Large Scale Emissions Inventory

Dallas, TX

Mark Hilverda

Dec 3 / 2002

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Acknowledgement

- Tom Moore - WRAP
- Sarah Kelly - ITEP

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Agenda

- TEISS Objectives
- TEISS Modules
- System Architecture
- Database Structure
- Data Entry Facilitation
- QA / QC

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Who is Lakes Environmental

Lakes
Environmental

Environmental Software

- ISC-AERMOD View
- AUSTAL View
- IRAP-h View
- Eco-Risk View

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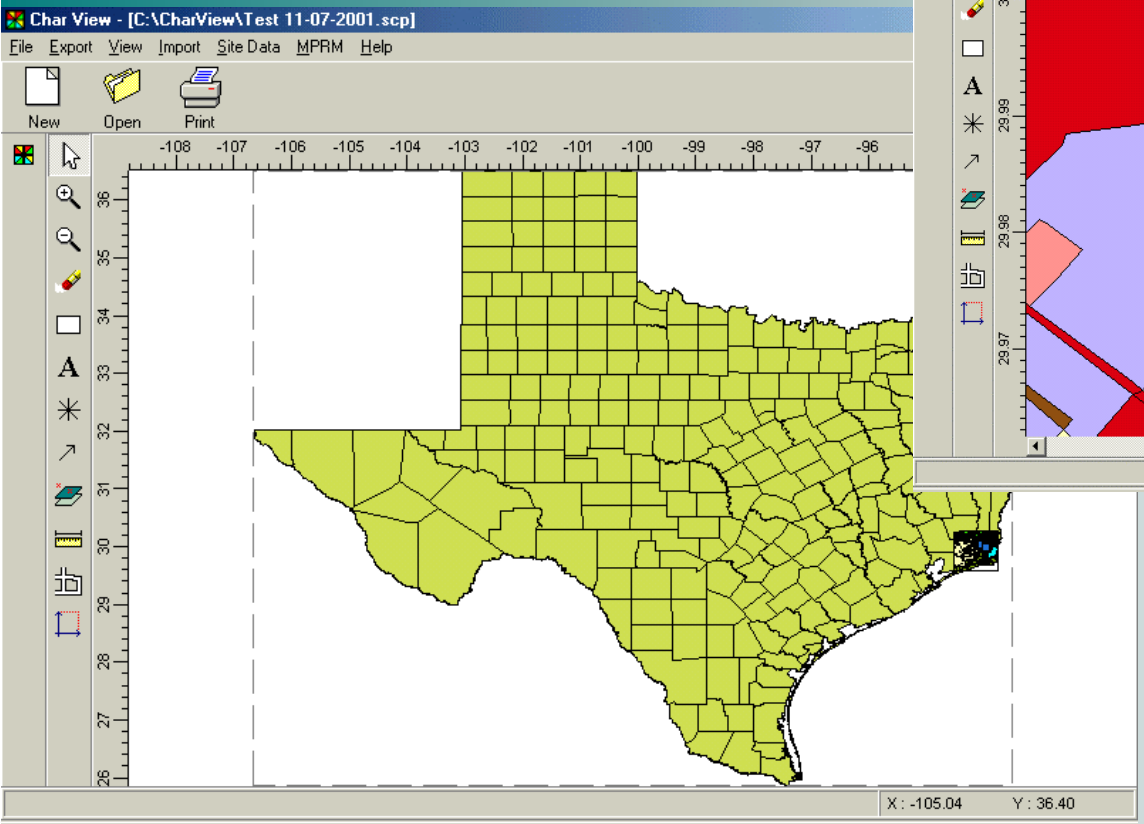
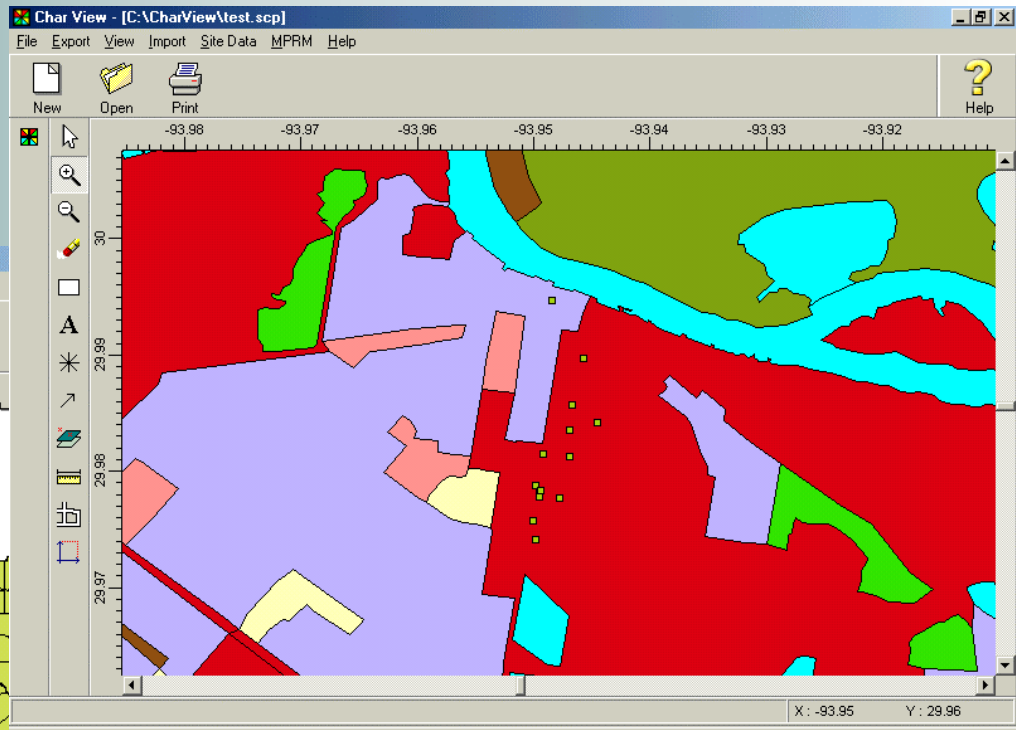
Cumulative Risk Assessment





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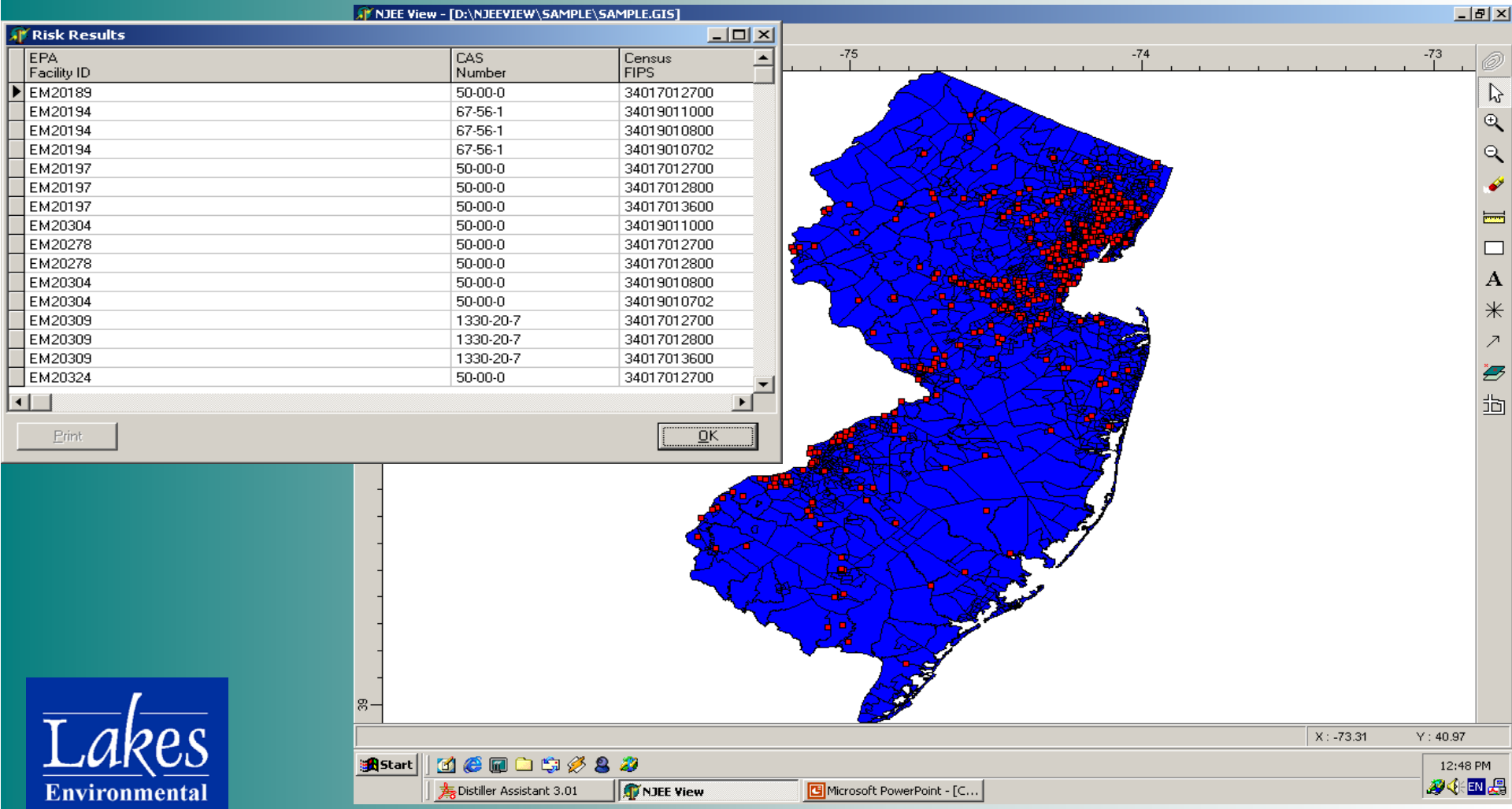
NJEE View



