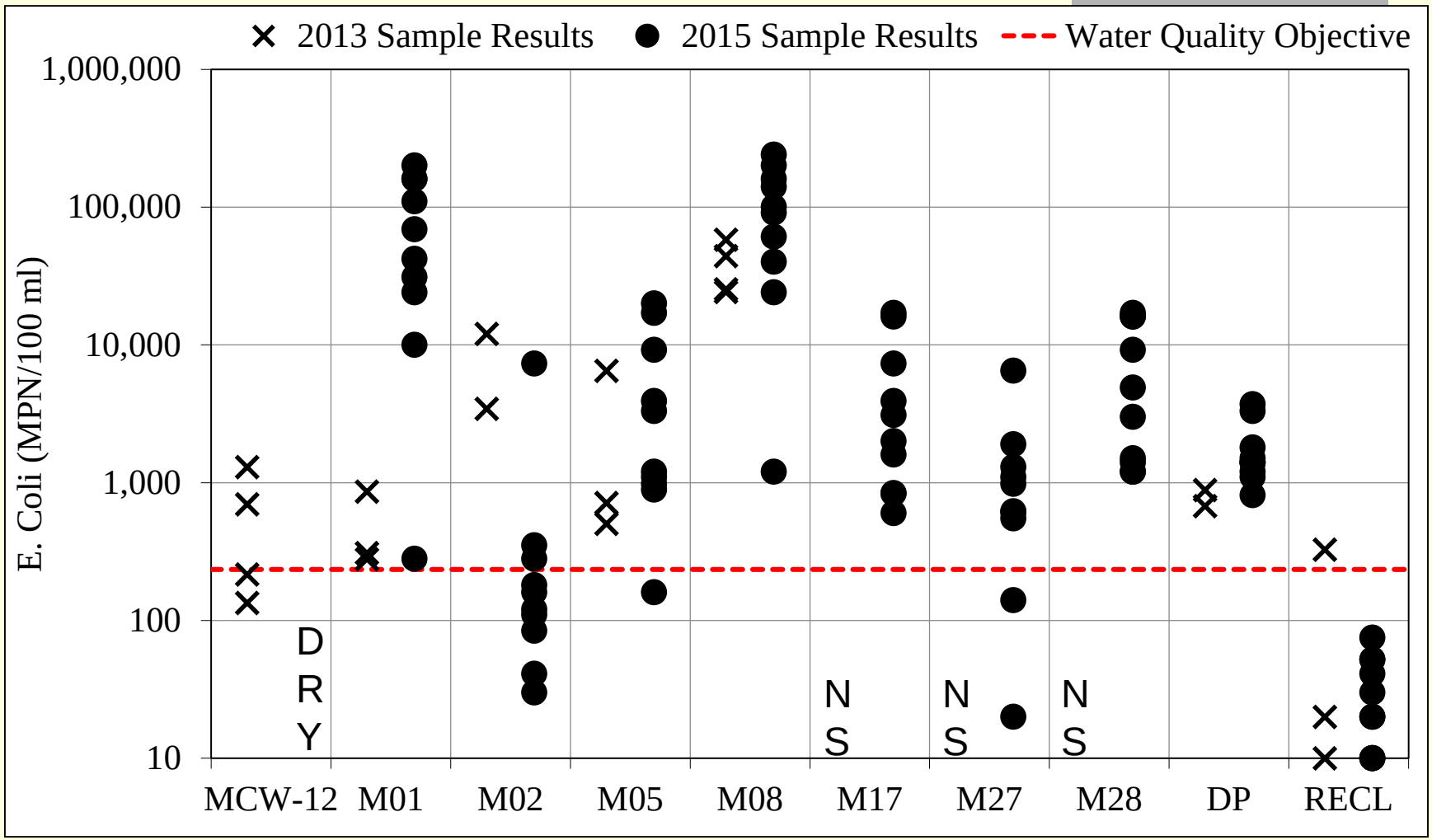
