OUTFALL INSPECTIONS & MONITORING

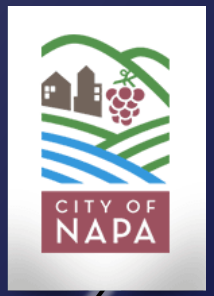
Jamison Crosby, Program Manager
Napa Countywide Stormwater Pollution Prevention Program
11/21/19


CALIFORNIA
Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS


City of Calistoga
Inc • Jan • 6 • 1886


CITY OF
AMERICAN
CANYON


NAPA COUNTY
CALIFORNIA


CITY OF
NAPA


ST. HELENA
CALIFORNIA


Town of Yountville


Napa Countywide Stormwater
NO DUMPING
DRAINS TO RIVER
Pollution Prevention Program

Storm Drain Outfall Monitoring

NAPA COUNTY RCD Resource Conservation District

Why sample outfalls?

- Detect illicit discharges
  - Wash water
  - Used oil disposal
  - Construction discharges
  - Power washing/surface cleaning
  - Mobile washers
- Inspect annually during dry weather
- Stormwater permit requirement

Outfall Sampling in Napa County

- 6 Years of data collection
  - 2014 to present…and beyond ?
- ~ 308 total outfalls in all jurisdictions
  - In 2014, all 308 were assessed
  - Later, 308 narrowed to ~162 via prioritization process

Methods

- 2 person team visits each outfall, collects photo, GPS coordinates, misc data using tablet
- At least 72 hours since last rainfall
- If water flowing, sample was collected and analyzed using variety of test kits & hand held meters

Data Collection App Entry Fields
Jurisdiction
Outfall ID
Latitude/Longitude
Name of Receiving Waters
Whether Receiving Waters Are Aquatic Habitat
Outfall Pipe Diameter
Outfall Pipe Configuration
Outfall Pipe Shape
Outfall Pipe Construction
Assessment Date and Time
Structural Condition
Presence and Severity of Erosion
Maintenance Condition
Whether Water was Flowing from Outfall
Description of Flow Quantity
Odor of Flowing Water, and Brief Descriptor of Odor
Whether a Sample was Collected
Whether Analyses Were Performed
Which Analyses Were Performed
Results of Analyses
Whether Results Exceeded Action Level Concentrations
Comments

Analytes and Action Levels

Indicator Parameter	Action Level Concentration
Ammonia	>= 50 mg/L
Color	>= 500 units
Conductivity	>= 2,000 µS/cm
Hardness	<= 10 mg/L as CaCO3 or >= 2,000 mg/L as CaCO3
pH	<= 5 or >=9
Potassium	>= 20 mg/L
Turbidity	>= 1,000 NTU

Discharge Types Detected

Parameter	Sewage	Washwater	Tap Water	Industrial or Commercial Liquid Wastes	Laboratory/Analytical Challenges
Ammonia	●	◉	○	◉	Can change into other nitrogen forms as the flow travels to the outfall
Color	◉	◉	○	◉	
Conductivity	◉	◉	○	◉	Ineffective in saline waters
Detergents – Surfactants	●	●	○	◉	Reagent is a hazardous waste
Fluoride*	○	○	●	◉	Reagent is a hazardous waste Exception for communities that do not fluoridate their tap water
Hardness	◉	◉	◉	◉	
pH	○	◉	○	◉	
Potassium	◉	○	○	●	May need to use two separate analytical techniques, depending on the concentration
Turbidity	◉	◉	○	◉	

● Can almost always (>80% of samples) distinguish this discharge from clean flow types (e.g., tap water or natural water). For tap water, can distinguish from natural water.

◉ Can sometimes (>50% of samples) distinguish this discharge from clean flow types depending on regional characteristics, or can be helpful in combination with another parameter

○ Poor indicator. Cannot reliably detect illicit discharges, or cannot detect tap water N/A: Data are not available to assess the utility of this parameter for this purpose. Data sources: Pitt (

*Fluoride is a poor indicator when used as a single parameter, but when combined with additional parameters (such as detergents, ammonia and potassium), it can almost always distinguish between sewage and wash water.

