APPENDIX A1: FIRST WORKSHOP PRESENTATION

Needs Assessment for Evaluation and Design of an Emissions Data Reporting, Management, and Tracking System

Project Intent and Objectives

Intent

- Assess needs of EDMS through Interview Workshop

Objectives

- Determine the Emissions Data to be Reported and Tracked
- Perform a Comparative Analysis of Existing EDMS and Conceptual WRAP EDMS
- Prepare a Report Recommending Needs for the WRAP EDMS

Project Timeline

Determination of Requirements

First Workshop	March 20
Second Workshop	April 24
Submission of Findings	May 16

Comparative Analysis of Existing Systems

Presentation of Comparative Analysis	June 16

Final Report

Presentation of Needs Assessment Report	July 10
Final Needs Assessment Submission	July 25

Introduction of Workgroups

Goals and Objectives of WRAP EDMS

- Publicly Accessible, Internet-based system with GIS functionality
- Repository of WRAP emissions inventories
- Ability to display, analyze, and summarize emissions data by geography and source type
- Ability to report data in user-defined formats

Goals and Objectives (cont.)

- Ability to Annually report and track emissions for the implementations of:
  - Grand Canyon Visibility Transport Commission (GCVTC) (40 CFR 51.309)
    - Clean Air Corridors(CAC)
    - Stationary Sources
    - Mobile Sources
    - Fire Emissions
    - Dust Emissions
    - Pollution Prevention
  - Regional Haze Program (40 CFR 51.308)
    - Best Available Retrofit Technology (BART)
    - Periodic Reports
  - Others

Comparison of Existing Systems

Multiple existing systems were compared:

1. National Emissions Inventory (NEI)
2. Tribal Emissions Inventory Software Solution (TEISS)
3. California Air Resources Board Emissions Inventory
4. Others

NEI - National Emissions Inventory

Address: www.epa.gov/ttn/chief/net/index.html

Data Collection
- Submitted as text, XML, or Microsoft Access Database

Pollutants
- CO, NOx, SO_2, PM_{10}, $PM_{2.5}$, VOCs, and NH_3

Sources
- Point, Area, Mobile Sources (On-road and Non-road)

Data QA/QC
- QA/QC format and content of submitted data

NEI (cont.)

User Preferences
- Simple queries and maps with ability to export
- FTP access for download of bulk data

GIS Components
- No true GIS components available on-line

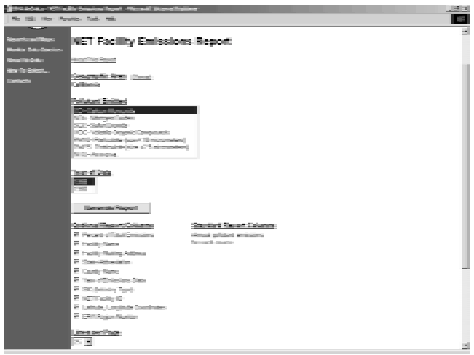
Security
- Public Access to all data

Training
- Publications on data collection/submission process
- On-line instructions for the use of the web based system

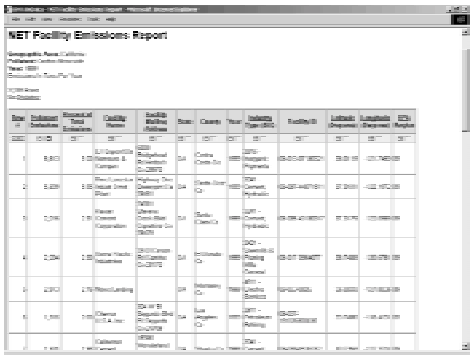
NEI (cont.)

Reporting/Tracking
- Facility Emissions Report
- Facility Count Report
- Facility SIC Report
- Tier Report
- Facility Search Report
- Facility Locator Map Facility/Monitor Locator Map
- Emissions Summary Map
- Emissions Distribution Map

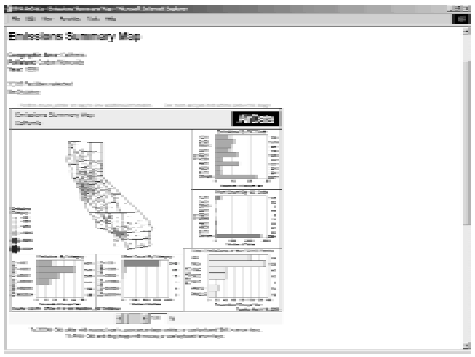
NEI (cont.)



NEI (cont.)



