

**WRAP EDMS Project
2005 Task Ideas and Rough Budget Estimates**

The list below provides some basic information on EDMS costs, basic operations, and potential tasks for calendar year 2005. The Forum Co-Chairs are developing a work plan and budget that can be defended at the Planning Committee meeting on July 20-21 in Denver. Some Phase II development tasks will be more critical to meeting WRAP needs than others. The desire is to prioritize and finalize a list of Phase II development efforts over the next month. Priorities are needed in order to adjust efforts during overall discussions on the WRAP work plan.

Ongoing Operations –

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| 1. Hosting (Physical Maintenance and Support): | \$60,000 |
| 2. Administrative Analysis, Assistance, Oversight:
(assumes 1/3 FTE DBA, 1/2 FTE Analyst) | \$119,411 |

Total Ongoing Operational Costs	\$179,411
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Phase II Development Efforts -

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| Inventory Enhancements | |
| 1. Emission Inventory Projections | \$75,000-150,000 |
| 2. Oil & Gas Inventory Improvements | \$35,000-75,000 |
| 3. Fire Improvements | \$121,000 |
| 4. Data comparison of CEMS to EDMS data | \$60,000 |
| Functionality Enhancements | |
| 5. Acceptance of XML data submittals | \$20,000 |
| 6. Automated cloning of databases | \$20,000 |
| 7. Low Graphics Version of EDMS | \$30,000 |
| 8. Method for Biogenic/Dust feedback loop | \$20,000 |
| 9. Use of exchange network for file transfer | \$20,000-90,000+ |
| Data Storage/Reporting Enhancements | |
| 10. Auxiliary Point Source Data | \$10,000 |
| 11. Biogenics emissions at less than annual resolution | \$20,000 |
| 12. Capability to store and retrieve model input files | \$45,000 |
| 13. Geo-coding certain area source categories | \$20,000 |
| 14. Permit tracking capability | \$40,000 |

Results of Preliminary EDMS Steering Committee Discussions-

- EI Projections must be completed in 2005 – methods need to be discussed.
- Fire improvements have several sub-components; priority needed from FEJF.
- Tasks 1-4, 5 and 10 appear to be the most time critical for 2005.
- Tasks 6-9, 11-13 do not appear time sensitive for completion in 2005 and may be able to wait until 2006.

Additional Detail
Phase II EDMS Development Efforts

Inventory Enhancements

1. Emission Inventory Projections

Estimated Cost: \$75,000-\$150,000

Description/Deliverable: Storage of Existing Projections -As currently configured, the EDMS can harbor data for an unlimited number of years and inventory types, however, the storage structure supports emission inventory information. Projection inventories may require modification if additional information, such as growth and control factors, are intended to be stored in the EDMS. This information is sector-specific; sectors included in the EDMS are:

- Point;
- Area;
- On-road Mobile;
- Non-road Mobile;
- Windblown dust;
- Biogenic; and
- Fire.

There may be multiple projection scenarios for any sector produce future estimates using varying assumptions. (Note: This is the lower end of the cost estimate)

The EDMS could be designed to project emissions for future control scenarios for emissions analyses and air quality modeling applications. WRAP-designated economic and other data types and the associated models will be accessed by the EDMS operators for the purpose of projecting changes in emissions in future years. Specific uses of projection inventories include, but are not limited to:

- Special Section 309 tracking
- Clean Air Corridors – using the most recent state emission inventories available through the WRAP EDMS, WRAP will produce a report for each 5 year implementation plan revision (2008, 2013 and 2018)
- Pre-trigger SO₂ Annex – 2003-2018, annual SO₂ emissions report
- Mobile emissions – 2003, 2008, 2013, and 2018

Qualified users would have the ability to request the calculation of projection inventories which would be executed by the EDMS DA or DBA in coordination with WRAP oversight. The model will apply available economic growth data and the IAS algorithms to produce 2018 (and intermediate year) forecasts for new base years (2002, for example). This valuable forecasting capability enhances the overall utility of the EDMS. (Note: This is the higher end of the cost estimate)

Estimated Calendar Time to Complete: 6 months

Benefits: Task provides technical information needed to allow SIP projections of progress through 2018.

