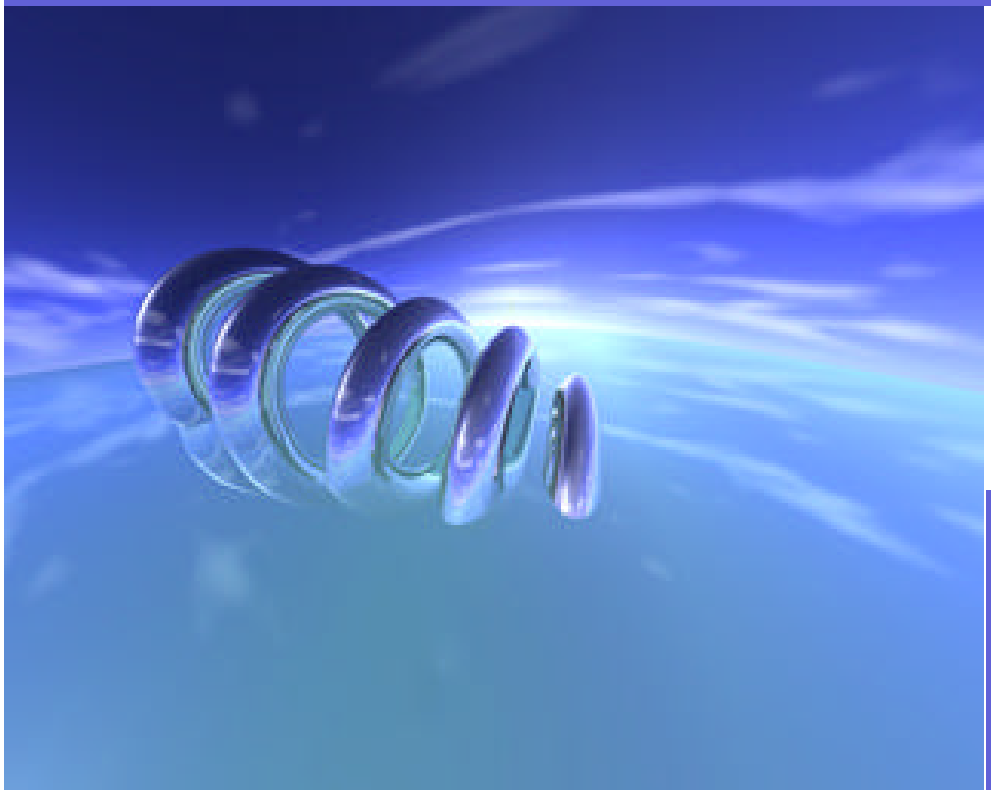
Air Pollution Impact Assessment

- Overview of Tools and Vision -



Planning and Technical Support Division
California Air Resources Board

March 2003

Overview of Tools and Products

- Tools to make emission data more accessible to the public
- Tools for professionals to assess localized cumulative impacts
- Tools and maps for a statewide overview of total cumulative impacts

CHAPIS: Community Health Air Pollution Information System

-- Web-Mapping Tool - Prototype March 2003 --

- Provide Interactive Maps of Air Pollution Emission Sources
- Include Stationary, Mobile, & Areawide Emissions
- Provide Maps or Tabular Information
- Collaboration with CAPCOA and Districts
- Mechanism to Improve Data Quality

Populating Data in Stages for Quality

- **Initial pollutants and facilities**
  - Criteria Pollutants for 10 ton/year facilities
  - Toxics for Refineries, Power Plants
  - HRA facilities - Metal fabrication, Chemical, Aerospace
- **Initial public data release ~summer 2003**
- **On-going future additions**
  - Coordination with CAPCOA
  - Other HRA, Gas stations, Platers, Dry Cleaners

CHAPIS Launch Page - Microsoft Internet Explorer

File Edit View Favorites History

Start by picking a region of interest:

California Home Contact Us

Welcome to California

California Air Resources Board CHAPIS Community Health Air Pollution Information System

Welcome to CHAPIS - The Community Health Air Pollution Information System Last Updated Nov. 18, 2002

The California Air Resources Board (ARB) developed CHAPIS as an Internet-based tool to provide a graphical way to look at the amounts and spatial distribution of air pollution emission sources in California. CHAPIS provides a mapping tool to analyze the spatial characteristics of California's Air Pollutant **Emission Inventory**, for emissions of **traditional criteria air pollutants** and key **toxic air pollutants**. This is a prototype, showing **selected data** from the ARB and **local Districts**, for **point source**, **mobile source**, and **dispersed source** emissions data. For online help or more information about CHAPIS, click **here**. To begin using CHAPIS, select an area of interest using the menus or map provided below.

Select an Area of Interest:

Select an area of interest using the menus below *or* use the map, and click on the county of your choice.

County: ——COUNTIES——

Air Basin: ——AIR BASINS——

Air District: ——AIR DISTRICTS——

Region: —— REGIONS ——

***Or* Enter a Zip Code:** Go To Zip

* This website is best viewed with your screen area set to **1024 x 768 px**.