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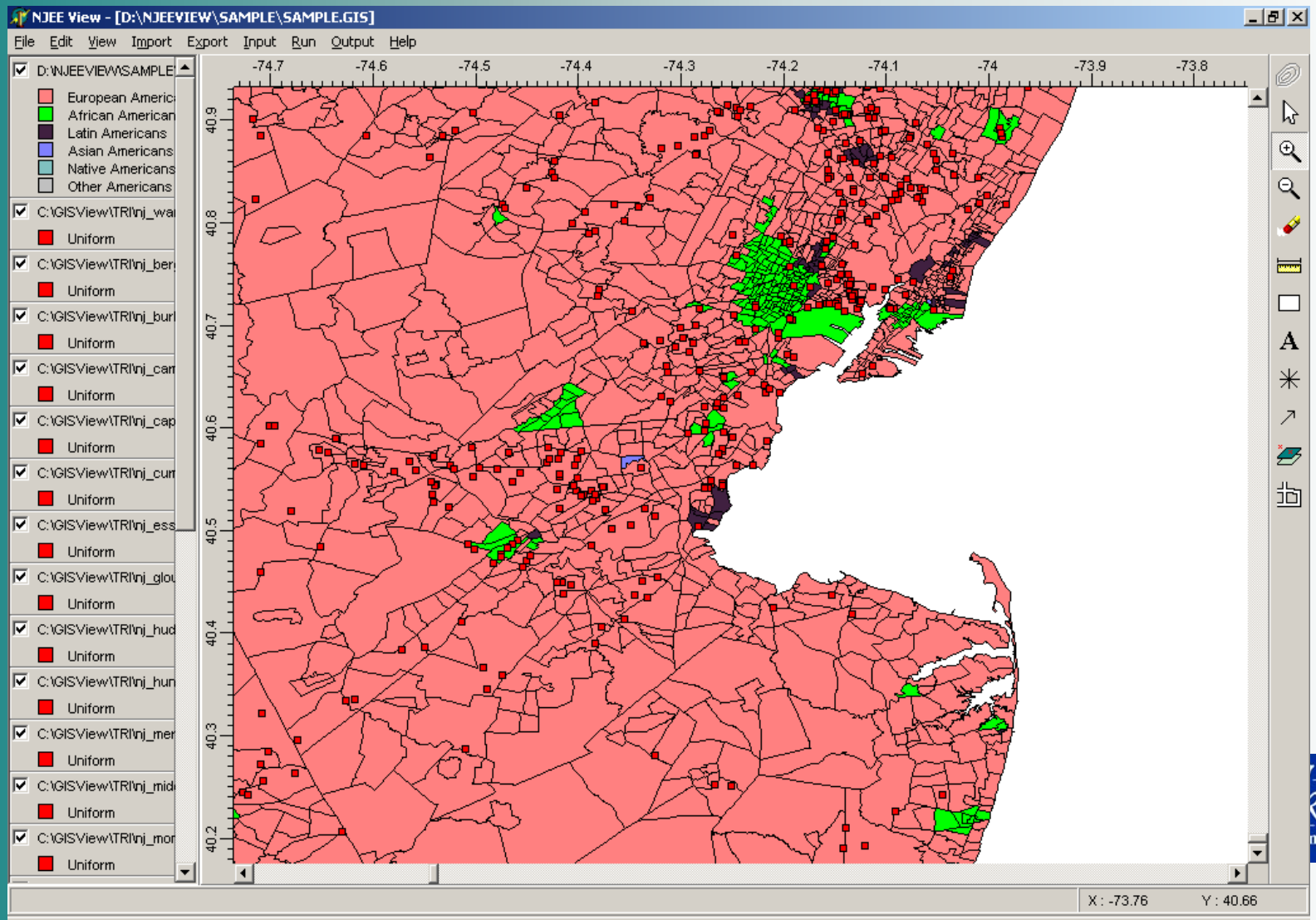
NJEE View


NJEE View - [D:\NJEEVIEW\SAMPLE\SAMPLE.GIS]
File Edit View Import Export Input Run Output Help
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African American
Latin Americans
Asian Americans
Native Americans
Other Americans
C:\GISView\TRI\nj_wa
Uniform
C:\GISView\TRI\nj_ber
Uniform
C:\GISView\TRI\nj_bur
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Uniform
C:\GISView\TRI\nj_mid
Uniform
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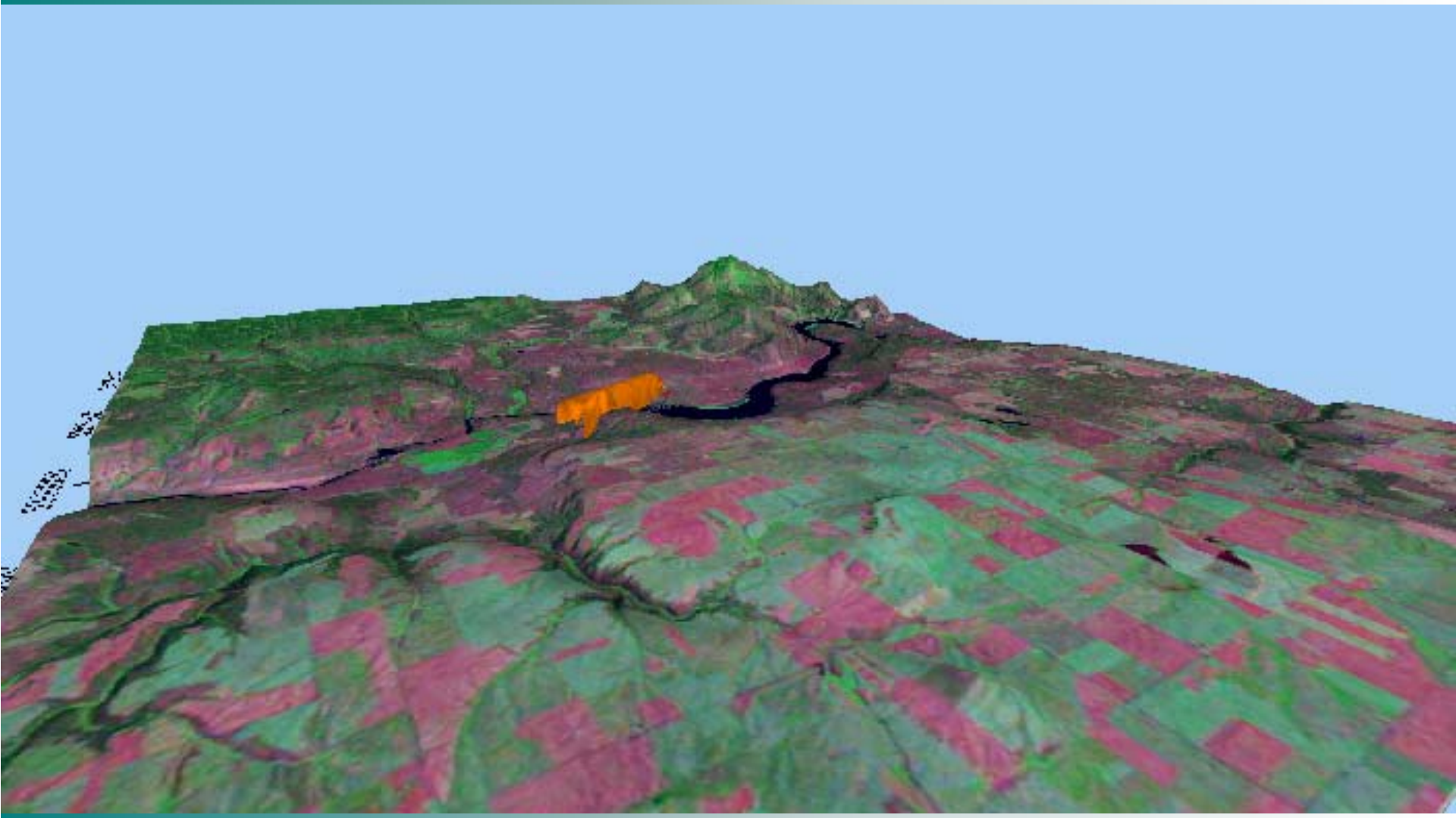
Uniform
-74.7 -74.6 -74.5 -74.4 -74.3 -74.2 -74.1 -74 -73.9 -73.8
40.9 40.8 40.7 40.6 40.5 40.4 40.3 40.2
X : -73.76 Y : 40.66