In case of discharge…

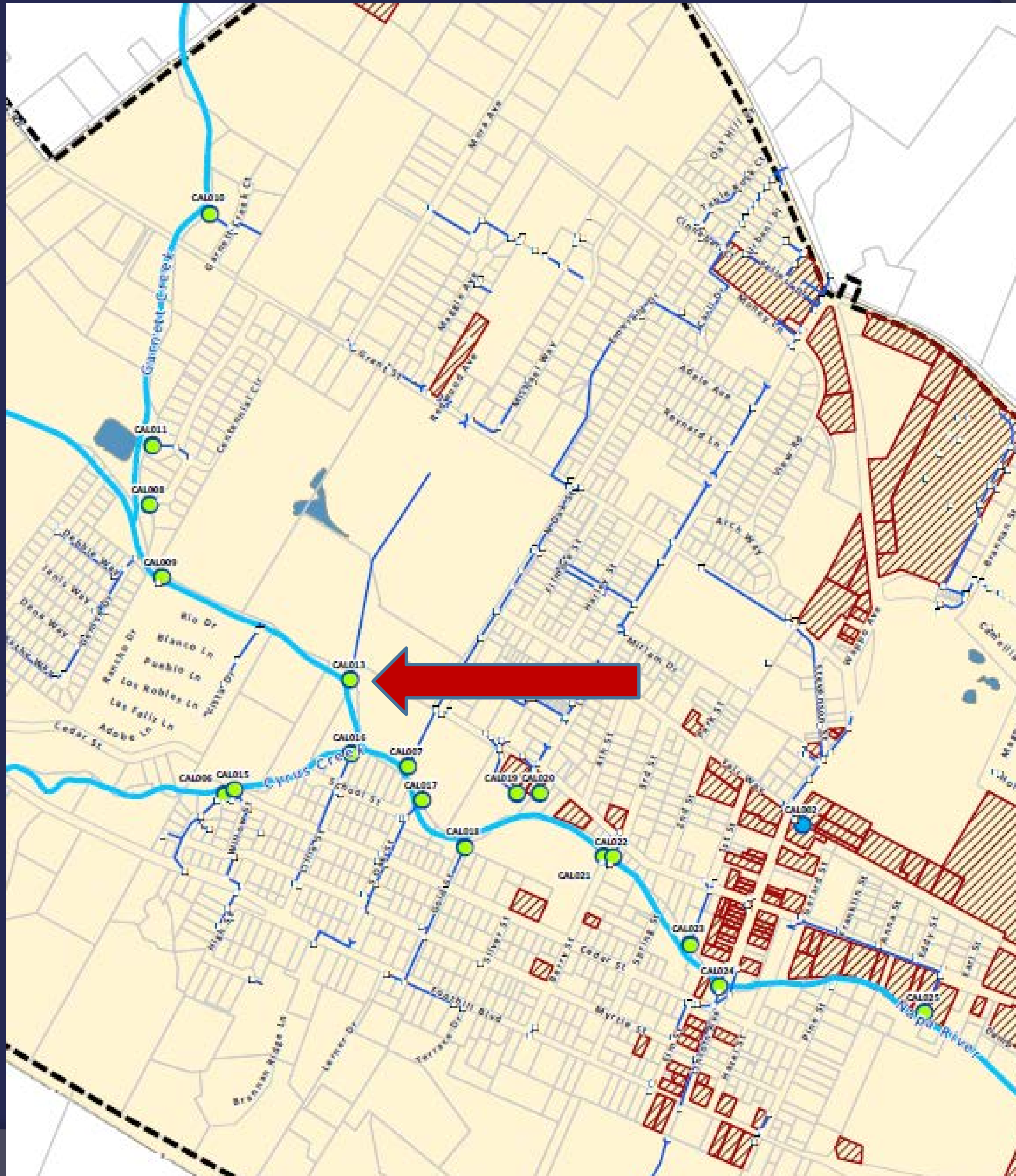
- Results > Action Levels?
  - Required to Investigate
- Results < Action Levels?
  - Investigate anyway…until you get to know the discharge

Results - 2014

- 304 outfalls assessed (visited)
  - 29 were flowing
    - 28 were sampleable
      - 6 exceeded action levels
        - 2 valid exceedances
        - 2 investigations
    - ✓ 4 Tidal
    - ✓1 Groundwater Discharge
    - ✓1 Confirmed Illicit Discharge

