

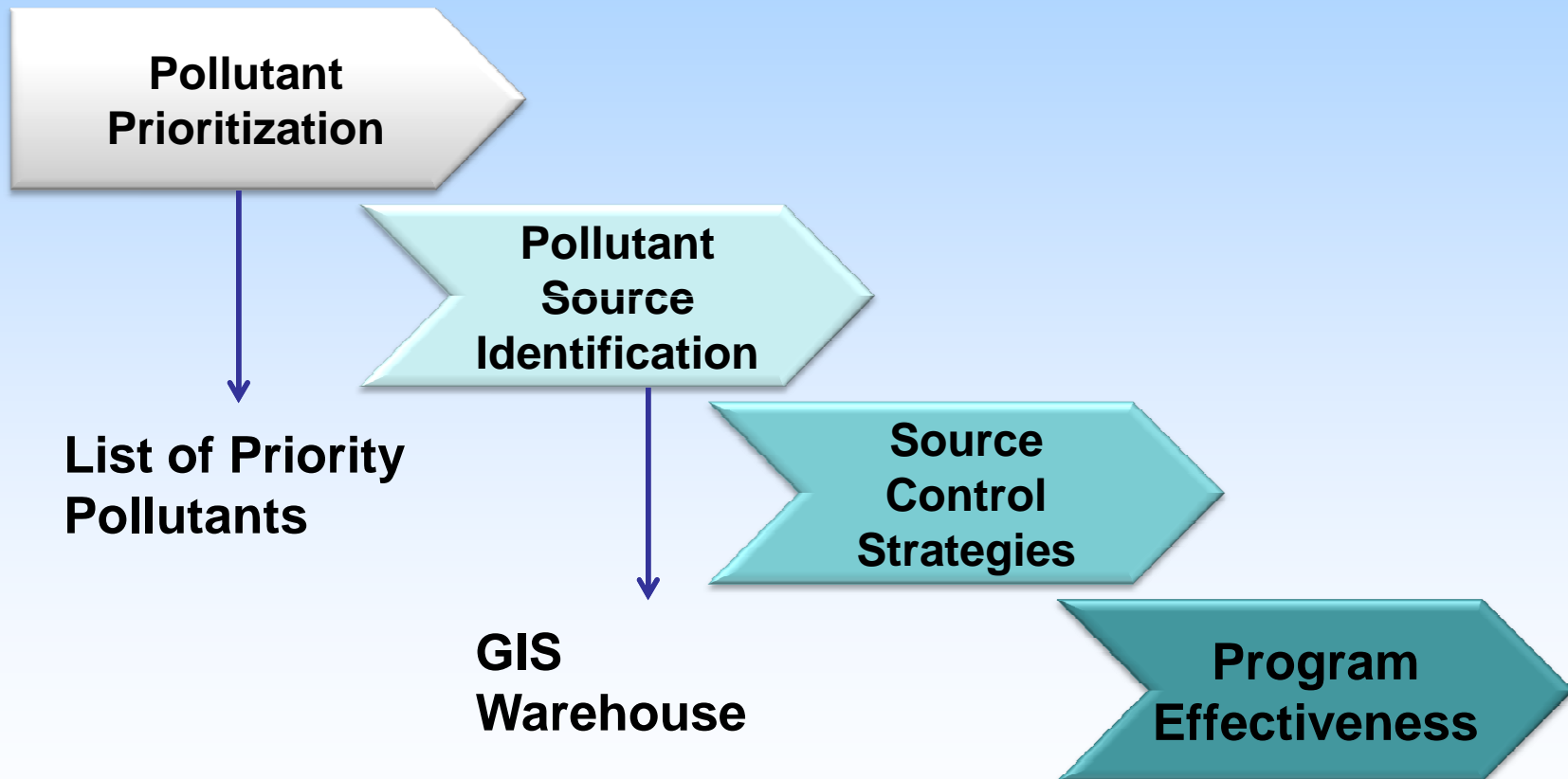
# Geographic Information Systems – Enhancing Source Control for Emerging Pollutants of Concern



**Division 640, Source Control**  
**Orange County Sanitation District, California**

EL MORR

# Source Control Approach to Emerging Pollutants of Concern



# Challenges Emerging Pollutants of Concern

Regulatory mandate

Over 20,000 commercial and industrial dischargers in OCSD's service area

Multiple assortment of compounds

Ability to accurately track, trace, and respond to pollutant to source with limited resources



# GIS to Optimize Management of Emerging Pollutants of Concern

## What is GIS

## Why GIS

- GIS enables “faster, better, cheaper” decision making
- Reveals spatial relationships of pollutant sources
- Accelerates field work planning
- Picture is worth 1000 words

# Building Components using GIS to Enhance a Source Control Program

Commercial/Industrial Chemical Inventory –  
Source Identification

Chemical Fact Sheet

Collection System Network

# **Commercial / Industrial Chemical Inventory – Source Identification**

California Department of Health Service

Chemical Inventory Project -Identify Chemical and Sources

Data Mining – CUPA and Data Vendor

Search interface capabilities linked to GIS

# Search Interface

POC Data Search Tool

Home Create External Data Database Tools Acrobat

View Paste Font Rich Text Refresh All New Save Delete More Totals Spelling Selection Advanced Toggle Filter Filter Find Replace Go To Select

ItemSearchForChemicalOfInterest

Search for Industries of Interest Document Library for Chemical of Interest

Search from the List Search by chemical name or substring

Select a Chemical of Interest:

