

# Enhancing



*"A Shared Commitment"*

A Report Prepared by the Technical  
Assistance Team for the *Office of*  
Surface Mining Reclamation and  
Enforcement

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## EXECUTIVE SUMMARY

The Office of Surface Mining Reclamation and Enforcement (OSM) established a team that ~~was~~ assigned the initiative to develop a plan for providing State regulatory authorities with an enhanced level of technical assistance. The team developed an outreach **plan** to survey the States' needs and priorities for technical assistance. Eighteen major technical assistance initiatives were proposed to enhance external relations **with** States in this area. Ten of these initiatives were identified by the States as medium to high priority and action **plans** for these ten initiatives are presented in this report for implementation by **OSM** over the next year.

The top ten initiatives listed in order of priority **are**:

- Enhance Current Technical Training program
2. Expand and Enhance the Technical Information Processing System (TIPS)
3. Develop and Maintain Geographic Information System (GIS) for the Coalfields
4. Establish Automated Information Transfer
5. Hold Topical Seminars/Interactive Forums and Publish Papers on Technical Issues
6. Create Technical Guidance Documents
7. Develop Skills Directory
8. Develop a National Information Transfer Program
9. Develop a Definitive Process for Providing Technical Assistance
10. Develop Joint State/OSM Technical Projects

The action plans developed for these initiatives identify a responsible entity to coordinate the development of specific tasks to implement the initiatives. Five of these ten initiatives **are** expected to be accomplished within the existing budget. Additional budget considerations for the top five initiatives range from \$30,000 for holding seminars to \$2,000,000 for expansion of the TIPS program.

The report **recommends** that OSM analyze the agency's technical workload in order to determine the appropriate amount of staffing and appropriate technical disciplines to meet the current future demands. **A** committee should be established under the direction of the Deputy Director to develop a staffing plan to fully meet the technical needs of the States and the OSM offices. *Also*, the majority of these initiatives fall to either ~~the~~ Denver or Pittsburgh coordinating centers for development; it must be recognized that these initiatives will be prioritized for development **as** resources are made available.

## I. TASK FORCE OBJECTIVES

The Office of Surface Mining Reclamation and Enforcement (**OSM**) adopted a goal to improve external relations and enhance the credibility of the agency. **An** initiative toward this goal is to develop a plan for providing States with technical assistance in order to achieve and maintain high quality programs under the Surface Mining Control and Reclamation Act of 1977 (SMCRA). This plan would promote the development of high quality technical capabilities within **OSM** and the States, promote technology transfer to and from the States, and promote effective working relationships with States to reach decisions that are technically supportable.

In April 1994, OSM established a team to develop, prioritize, and recommend the types of technical assistance initiatives needed to enhance SMCRA program effectiveness. The team initiated **an** open dialogue with States and other stakeholders through **an** outreach effort to identify technical areas and potential plans for enhancement of these **areas**. The outreach survey demonstrates to the States that OSM wishes to encourage a shared commitment with the States, based on two-way transfer of technology. An overall objective is to foster environmentally-sound mining and reclamation **through** the consistent nationwide application of valid scientific principals and techniques.

The anticipated outcomes of this plan include:

**OSM** will provide ~~more~~ responsive technical assistance to States;

**OSM** will provide the States with enhanced tools and techniques;

OSM will enhance technology/information transfer to States;

OSM will expand advanced technical training for the States; and

**OSM** will improve technical procedures, guidance, and documentation on technical issues and evaluations.

The success of this plan will be measured by evaluating such items **as** the number of requests for technical assistance, the number of customer complaints, the timeliness of responses to requests for assistance, the amount of state involvement in technical projects, the number of staff receiving advanced technical training, and the level of usage of new tools and techniques. OSM hopes to implement a planning process that is dynamic and constantly seeks improvement in technical programs and continually serves the States in the most effective and efficient manner.

## II. DESCRIPTION OF METHODOLOGY

The team to implement the **technical** assistance objective established under the OSM's management guidance plan was formed in April **1994**. Makeup of the six-person team included representatives from both Eastern and Western Support Centers, **as well as** the Knoxville, Lexington, and Birmingham Field Offices.

The team first met during May **1994** and developed an implementation plan (Appendix A) to serve, along with the management guidance plan, **as a** framework for achieving the team's goal. In order to list initiatives for enhancing **technical** assistance to the States, the team held a brainstorming session, following the principles of Total Quality Management. **This** session led to a consensus on eighteen major technical assistance initiatives for consideration. The team found that the initiatives could be grouped into four major areas: procedures/documentation; tools and techniques; information transfer; and training. An outreach plan and survey form were then devised to solicit input from State, industry, and citizen interests. OSM offices were also contacted for their ideas. The outreach effort involved the solicitation **of** comments on the ideas proposed from all parties. In addition, commenters were asked to rate the proposed ideas in terms of importance to them. Respondents were also asked for any additional suggestions that might further enhance technical assistance. Appendix B is a copy of the survey document.