NEI (cont.)



Comparative Summary

TEISS - Tribal Emissions Inventory Software Solution

Address: N/A – Desktop Application

Data Collection

- **Incorporates data from the NEI, NTI, ITEP and MOBILE6**

Pollutants

- **CO, NOx, SO_2, PM_{10}, $PM_{2.5}$, VOCs, NH_3, and Others**

Sources

- **Point, Area, Mobile (On-road and Non-road sources)**

Comparative Summary

TEISS (cont.)

User Preferences

- **Perform emission estimate calculations**
- **Perform modeling**
- **Create maps dynamically**
- **Perform data entry**
- **Export data in formatted text, NIF v2.0, other database formats**

GIS Components

- **Embedded GIS technology**
- **Access to Map Tools to Pan/Zoom/Select**
- **Ability to add/remove GIS Themes to maps**
- **Dynamically query database and highlight affected areas**
- **Ability to export maps/data to ESRI ArcView shapefiles**

Comparative Summary

TEISS (cont.)

Security

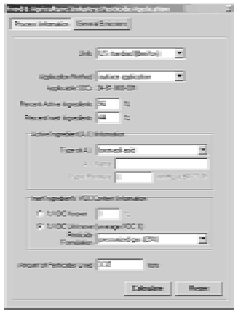
- **Limited Access – TEISS is a desktop application**

Training

- **Complete User's Guide for the system**
- **Help File System**
- **Database Dictionary**

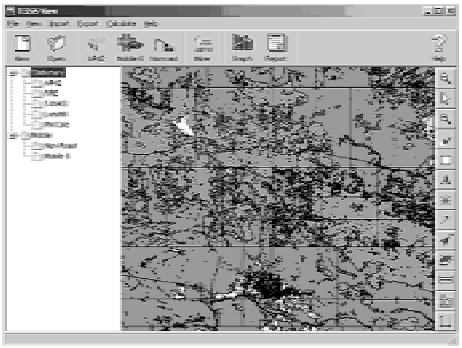
Comparative Summary

TEISS (cont.)



Comparative Summary

TEISS (cont.)



Comparative Summary

California Air Resources Board Emissions Inventory

Address: www.arb.ca.gov/emisinv/eib.htm

Data Collection
- **Plain text or Microsoft Access Database (CEIDARS 2.5)**

Pollutants
- **TOG, CO, NOx, SO_2,Optionally PM_{10}, $PM_{2.5}$ ROG**

Sources
- **Point, Area, Mobile Sources (On-road and Non-road)**

Data QA/QC
- **QA/QC format and content of submitted data**

California (cont.)

User Preferences
- **Simple queries with ability to export data as text**

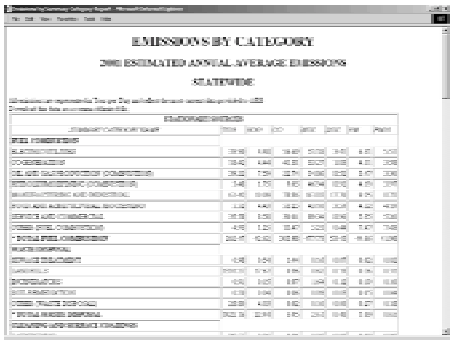
GIS Components
- **No true GIS components available on-line**

Security
- **Public Access to all data**

Training
- **On-line instructions for the use of the web based system**

California (cont.)

California (cont.)



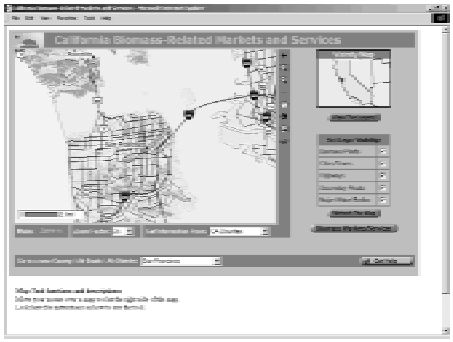
Other Existing Systems

DEN – Delaware Environmental Navigator
Address: www.dnrec.state.de.us/dnreceis

CBRMS - California Biomass Related Markets and Services
Address: www.arb.ca.gov/gismo/biomass

DEN

CBRMS



Comparative Summary

Comparison of Existing Systems

Overall Comparison			
	NEI	TEISS	CAL
Pollutants Tracked	7	7+	5
Scope of Data	US+	Tribal Lands	California
Ability to Query Data	Yes	Yes	Yes
Ability to Generate Reports	Yes	Yes	Yes
Ability to Generate Maps	Yes	Yes	No
Ability to Perform Modeling	Export Dataset	Yes	Export Dataset
Publicly Accessible	Yes	Limited	Yes
Regional Haze Rule Tracking Reqs.	No	No	No