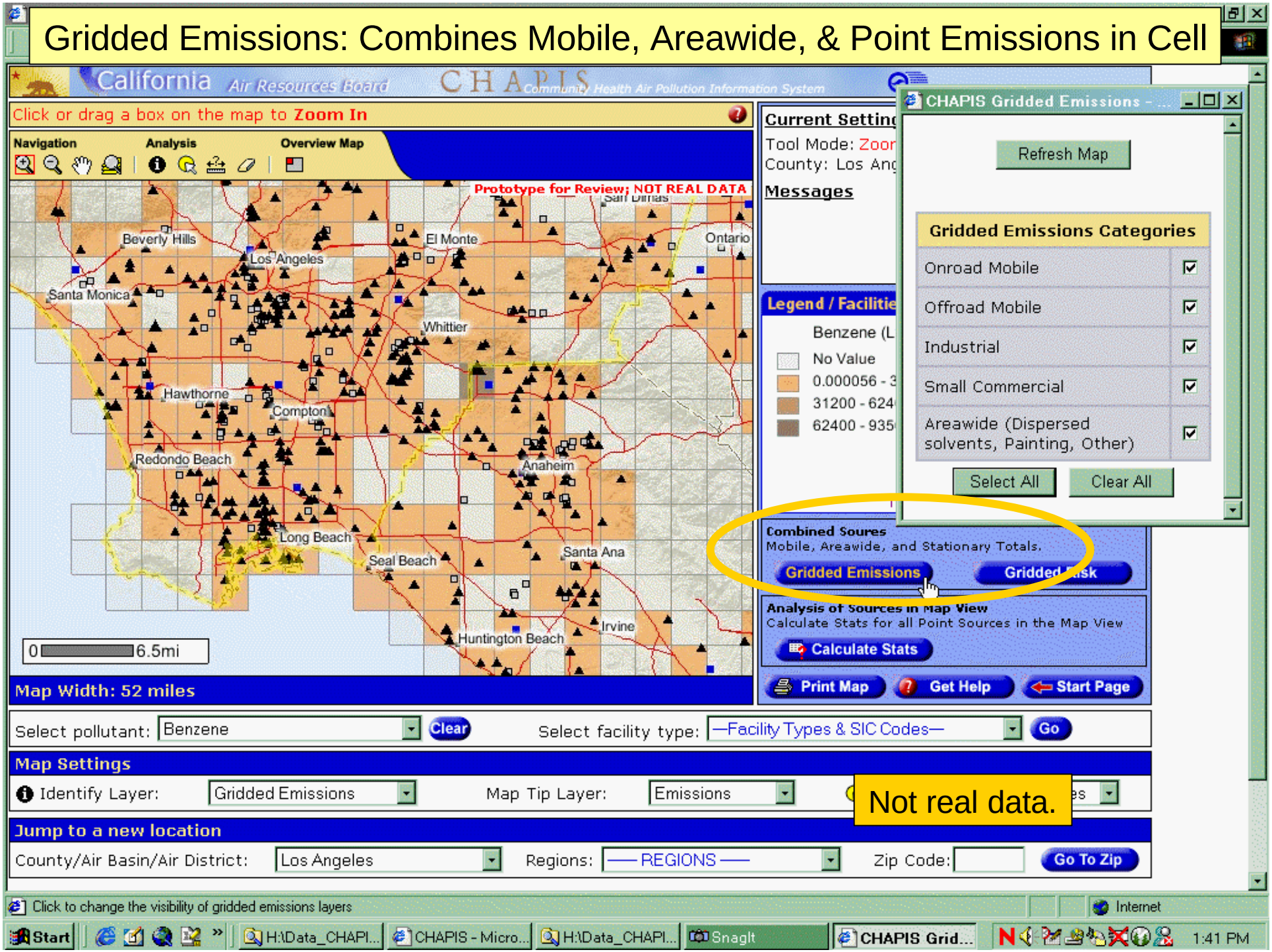
Website developed by VESTRA Resources Inc. VESTRA

ARB Homepage

Internet

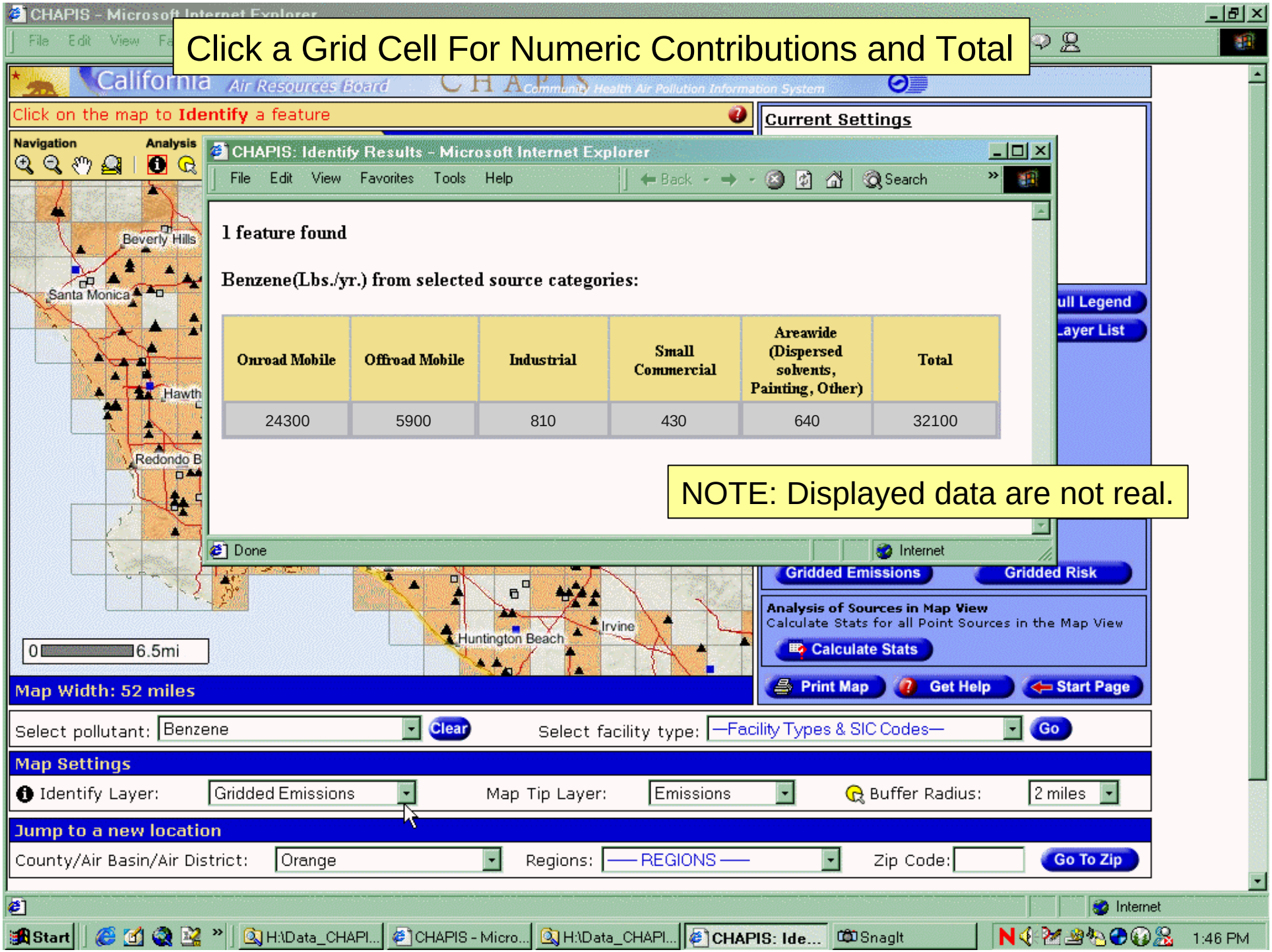
Start H:\Data_CHAPIS_HA... Microsoft PowerPoin... CHAPIS Launch ... SnagIt 9:23 AM

Gridded Emissions: Combines Mobile, Areawide, & Point Emissions in Cell



Not real data.

