



Presented to:

**City of Newport Beach  
Coastal/Bay Water Quality  
Citizens Advisory Committee**

Presented by:

**Alan L. Murphy, Airport Director**

*November 12, 2009*

# Introduction

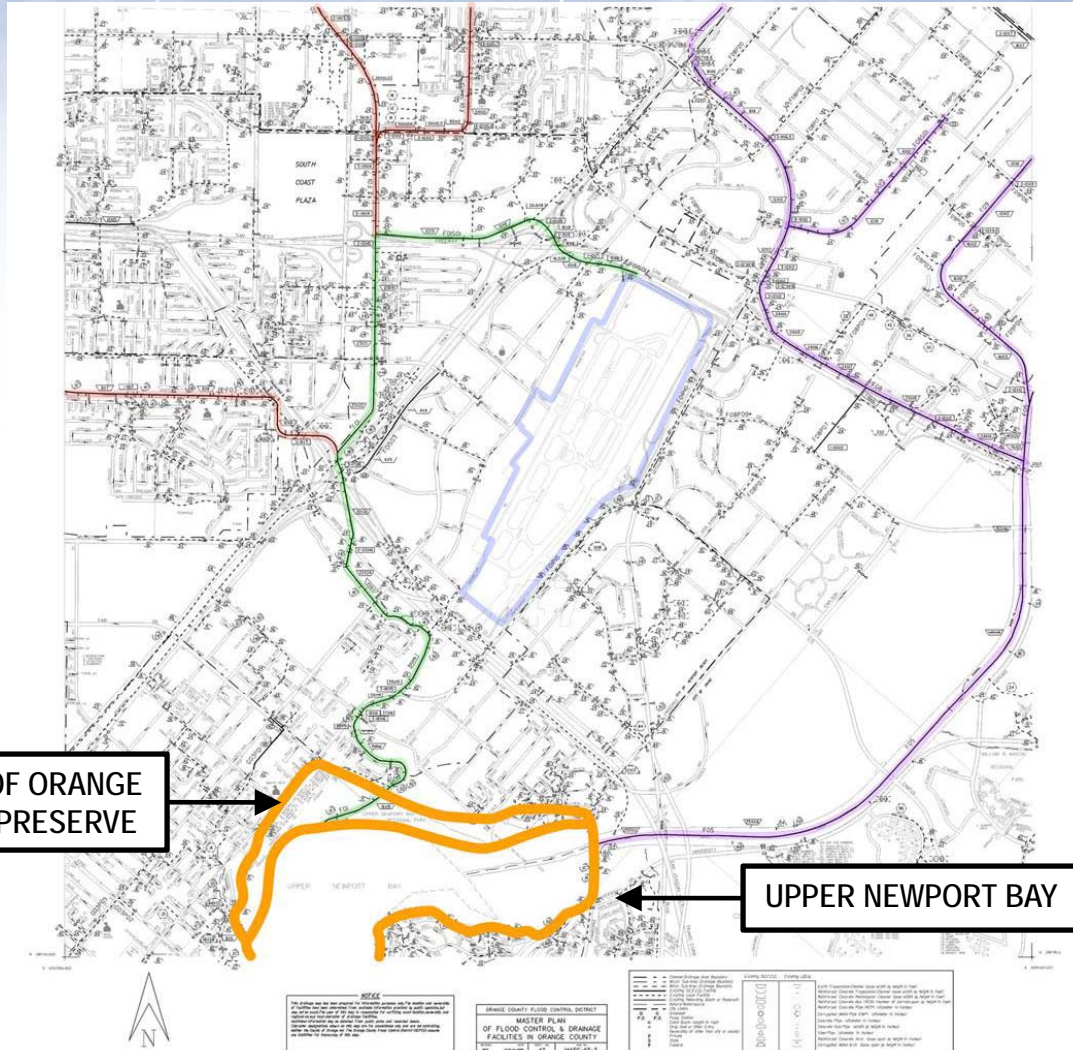
- **John Wayne Airport**
  - Discharges into the Delhi Channel
  - Regulated by the Orange County MS4 Permit and the General Industrial Permit
- **Upper Newport Back Bay**
  - Listed under the Clean Water Act as an impaired, and therefore protected, body of water
  - Total maximum daily load allowances for nutrients, sediment, metals and bacteria