Responses to outreach surveys were received in June **1994**, and the team convened for the second time to consider the comments. Responses were received from eighteen States, eleven OSM offices, The Western Interstate Energy Board, Interstate Mining Compact Commission, and the American Mining Congress. During this meeting, the priority ratings submitted by the respondents were tabulated and summarized on a spreadsheet (Appendix C). The initiatives were ranked in order of priority based on responses (Appendix D).

**Both** the States and **OSM** were consistent in identifying what they considered to be the top seven initiatives. There were minor variations between **OSM** and the States with regard to the priority of remaining initiatives. The team developed analyses, **summarizing** the comments and recommendations for implementation. In developing **recommendations**, consideration was given to various implementation options, relative timeframes for implementation, resource needs, and identification of the entity that should have the lead responsibility for implementation. Draft component analyses and recommendations were completed by the end of June **1994** and were then incorporated into the preliminary draft report for review by team members. Team members held coordination discussions with other teams and staff including Technical Information Processing System, Data Management/Computer Integration Team, Branch of Training and Technical Information, External Relations Team, and Support Center staff.

The response to this team initiative was very positive, particularly from the States' perspectives. The majority of commenters support the concept of **OSM** providing enhanced technical assistance to State regulatory authorities. The outreach plan to include States' ideas in the development of this process was **also** well received. The states are genuinely interested in a shared commitment with **OSM** to improve technical skills and abilities to implement **SMCRA**.

**This** report presents the findings, analysis, and recommendations of the team. The report includes three primary sections: the description and analysis of 15 components proposed for enhancing OSM's technical assistance to States; the summary of responses to the outreach survey questionnaire; and the action plans that recommend how OSM should implement the highest priority components. Appendices contain background information to assist the reviewer in understanding the objectives of this task and how the team carried out these objectives.

The components and action plans presented in this report **are** intentionally broad in scope. This approach allows the teams assigned to develop the specific task some flexibility to improve upon and flesh out the detail necessary to better implement each of the concepts. For example, component B.2. supports the expansion and enhancement of the Technical Information Processing System (TIPS). The description and analysis of the **TIPS** component evaluates concepts, but does not involve detailed action items (such as the review of specific **software** that should be considered for addition to **TIPS**).

Support staff **from** the Birmingham, Lexington, and Knoxville Field Offices were **also** involved in the summarization of comments, preparation of the histograms, and drafting of portions of this report. Their able assistance was greatly appreciated.

### III. ANALYSIS OF COMPONENTS

#### A. INTRODUCTION

This section of the report presents a discussion of the eighteen initiatives presented to the States, Office of Surface Mining Reclamation and Enforcement (OSM) offices, and stakeholders as components for enhancing technical assistance. The commenters were asked to rank (prioritize) the components, on a scale of one (lowest) to five (highest) and provide written comments on the implementation of the idea.

The components were categorized in four areas: (A.) Procedures/Documentation; (B.) Tools and Techniques; (C.) Information/Technical Transfer; and (D.) Training. These components are listed in order of priority as ranked by the States. A brief description of the initiative is provided along with the summary of ranking, a summary of comments provided, and the team's recommendations on further actions that should be taken by OSM on the initiative.

The summary of ranking includes an histogram that displays how the commenters rated that particular initiative. The histogram indicates both how the States prioritized the initiative and how all commenters rated it. From the histogram, the reviewer can get quick picture of the overall importance of each element. The comments section presents a summary of all the comments received and indicates whether certain comments were made by States or OSM offices. The recommendations were made based on the direction received from the comments-giving considerable deference for those comments provided by the States.

The following initiatives are described in this report:

#### A. Procedures/Documentation

1. Develop a Definitive Process for Providing Technical Assistance
2. Finalize, Upgrade, and Create Technical Guidance Documents

#### B. Tools and Techniques

1. Electronic Permitting by the Year 2000
2. Enhance/Expand Use of TIPS by the States
3. Continued Development of the Expert System
4. Develop and Maintain Geographic Information Systems (GISs) for the Coalfields
5. Establish Automated Information Transfer
6. Develop Skills Directory
7. Creation of Rapid-Response Technical Teams
8. State/OSM-Shared Commitments on Technical Projects

**C. Information/Technology Transfer**

- 1. Develop a National Information Transfer System**
- 2. Develop a Program To Provide Technical/Information to Outside Stakeholders**
- 3. Topical Seminars/Interactive Forums/Publish Papers on Technical Issues**

**D. Training**

- 1. Enhance Current Technical Training Program**
- 2. Initiate Employee Exchange Program for Technical Staff**