Comparative Summary

Conceptual WRAP EDMS

Data Needs

- Report all visibility-impairing pollutant emissions
- Include all sources and their activity data (at least) on an annual level and a county level
- Calculate and project emissions
- Accept and report data in the NEI format

Data QA/QC

- Regional consistency in emission calculation methodology
- Standard data review process

Conceptual WRAP EDMS

Conceptual WRAP EDMS (cont.)

User Preferences

- Ability to query data by geographical and source categories
- User-selected output format
- Provide emission model-ready input files

GIS Components

- Internet GIS functionality for enhanced data queries

Training

- State and local agencies staff workshop training
- Online user's manual
- General user support

Conceptual WRAP EDMS

Conceptual WRAP EDMS (cont.)

Reporting/Tracking

- Implement all reporting and tracking requirements of RHR
- Implement all reporting and tracking requirements of other regulations, if necessary

System Housing

- To be determined

Conceptual WRAP EDMS

Timeline of WRAP EDMS Development

Completion of Needs Assessment	Summer 2003
Build, Alpha and Beta test EDMS Phase I	Fall 2003
Release EDMS Phase I	Spring 2004
Populate EDMS with 2003 emissions	2004
Collect and QA/QC 2002 STL emissions	2004
Implement "Phase II" of EDMS	Fall 2004
Produce emissions reports for §309	Fall 2004
Prepare 2002 base and 2018 projection years' emissions files for RMC	Fall 2004
Ongoing operation of EDMS	2005 - 2007

Timeline

Workgroup
Breakout Session

Discussion
&
Ranking

APPENDIX A2: FIRST WORKSHOP DISCUSSION SUMMARY

During the Santa Fe workshop, participants raised and discussed the following concerns, questions, preferences, and recommendations:

For the emissions data needs, reporting and tracking requirements of the EDMS,

- It is important to decide who would be the primary user of the EDMS (planners, Scientists, etc.).
- The EDMS should be designed in a modular fashion, including six (6) major source modules: point, area, fire, mobile, biogenic, and windblown dust sources. It should implement the reporting and tracking requirements of §309 first (Phase I), then §308 and other requirements and regulations (Phase II).
- The EDMS inventory should focus on actual emissions rather than potential.
- STL should submit data to WRAP EDMS and WRAP would get additional data from NEI.
- The minimum spatial and temporal resolution of the emissions data should be county and annual respectively.
- WRAP can submit data directly to NEI for the RHR reporting Requirements.
- Visibility impairing pollutants are the working priority, but the system should accommodate inclusion of other pollutants in the future.
- Descriptive source parameters and activity data should be included in the EDMS.
- WRAP and EPA can provide Data international emissions.

For the Data QA/QC,

- The EDMS should incorporate automated QA/QC functionality to check submission format and content.
- WRAP should consult with the submitting agency before modifying any data points.
- The EDMS should include metadata and version control for all data submitted, reported that would be certified by a database administrator (DBA).

For the GIS Requirements,

- GIS requirements were not specifically discussed. However, the Fire Emissions Joint Forum requested ESRI formatted data and the ability to print multiple sized maps from the web-based system because of the previous experience using that software.

For the User Preferences requirements,

- The EDMS should have a mixed level of access by the public with protected functionality
- The EDMS should accept NEI formatted submissions and produce NEI formatted exports. This would allow an easy integration with the TEISS system and easy coordination with STL submission to EPA.

For the Training options,

- WRAP should provide training for consistent emissions factors
- WRAP should provide on-line user manual
- WRAP should provide hands-on training / help desk

For the Physical Location option,

- The location of the system was not specifically discussed.

During the Santa Fe workshop, individual forums also provided their group perspective on the following issues.

For the emissions data needs, reporting and tracking requirements of the EDMS,

- The EDMS should include sub-modules for emission models.
- Trade associations and industry might also submit fire emissions data.
- Modeling, monitoring, and Fire Forums requested daily/hourly temporal resolution.
- Some forum members felt that the EDMS should include emissions calculation and emissions projection functionality.

For the User Preferences

- The Modeling Forum requested SMOKE input formatted exports.

APPENDIX A3: FIRST WORKSHOP PARTICIPANTS

All of the WRAP Forums were represented.