- FORE FUNGICIDE
- FORE FUNGICIDE (ROHM & HAAS)
- FORE RAINSHIELD NT FUNGICIDE
- FORE WSP RAINSHIELD
- FORMALDEHYDE**
- FORMALDEHYDE, POLYMER WITH BENZENEAMINE
- FORMALDEHYDE/DIETHYLENE GLYCOL/ETHYLENEUREA
- FORMALDEHYDE/ETHANOL
- FORMALDEHYDE/METHANOL
- FORMALDEHYDE/POLYMER
- FORMAZIN TURBIDITY STANDARD, 4000ITU
- FORMIC ACID
- FORMS I & 15%

Enter a Chemical of Interest:

Industries of Interest Reporting: FORMALDEHYDE

BUS_ID	BUSINESS_NAME	STREET_ADDRESS	CITY
85828	ANTECH DIAGNOSTICS	17672 COWAN	IRVINE
3001100	AQUATROL INC	237 N EUCLID WAY H	ANAHEIM
3001300	AQUATROL INC	237 N EUCLID WAY H	ANAHEIM
73315	ARATECH PLASTICS	14401 CHAMBERS RD	TUSTIN
96111	CHROMA VISION MEDICAL	101 THEORY	IRVINE
97917	CLARIENT INC.	31 COLUMBIA	ALISO VIEJO
21337	COAST CHEMICAL INC	505 S MELROSE ST	PLACENTIA
95074	CONSOLIDATED MEDICAL BIOANALYSIS	11215 KNOTT AV	CYPRESS
8246	DYE TECHNIQUE/ST JOHN KNITS	17420 DERIAN AV	IRVINE
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3001100	DYNAMIC DETAILS INC	1221 N SIMON CIR	ANAHEIM
69980	EDWARDS LIFESCIENCE LLC	1435 MC GAW AV	IRVINE

Navigation Pane

Item View

Zoom Lock

# Chemical Fact Sheet

<b>Fact Sheet</b>	Revised 11 Jan 2008	<b>FACT SHEET</b>	ID: 1
CAS No.			
Classification:			10 – 200°F.
Synonym			d trichlorohydrii
Molecular Weig			024i
Spec. Gravity			
Solubility			
Max Contaminat			ry animals (US
Federal: Drink			s
California: Ac			0.005 ppb
EPA Health Ad			
10-kg Child (			time) 0.2 mg/l
Uses			ed as an
Potential Wast			ont although
Industrial			of 1,2,3-trichlor
Commercial			
Residential			licine (NLM) sh
GWR Ops/W			ied to date
Water Suppl			
Other			
Record: 1 of 168			

**1,1,1-Trichloroethane**

CAS No. 71-55-6

**CHEMICAL CLASSIFICATION**  
Not classifiable as a human carcinogen

**CHEMICAL SYNONYMS**  
Alpha-T; Aerothene MM; Aerothene TT; A13-02061; Algpien; Baltana; Caswell No 875; CF 2; chloroethane-nu; chloroethene; chlorotene; Chlorothane NU; Chlorothene NU; Chlorothene (Inhibited); Chlorothene SM; Chlorothene VG; Chloroten; Chlorthane-NU; Chlorylene; Dowdene LS; Pesticide Code: 081201; ethane, 1,1,1-trichloro-; Gemalgene; Genklene; ICI-CF 2; Inhibisol; methylchloroform; methyltrichloromethane; NCI-C04626; Solvent 111; TCEA; Trichloran; Trichloro-ethane; alpha-trichloroethane; Trielene