## A. PROCEDURES/DOCUMENTATION

### Develop a Definitive Process for Providing Technical Assistance

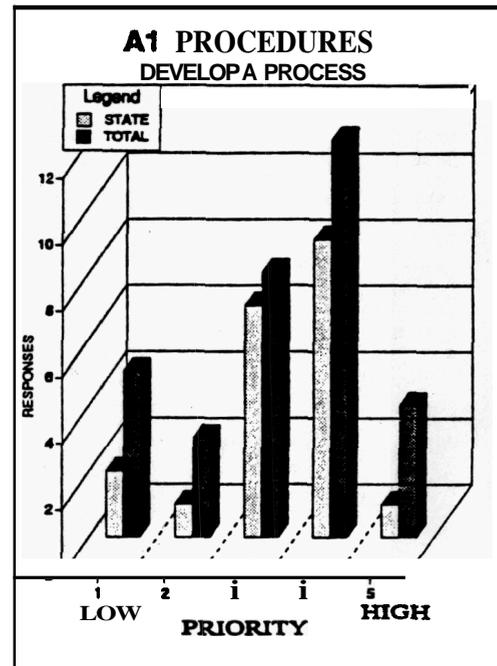
#### Description

The Office of Surface Mining Reclamation and Enforcement (**OSM**) should develop a definitive process for responding to requests for technical assistance. This process would include procedures for: (1) requesting technical assistance; (2) defining the request and this would include contacting the requestor if clarification is needed; (3) how appropriate assignments are made, e.g., single discipline vs. multiple disciplines; (4) how technical assistance will be provided, e.g., reporting format and site investigation protocol; (5) defined timeframes for products; (6) outlining internal review procedures, including quality control review; and (7) follow-up actions to evaluate the effectiveness of the technical assistance and how the technical assistance was used. The process should include how priorities will be established for responding to various types of requests.

#### Summary of Ranking

This initiative ranks as a medium priority. It ranks ninth overall in the survey responses, averaging 3.2 out of 5.0 possible on the rating scale. In the eastern States, this proposal scored 3.5; in the midwestern States, 3.1; and in the western States, 3.6--for a state average of 3.3. In **OSM** eastern offices, the initiative was rated at 3.0; in the western **OSM** offices, an average of 3.4; the lone midwestern **OSM** office reported a rating of 2.0--for an **OSM** average of 2.9. For individual numerical responses see Appendix C.

Figure A1 shows the total number of "votes" for each possible numerical rating. Only eight (25%) of the thirty-two organizations responding to the survey rated the development of a process for providing technical assistance as less than a medium priority. Twenty-four (75%) of the organizations (17 States, 6 **OSM**, and AMC) rated the proposal as medium priority or higher. Sixteen respondents (50%) rated the initiative at or above moderately high priority, and four (13%) ranked it as a high priority. References to state responses include WIEB and IMCC. The AMC response is included as part of the total in figure A1.



## Comments

Written comments were submitted by representatives from 13 States and 9 OSM offices. The following summarizes those comments received:

Overall, the majority of the commenters clearly support the need to develop definitive procedures for requesting technical assistance. However, there is also a general concern that these procedures not become too bureaucratic and burdensome to the point it stifles the process.

There seems to be a high level of frustration from the States in asking for and receiving technical assistance from OSM, mostly on "who" to ask for help. There are some responses indicating that there is enough expertise within the state government to provide their own assistance. One response States a definite opposition toward "a formalized system which would tend to be a barrier to requesting assistance."

Several States commented that OSM is often a last resort for technical assistance, due to lack of timeliness in response, and getting bogged down in going through "appropriate channels." Because of the lack of clearly-established procedures and guidelines, requests for assistance get "lost" in the system and there is discouragement in seeking assistance. Another negative aspect in asking OSM for assistance is needing a yes/no answer, and getting a complex response which gives no clear guidance ("a maybe yes/maybe no response")--resulting in the requested assistance not being provided. Often, once OSM is asked for assistance, the state is shut out--and OSM's decision is insisted upon, even if the SRA is in disagreement.

There is a desire for a joint state/OSM approach to resolve specific issues and problems, to eliminate the feelings of being left out of the decision, and, ultimately, to reach a satisfactory agreement from all parties.

It was suggested that "Requests for technical assistance can be encouraged by ensuring that the request procedure be kept simple, and provide timely and accurate responses.

A suggestion was made that the results of technical assistance on complex issues should be shared with other States, possibly through the WAN or interactive functions. One OSM commenter suggested that OSM should not wait for specific requests but rather be productive and tackle tough issues like AMD head on.

One OSM respondent States that they have encountered technical reports which used unsupported theories as the basis for the findings. "ESC should always assume their reports will be contested in a hearing and consequently, the findings should have a sound technical/scientific base." Some States suggested the process must define **how**

the States would be involved in order to determine what assistance is needed and when it is needed. States requested they should also have the flexibility to use or not use the assistance provided.

The consensus is that a definitive process needs to be developed that is simple, clear, and concise, providing timely, supported assistance.

### Recommendations

There appears to be a greater need for defining and development of these processes from OSM's perspective than from the state's view. The States want to know how to request the assistance and wish to receive timely and efficient assistance. The **OSM** staff want to define what scope of assistance **is** to be provided, how assignments are made, and how priorities for assignments will established. Most commenters support the idea of a follow-up review to assess and improve the technical assistance process.