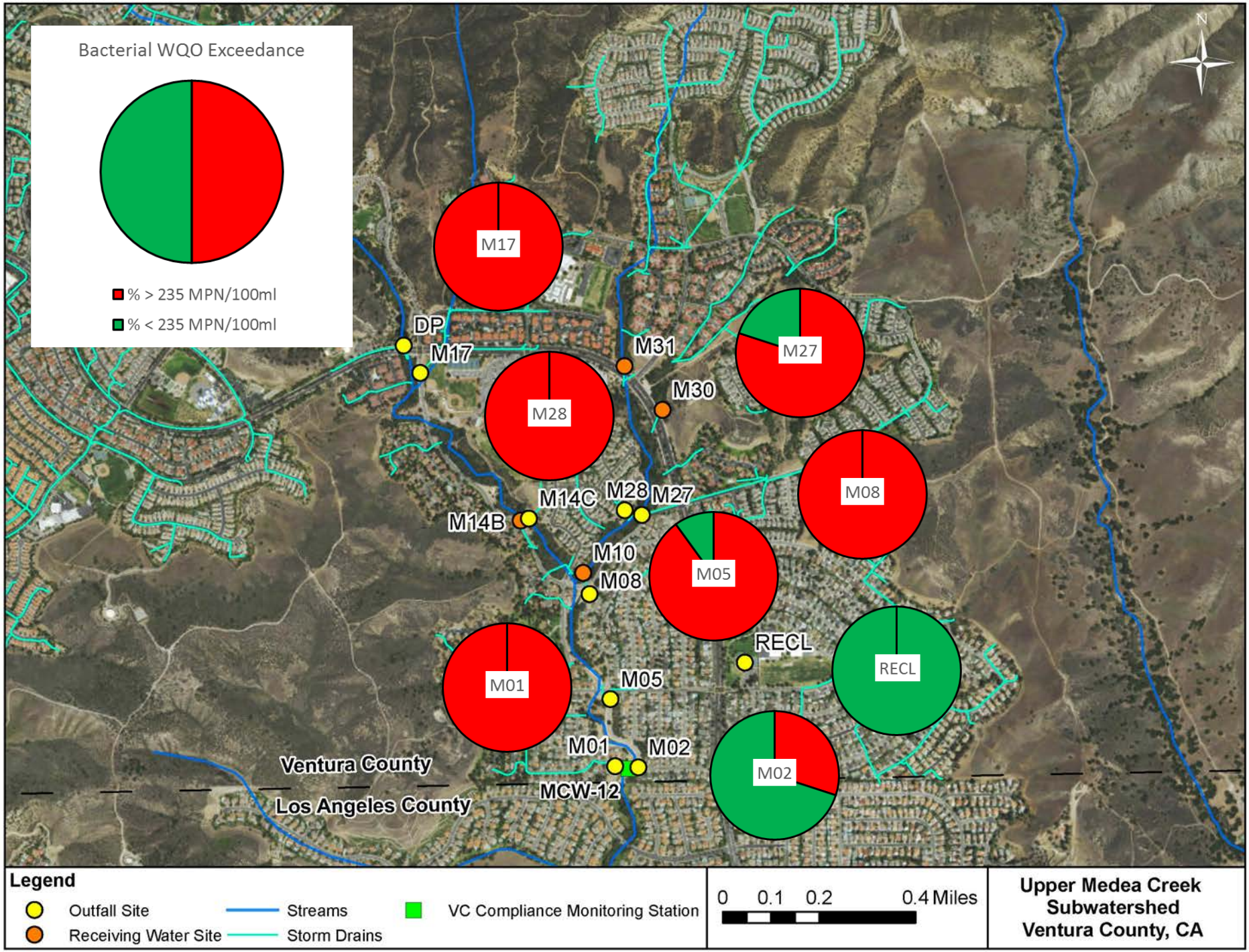