# John Wayne Airport & Upper Newport Bay



# County of Orange Nature Preserve

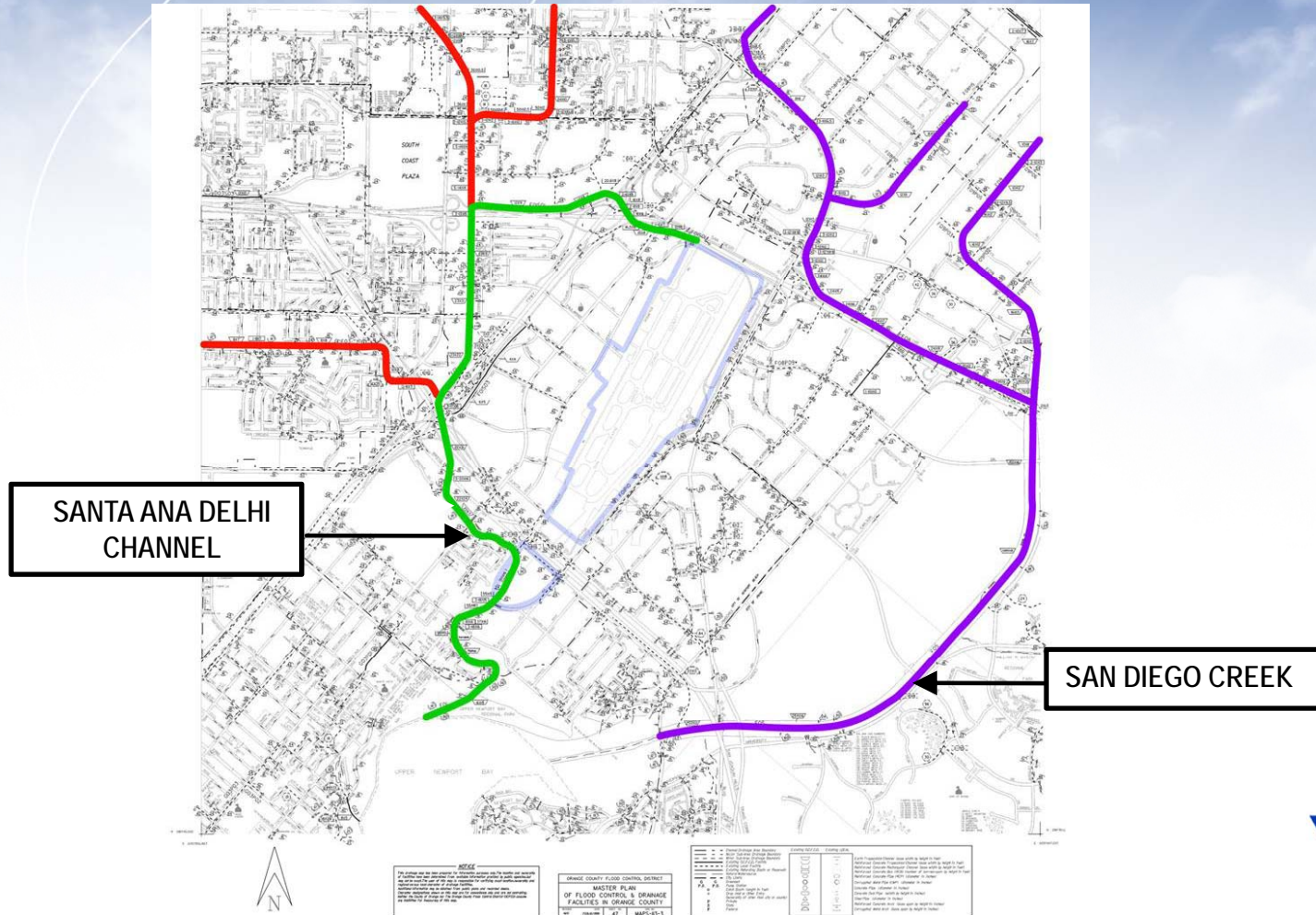


COUNTY OF ORANGE  
NATURE PRESERVE

UPPER NEWPORT BAY



# Orange County Flood Control and Drainage Channels



# Policy and Guidance

- **County of Orange Ordinance (OC Watershed)**
- **County of Orange Ordinance (Airport)**
- **Airport Rules and Regulations**
- **Leases and licenses**
  - **Commercial and commuter air carriers**
  - **Fixed Base Operators**
  - **General aviation (inc. wash & wax and mechanics)**
  - **Parking services and ground transportation**
  - **Terminal concessions (fat, oil and grease)**
  - **Golf course operator**