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Data Availability

- WWW.WEBGIS.COM
- WWW.WEBMET.COM
- WWW.WEBLAKES.COM
- WWW.WEBTHERMAL.COM

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TEISS Objectives

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TEISS Objectives

- Emission inventory software with a very user-friendly interface
- Facilitate emission inventories by tribal environmental professionals
- Emission estimates technically defensible

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TEISS Requirements

- Requirement Specification
- User Feedback
- QA \ QC Procedures
- Consistent Interface
- Documentation
- Training

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TEISS Modules

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TEISS Modules

- GIS
- Calculators
- MOBILE6
- NON-ROAD
- Other Functions

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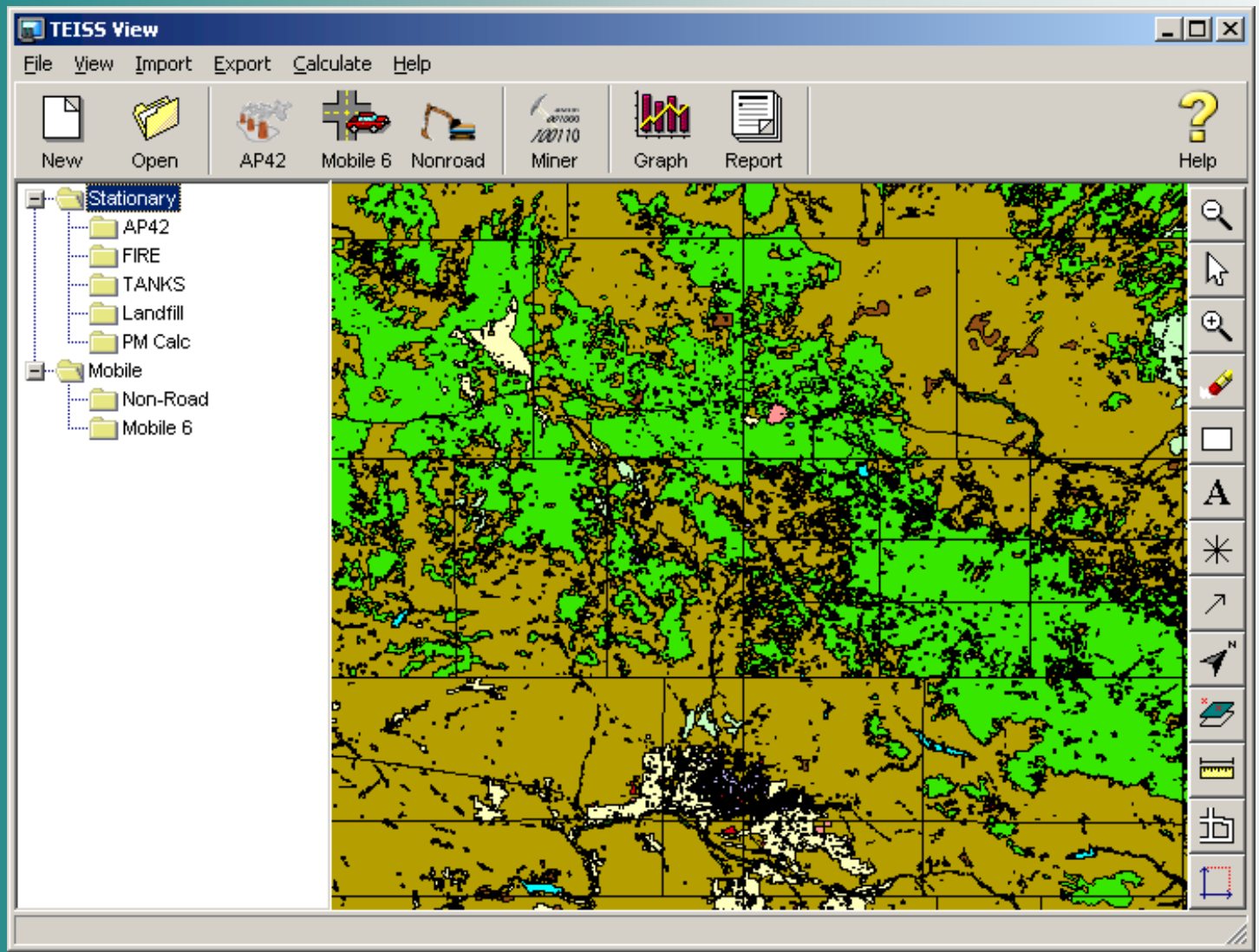
Mapping