Click a Grid Cell For Numeric Contributions and Total



NOTE: Displayed data are not real.

Sample Map with Point Sources, Roads, Schools, etc. (scale-dependent)

Hover tool gives facility name immediately

Not Real Data

Summary List and Total for Facilities in the Map View

CHAPIS: Calculate Statistics Results - Microsoft Internet Explorer

22 Benzene industrial (point) emissions sources found

Maximum Value: 3700 Lbs./yr.
Average Value: 252 Lbs./yr.
Total Emissions: 5550 Lbs./yr.

Note: Data and summary statistics in this table are for point (industrial) sources only.
Use the "Gridded Emissions" option to see additional types of sources.

Facil ID	Company	Address	Benzene (Lbs./yr)	SIC Code
3240788	ABC COMPANY INC	200000 A ST SANTA FE SPRINGS, CA 90670	3700	13 - Oil and Gas Extraction
8748	XYZ COMPANY INC	300000 B ST PICO RIVERA, CA 90660	788	37 - Transportation Equipment
2289688	EFG COMPANY INC	4000000 Q ST PICO RIVERA, CA 90660	746	37 - Transportation Equipment
46500	IJK COMPANY INC	2000000 J ST SANTA FE SPRINGS, CA 90670	160	13 - Oil and Gas Extraction
24488	GGG COMPANY INC	600000 G ST SANTA FE SPRINGS, CA 93003	64.9	13 - Oil and Gas Extraction
23419	PQR COMPANY INC	1000000 F ST PICO RIVERA, CA 90660	32	49 - Electric,Gas,Sanitary Services
23351	CCC COMPANY INC	400000 C ST LOS ANGELES, CA 90040	2	llied Products
19251	LMN COMPANY INC	5000000 T ST WHITTIER, CA 90601	23.5	34 - Fabricated Metal Products
18695	ZYX COMPANY INC	3000000 Z ST	6.57	32 - Stone,Clay,and Glass Products

Not real data.

http://www.arb.ca.gov/app/emsinv/facinfo/facdet.php?co_=19&ab_=SC&facid_=3240788&dis_=SC&dbyr=1996

Jump to a new location
County/Air Basin/Air District: Los Angeles Regions: —REGIONS— Zip Code: Go To Zip

Link to Existing Database Query Tools for Facility Data

CHAPIS v1 (Preliminary Release b; 05/28/02) - Microsoft Internet Explorer

Facility Detail

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History

Facility Information

Facility Name :	ABC COMPANY INC.	District :	SOUTH COAST AQMD
Street :	10735 S SHOEMAKER AVE		
City :	SANTA FE SPRINGS	Zip :	90670
Contact Person :	ENVIRONMENTAL ENG	Phone :	(310) 903-2725
Facility SIC :	1311		

Mailing address

Company Name :	ABC COMPANY INC.				
Address :	10735 SOUTH SHOEMAKER AVENUE				
City :	SANTA FE SPRINGS	St :	CA	Zip :	90670

For most recent data, please contact the Air District

[Start a new query] [Prioritization & Risk]

	Pollutant	Emissions	Unit
Data from 1996	TOG	21.8	Tons/Yr
	ROG	13.9	Tons/Yr
TOXIC DATA MAY COME FROM VARIOUS YEARS			
	Ammonia	587.4	Lbs/Yr
	Benzene	3702.4	Lbs/Yr
	Naphthalene	2398.4	Lbs/Yr

Not real data.

Internet

Done

Start | CHAPIS v1 (Preliminary Re... | Facility Detail Selecti... | 5:15 PM

Link to Reported Risk Assessment if Available

CHAPIS v1 (Preliminary Release b; 05/28/02) - Microsoft Internet Explorer

Facility Detail Ri

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History

Facility Risk Information

Facility Name : ABC COMPANY INC.

District : SOUTH COAST AQMD

Street : 10735 S SHOEMAKER AVE

City : SANTA FE SPRINGS

Zip : 90670

For most recent data, please contact the Air District

[Start a new query]

Not real data

Facility Health Risk and Score Data

Facility Prioritization Score	Inventory Year	Value	District Prioritization Threshold High	Low
Cancer	1991	182.53	10	1
Non-Cancer Chronic	1991	6.92	10	1
Non-Cancer Acute	1991	1.07	10	1

Health Risk Assessment	Inventory Year	Value	District Notification Level	District RRAP Level
Cancer Risk	1991	.79	>=10	>100
Non-Cancer Chronic Hazard Index	1991	.04	>1; lead THI >.5	>5
Non-Cancer Acute Hazard Index	1991	.01	>1; lead THI >.5	>5