# Industrial Stormwater Permit

- California State Water Resources Control Board
- Airport-specific Storm Water Pollution Prevention Plan (SWPPP)
- Monitoring Program Plan
- Automated stormwater sampling system
  - Programmable samplers
  - Wireless communications
  - Connected to rain gauges
  - Non-stormwater flow alarms
  - Oil-water separator high level sensors

\* *More stringent than municipal permit*

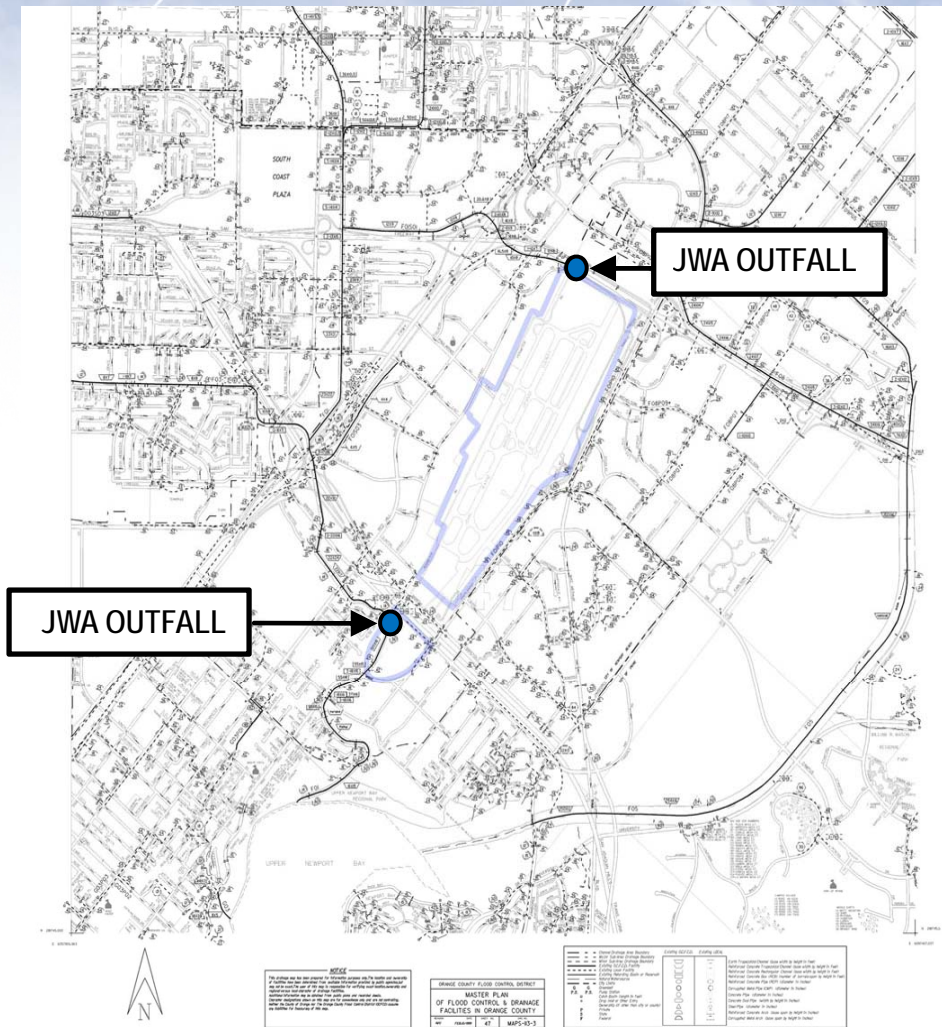


# Industrial Stormwater Permit

- Covers JWA "airside"
- The airfield is graded to drain north or south towards four oil-water separators
  - Two 25,000 gallon tanks
  - Two 50,000 gallon tanks
- Oil-water separators discharge at two outfall locations and into the Santa Ana Delhi Channel