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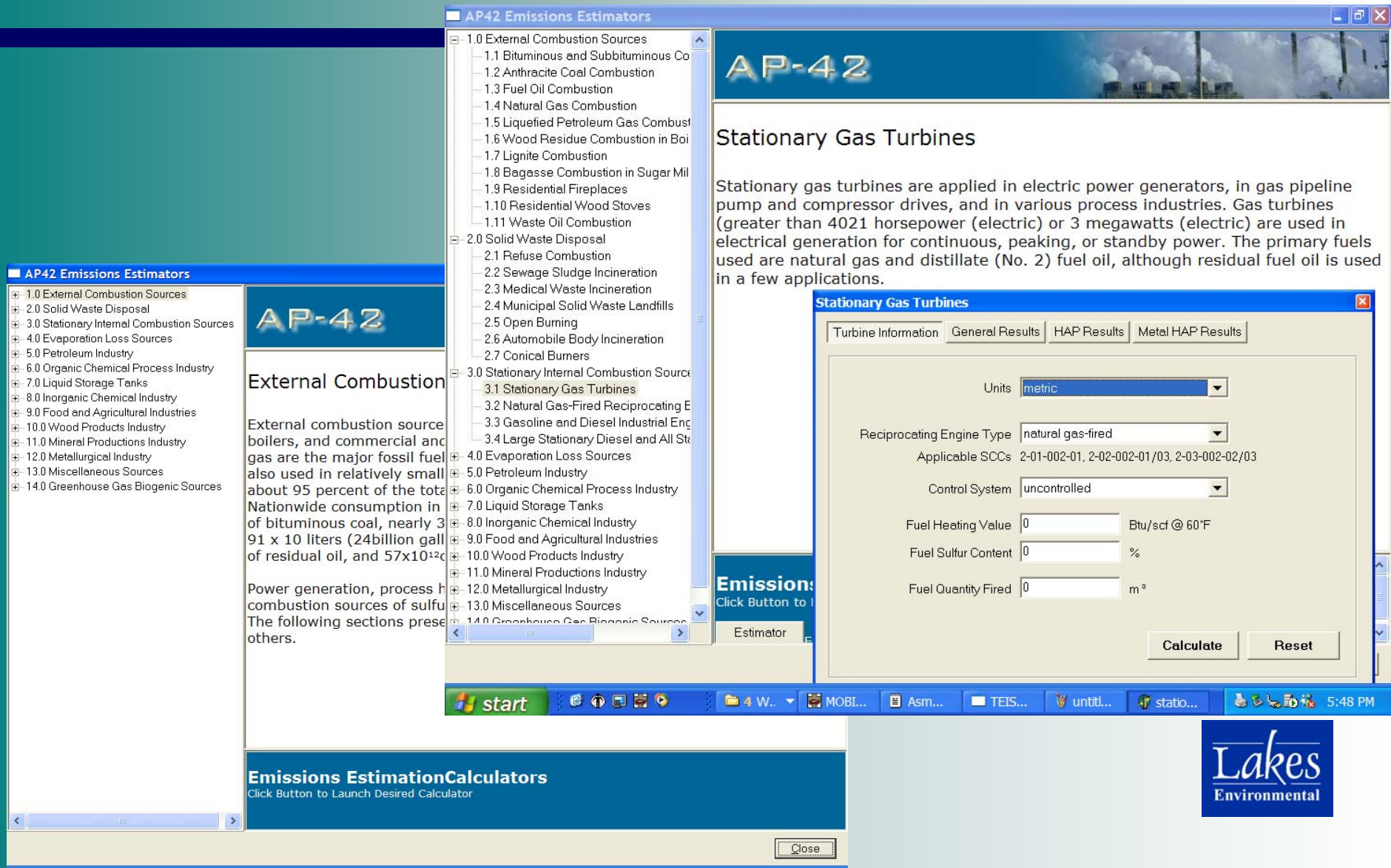
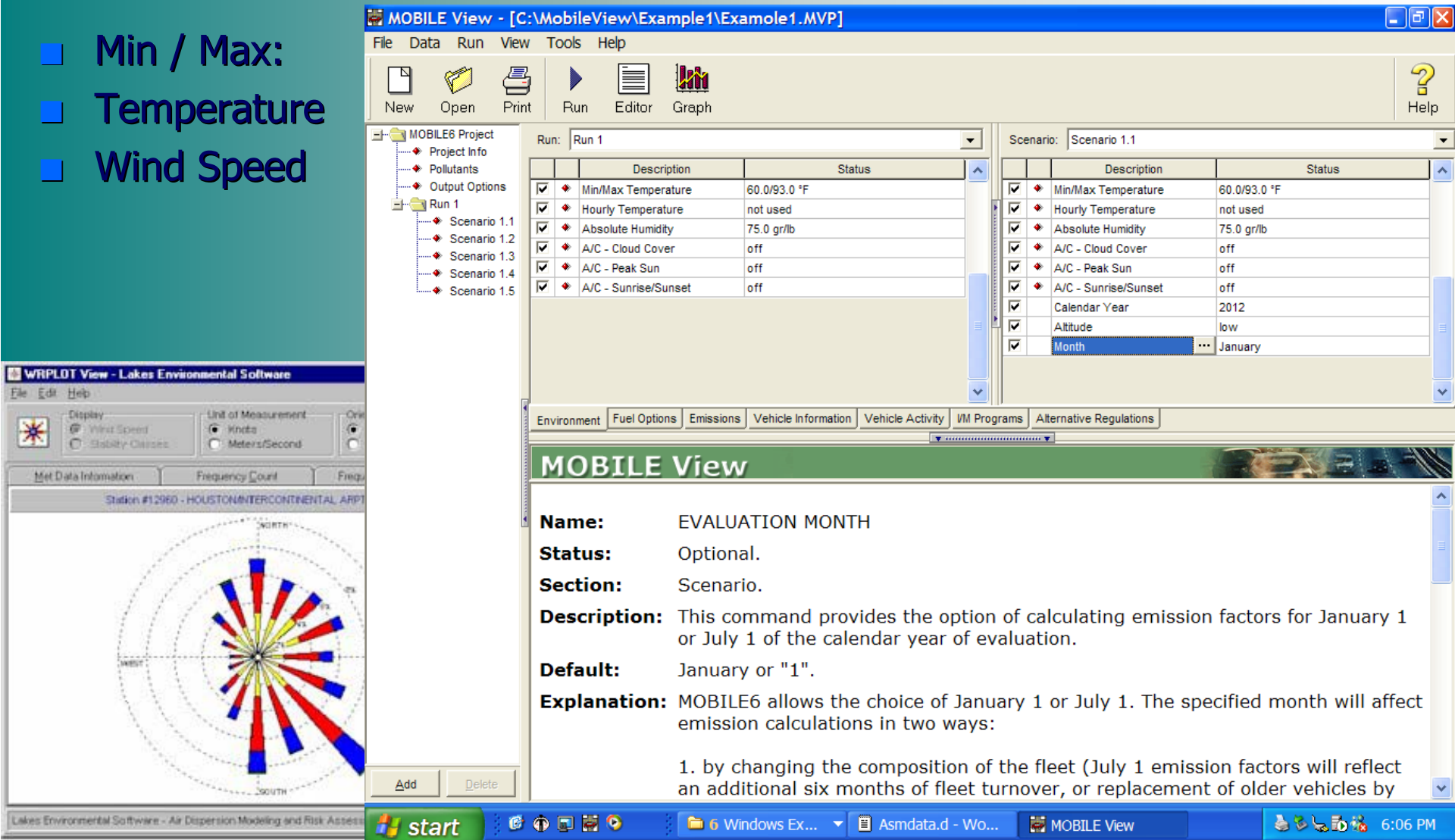
Calculators