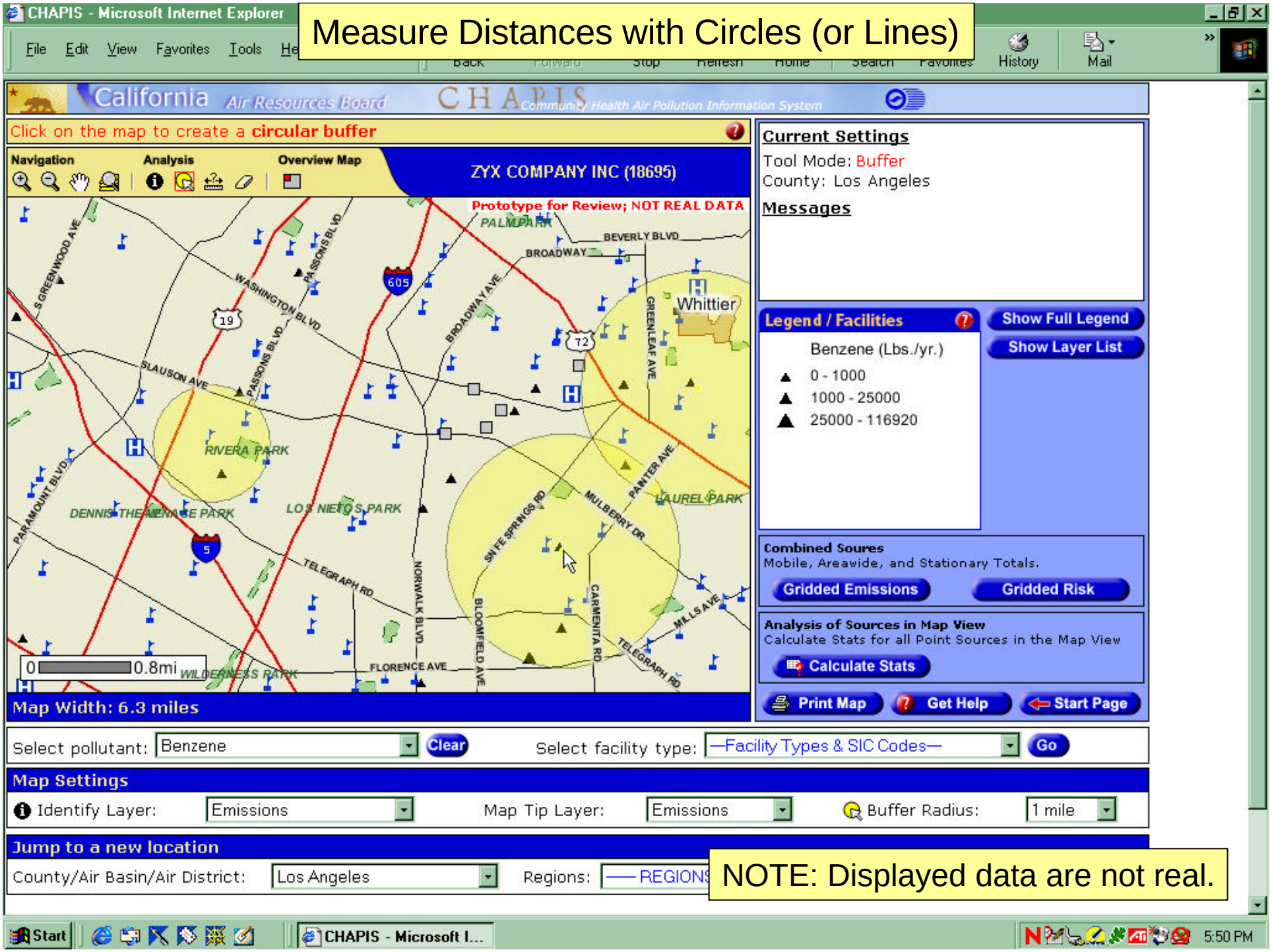
Internet

Done

Internet

Start CHAPIS v1 (Preliminary Re... Facility Detail Risk S... 5:16 PM

Measure Distances with Circles (or Lines)



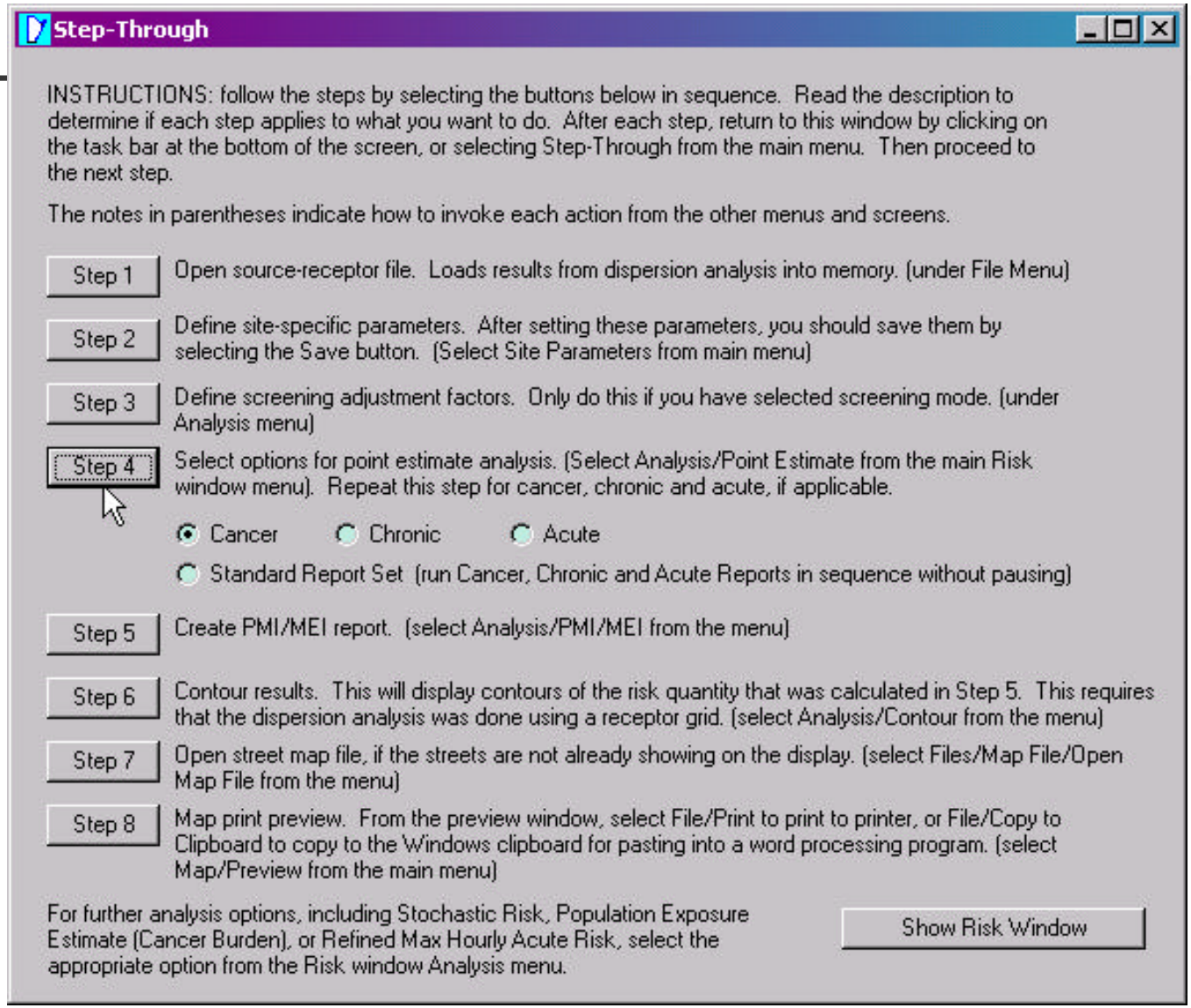
NOTE: Displayed data are not real.

What is HARP?

The Hotspots Analysis and Reporting Program (HARP) is a tool to ...