"NS" – not sampled


Bacterial WQO Exceedance
% > 235 MPN/100ml
% < 235 MPN/100ml
N
M17
DP
M17
M31
M27
M28
M30
M28
M27
M14C
M14B
M10
M08
M08
M05
RECL
RECL
M01
M05
M01
M02
M02
MCW-12
Ventura County
Los Angeles County
Legend
Outfall Site
Receiving Water Site
Streams
Storm Drains
VC Compliance Monitoring Station
0 0.1 0.2 0.4 Miles
Upper Medea Creek Subwatershed
Ventura County, CA

Bacteria Study Conclusions

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- Prohibited dry weather flow is present at majority of outfalls, primarily from irrigation runoff
  - Daily, including days when irrigation is prohibited
- Bacteria levels frequently exceeded allowable limits
- **Dry weather flows, which are persistent and high in bacteria, need to be either eliminated or treated to achieve compliance**

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Visual Tracking

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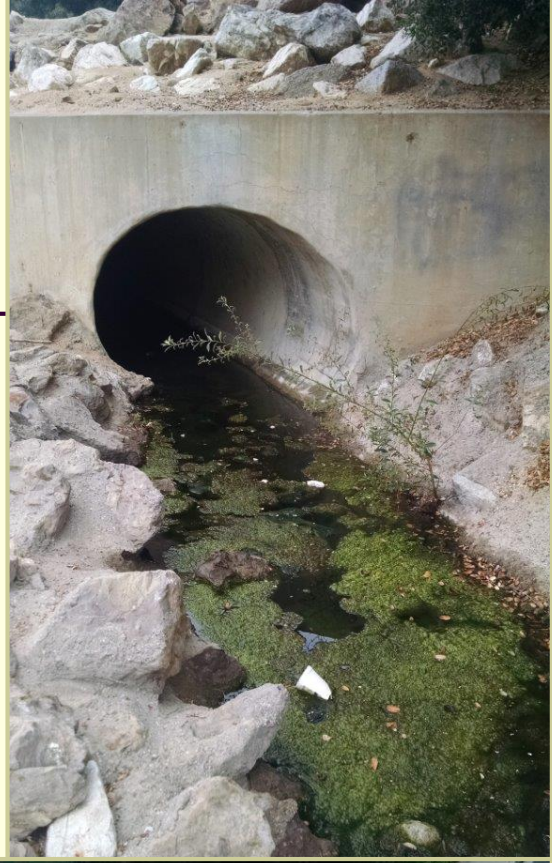
Domestic Animal Feces



Wild Animal Feces

CCTV

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CCTV Results

Outfall	Street	CCTV (feet)	% of Network	Notes
M01	Medea Creek Ln	1000	50%	2 locations animal feces in flow path
M02	Tamarind Ln	80	100%	none
M05	Conifer St	400	100%	2 pipe sags, 1 illegal dump
M08	Oak Hills St	500	10%	1 illegal connection, 4 potential intrusion stains