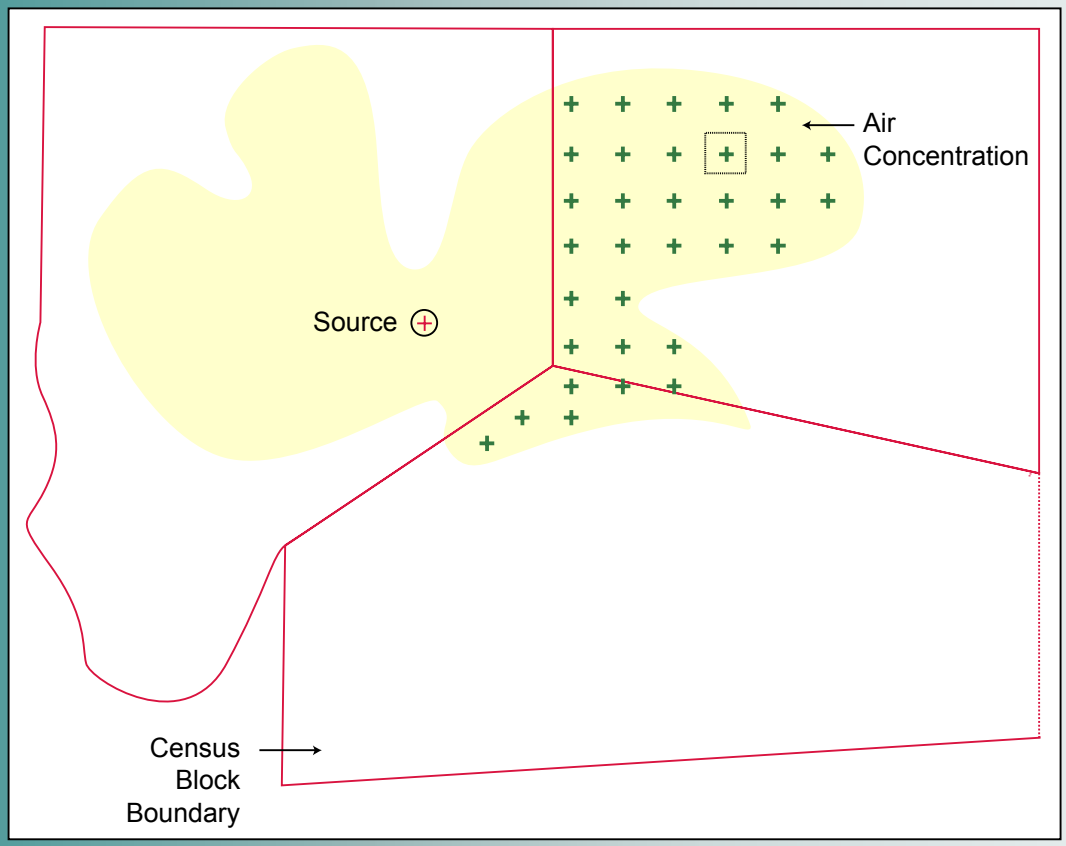
Mobile 6

- Min / Max:
- Temperature
- Wind Speed



Area Source Allocations

- Polygon Intersection
- GIS Area Allocation



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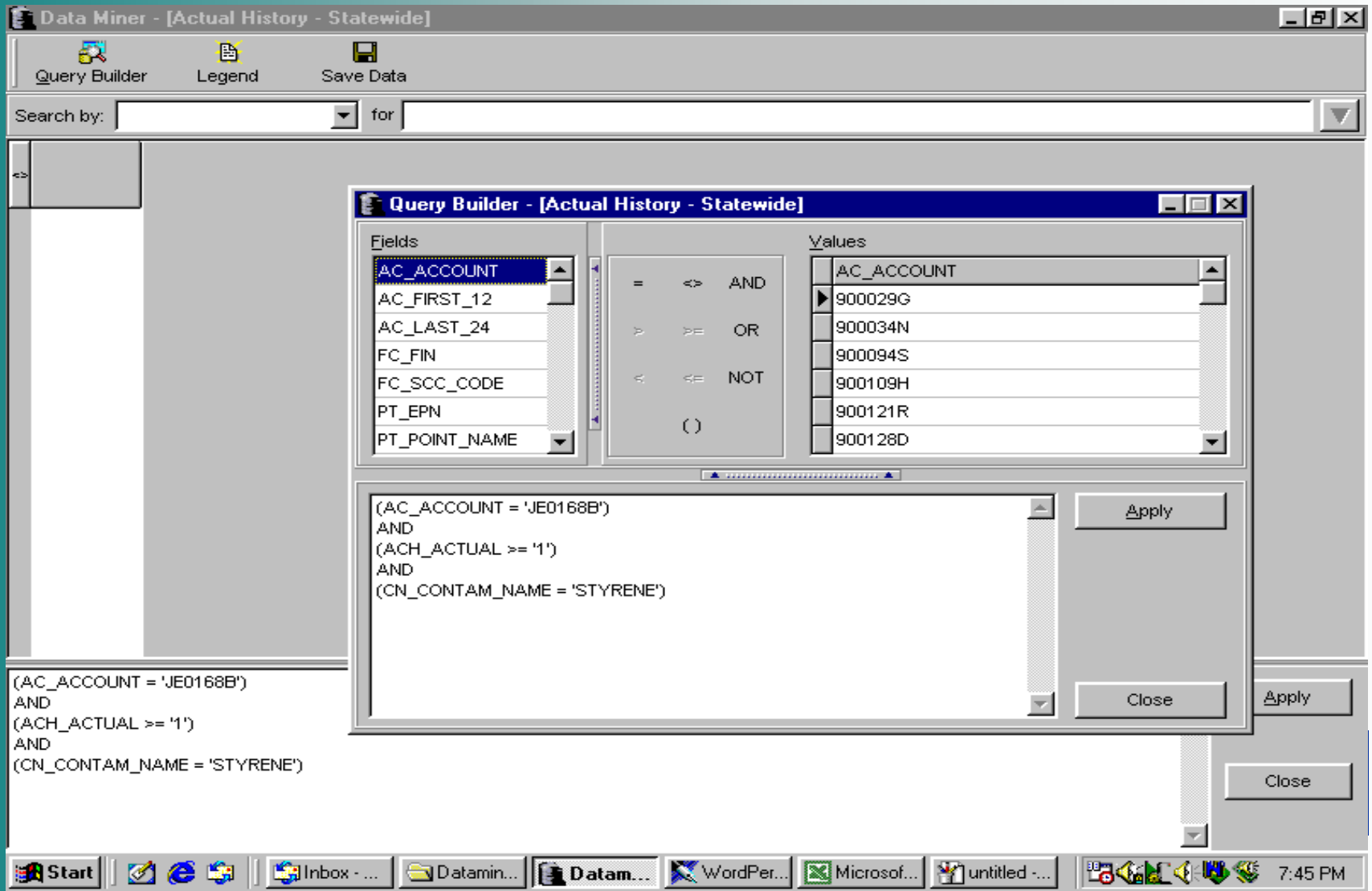
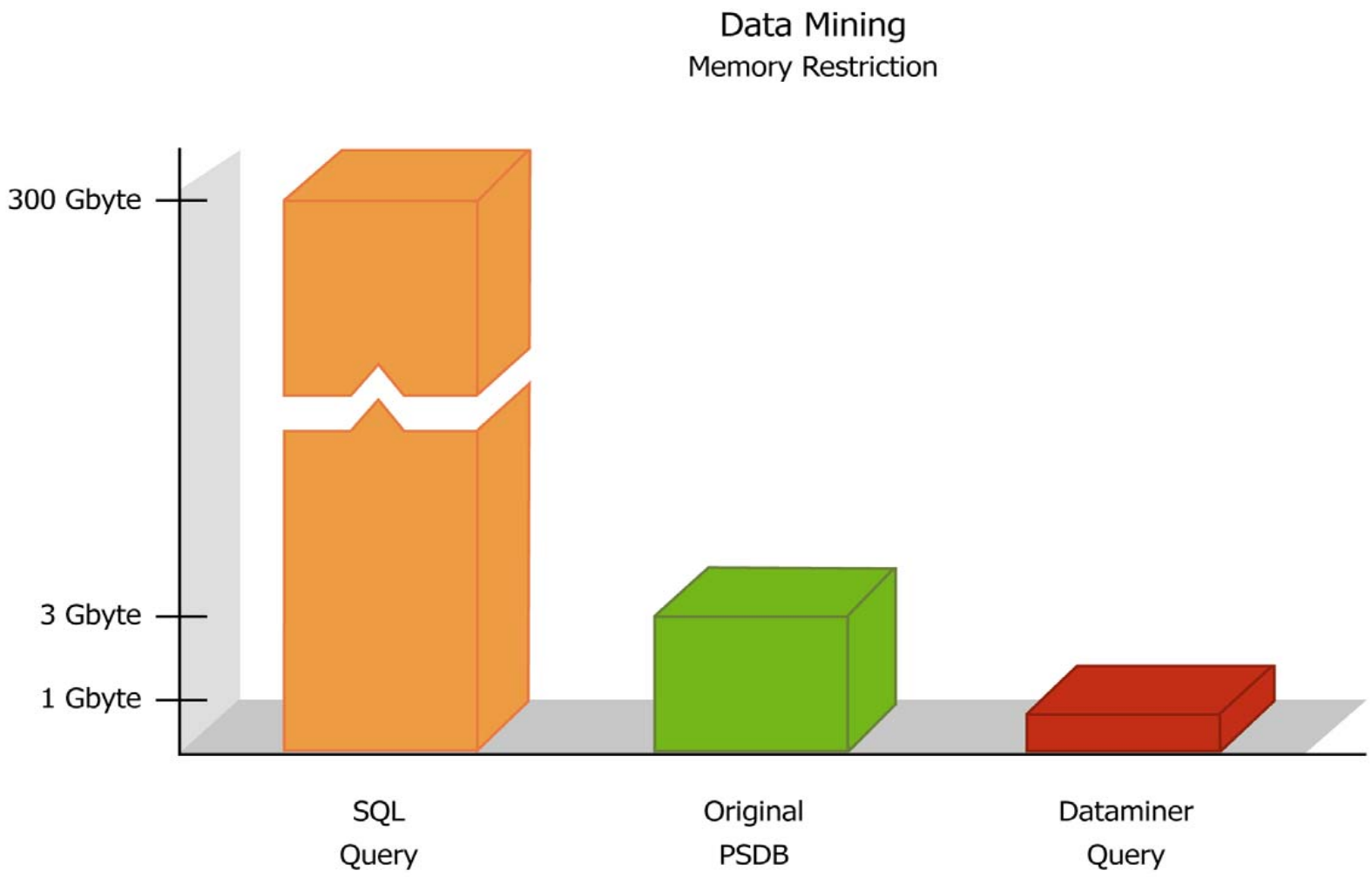
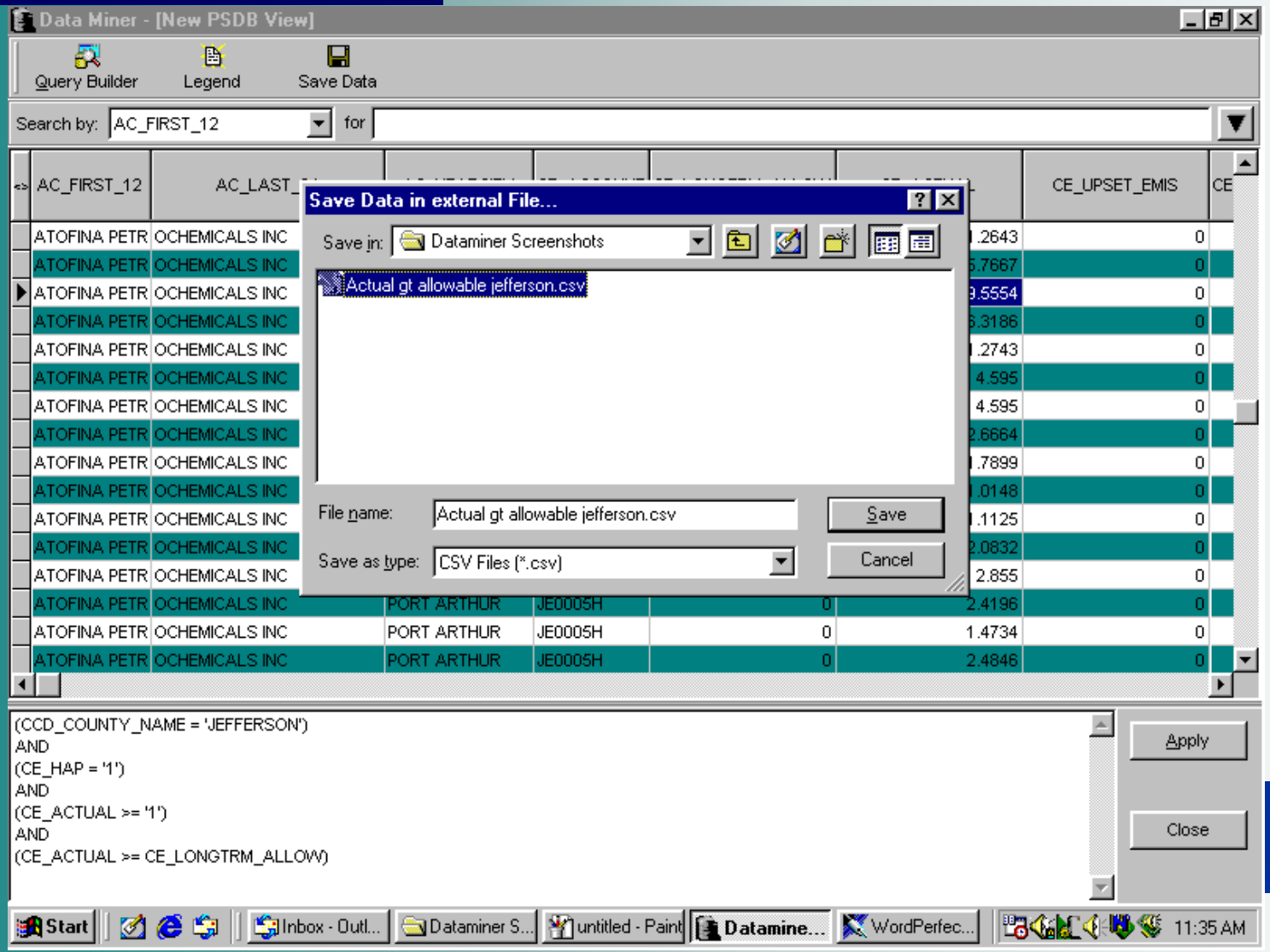
DataMiner – Query Builder