Strategic Plan Timing Issues: Inventory projections must be completed during 2005 to be available for modeling.

2. Oil & Gas Production/Distribution Analyses

Estimated Cost: \$35,000-\$75,000

Description/Deliverable: This task will entail detailed analysis of the subject industrial process, formulating appropriate algorithms and data fields for accurate calculation, storage, and reporting of emissions. This approach is to a “top-down” inventory and may entail guidance from other WRAP forums. This analysis appears to be similar in scope and magnitude to “Market Trading Forum Non-utility Sector Allocation”, a project previously completed by Pechan for the WRAP.

Estimated Calendar Time to Complete: 5 months

Benefits: The EI for this sector is inconsistent and appears to be important source of haze pollutants. This task provides additional data requested by Stationary Source Forum

Strategic Plan Timing Issues: Timing needs to fit need of Stationary Source Forum.

3. EDMS Fire Improvements

Estimated Cost: \$121,000

Description/Deliverable: This task would be undertaken in conjunction with oversight from the FEJF. The deliverables would include:

- Incorporate FEJF-specified fire emissions model into the EDMS, to ensure regionally-consistent emissions estimates, including recently available improved base data layers. Entails determining the appropriate model (Consume, FOFEM, others) to incorporate into the EDMS, and applying the results of the analysis.
- Specify EDMS fire activity data reporting formats based on inputs to FEJF-specified fire emissions model.
- Specify EDMS protocol to accept/use/display state/tribal-reported fire emissions data with supporting activity data.
- Develop EDMS tools and procedures to use in estimating emissions changes from annual emissions goals and regional control strategy scenarios.
- Specify daily Smoke Management activity data protocol for transmission and display on the EDMS.

Estimated Calendar Time to Complete: 12 months

Benefits: The EDMS envisioned for Phase I completion does not yet meet the needs of the FEJF. This task would improve and enhance the EDMS capabilities for fire emissions.

Strategic Plan Timing Issues: Certain fire improvements needed to meet tracking/planning requirements.

4. Data Comparison of CEMS to EDMS Data

Estimated Cost: \$60,000

Description/Deliverable: This initiative is meant to use the real-time monitoring data stored in the CAMD database as a check against the emissions stated in the EDMS database. The mapping between the data entities in the two databases has historically been shown to be more challenging than it appears on the surface. US EPA may initiate a project CAMD to NIF mapping in the coming fiscal year.

Benefits: This task would allow CEMS data from EGUs to be compared to reported annual emissions, allowing for inconsistencies to be addressed.

Strategic Plan Timing Issues: To be useful for base case modeling, this task would need to be completed early in 2005 and any updates to emissions included in the base year emission inventory.

Functionality Enhancements

5. Acceptance of XML Data Submittals

Estimated Cost: \$20,000

Description/Deliverable: This task entails adding parsing routines to accept and report data in the XML format.

Benefits: Would allow acceptance of data in XML format. New Mexico needs this format for future data submissions.

Strategic Plan Timing Issues: XML format needed in time for next data submission for New Mexico, which would be next year's SO₂ tracking data.

6. Automated Cloning of Databases

Estimated Cost: \$20,000

Description/Deliverable: This function will allow qualified users to spawn a new database based on an existing database for continued analysis purposes. This function is performed manually by the DBA in the current configuration of the EDMS.

Benefits: Would allow DBA efficiency in generating new databases for analyses.

Strategic Plan Timing Issues: Since manual function already exists, this has no significant impact on meeting strategic deadlines.

7. Low Graphics Version of EDMS

Estimated Cost: \$30,000

Description/Deliverable: Provide users without high-speed Internet connections an attractive and intuitive interface to view, query, and report EDMS data

Benefits: Would allow users that do not have high speed to access data more easily thus improving access/communication of data to certain stake holders. This may be of more benefit to tribal users that may not have high speed computer access as well as other stakeholders and public users.