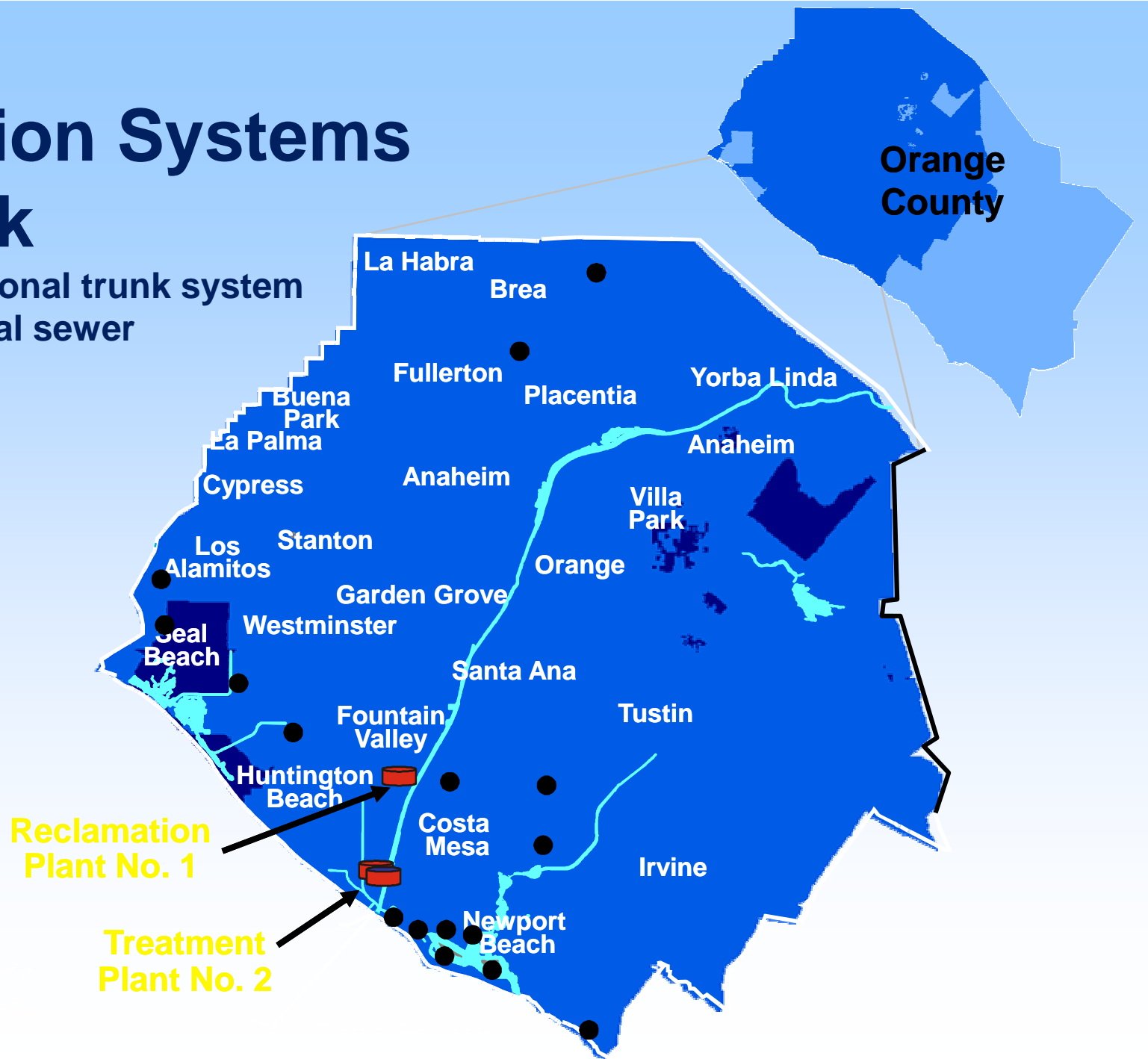
**PROPERTIES**  
Molecular Weight: 133.42 Boiling Point: 74.0°C at 760 mm Hg  
Specific Gravity: 1.3376 at 20°C/4°C LEL: Not identified  
Solubility: 4,400 mg/L in water at 20°C; Soluble in all common organic solvents; Soluble in acetone, benzene, methanol, carbon tetrachloride, carbon disulfide

**REGULATORY LIMITS**  
Maximum Contaminant Level: 0.2 mg/L  
Detection Limit for Reporting Purposes: Not identified  
Federal:  
Drinking Water Standard: Not identified  
Drinking Water Guidelines: 200 µg/L  
California:  
Advisory Action Level: N/A  
Notification Level: N/A



# Collection Systems Network

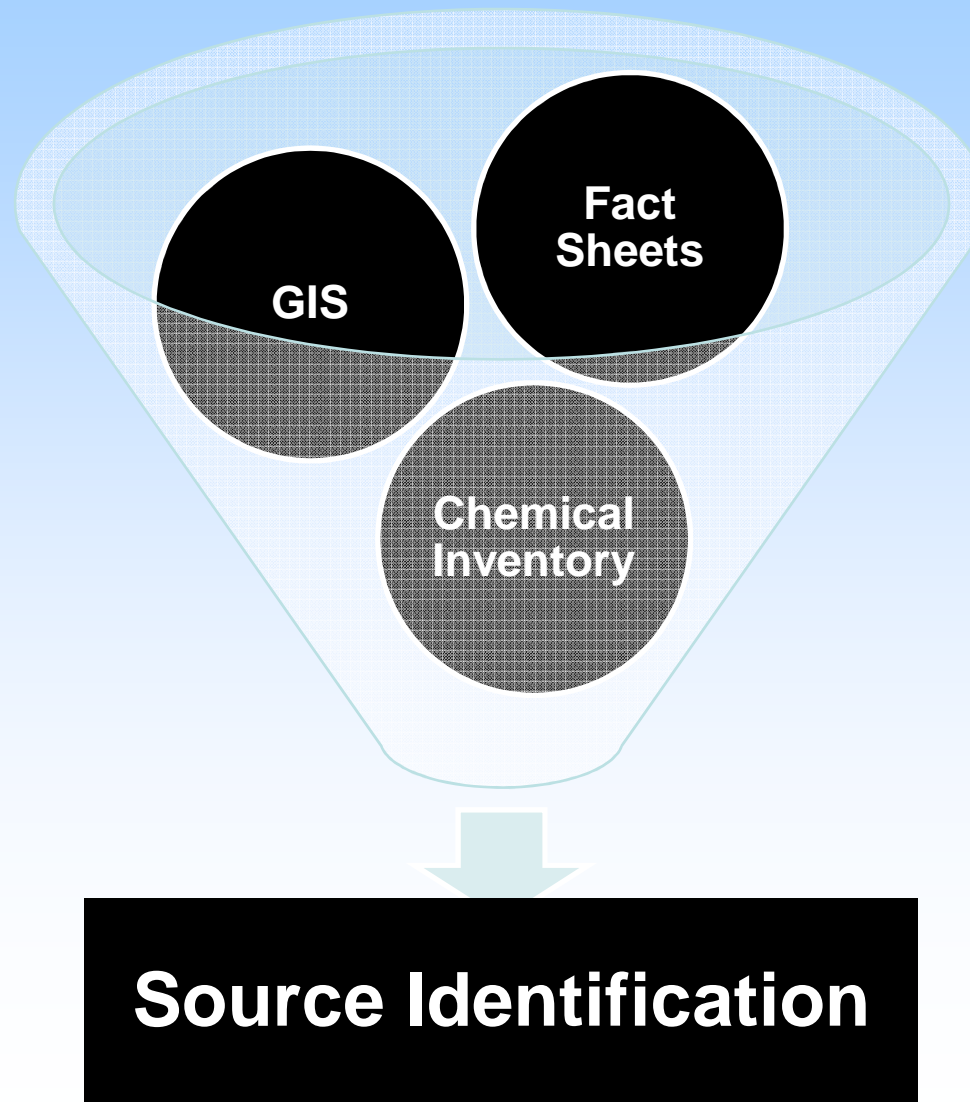
426 miles regional trunk system  
4800 miles local sewer