Culprit? Construction

Outfall ID	Color (color units)	Conductivity (µS/cm)	Detergents (mg/L)	Hardness (mg/L)	pH	Turbidity (NTU)	Potassium (mg/L)	Ammonia (mg/L)
CAL013	>500	1,457	NA	216	7.47	2,467	0	20
NCI056	20	19,550	2.5	3,410	7.42	1.79	60	10
*NCI006**	--	*32,050*	--	--	--	--	--	--
*NCI049**	--	*32,300*	--	--	--	--	--	--
*NCI137**	--	*33,400*	--	--	--	--	--	--
*NCI186**	--	*25,710*	--	--	--	--	--	--


CAL010
CAL011
CAL008
CAL009
CAL013
CAL016
CAL007
CAL006
CAL015
CAL017
CAL019
CAL020
CAL018
CAL022
CAL021
CAL002
CAL023
CAL024
CAL025
Grant St
Rio Dr
Blanco Ln
Pueblo Ln
School St
Foothill Blvd
Myrtle St
Cedar St
Napa River

Results - 2019

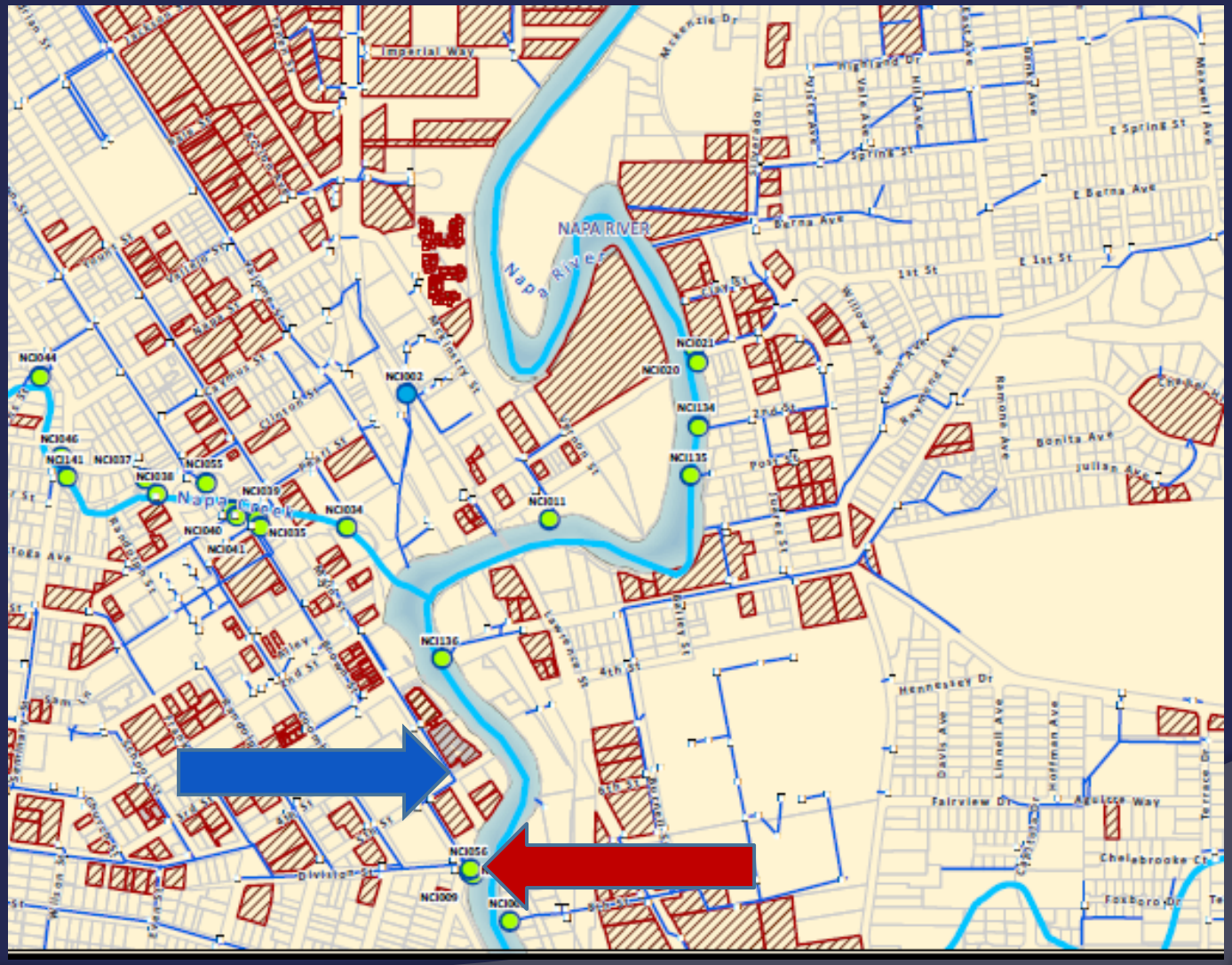
- All 162 “Priority” outfalls assessed
  - 35 were flowing
    - 34 were sampleable
      - 0 exceeded action levels *however…*
        - 2 were voluntarily investigated based on appearance, odor and/or detergents results