Currently there is no consistent, definitive process for responding to requests for technical assistance. Some offices have established **an** informal protocol, e.g., a letter of request from the Field Office Director to the Assistant Director. Such systems function but could be improved. The procedures for technical assistance should be simple, efficient, informal, and flexible enough to accommodate emerging (high priority) situations. Likewise, documentation and reporting format should be simple and straightforward with the built-in ability to address varied situations. OSM's approval process for rendering assistance to States must be **as** free of red tape **as** possible.

Since the primary source of technical assistance will be provided by the **OSM** regional offices, it is recommended that these offices develop **the** process and procedures necessary to implement this item. The process should address each of the seven items identified in the description of this element and ensure that the States have the opportunity to review and provide input to development of these procedures. Options that might be considered include: (1) the development of a form to request technical assistance, which would specify such items **as** the type of assistance needed, timeframe, urgency, and the type of product needed; (2) **an** internally-documented procedure outlining how **OSM** processes requests for technical assistance; and (3) a process to evaluate how well the technical assistance is working (e.g., customer satisfaction survey and continual improvement process).

**As** a note of caution, this initiative is not intended to replace the most important aspect of communication between States and **OSM**. The person-to-person contact and effective relationships that exist in some offices should continue **to** be encouraged.

## A. PROCEDURES/DOCUMENTATION

### 2. Finalize, Upgrade, and Create Technical Guidance Documents

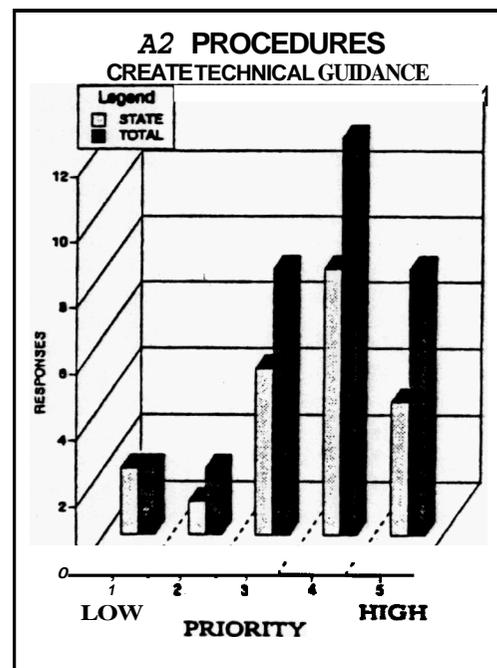
#### Description

OSM should finalize, upgrade, or create technical guidance for appropriate technical areas. The agency has several technical manuals that currently are in various stages of release. Some are printed but outdated, some are in draft form, and others are complete. This initiative would create a coordinated effort to plan, prepare, and distribute technical guidance manuals for areas/topics such as hydrology [including Cumulative Hydrologic Impact Assessment (CHIA)]; geology/geochemistry; revegetation; soils; biology; refuse disposal; and critical earthfill structures. Other manuals that should be considered for development include standard investigation techniques for subsidence, well loss/diminution, blasting complaints, etc. This initiative would also put in place a procedure for keeping these documents upgraded and maintained as new information and technologies become available. OSM would solicit States' input and assistance in developing these manuals. The manuals would also be geared toward regional variations throughout the coalfields.

#### Summary of Ranking

This initiative ranks as a moderately high priority. It ranks sixth overall in the survey responses, averaging 3.7 out of 5.0 possible on the rating scale. In the eastern States, this proposal scored 3.8; in the midwestern States, 3.4; and in the western States, 3.8--for a state average of 3.4. In OSM eastern offices, the initiative was rated at 3.9; in the western OSM offices, an average of 4.0; the lone midwestern OSM office reported a rating of 4.0--for an OSM average of 4.0. For individual numerical responses see Appendix C.

Figure A2 shows the total number of "votes" for each possible numerical rating. Only four (12.5%) of the thirty-two organizations responding to the survey rated technical guidance documents as less than a medium priority. Twenty-eight (88.5%) of the organizations (17 States, 10 OSM, and AMC) rated the proposal as medium priority or higher. Twenty respondents (63%) rated the initiative at or above moderately high priority, and eight (25%) ranked it as a high priority. References to state responses include WIEB and IMCC. The AMC response is included as part of the total in figure A2.



## Comments

Written comments on this document were submitted by 17 States and 9 OSM offices. The following summarizes those comments received:

The general consensus is that there is strong support from both the States and OSM for development of such guidance. The States felt very strongly about OSM involving the States up front in the development of such guidance. They believe that guidance documents would go a long way in forming the basis for mutual understanding on a lot of technical/regulatory issues that have been long-standing. Several commenters indicated that OSM has had a poor history of trying to develop such manuals.