* Domestic animal feces at outfalls washed away by low flows

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Infiltration Testing

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May 2013
Tested 4 Sites

July 2015
Tested 5 Sites

Infiltration Testing

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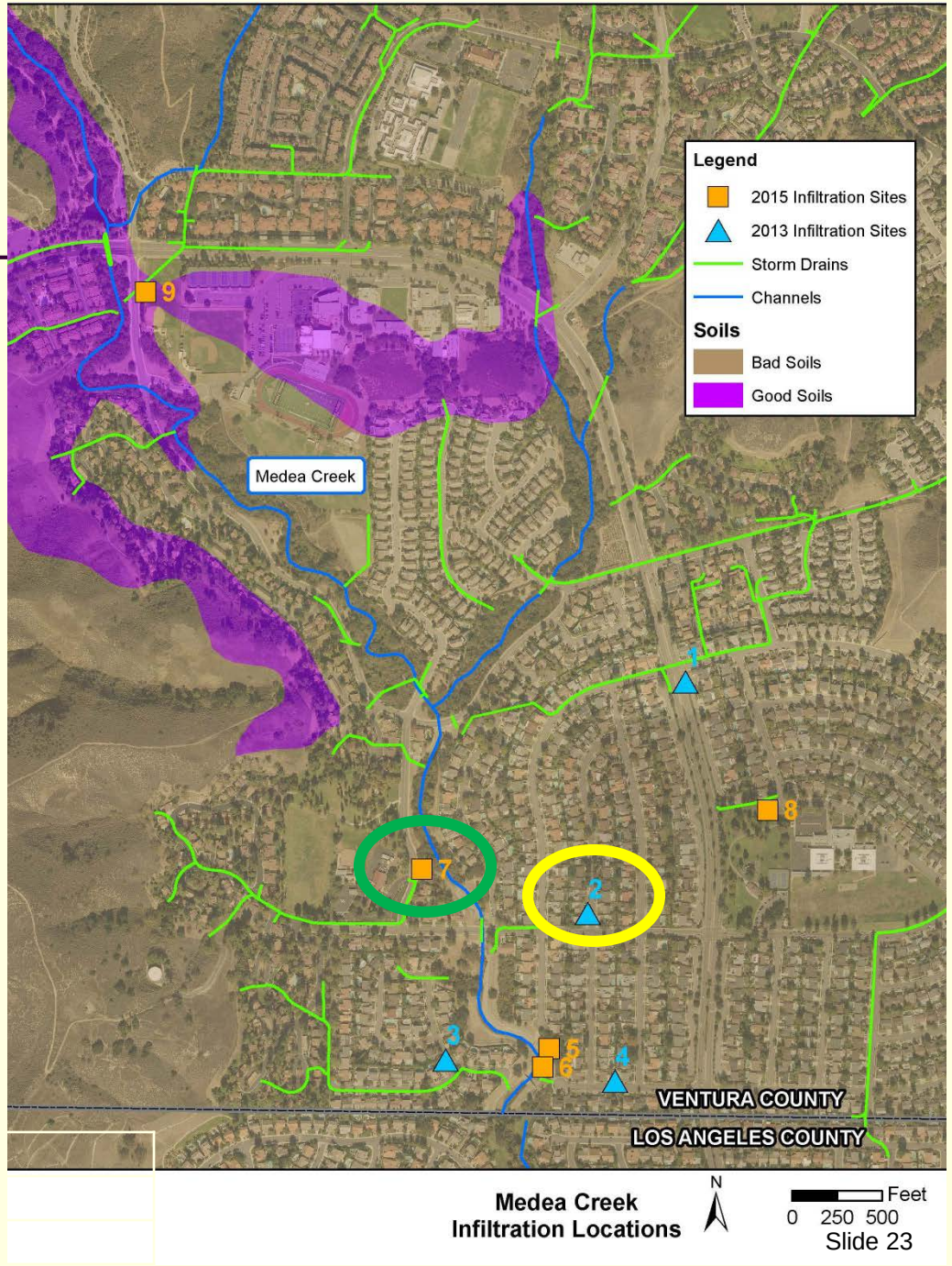
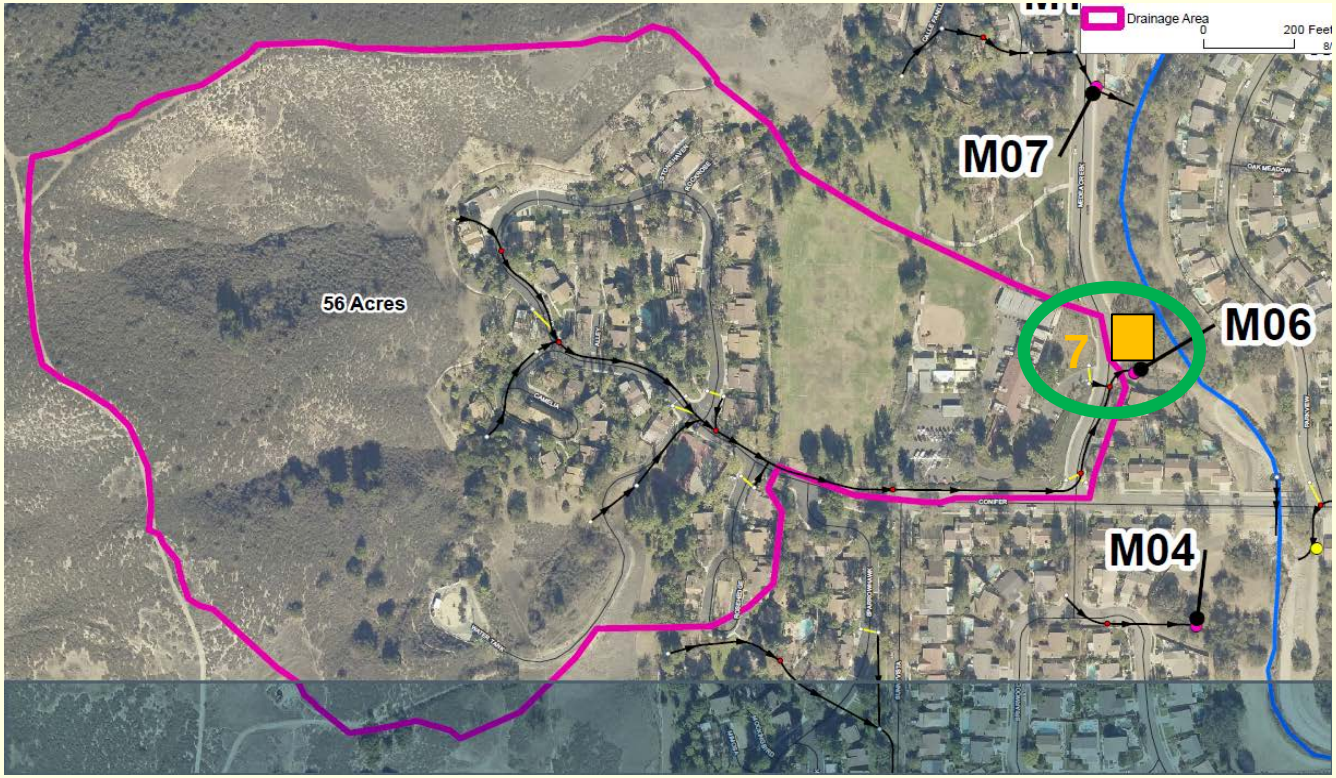
Site No.	Results
2013 Testing	
1	
2	
3	
4	
2015 Testing	
5	
6	
7	
8	
9	