# John Wayne Airport Outfalls



# **Pollution Prevention**

## ***Best Management Practices (“BMPs”)***

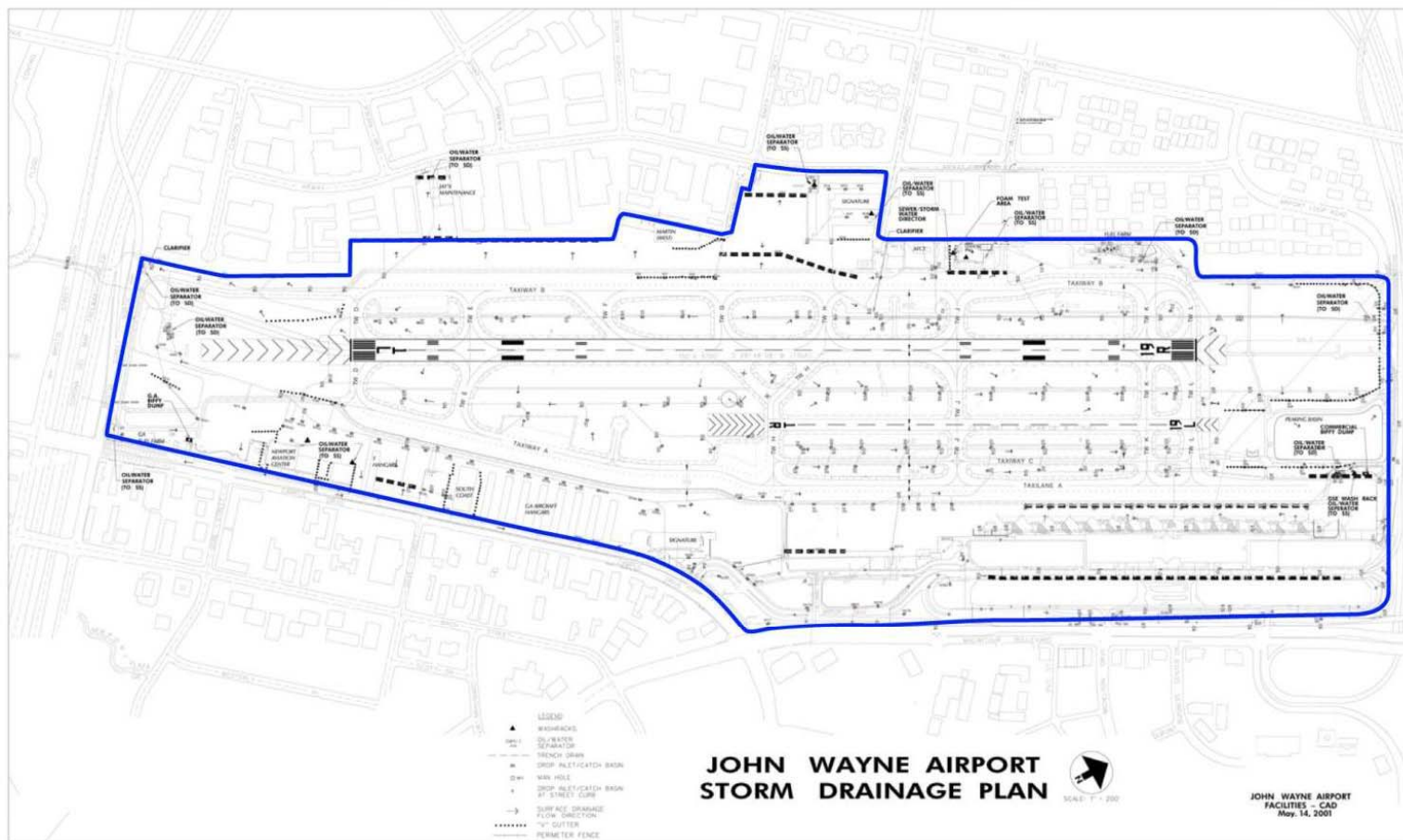
### **1. Site Design**

- **Constructed airside surfaces to direct storm water runoff towards oil-water separators and detention-infiltration basin**
- **Water Quality Management Plan post-construction BMPs for Airport Improvement Program projects**