Data Miner


Data Mining
Memory Restriction
300 Gbyte
3 Gbyte
1 Gbyte
SQL
Query
Original
PSDB
Dataminer
Query

DataMiner – Saving Results



System Architecture

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Software Engineering

- Integration Problem
- Modularity
- Cost
- Development Time
- Maintenance
- Changing Data Formats
- Scalability

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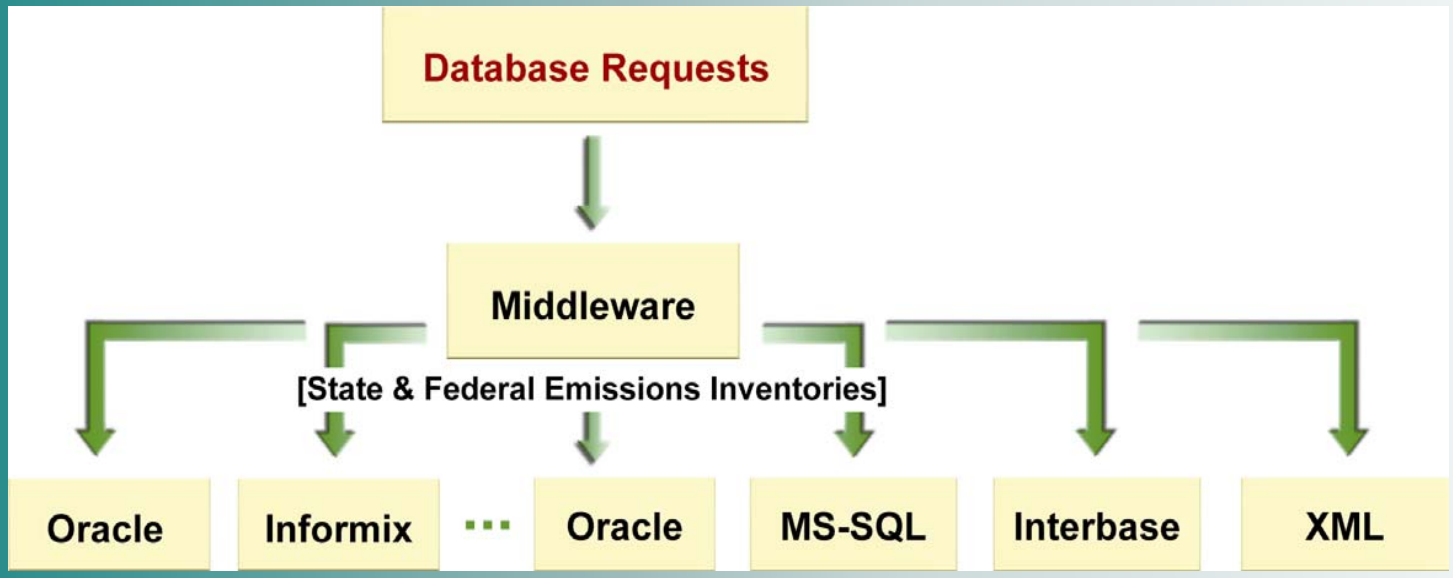
Scalable Architecture

- Desktop / Stand-Alone App
  - Client / Server DBMS Independence
  - Web & .NET
  - XML



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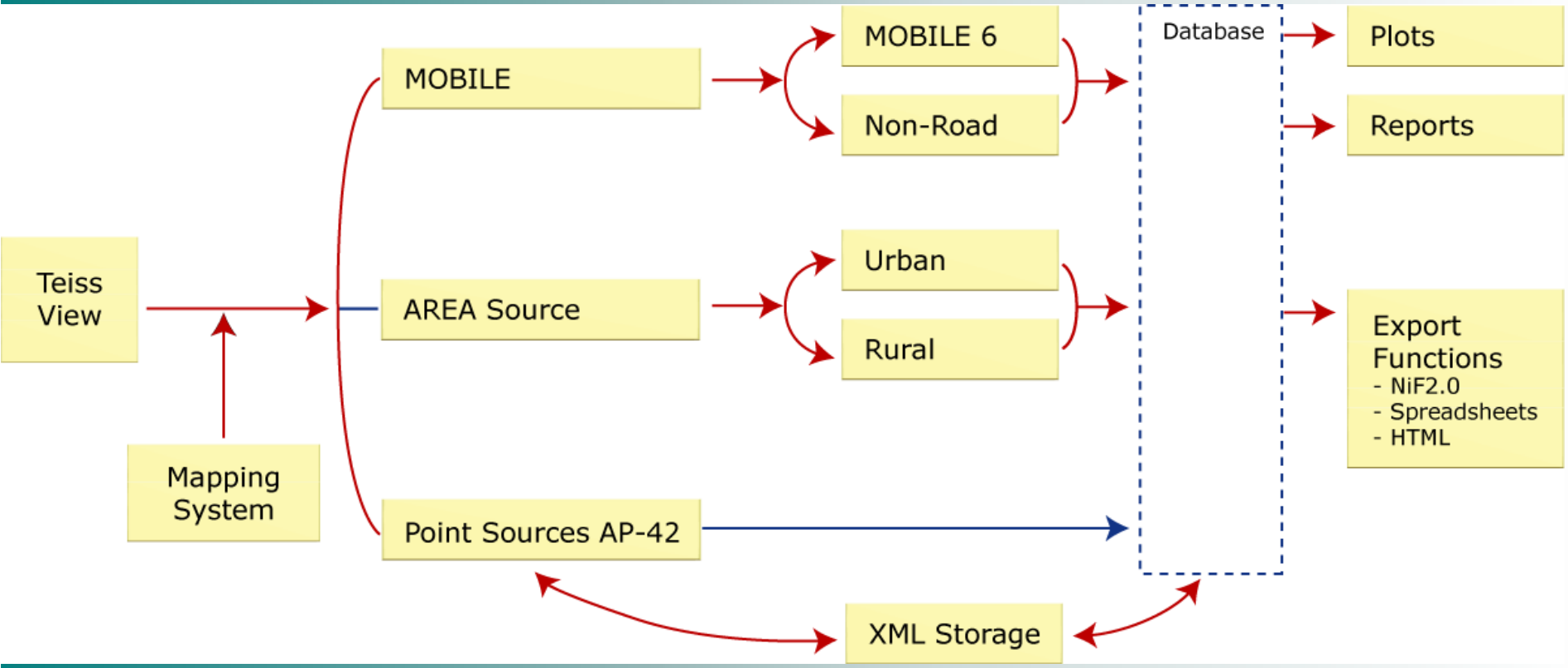
TEISS Software Components