- Create & manage facility emission data
- Perform air dispersion modeling
- Conduct health risk analyses
- Output data reports and maps

HARP: Risk analysis step-through



Site-specific analysis using HARP

- **Powerful tool in one convenient package which uses:**
  - ARB Emission Inventory Guidelines
  - U.S. EPA approved air dispersion models
  - OEHHA Risk Assessment Guidelines

- **Analyzes single or multiple facilities**
  (cumulative impacts)

- **Tool for air quality professionals**

Tools to Assess Localized Cumulative Impacts

- **Vision: integrate CHAPIS and HARP on web**
  - User can add a new facility and overlay impacts with statewide risk maps
  - Pushes technology
- **Also enhance desktop HARP to import external, regional modeling**
  - Single package for combining total cumulative impacts
  - For air quality professionals doing local analysis

ARB Regional Risk Maps

-- ASPEN Model --

- **Maps now on ARB web site**
  - **ASPEN model with ARB's 1996 emission inventory**
  - **Trends to 2010**
- **Update to statewide coverage and 2000 data**
  - **~Spring/summer**
- **Regional scale**

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home

Address http://www.arb.ca.gov/toxics/cti/hlthrisk/hlthrisk.htm

selected only because it conveniently illustrates the trends associated with urban areas. Local maps with additional risk cutpoints can be accessed either by emission category or year.

About Risk Maps

Local Maps By Emissions Category

Local Maps For Different Years

Community Health

Health Effects

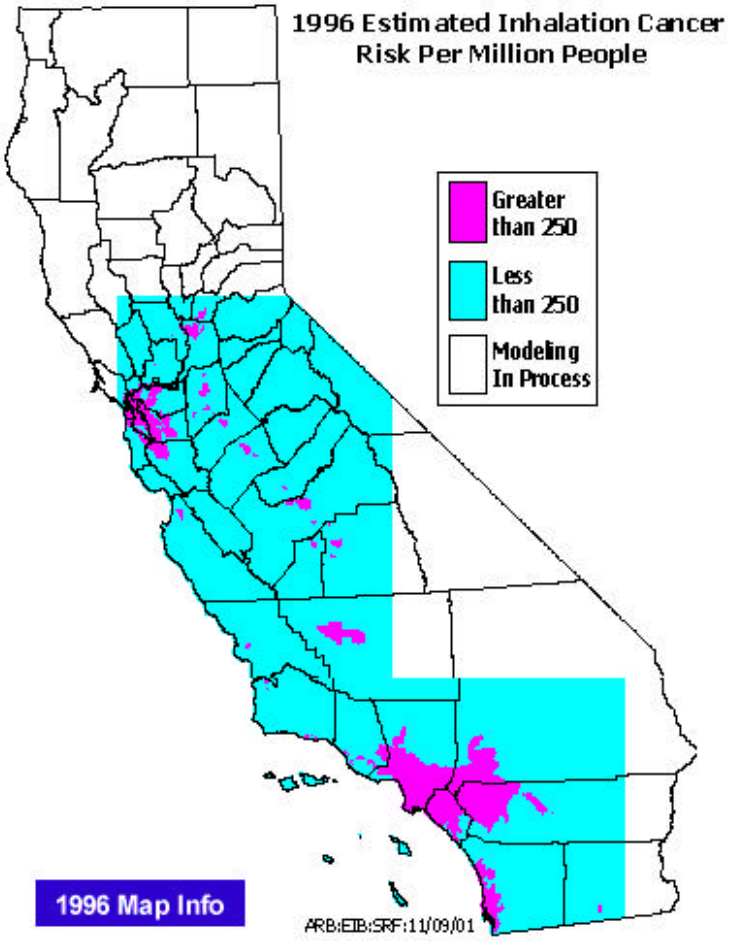
Measured Air Pollution in Your Neighborhood

Air Toxics Program

Diesel Risk Reduction

Chemical Information

Coming Soon



1996 Map Info

Select year below to see trends

1990

1996

2010

2010 With 75% Diesel Risk Reduction Goal

Start

Environmental Maps: ...

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home

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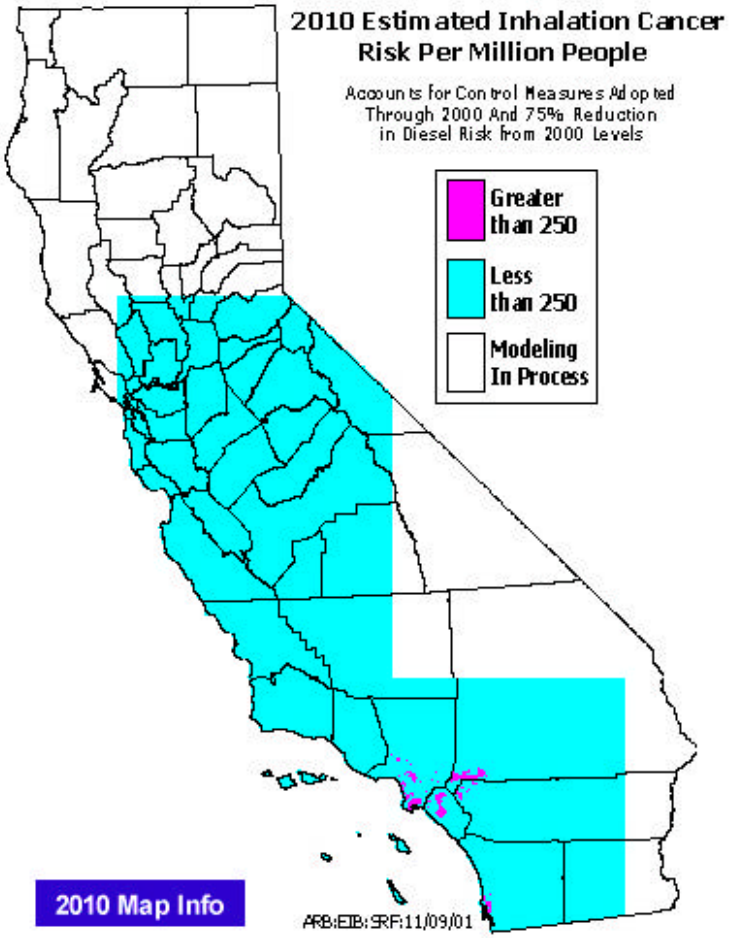


2010 Map Info

Select year below to see trends

1990

1996

2010

2010 With 75% Diesel Risk Reduction Goal

Start

Environmental Maps: ...