The States also felt strongly that such guidance documents would become tools for oversight and, thus, cause resistance for their use and application. However, many commenters pointed out that lack of guidance (documented) has been a major problem with communication between the States and OSM. They felt it is important for OSM and the States to develop and publicize their technical positions on all issues of importance to effectively implement SMCRA.

Commenters pointed out that several manuals are currently in existence and that this process should include the manuals that have been developed by States. Commenters point out that such manuals would be useful to inspectors, permit reviewers, and the citizens. A distribution list should be developed and OSM should consider putting this information on the WAN.

Commenters suggested that there will be a need for regional and/or state variation in the development of manuals. Also, OSM should be aware of the relationship between regulatory requirements and technical "guidance." The implementation of the technical guidance documents must be consistent with the concept of state-approved regulatory programs. The use of these documents should not be considered mandatory.

A commenter suggested that the manuals would be most useful if written in a manner and at the level of a target audience. Manuals geared for field usage should be developed in a cookbook fashion. It is expected that such manuals would actually reduce the number of routine requests for technical assistance, thus freeing up staff for evaluation of more complex issues.

Several commenters suggested specific areas for development of guidance, other than the examples described, including bonding, revegetation success, dragline roads, ash disposal land fills, 16-2/3 percent exemptions, and approximate original contour evaluations. Commenters suggested that technical teams be created to continually monitor informational databases and upgrade (update) guidance in a computer-accessible format. Another commenter suggested that contractors be used to develop

**this** guidance since most technical staff are too busy actually providing technical assistance.

### Recommendations

Development of written technical guidance by **OSM** has been characterized **as** haphazard **from** a historical perspective. Some fairly good guidance documents, such **as** the National Bonding Handbook, exist and have been heavily utilized and consequently have been updated and maintained. On the other side of the coin **OSM** has developed, or contracted for the development of, guidance manuals that **are** sitting on shelves, gathering dust, and **are** virtually useless because they missed the target or were not maintained to stay current with the state of the **art** in technology. In other instances, when OSM has expended considerable time and effort to develop a guidance **manual** for state usage, the documents were never put into standard practice. In many cases and for many issues, technical guidance is virtually non-existent.

**OSM**, in concert with the States, must make a concentrated effort to first identify all **areas** needing technical guidance. **An** inventory of existing guidance and its status should then be prepared. A listing of missing or needed guidance can subsequently be compiled. **OSM** and the States could then establish the **priorities** for which **areas** should be developed first. Assignments for the development of guidance manuals can then **be** made and, **as** draft documents **are** prepared, **OSM** must ensure that States and peer reviewers **are** closely involved in their review and development.

Several other agencies have developed effective technical guidance manuals that **are** kept updated **as** technology changes. One option for consideration would be a set of manuals developed similar to the OSM directive system; but divided into technical resources areas such **as** engineering, hydrology, geology, biology, revegetation, soils, etc. (or topical **areas** such **as** backfilling and grading, excess spoil, revegetation, subsidence, blasting, prime farmlands, topsoil substitutes, coal mine waste, etc.). Various functional units within OSM could be assigned the task to create and maintain this technical guidance. For example, guidance on items such **as** handling of selenium in the overburden would most likely be assigned to Denver; while techniques for treatment of acid mine drainage would be assigned to Pittsburgh.

One suggestion that would accomplish development of technical guidance while improving external relations would be to follow the model used by the Branch of Training and Technical Information. This model has worked well for OSM's technical training courses and could be followed in preparing technical guidance manuals. Technical training manuals are developed by qualified technical staff from either **OSM** or the States. This method fosters technical transfer (both ways) and builds effective working relations with State's technical staff.

**This** will be a fairly involved and long-term project; however, the benefits would be worth the effort. **Technical** guidance would be developed with the consensus of the States and the **OSM** technical staff. The products will also **be** useful to industry **and** consistency in decisions by regulatory authorities **will** be enhanced **by this effort**. It is recommended that a joint State/OSM committee be established to coordinate **the** development of this **task**. **To** be most effective and long-lasting, the technical guidance must be scientifically based and free **from** political influence.