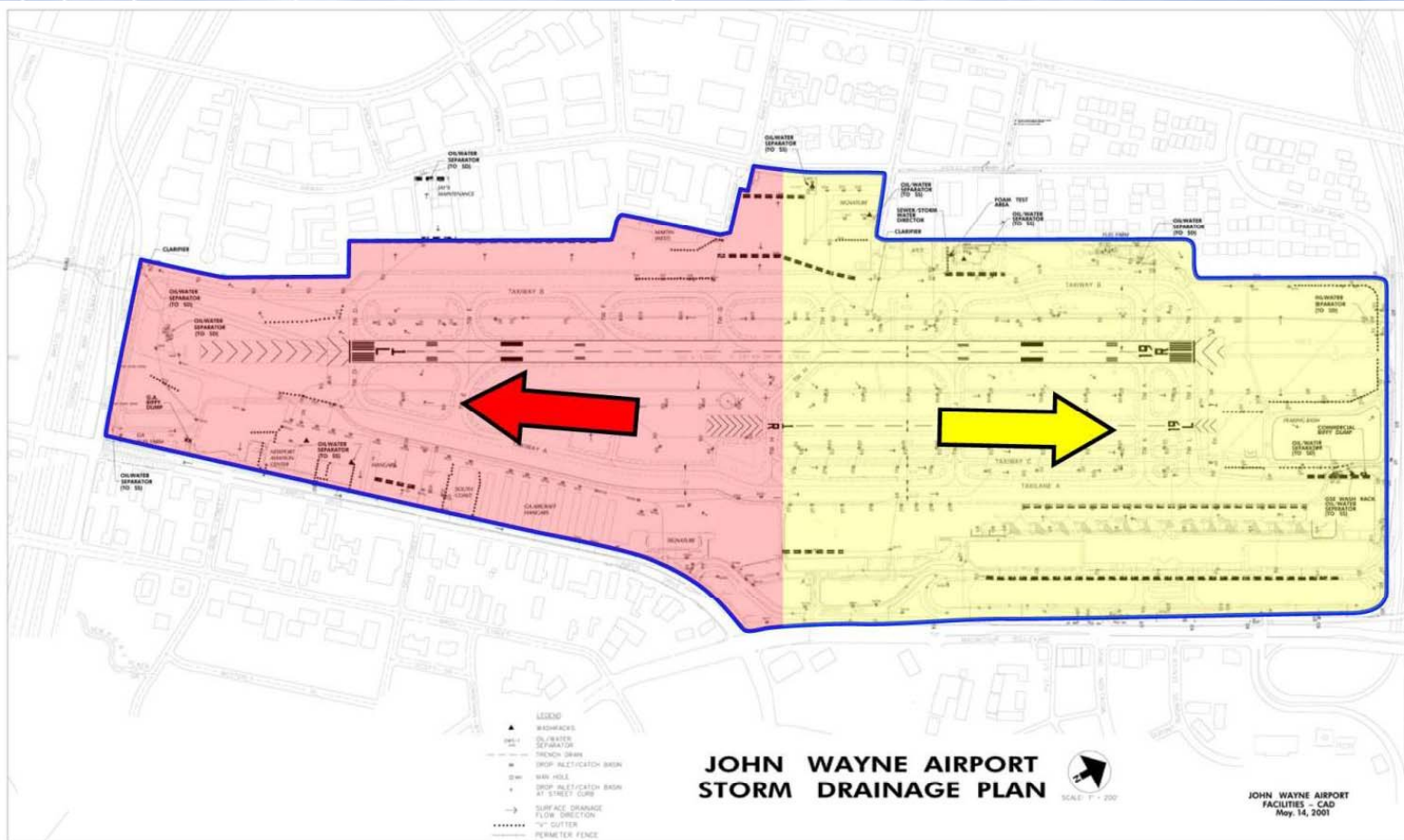
### **2. Treatment Control**

- **Oil-water separators**
- **Storm drain inlet and sand filters**
- **Grease interceptors**
- **Stormwater vaults with leaf fiber filters**
- **De-chlorination**