# GIS General Applications



# Source Identification





# Source Identification

POC Data Search Tool

Home | Create | External Data | Database Tools | Acrobat

View | Paste | Font | Rich Text | Refresh All | New | Save | Delete | Records | Total | Spelling | More | Selection | Advanced | Toggle Filter | Find | Replace | Go To | Select | Find

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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Navigation Pane

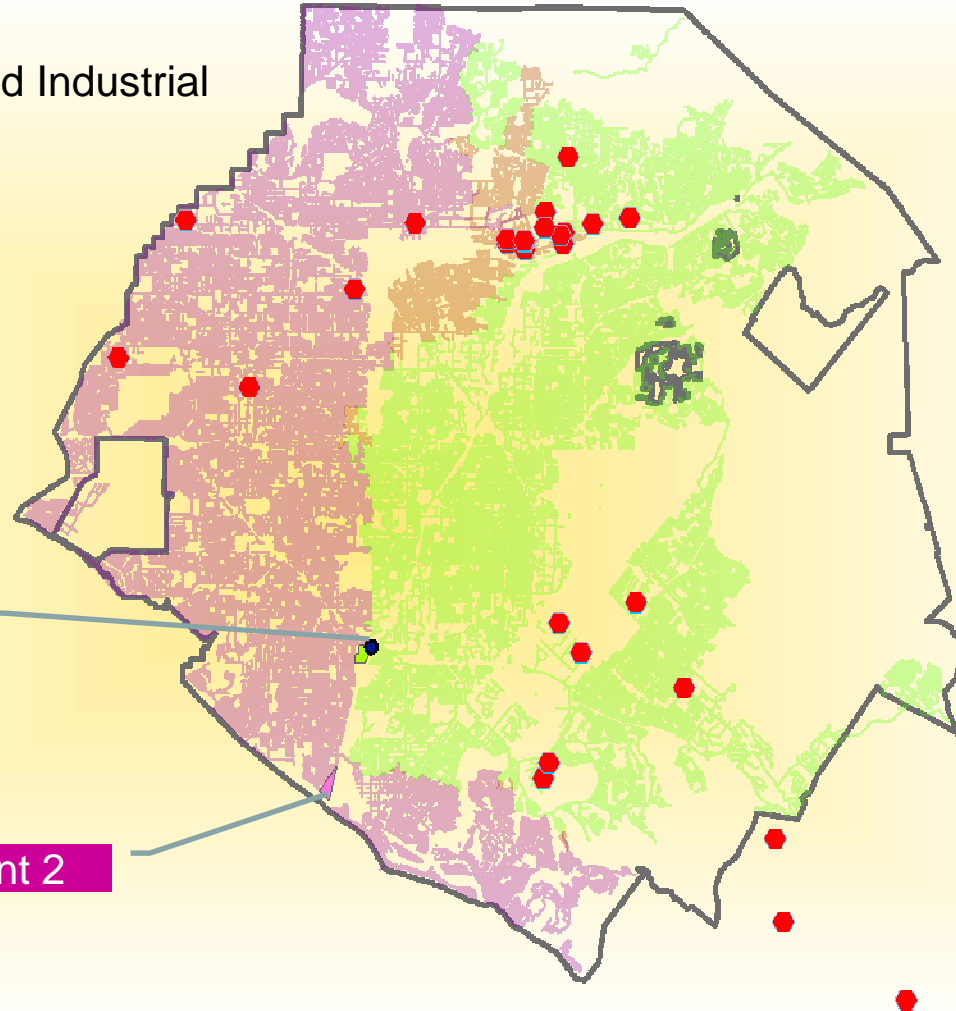
Zoom View | Main Lock