✓ 1 Confirmed Illicit Discharge

X 1 discharge could not be confirmed and second visit to the outfall showed no flow

✓ More limited suite of analytes – flow strength, color, odor, EC, pH and turbidity (no NH4, detergents, hardness or K)

A Word About Groundwater Discharges



Big Picture

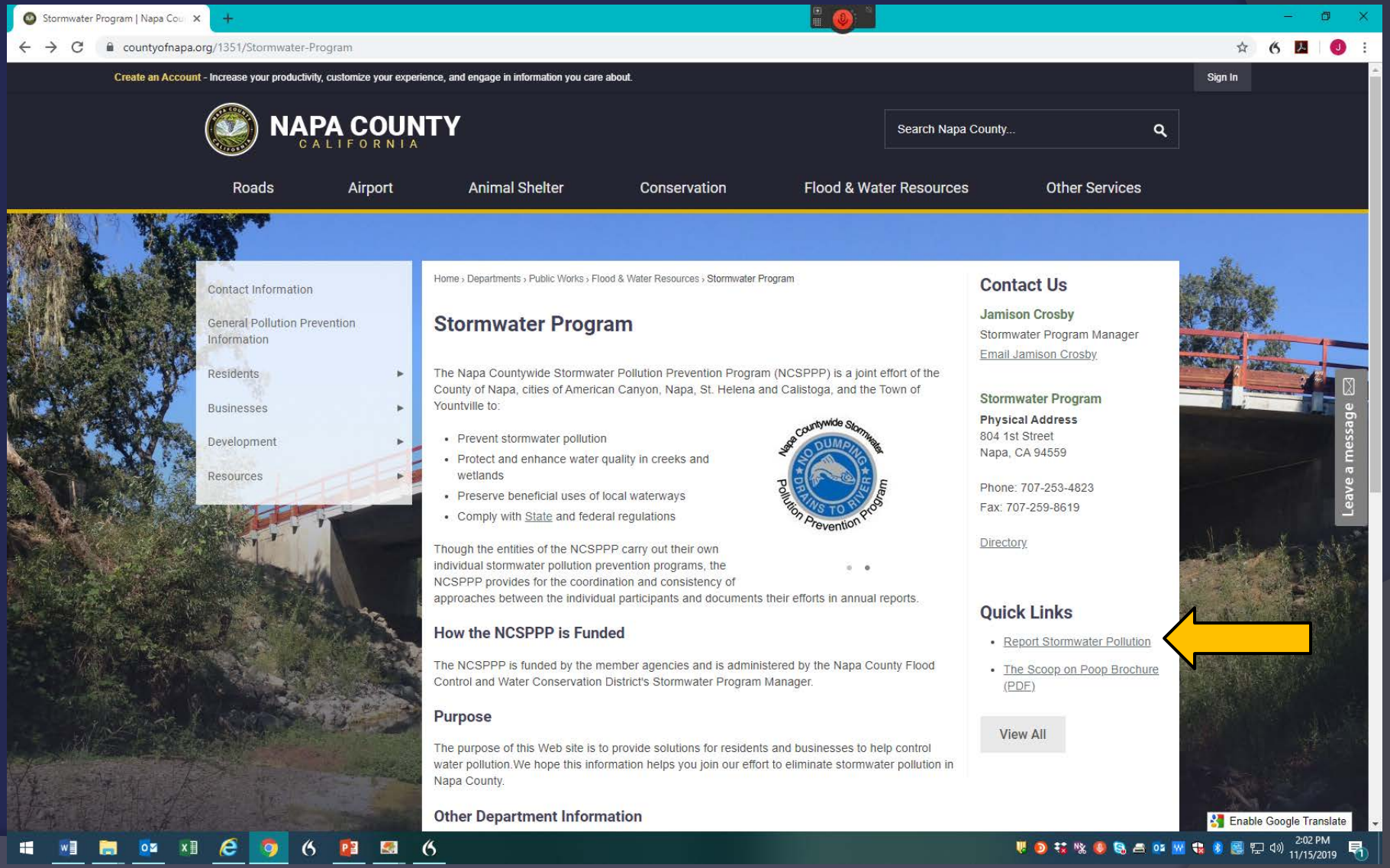
- Total cost ~ $138,000 over 6 years
- Total man hours ~ 1,338
- Valuable effort to establish baseline
- Best way forward
  - Ideas?