# JWA Storm Drainage Plan

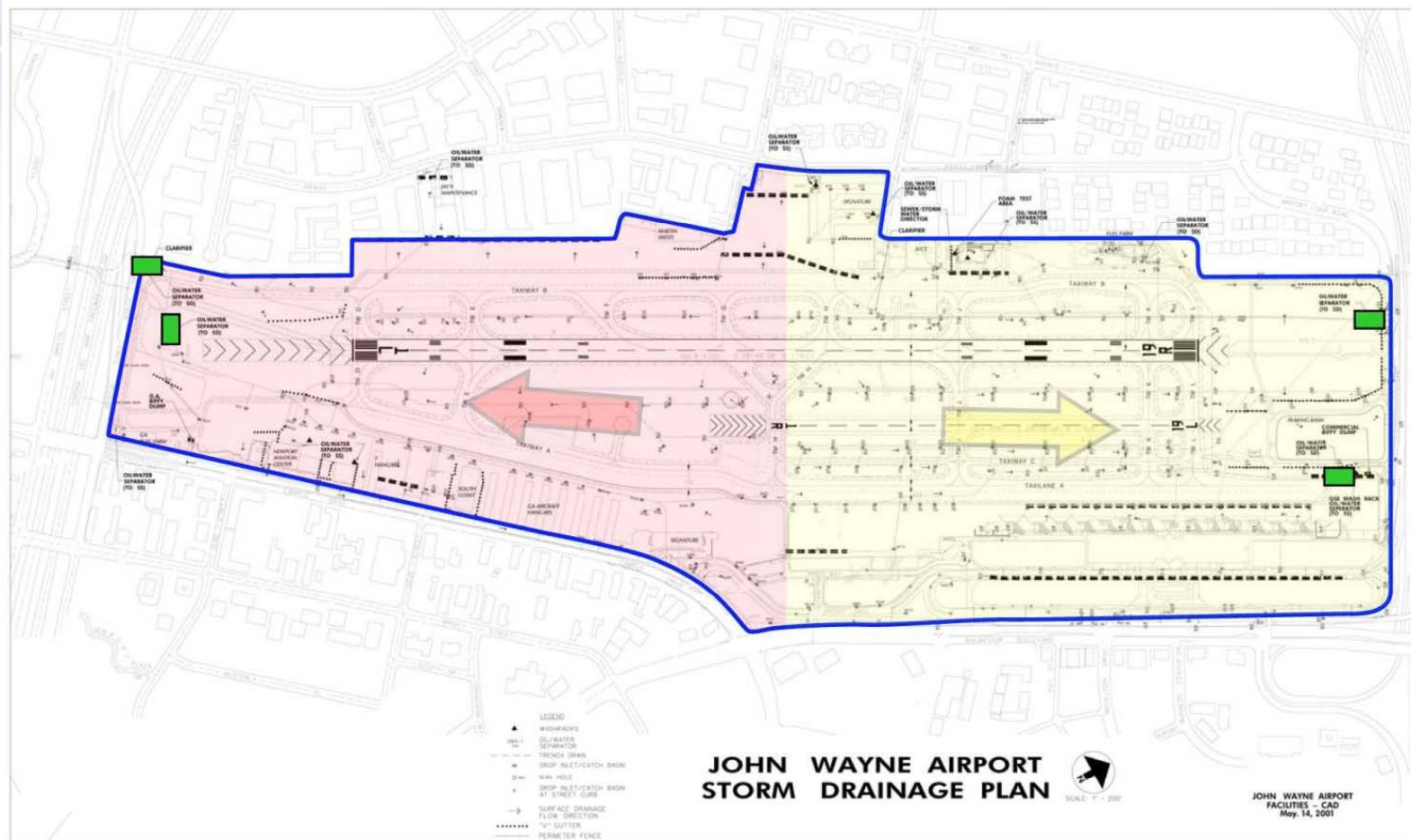


# JWA Storm Drainage