Good infiltration;
Medium, not substantiated
Insufficient infiltration;



Medea Creek Lane (M06)



- ~ 62% of drainage area is open space
- No flow was observed in 2015 study at M06

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Evaluation Criteria

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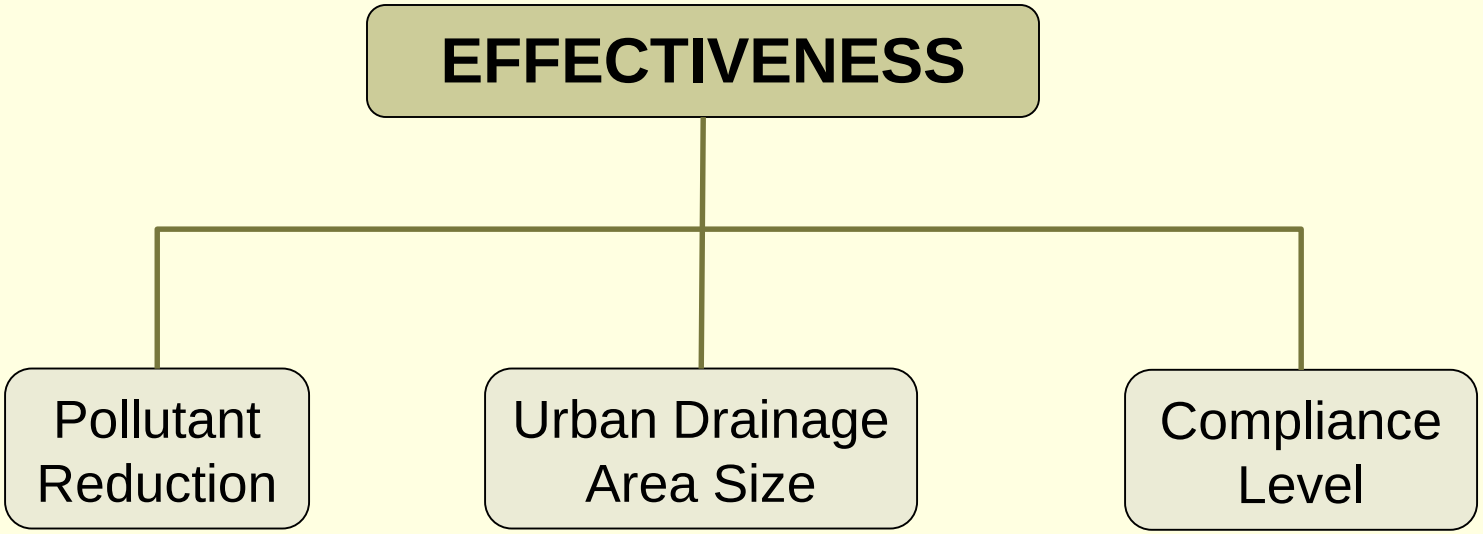

Evaluation Criteria (Continued)

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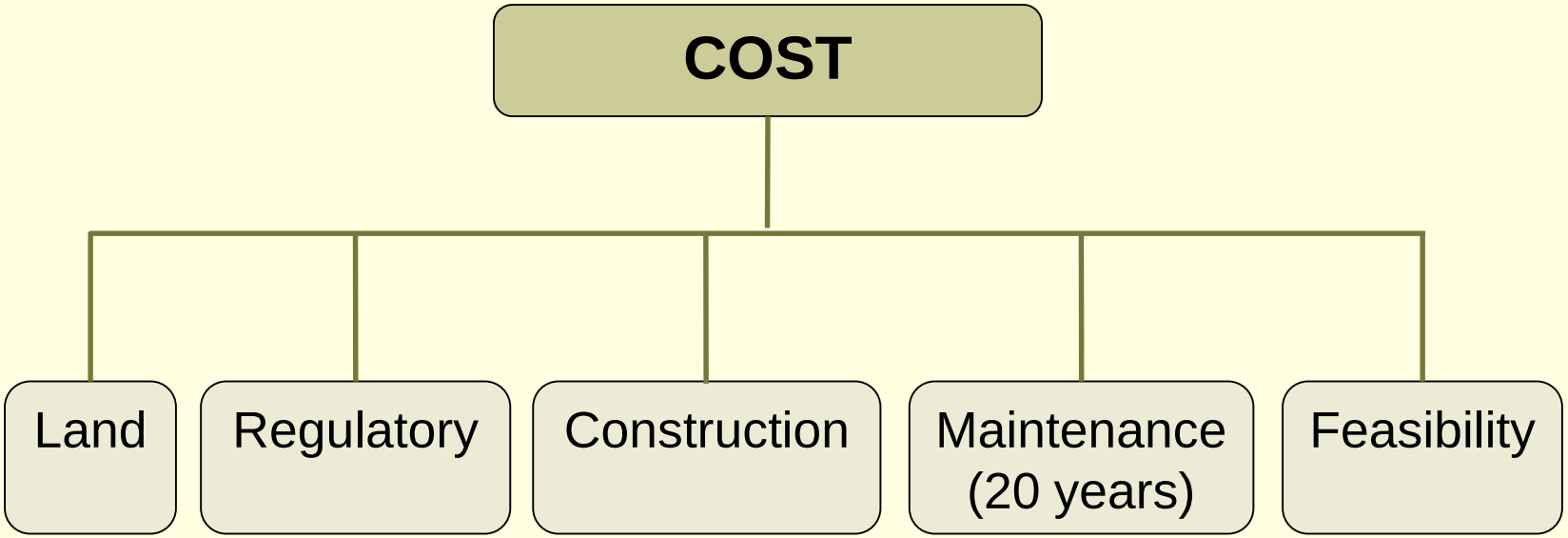