Cancer Inhalation Risk: Local Maps by Category - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail

Address http://www.arb.ca.gov/toxics/cti/hlthrisk/cncrinhl/riskmapviewfull.htm

Go

L.A.-Central

Map is loaded - Click on map to view printable map window.

Select region by clicking on name on above maps. Next select radio button, below, and then category from dropdown lists

TOTAL:

DIESEL

All diesel

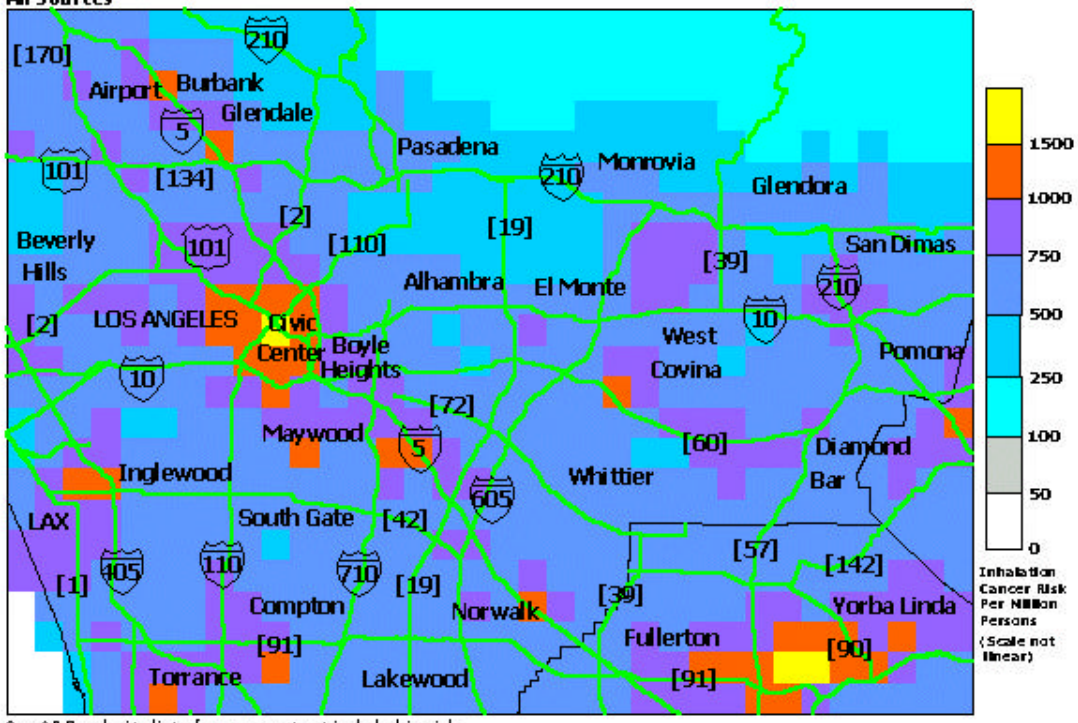
NONDIESEL

All nondiesel

Total Risk (diesel + nondiesel)

Central Los Angeles : 1996 Cancer Risk Per Million

All Sources



See ARB web site list of sources not yet included in risk.

ARB:EIB:SRF:11/20/01

Start

Cancer Inhalation Ris...

12:15 PM

Combine Regional Grid Modeling + Local-Scale Modeling

- **Regional Grid Modeling is Needed:**
  - Photochemistry
  - Long-range transport
  - Urban background
- **Local-Scale Modeling is Needed:**
  - Near-source peaks
    - Busy roadways; ground-level sources
  - Neighborhood resolution
- **Integrate and avoid double counting**