## B. TOOLS AND TECHNIQUES

### 1. Electronic Permitting by the Year 2000

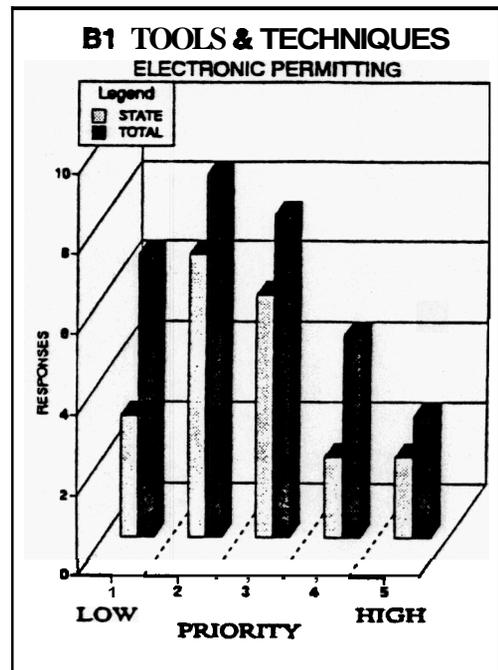
#### Description

To improve the efficiency and consistency of technical reviewers in state and Federal permitting, **OSM** could assume a leadership role in moving toward "paperless permitting." Submission of digital information by an applicant would eliminate the necessity to digitize maps or other spatial data in order to complete a permitting evaluation. Through guidelines, **OSM** could establish standardized data formats for mining permit applications. While every aspect of the permit can become electronic, of particular value to technical staff would be the geologic and hydrologic baseline data, mapping data, parameters for stability analyses, sediment control analyses, reclamation models, etc. Electronic submissions could be more efficiently checked for completeness, data validity, and technical sufficiency. Upon permit issuance, monitoring data would be submitted in a similar format to check if the predicted consequences of mining were on target, or not. Responsiveness to industry would also be improved significantly.

#### Summary of Ranking

This initiative **ranks** as a moderately-low to medium priority. It ranks 13 overall in the survey responses, averaging 2.6 out of **5.0** possible on the rating scale. In the eastern States (**650** permits issued during 1992), this proposal scored 2.5; in the midwestern States (31 permits), 2.3; and in the western States (**5** permits), 3.0--for a state average of 2.6. In OSM eastern offices, the proposal was rated at **2.2**; in the western OSM offices, an average of **2.4**; the lone midwestern **OSM** office reported a rating of 1.0--for an OSM average of 2.3. For individual numerical responses see Appendix C.

Figure B 1 shows the total number of "votes" for each possible numerical rating. Seventeen (53%) of the thirty-two organizations (11 States and 6 **OSM**) responding to the survey rated the proposal as less than a medium priority. Seven (21%) of the organizations (**5** States and 2 **OSM**) rated the proposal as medium priority. Eight (25%) of the organizations (**4** States, 3 **OSM**, and **AMC**) rated the proposal above medium priority. References to state responses include responses from **WIEB** and **IMCC**. The **AMC** response is included as part of the total in figure B1.



## Comments

About a third of the state comments expressed a concern that electronic permitting could adversely affect small operators. Others noted that hard copies would **still** be required for review by the States and citizens. One of these commenters suggested **OSM** identify the portions of permits suited to ADP and gradually incorporate them into electronic permitting. One response felt that the differences in state program regulations would **make** standardizing permit information difficult.

One comment stated: "Don't standardize to the exclusion of site-specific determinations." Another response speculated that electronic permitting could result in a "boilerplate" application of poor quality. A comment read: "The futuristic connotation of such a concept causes some reservation, even when it is obvious that the direction of **all** business is moving towards a computerized environment."

One response cautioned that the complexity to obtain compatible software, relational databases for **OSM**, the State, and industry could be overwhelming. Several indicated that the effort would require many person-hours and costs converting paper files--i.e., limited **resources** and **funds are** seen **as an** obstacle. **A third** response believed OSM should assure that States have adequate computer resources before implementation.

A survey comment stated that there **are** a lot of other types of data than those Listed that could be electronically submitted; however, the commenter **was** skeptical that "responsiveness to industry would be improved."

One commenter said that industry should "drive" this good idea--they have a real interest and could teach **us**. The same commenter said that the government would screw up the effort if it took the lead. One response questioned whether or not the industry and States were ready for and **behind** this. The comment also asked if they (States and industry) were willing to bear the costs necessary to implement such a system?

The AMC felt that **OSM** should not wait until the year 2000, but should act now to make electronic permitting a reality by 1996 (another commenter said it could and should be implemented by 1995). On the other side of the spectrum, commenters felt that the timetable was too quick and unrealistic.

Several commenters cited the fact that several States are already experimenting with this. One commenter believed that OSM should defer to the States prerogative and **just** keep up with the available technology. One of the commenters said it is a cost savings issue and not a technical assistance one. Another response felt OSM guidelines should be incorporated into state regulations by reference. One respondent said such an initiative should not be imposed by nationwide rulemaking.

Some responses indicated that a phased approach is the preferable way to implement electronic permitting. One commenter said "develop for Federal program permits first, then States could adopt or modify." Another said that standards should be established first. Yet another response suggested that **OSM** should "go slowly on implementing so that data is usable and we don't find that it is easier to do it manually, the way we do now." One commenter believed that paper copies of permits should be perfected first. The same commenter said that other areas should go electronic first, e.g., E-Mail, communications, questionnaires on technical assistance, etc.

With respect to the statement in survey that **OSM** should take a lead role, one response stated, "OSM has already taken a lead role **through** the implementation of the **TIPS** next generation system." A second commenter agreed that **this** should be a **TIPS** initiative, and a third felt **TIPS** could **be** the basis for creating electronic databases.