# Source Identification

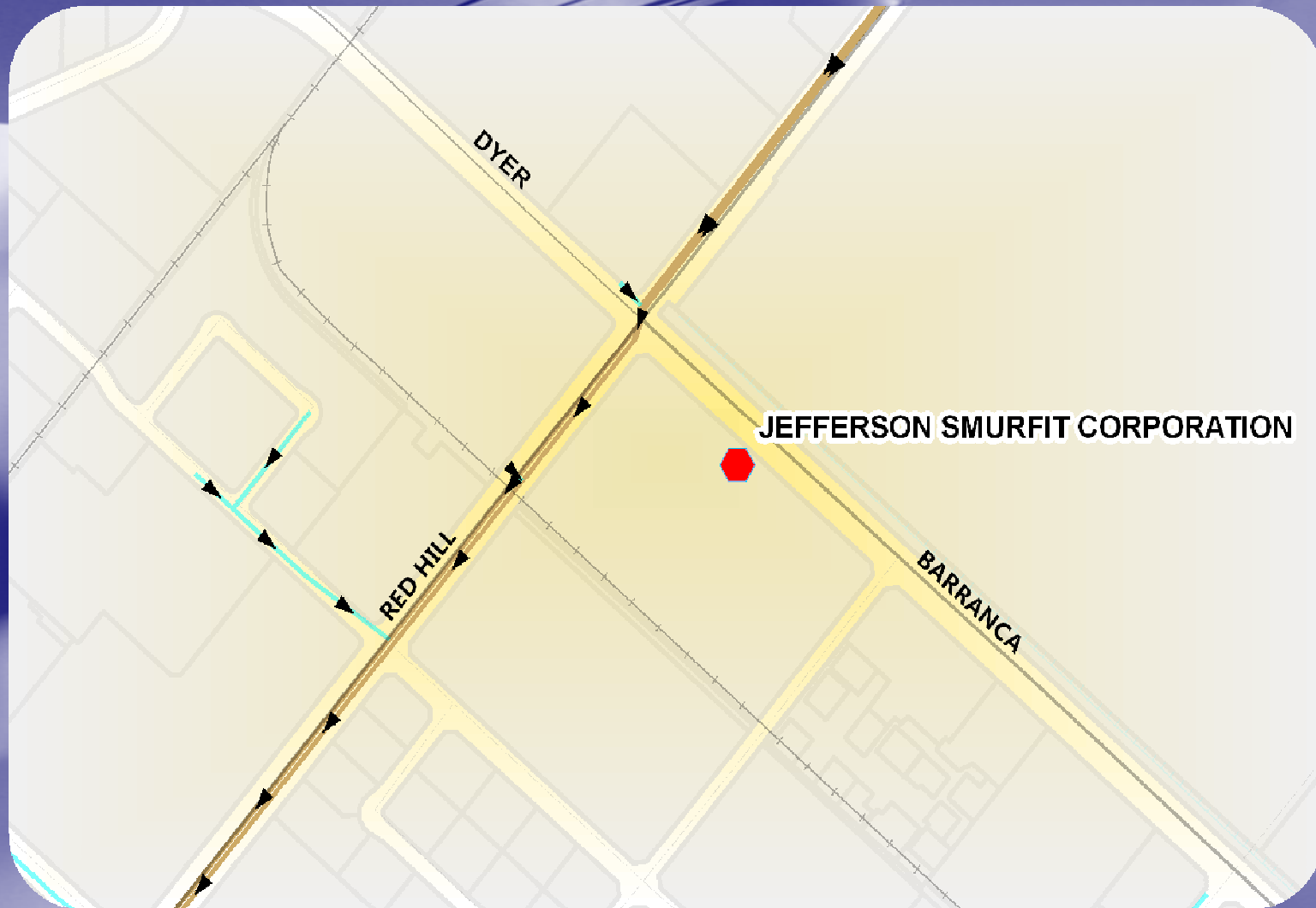
◆ Commercial and Industrial Facilities

Plant 1

Plant 2

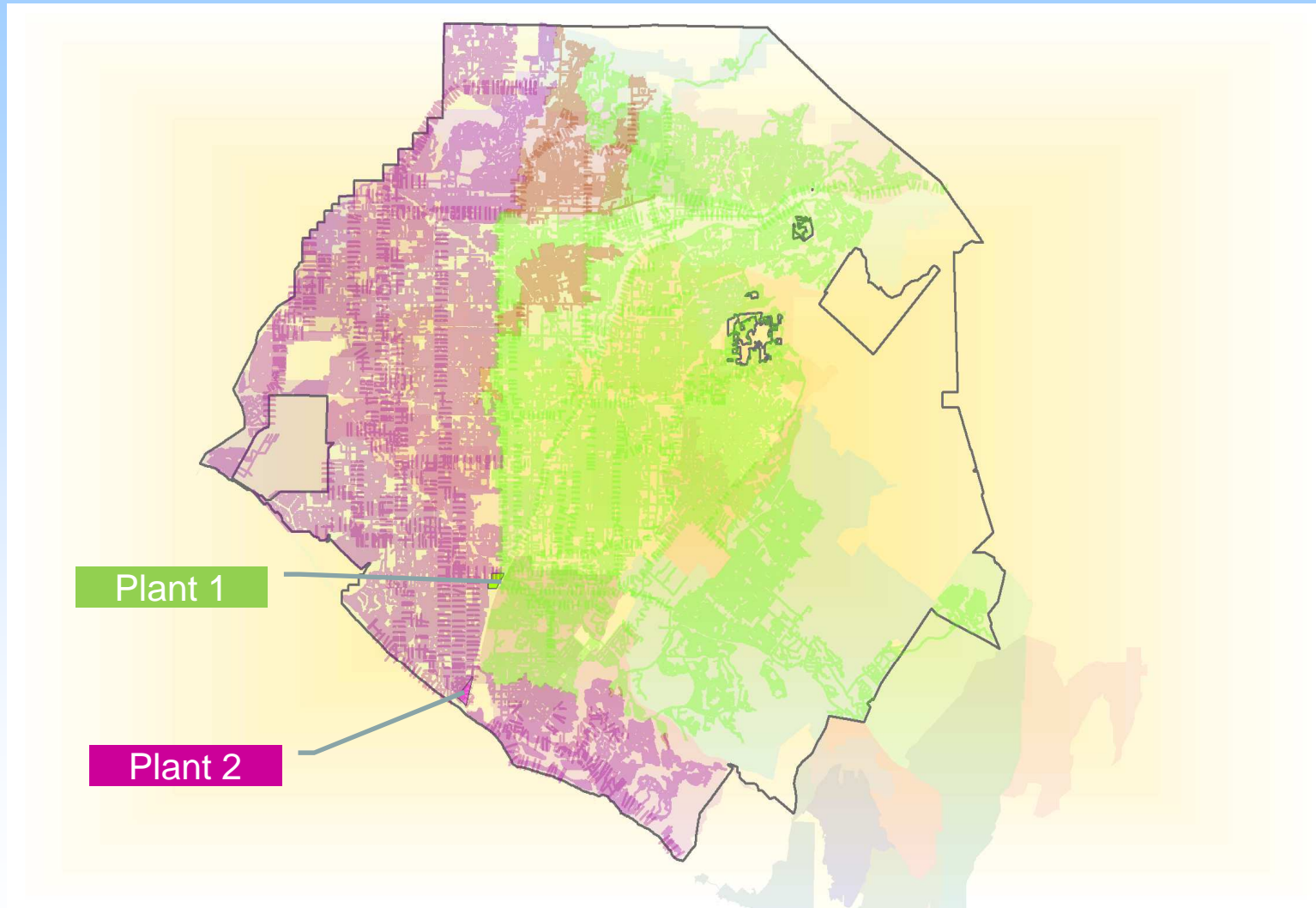


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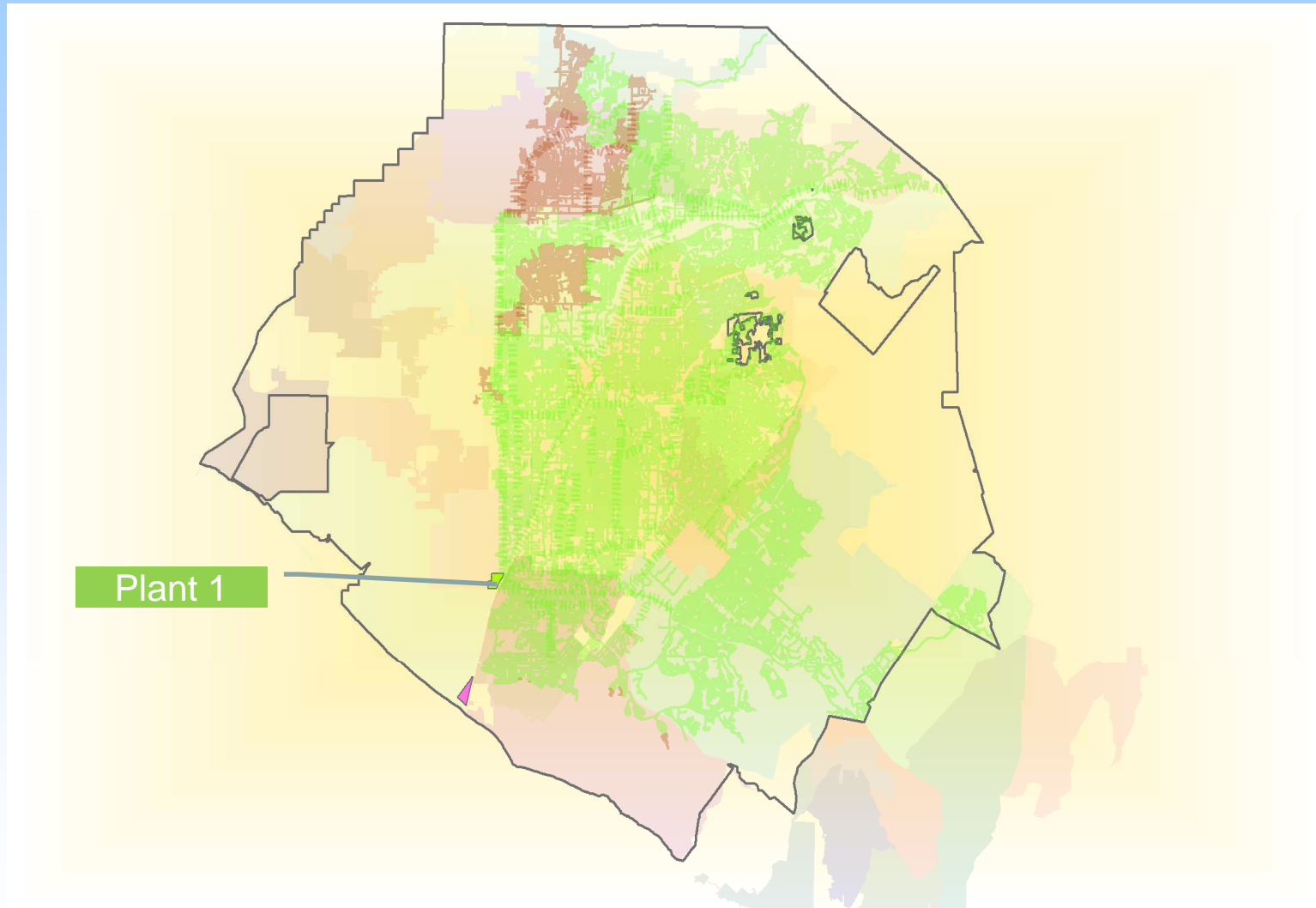