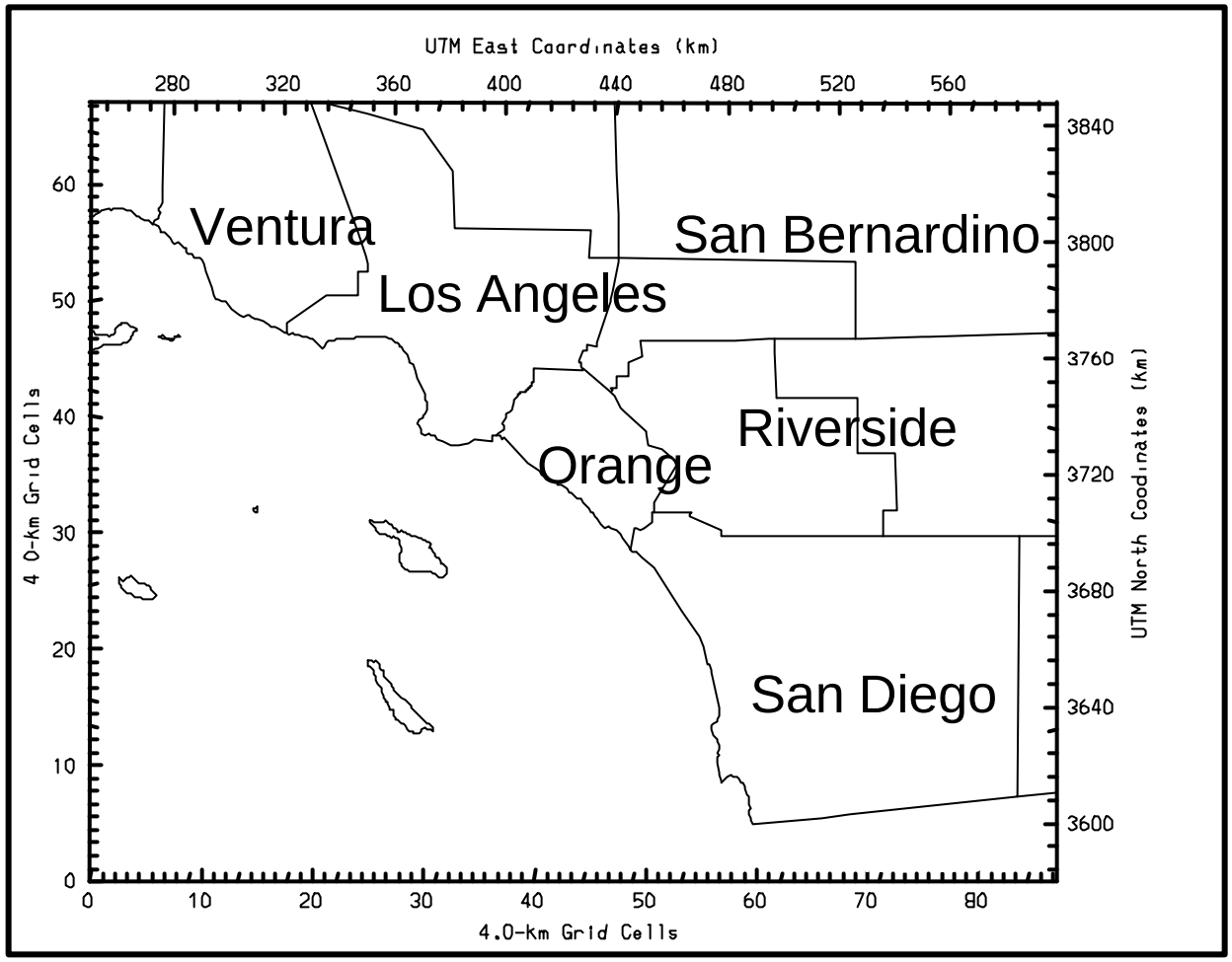
Neighborhood Assessment Program

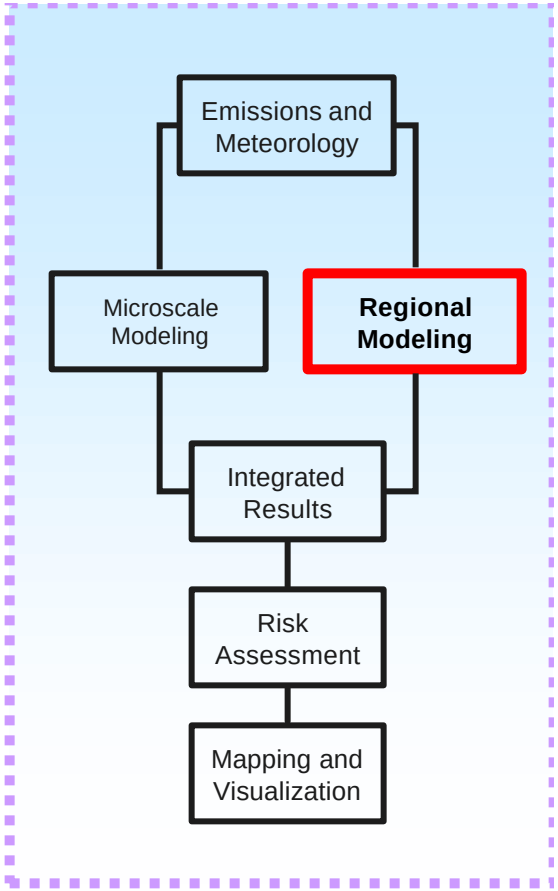
- **Neighborhood Assessment Program (NAP)**
  - Two major studies: Barrio Logan, Wilmington
  - Detailed local emission inventories
  - Community air monitoring
  - Tracer studies
  - Develop/test new modeling protocols
  - Compare modeled and observed concentrations