One response urged that **OSM** ensure controlled access if on a network.

Several survey responses agreed that "standardized data **formats** are key to this issue." Another response asserted "One format for all mines!" **An OSM** response said standardization of digital format is critical due to the months spent **trying** to get western federal permit information into a operational database. One comment felt that since "States, Field Offices, and Support Centers have identical computer systems, we should be able to **ask** for data in a format acceptable to the RA."

On the positive side, responses included: "**This** concept could speed bond cost calculation considerably." Another said that any paper-saving efforts will ultimately result in environmental benefits. Another believed: "**This** is the wave of the future. Not only will it decrease permitting time, but it will reduce filing space and tracking by the States and **OSM**." Another felt this would "allow permit review without traveling to state offices."

One comment suggested benefits in developing an initiative for the electronic submission of state program amendments.

### Recommendations

The States generally recognized the benefits of automation, but there was limited interest in total electronic permitting. This, in part, may be attributed to potential economic impacts on the operators and possibly on the States. Five of the six eastern States rated the proposal low, even though the five states approve about 500 new permits annually.

The team recommends that **OSM** not pursue total electronic permitting **as** a high-priority initiative for a national requirement. Rather, **OSM** should stay current with

and encourage the various States' activities concerning electronic permit and data management (e.g., ground- and surface-water monitoring data storage and analysis). **OSM** should disseminate this information and provide assistance to the States. In this way, **OSM** could demonstrate the usefulness of electronic permitting to the States, and perhaps phase in this approach as the various **States** indicate a willingness to adopt these procedures.

The team continues to recognize the benefits of electronic permitting and therefore recommends that, as pilot projects, the Knoxville Field Office and the **Western** Support Center investigate, and implement if feasible, electronic permitting for new Federal program **permits**.

Further, in consideration of provisions in the Energy Policy Act (**EPA**) and the concern for the costs to small operators, the team recommends that the feasibility of electronic permitting be considered for small coal operators under the **SOAP** program. The **SOAP** program provides for the reimbursement of certain permit preparation costs, and Section 2513 of the EPA includes a **SOAP** provision authorizing OSM to provide or assume the cost of permit preparation training for SOAP-qualified operators. The committee recommends that *this* action be conducted in conjunction with the **SOAP** outreach plan that the Assistant Director for Reclamation and Regulatory Policy **will** be conducting.

The Western Support Center currently has electronic permitting projects underway involving several western States, including **Wyoming** and Texas. **The** expertise gained through this experience should be utilized to form the approach **to** the national initiative.

## B. TOOLS AND TECHNIQUES

### 2. Enhance/Expand Use of the Technical Information Processing System (TIPS] by the States

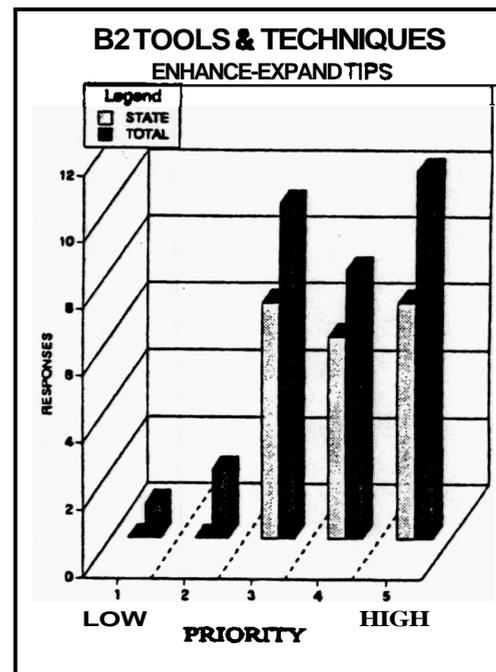
#### Description

The level of **TIPS** use varies from state to state. Under this proposal, an initiative would be mounted to encourage those States who **are** not reaping the **full** benefits of TIPS to expand their utilization. **OSM** and state technical staff who **are** proficient in **TIPS** use would visit the state and gain an understanding of the state's technical operation. These **TIPS** representatives would then demonstrate some **of** the capabilities of **TIPS** and how they might provide an improved analysis over a permitting review currently performed by hand: how complex technical concepts could be reduced to understandable graphical models; or, how multiple iterations (trial-and-error) analyses impossible to perform by hand, could be easily and quickly performed by TIPS software to result in the best-fit reclamation plan or technical evaluation. Further support of the state technical personnel, in the form of training, hotline support, etc., would occur **so** that **TIPS** support **was** provided at crucial stages of TIPS development, assuring steadily increasing TIPS proficiency. **This** initiative is directed primarily toward Title V agencies; but could be applicable to AML agencies **as** well.