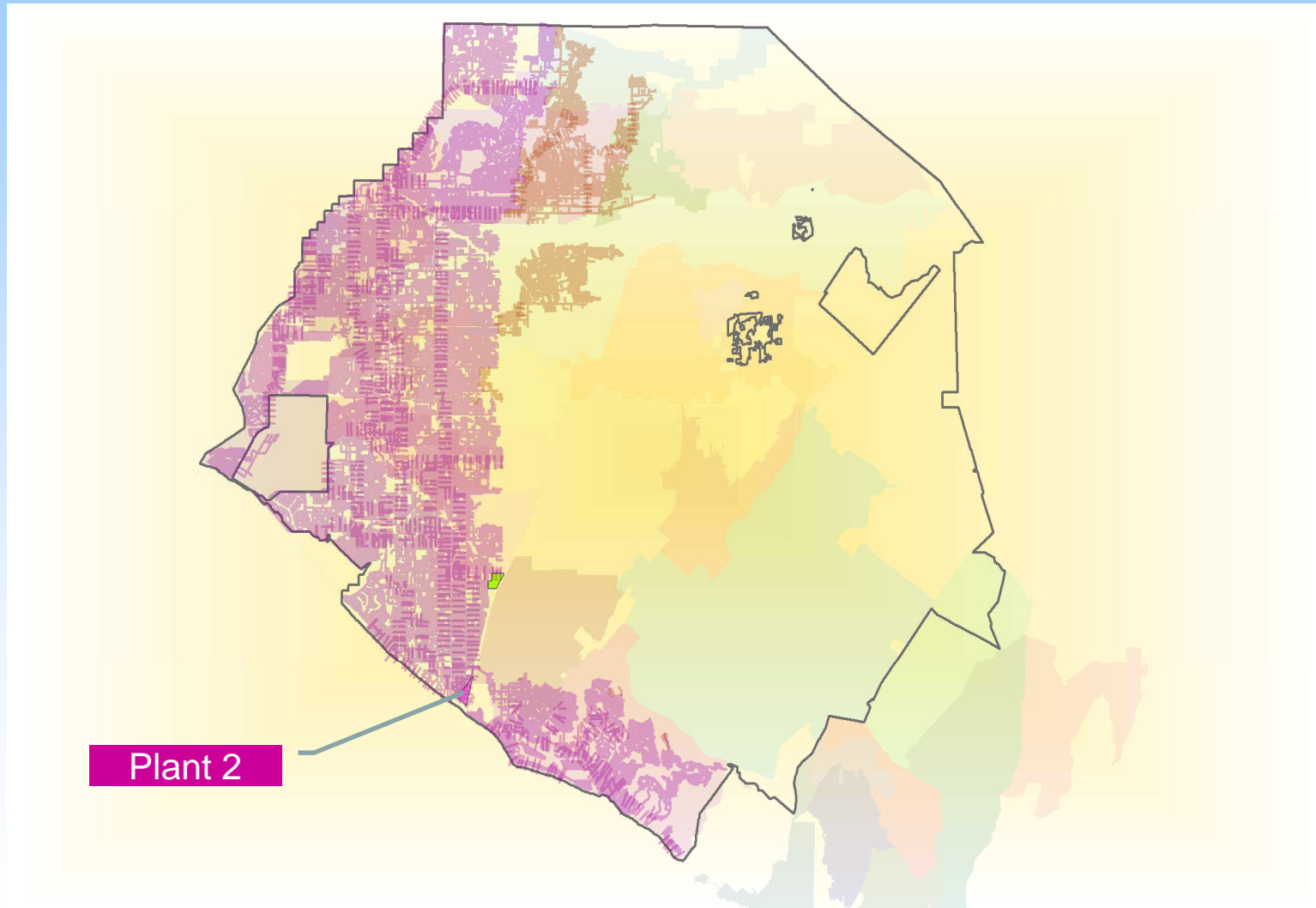
# General Flow Trace



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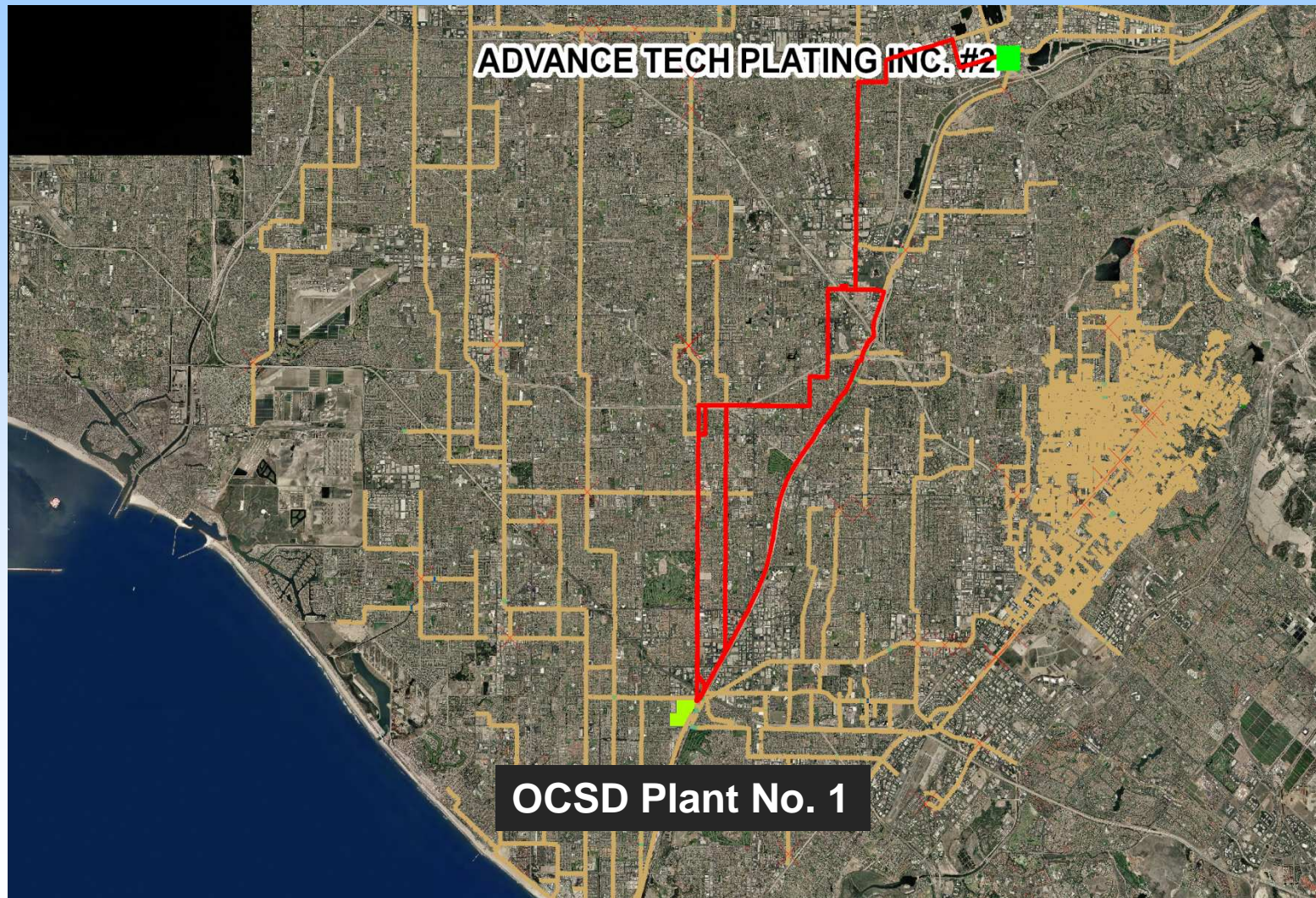