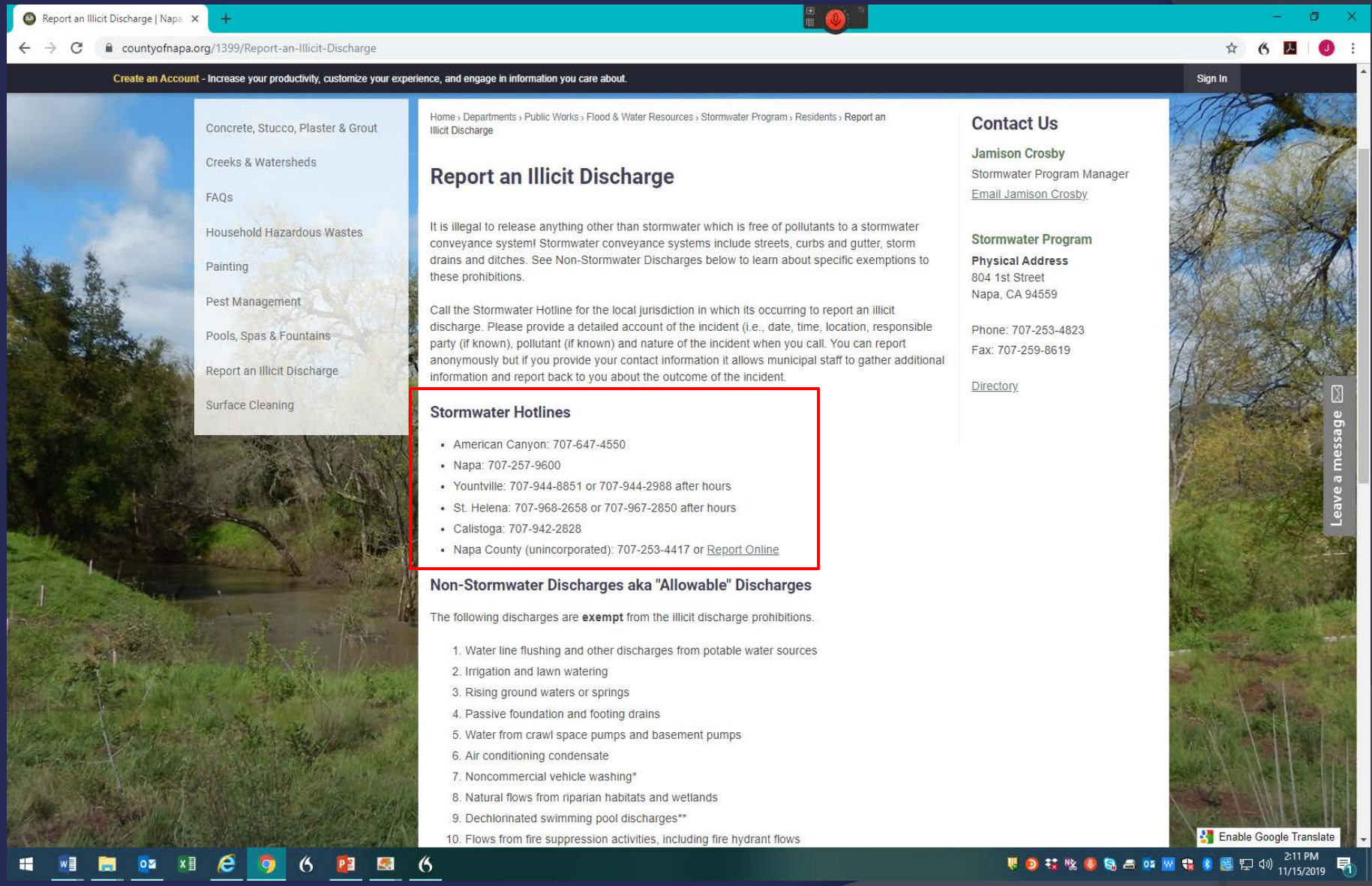
Table 6. Storm Drain Outfall Assessment Summary