Regional Modeling

Southern California - Pilot Study

- SCOS domain (4 km grid resolution)
- Larger than MATES II

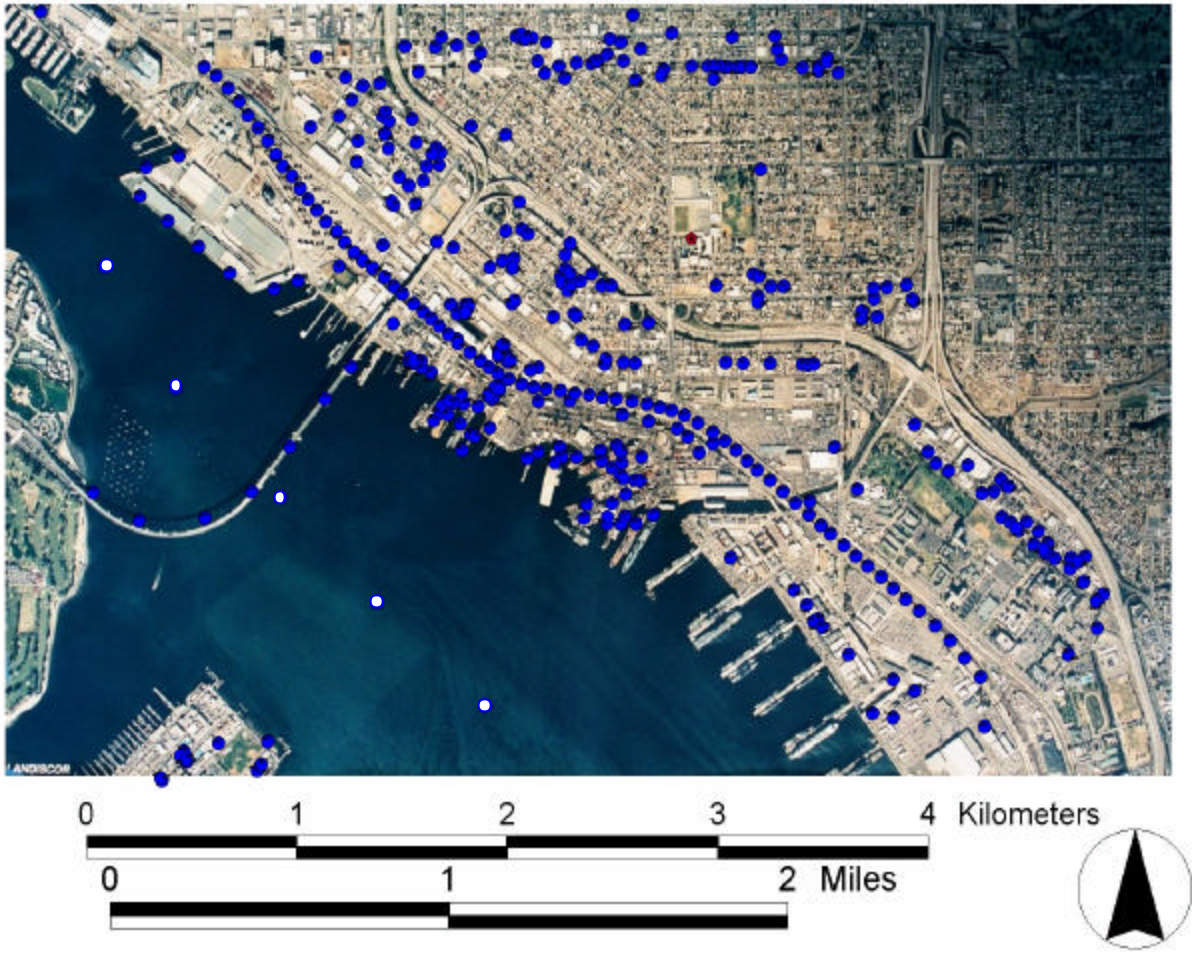


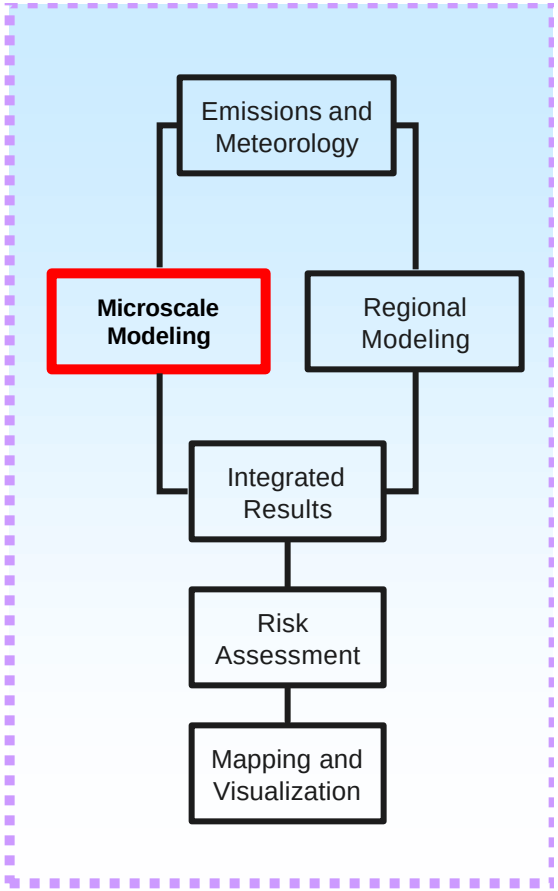


Microscale Modeling

Barrio Logan - Pilot Study

- Ship Building, Dock, Rail, Freeway, Manufacturing, Local Facilities, Local Traffic

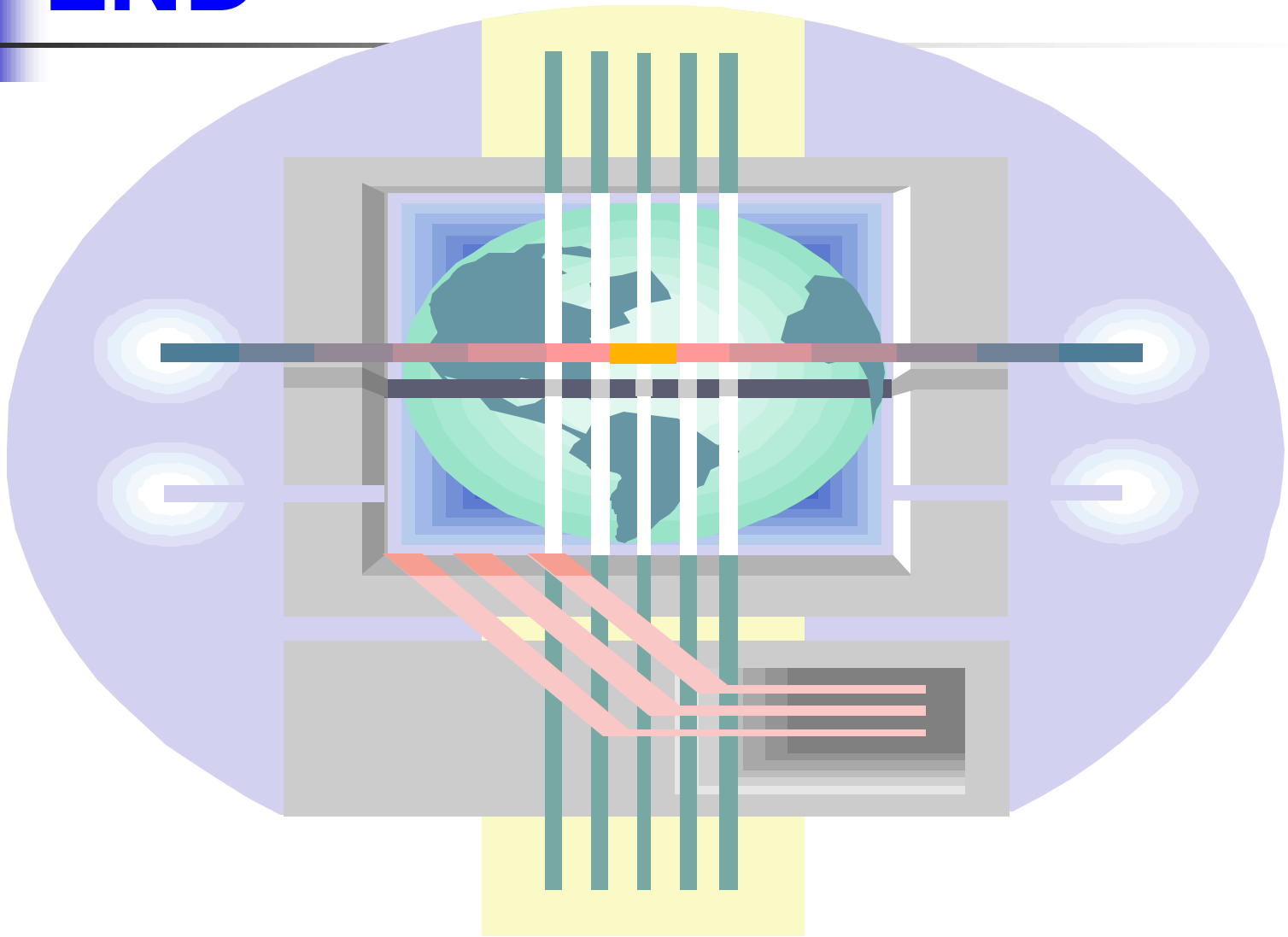




Modeling Performance & Challenges

- **Objective is new**
  - Cumulative source modeling analysis
  - Regional models run for annual average
- **Integrate regional and microscale results**
- **Develop practical statewide approaches**
- **Workshops & Peer Review**

SUMMARY

- **Improved information to the public**
  - CHAPIS emission maps
  - Statewide risk maps
- **Improved tools for air quality professionals**
  - To assess localized cumulative impacts
- **Improved tools for total cumulative impacts**
  - Localized impacts and regional perspectives on risk
  - Peer reviewed protocols

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