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Database Structure

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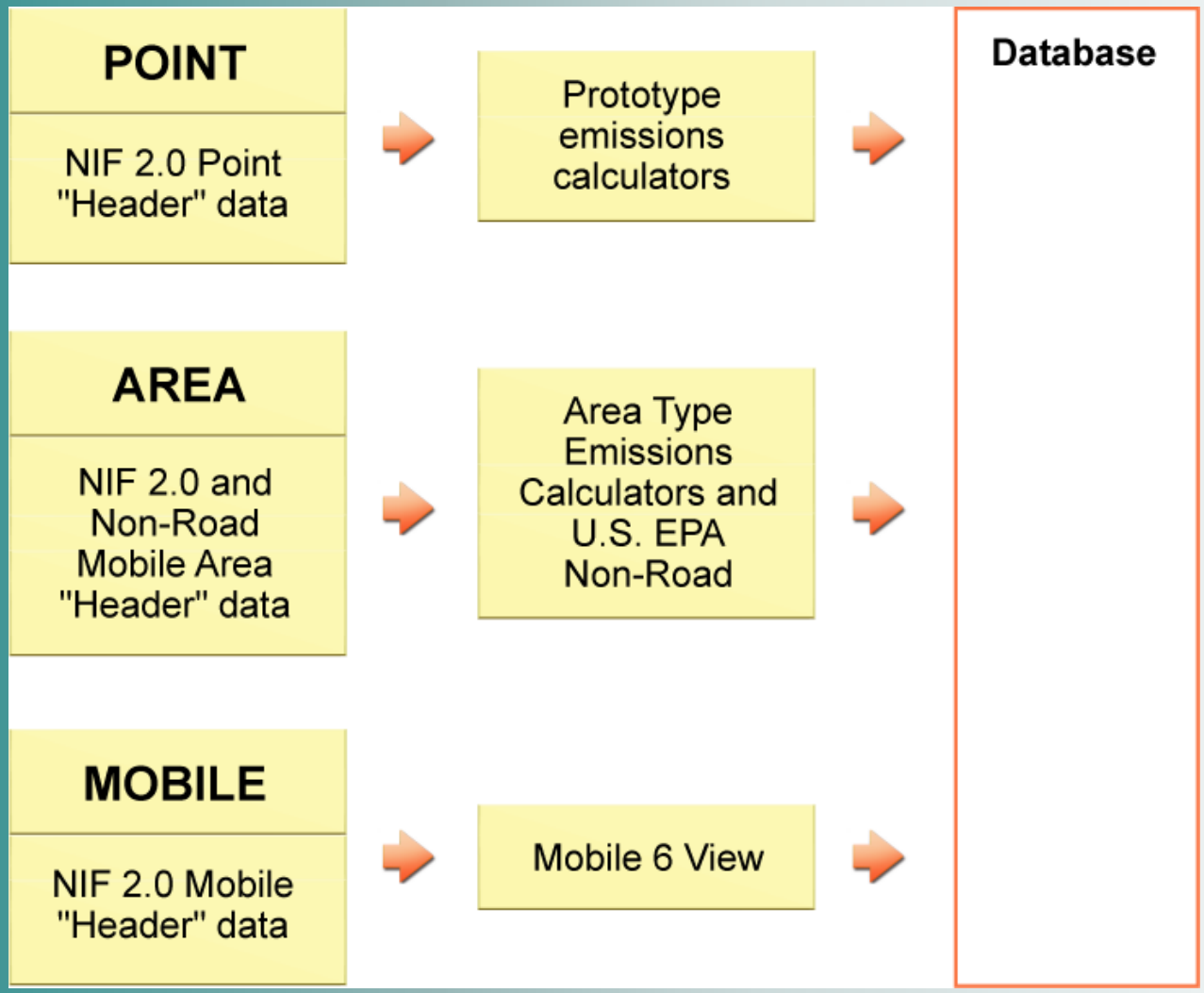
General Database Structure



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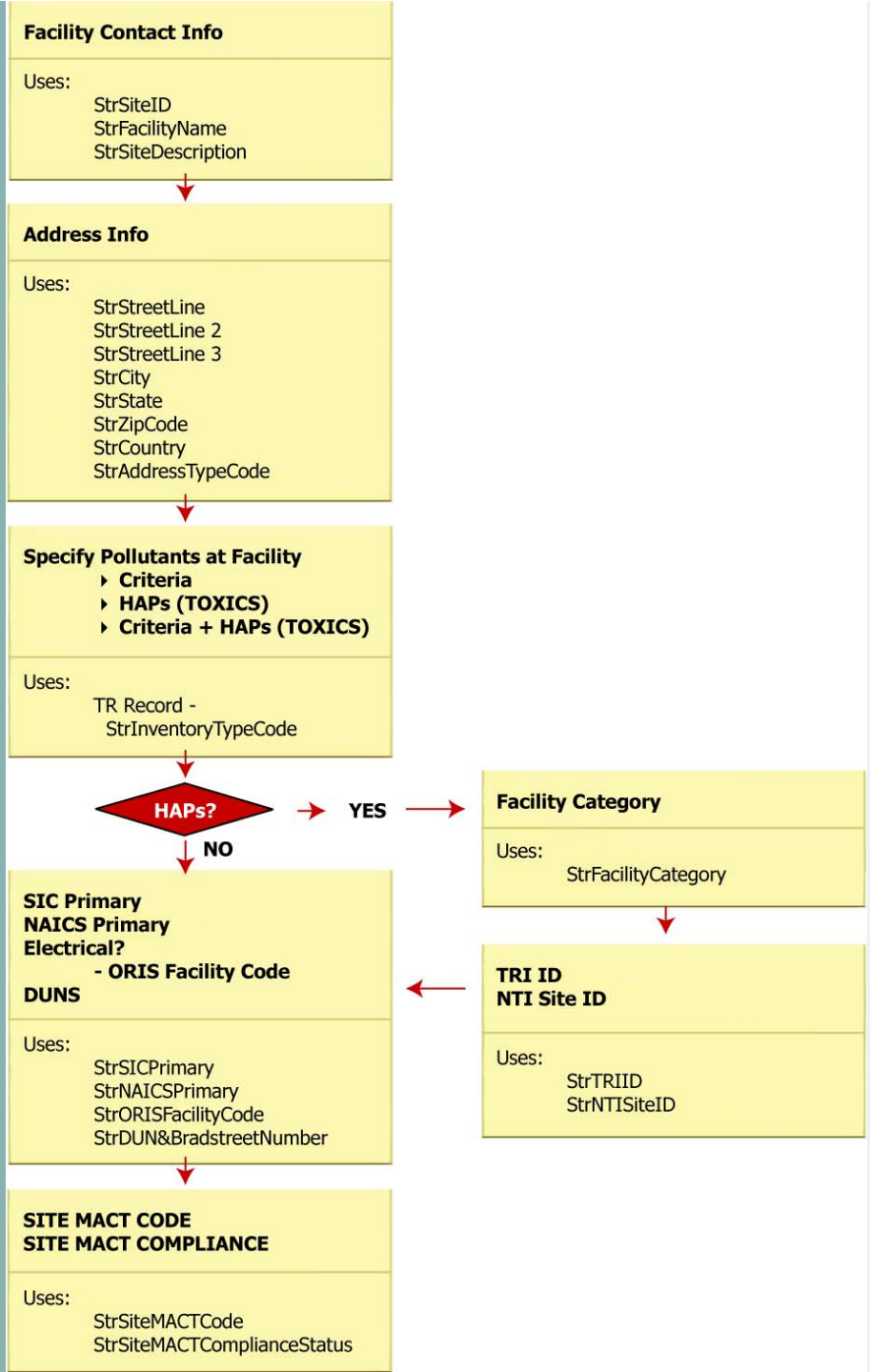
Facility Data



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QA / QC

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QA / QC - Input

- Range Checks
- Missing Value Checks
- Statistical Checks
- Referential Integrity Guarantee

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QA / QC - Code

- Unit Testing – Automated
- Dedicated Software Testers
- Various "Code Checking" Products