Evaluation
Color-Coded Rankings

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Most effective treatment for the Oak Park area;
Most cost-effective treatment for the Oak Park area;

Treatment effectiveness is lower than green;
Cost is higher than green;

Treatment is insufficient;
Cost is prohibitive;

Evaluation Results - Lowest Scores

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Lowest evaluation scoring due to:

- Little or no improvement towards compliance,
- Long-term costly liability for non-compliance (e.g., “Do nothing”), and
- Some RED costs are due to infeasibility and require extensive regulatory permitting and mitigation;
  For example, biofilters in creek are not feasible but with lots of money anything is possible.

Evaluation Results – Lowest Scores (Continued)

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No.	Community Comments	Effectiveness	Cost
1	Do Nothing		
2	Enforcement for Water Quality violation		
3	Public outreach		
4	Dog park, duck pond - clean up		
5	Lots of small sites (Residential lots)		
6	Clean up parks (Rancho Simi)		
7	Lock at screens to keep out wildlife, screens on inlets		
8	Wetlands adjacent to Duck Pond side channel		
9	Medea Creek at Tamarind Lane Biofilter		
10	Modular wetlands at outfalls		
11	Outfall treatment (Modular Wetlands or other)		

Evaluation Results – Medium Scores

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Medium effectiveness ratings due to:

- Small drainage area,
- Dry weather compliance only and/or
- Reduced pollutant removal.

Medium cost due to:

- Land acquisition and permitting (outside County ROW),
- Multiple sites increases cost (CSS #18),
- Smaller sites are less cost-effective,
- Pumping/piping for underdrain (Mae Boyar Park #12), and/or
- Other O&M issues and costs.

Evaluation Results – Medium Scores (Continued)

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No.	Community Comments	Effectiveness	Cost
12	Biofilters - Mae Boyer Park (North)		
13	Demonstration area - smaller area of biofilters		
14	Small Biofilter at corner property; East side of Kanan Rd		
15	Lindero Canyon (Biofilter near school)		
16	Parks - Rancho Simi (Biofilter at Deerhill Park)		
17	Upstream of Duck Pond; Dog Park (Rancho Simi)		
18	Combined Sewer System (CSS) (low flow diversion)		

Evaluation Results – Medium/High Scores

Public Works Agency

Medium effectiveness ratings due to:

- Small drainage area,
- Dry weather compliance only, and/or
- Reduced pollutant removal.

Low cost due to:

- Inside County ROW (no land acquisition and permitting),
- Potentially feasible to implement, and/or
- Construction and O&M costs manageable.

Evaluation Results – Medium/High Scores (Continued)

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No.	Community Comments	Effectiveness	Cost
19	Get rid of biofilters; Keep Modular Wetlands - more units		
20	Construct dry-weather; distributed Modular Wetlands		
21	Satinwood Ave and Smoke Tree Ave (Modular Wetlands or equivalent)		
22	Modular Wetland - area drains to LA county		
23	Modular Wetlands - along Kanan Rd.		
24	Upper Conifer St. off of Smoketree Ave (Modular Wetlands)		
25	Move trees between curb line and Edison vault		

Evaluation Results – High Scores

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High effectiveness ratings due to:

- High compliance level,
- High pollutant removal efficiency,
- Large drainage areas, and/or
- High percent of urbanization.