Plan



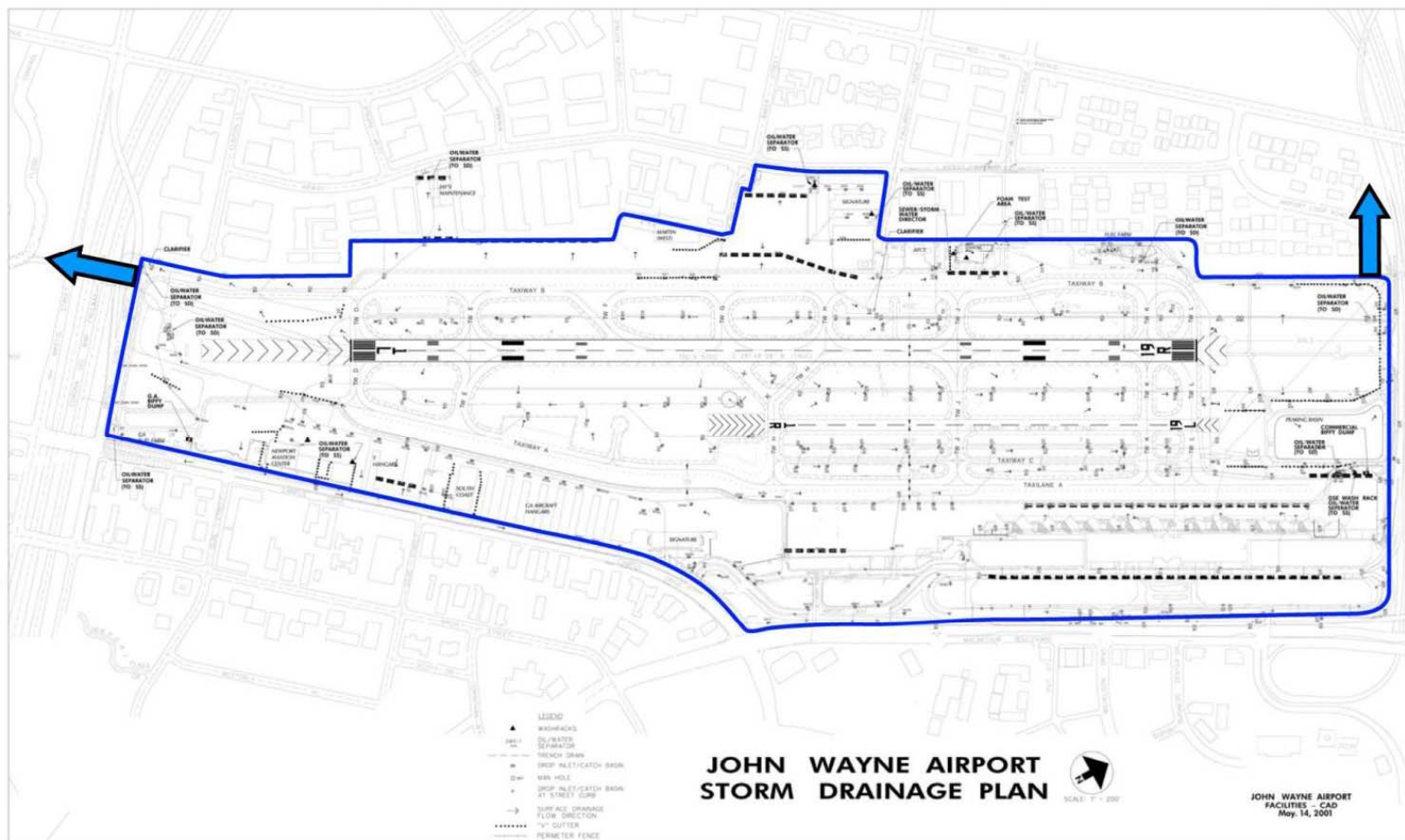
**JOHN WAYNE  
AIRPORT**  
ORANGE COUNTY