Item	2014	2015	2016	2017	2018	2019	Total
Outfalls Assessed	304	156	156	159	163	162	1,100
Outfalls Discharging	29	14	26	31	24	35	159
Discharges Sampled and Analyzed	28	13	25	31	23	34	154
Source Investigations	2	0	2	1	3	2	10
Illicit Discharges Detected and Reported	1	0	0	1	1	0	3

To Report an Illicit Discharge

http://www.countyofnapa.org/stormwater/




Report an Illicit Discharge | Napa
countyofnapa.org/1399/Report-an-Illicit-Discharge
Create an Account - Increase your productivity, customize your experience, and engage in information you care about.
Sign In
Concrete, Stucco, Plaster & Grout
Creeks & Watersheds
FAQs
Household Hazardous Wastes
Painting
Pest Management
Pools, Spas & Fountains
Report an Illicit Discharge
Surface Cleaning
Home › Departments › Public Works › Flood & Water Resources › Stormwater Program › Residents › Report an Illicit Discharge
Report an Illicit Discharge
It is illegal to release anything other than stormwater which is free of pollutants to a stormwater conveyance system! Stormwater conveyance systems include streets, curbs and gutter, storm drains and ditches. See Non-Stormwater Discharges below to learn about specific exemptions to these prohibitions.
Call the Stormwater Hotline for the local jurisdiction in which its occurring to report an illicit discharge. Please provide a detailed account of the incident (i.e., date, time, location, responsible party (if known), pollutant (if known) and nature of the incident when you call. You can report anonymously but if you provide your contact information it allows municipal staff to gather additional information and report back to you about the outcome of the incident.
Stormwater Hotlines
American Canyon: 707-647-4550
Napa: 707-257-9600
Yountville: 707-944-8851 or 707-944-2988 after hours
St. Helena: 707-968-2658 or 707-967-2850 after hours
Calistoga: 707-942-2828
Napa County (unincorporated): 707-253-4417 or Report Online
Non-Stormwater Discharges aka "Allowable" Discharges
The following discharges are exempt from the illicit discharge prohibitions.
1. Water line flushing and other discharges from potable water sources
2. Irrigation and lawn watering
3. Rising ground waters or springs
4. Passive foundation and footing drains
5. Water from crawl space pumps and basement pumps
6. Air conditioning condensate
7. Noncommercial vehicle washing*
8. Natural flows from riparian habitats and wetlands
9. Dechlorinated swimming pool discharges**
10. Flows from fire suppression activities, including fire hydrant flows
Contact Us
Jamison Crosby
Stormwater Program Manager
Email Jamison Crosby
Stormwater Program
Physical Address
804 1st Street
Napa, CA 94559
Phone: 707-253-4823
Fax: 707-259-8619
Directory
Leave a message
Enable Google Translate
2:11 PM
11/15/2019

Illicit Discharge Reporting

- **American Canyon: 707-647-4550**
- **Napa: 707-257-9600**
- **Yountville: 707-944-8851 or 707-944-2988 after hours**
- **St. Helena: 707-968-2658 or 707-967-2850 after hours**
- **Calistoga: 707-942-2828**
- **Napa County (unincorporated):**

  707-253-4417 or Report Online

Questions?

253-4823

Jamison.Crosby@countyofnapa.org