High cost due to:

- Extensive permitting and mitigation,
- Very high construction and maintenance costs,
- Still needs approval by Regional Board, and/or
- Feasibility questions (enormous water volume)

Evaluation Results – High Scores (Continued)

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No.	Community Comments	Effectiveness	Cost
26	Treatment in creek (Medea or Lindero), creek used for treatment		
27	Compliance methods in LA County (City of Agoura Hills Regional Project)		
28	Biofilters at outfalls		
29	**Proposed project: Kanan Biofilters & 10 distributed Modular Wetlands**		

Proposed Kanan Biofilters and 10 distributed Modular Wetlands

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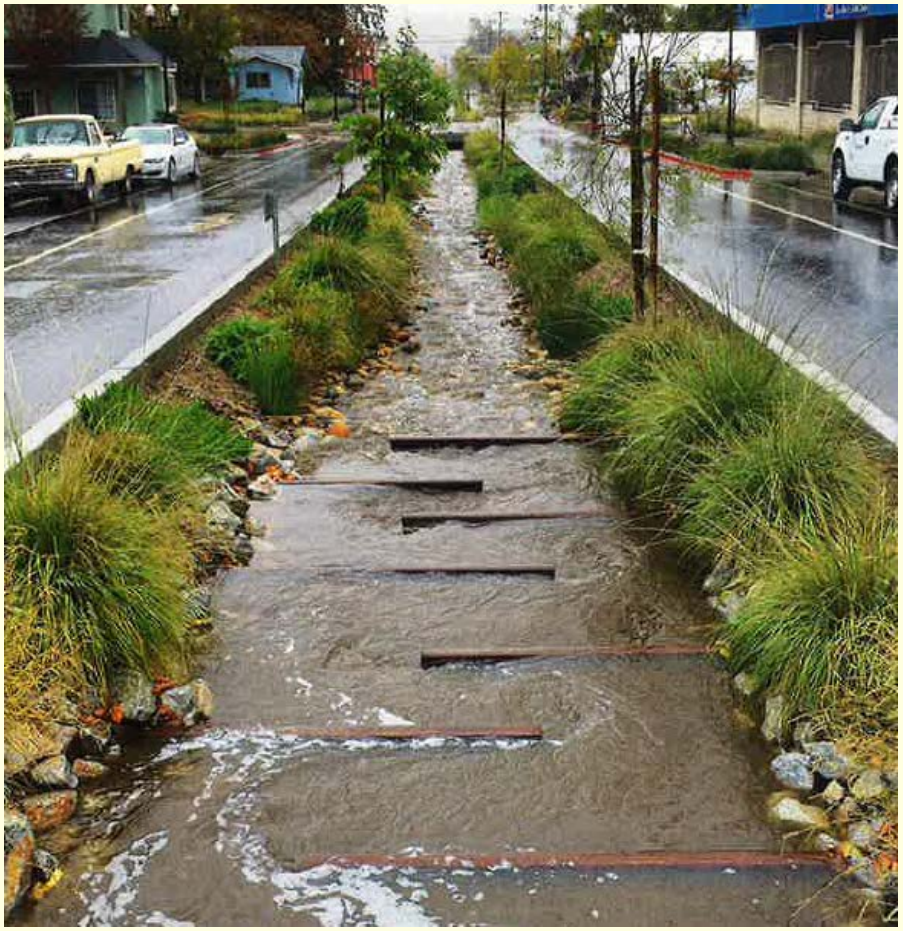
EXAMPLES
ASCE Award Winning **Bioretention**



City of Paso Robles, CA
ASCE Engineering Magazine
May 2015

EXAMPLES
Ocean Friendly Gardens

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EXAMPLES

Elmer Street photos provided by the Los Angeles and San Gabriel Rivers Watershed Council.

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Stormwater flows through a curb inlet into a bioswale on Elmer Street. The water infiltrates into the soil within a day, preventing breeding mosquitoes.

Drought Tolerant Demonstrations in Oak Park

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Oak Park Community Stormwater Pollution Prevention

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- **Break: 15 minutes**
- **Provide your questions and/or comments using Comment Cards**

Project Contact:
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ewelina.mutkowska@ventura.org

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Thank you
and
Good night!