# General Flow Trace



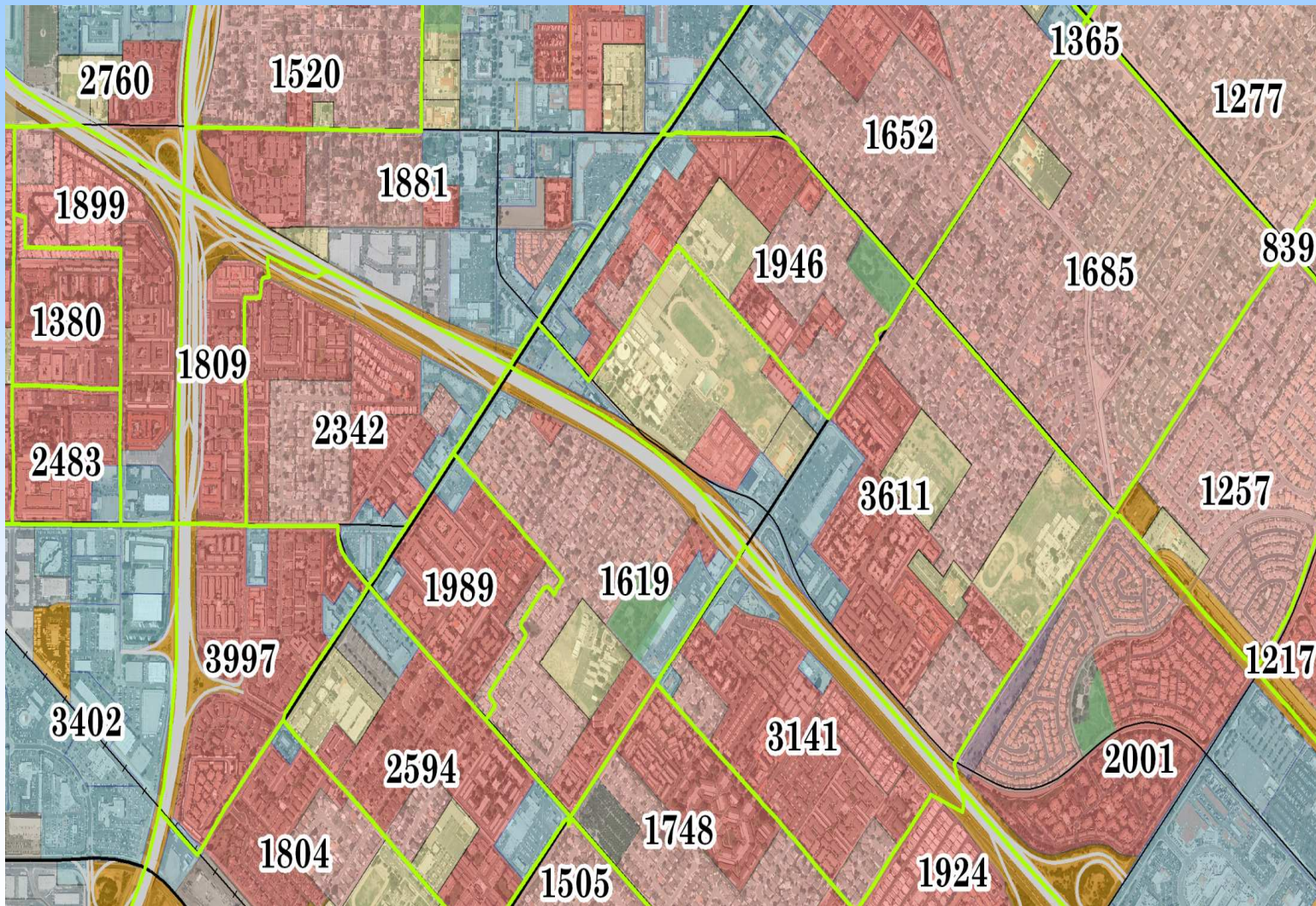


# Specific Flow Trace





# Land Use and Census Analysis



Recap

Managing Emerging Pollutant Many Challenges

GIS Benefits and Components

Practical Applications