# JWA Storm Drainage Plan



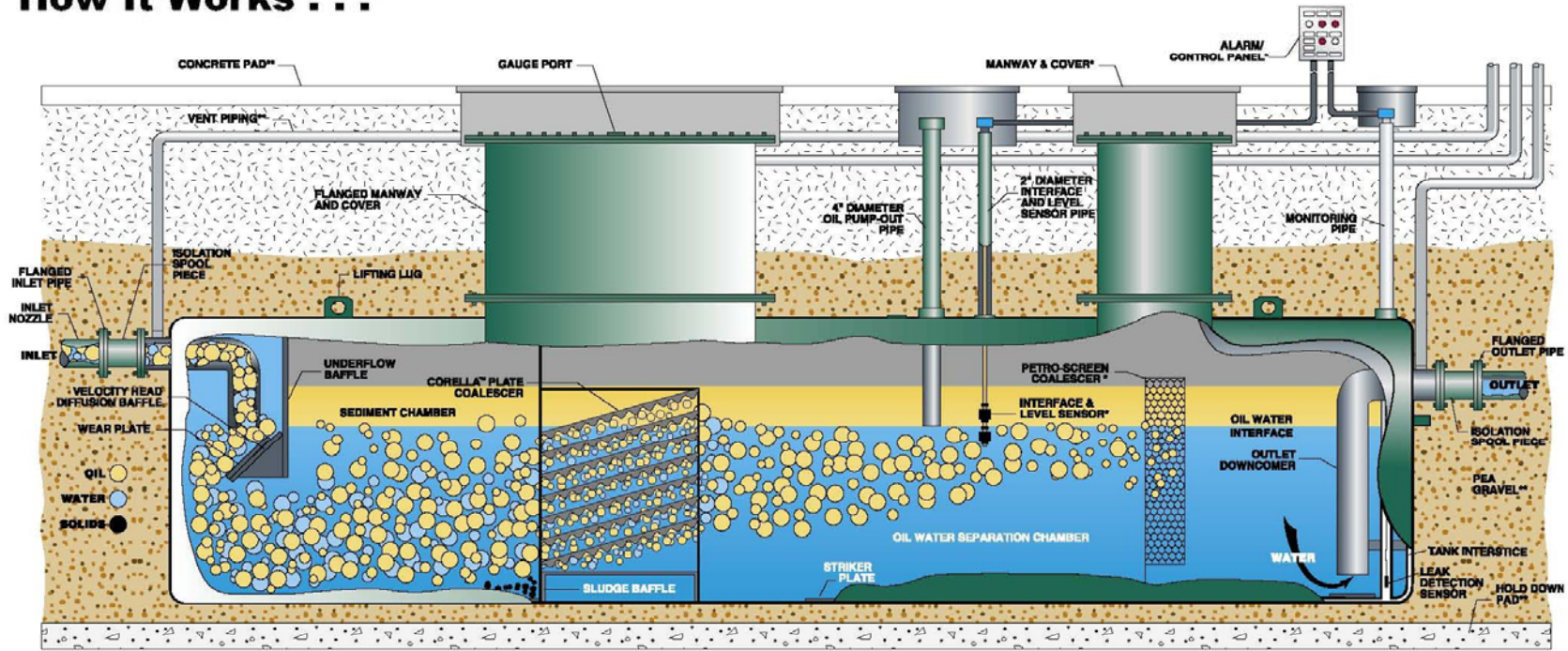
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# JWA Storm Drainage Plan



# Oil-Water Separator

## How It Works . . .



\* Optional equipment available from Highland Tank

\*\* Installer supplied equipment

# Interior of Oil-Water Separator





# **Pollution Prevention**

## ***Best Management Practices***

### **3. Source Control**

- **Eliminating non-stormwater discharges**
- **Airplane washing policy, use of wash racks**
- **Spill prevention, control and countermeasure**
- **Aircraft, vehicle and equipment fueling, cleaning and repair**
- **Material and waste management**
- **Proper outdoor storage of materials**

# Washing of Aircraft at Washrack



# Stormwater Monitoring Program

- Samples are collected from automated stormwater samplers located downstream of the oil-water separators.
- Stormwater discharges are sampled during the first hour of runoff for four qualifying rain events:
  - pH, total suspended solids, specific conductance, oil & grease, total petroleum hydrocarbons and total lead
- In addition, the “first flush” is analyzed for:
  - Priority pollutant volatile organic compounds
  - Acute toxicity
  - Priority pollutant metals

# Automated Sampler



# Stormwater Monitoring Program

- **Airside inspections: Bi-weekly, monthly, quarterly and annually**
- **Landside inspections: include golf course**
- **Construction site inspections: pre-, post- and during storm events**
- **Training program for JWA employees, contractors, Fixed Base Operators and fuel providers**
- **24/7 monitoring provided by Airport Police Services and Operations staff**



# Enforcement Resources

- **Aircraft Rescue and Fire Fighting**  
*(Orange County Fire Authority)*
- **Airport Police Services**  
*(Orange County Sheriff's Department)*
- **Orange County Watershed Department**
- **Airport Contracts**
  - Environmental services: compliance
  - Spill response/hazardous waste: cleanup and disposal
  - Fuel storage tanks: testing and maintenance
  - Landscaping: management of fertilizers, pesticides, etc.
  - Ramp and runway cleaning: removal of residuals



# Stormwater Program Costs

**Design and installation of stormwater management system** **\$3,000,000**

**Annual operation and maintenance** **\$500,000**

**Construction projects** **\$400,000**

**(does not include staff time)**



# **QUESTIONS?**

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Costa Mesa, CA 92626  
949.252.5171  
[www.ocair.com](http://www.ocair.com)**









**WASTE FUEL**



NO SMOKING

2319

ASIG

SPILL CART

FIRE  
EXTINGUISHER