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Data Entry Facilitation

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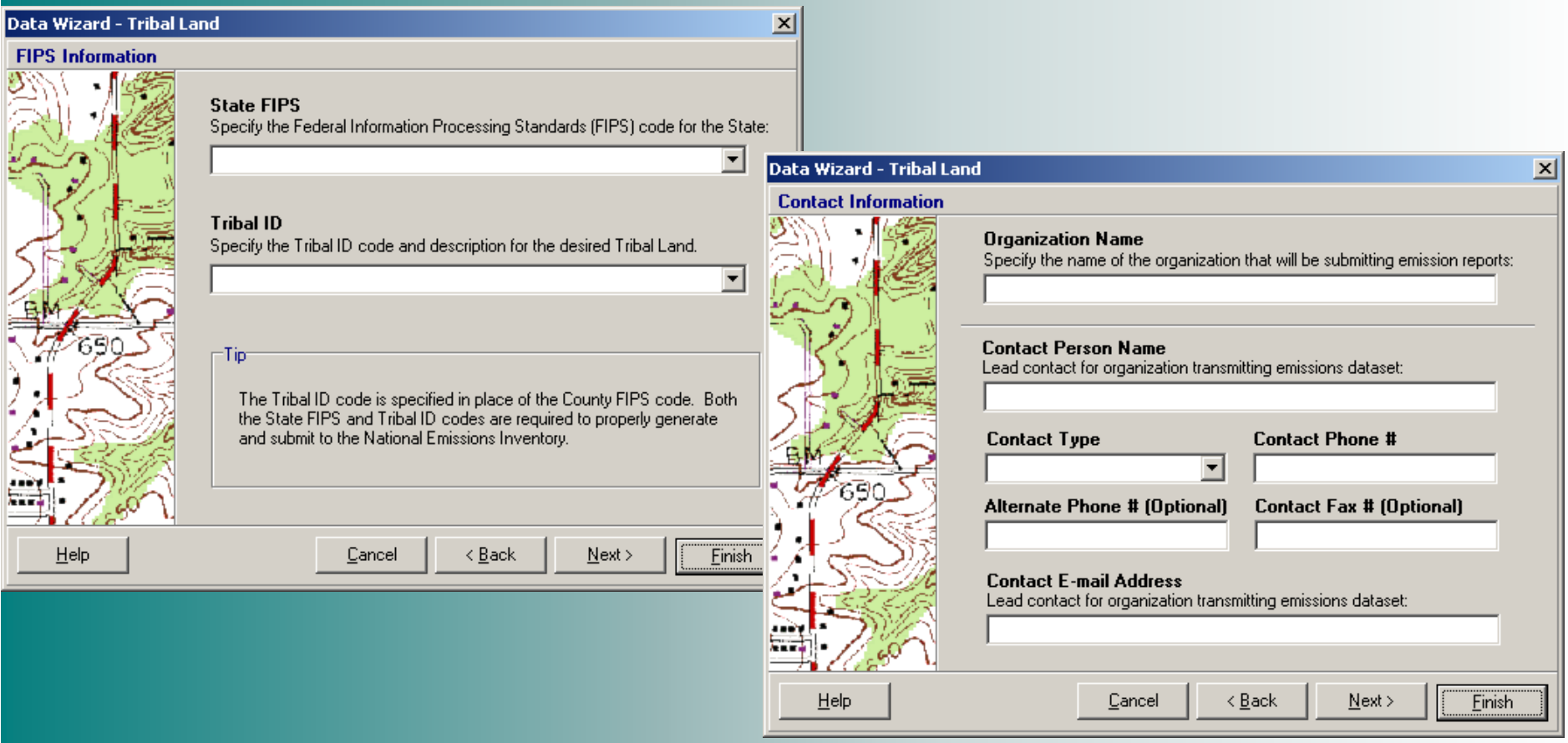
Tribal Land Wizard



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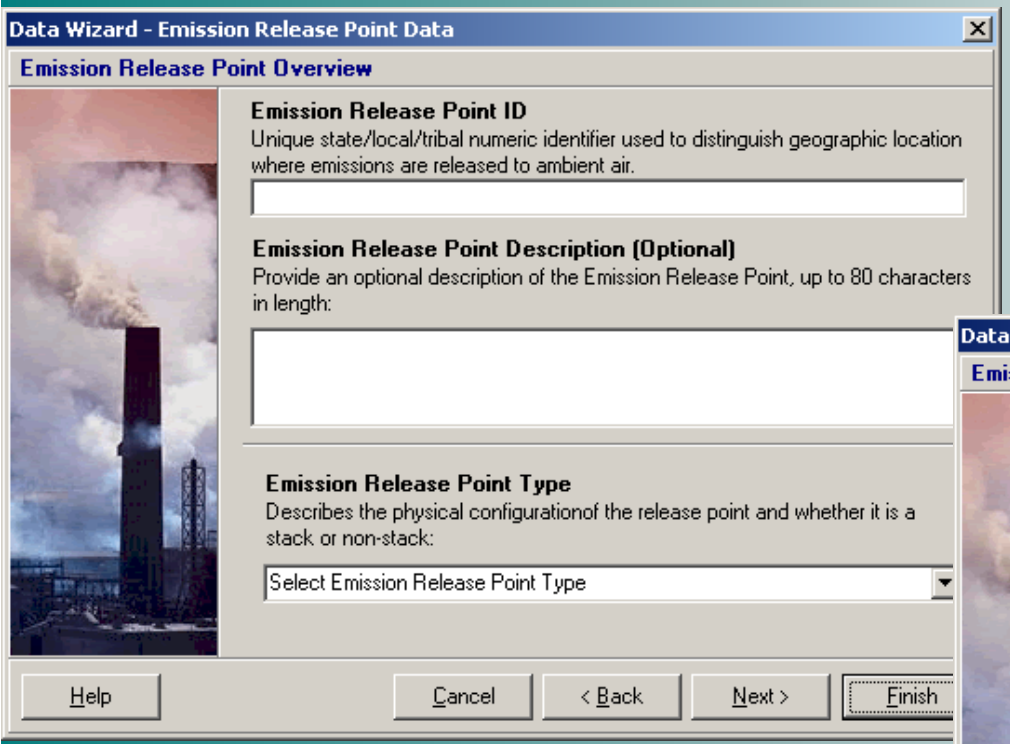
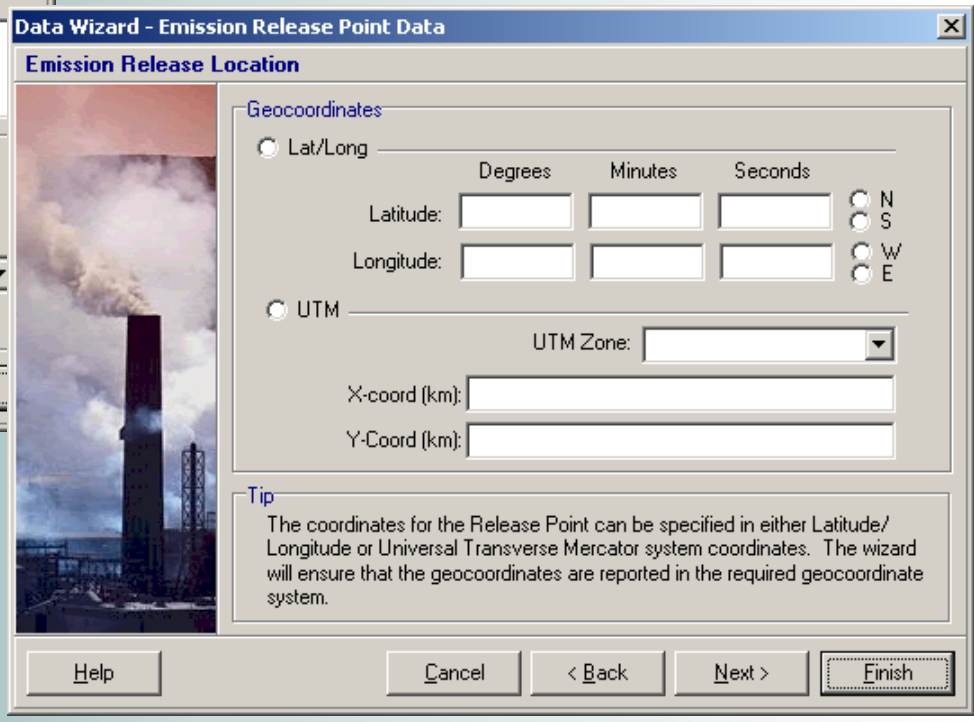
EMISSIONS RELEASE POINT WIZARD





STATE APPLICATIONS

- Architecture designed to support large-scale Eis
- Scalable, Clustering, Mirroring, Data Exchange
- Flexible – Add/Modify Estimation Methods
- GIS Integrated – no additional costs
- Modular Design – easily expand to permitting and other sectors

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Closure

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Closure

- Thank you for your time

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