Strategic Plan Timing Issues: Does not help to meet any strategic planning milestone.

8. Method for Biogenic/Dust Feedback Loop

Estimated Cost: \$20,000

Description/Deliverable: This task entails devising a method to return required revisions to modeled outputs concerning biogenic and dust emissions back to the relevant model inputs. This outcome of this task is more likely to be a statement of protocol rather than specific modifications to functionality of EDMS or other systems.

Benefits: If states/tribes provide biogenic or dust emissions, this method would be a first step at getting those emissions/activities back to the RMC. At this time the RMC would not have the disaggregated information coming from EDMS to feed back into their process.

Strategic Plan Timing Issues: Does not help to meet any strategic planning milestone, would improve data flow between EDMS and RMC.

9. Use of Exchange Method for File Transfer

Estimated Cost: \$20,000-90,000+

Description/Deliverable: This task entails analyzing the feasibility of establishing a node on the EPA's distributed database for emissions. Implementation of this initiative will likely entail the purchase and maintenance of dedicated hardware. The magnitude of the project depends on whether or not the system/information is integrated into EDMS based on the results of the analysis effort.

Benefits: As EPA is moving toward this method of file transfer, this would allow the WRAP to be prepared for the future.

Strategic Plan Timing Issues: Does not help to meet any strategic planning milestone.

Data Storage/Reporting Enhancements

10. Auxiliary Point Source Data

Estimated Cost: \$10,000

Description/Deliverable: Add storage and reporting of certain point source fields such as emission control device, efficiency, additional control information, year on-line, SCC verification.

Benefits: Would improve point source data and allow inclusion of data useful to control analysis.

Strategic Plan Timing Issues: Could assist stationary source forum in control analysis in 2005-2006.

11. Biogenic Emissions at less than Annual Resolution

Estimated Cost: \$20,000

Description/Deliverable: This task would allow for biogenic emission tracking at the hourly, daily, or seasonal temporal resolutions. It entails minor modifications to database and supplementary data submittal formats, as well as data uptake system.

Benefits: Would allow state/tribal and RMC data to be loaded into EDMS at a disaggregated level. The models provide data at these sub-annual resolution and the data is currently being aggregated to an annual level for storage in the system. Would make the data more transparent to users.

Strategic Plan Timing Issues: Does not help meet any strategic planning milestone.

12. Capability to Store and Retrieve Emission Model Input Files

Estimated Cost: \$45,000

Description/Deliverable: The ability to store the input and default files associated with model runs is imperative to the ability to faithfully reproduce those model runs or effectively. Unsecured storage of such files is a risky practice, however, the files and their configuration (relationships among the files) can be stored in a data repository for safety and data sharing purposes. Pechan has existing functionality that can be applied to this requirement. Applicable models include, but are not limited to, MOBILE, NonRoad, NMIM, and SMOKE.

Benefits: Would allow for model input files to be stored in a secure location. Would make the emission data more transparent to users.

Strategic Plan Timing Issues: Does not help meet any strategic planning milestone.

13. Capability to Geo-Code Certain Area Source Categories

Estimated Cost: \$20,000

Description/Deliverable: Entails minor modifications to database and supplementary data submittal formats, as well as data uptake system and GIS display routines.

Benefits: Would allow for certain area sources to be geo-coded in the database (e.g. landfills, minor point sources).

Strategic Plan Timing Issues: Could provide useful geo-information for attribution and control analyses, etc. scheduled for 2005-2006.

14. Permit Tracking Capability (may want to combine with #10)

Estimated Cost: \$40,000

Description/Deliverable: Entails analysis of issue and modifications to database and supplementary data submittal formats, as well as data uptake system.

Benefits: Would improve point source data and allow inclusion of data useful to tracking controls.

Strategic Plan Timing Issues: Could assist stationary source forum in control analysis in 2005-2006.