#### Summary of Ranking

This item ranks **as** a moderately high priority. It ranks second overall in the survey responses, averaging 3.8 out of 5.0 possible on the rating scale. In the eastern States, this proposal scored 3.8; in the midwestern States, 3.8; and in the western States, 4.2--for a state average of 4.0. In OSM eastern offices, the initiative ranked 3.9; in western **OSM** offices, an average of **3.1**; the lone midwestern **OSM** office reported a rating of 2.0--for a OSM average of 3.3. For individual numerical responses see Appendix C.

Figure B2 shows the total number of "votes" for each possible numerical rating. Only three (9.4%) of the thirty-two organizations responding to the survey rated expansion and enhancement of **TIPS** use by the States **as** less than medium priority. No state office rated the proposal below a medium priority. Twenty-nine (90.6%) of the organizations (20 States, 8 OSM, and AMC)



rated the proposal **as** medium priority or higher. Nineteen respondents (**59.4%**) rated the initiative at or above moderately high **priority**, and eleven (**34.4%**) rated it **as** a high priority. Reference to state responses include **WIEB** and **IMCC**. The AMC response is included **as** part of the total in figure **B2**.

### Comments

Written comments were submitted by **21** state representatives and state advocacy groups, **13 OSM** representatives, and by the American **Mining** Congress. It is clear that **this** initiative has a very high level of support from the States and **OSM**. The **common** theme of the comments is a desire for sufficient **TIPS** equipment, adequate support of **TIPS** users, and training on **TIPS** use. While the theme of the initiative was to "encourage those States who **are** not reaping the full benefits of **TIPS** to expand their utilization," it appears that the majority of commenters felt that they fell into this category. That is, they did not appear to be looking **for OSM** to help **other** States that weren't using **TIPS**; but to help **them** use **TIPS** more!

Only one **OSM** commenter parroted the suggestion posed in the survey description for this initiative, i.e., to use state people who **are** **TIPS**-proficient **as** "emissaries" to demonstrate the **utility** of **TIPS** to low-level or non-**TIPS** users. Thus, it is not clear whether the States would be willing to enter into the "shared commitment" with **OSM** that is necessary to bring States' **TIPS** use up to a common level of proficiency.

It is also clear that **AML** agencies feel like "stepchildren" in the **TIPS** program. **This** is probably because the impetus for **TIPS** has, admittedly, been to use **TIPS** in Title V permitting **actions**, to support enforcement actions, to investigate citizens' complaints, and to assess other technical issues in active surface and underground mining operations. Another factor in the "preferential treatment" of Title V agencies was the FY 1993 appropriation for the purchase of **TIPS** "next generation" (NG) workstations for regulatory programs. **AML** agencies rightfully feel left out, since they see their sister agencies receiving new equipment. The following summarizes the comments received:

Several of the higher-ranked comments indicated that the **TIPS** program is absolutely crucial and encourage its use to be made widespread. Two respondents suggested that **TIPS** might be the basis for electronic permitting. Positive statements about **TIPS** included: "**TIPS** support should receive the highest priority. It is a fundamental tool/service with which we have become very dependent." "Essential **..an** outstanding program." "...proven...a very effective tool...in the development of timely and consistent reviews **of** permit application and revision documents." "...enhancing and expanding **TIPS** use will be beneficial to all States." "...we have a great deal **of** enthusiasm for the program, **for** working with the personnel involved, for the delivery system and methods, and for opportunities to make greater application of the system's capabilities in the future." "This activity should be a

high priority." "Given the success of **TIPS**..this appears to **be a** worthwhile initiative." "Enthusiastically encourage this proposal." One state asserted that open interaction between state and Federal technical personnel must be fostered.

One state suggested that OSM provide funding or a Federal employee in each state to be a "**TIPS** operator." The commenter explained that **this** operator would use the complex **software** and provide the information to the technical **staff** for analysis and interpretation. Another comment suggested that field workers should have **TIPS** on notebook computers to use at minesites.

Two abandoned mine land (AML) agencies responded that Title IV agencies should be provided the same systems **as** Title V agencies. One **AML** program staffer said that they had never had any **TIPS** assistance **and** that it is "**a** mistake of **OSM** to avoid AML" in **TIPS**. Another state agreed that **OSM** has not provided an adequate level of support to enable **TIPS** use.

The majority of all of the comments **stress** the need for **more** training in the use of **TIPS**, from the **hardware/software** to information on the capabilities of the programs. One state commenter said it should be **mandatory**. Another commented: "Equipment is useless if individuals **are** not properly trained." Several commenters suggested that Federal funding must be provided for this initiative, particularly **TIPS training**, inasmuch **as** state agencies have limited resources. Five state commenters agreed, stating that "**OSM** needs to at least **maintain** the level of support and training," and felt that **TIPS** must **be** provided with the "necessary financial commitment for equipment, travel and training." "The ideas for training and support of potential users have merit." Other comments urged **TIPS** to be more closely integrated into existing training programs. One OSM commenter stated that continued education of **OSM** staff is essential so **OSM** can continue to use the system and reap the benefits. **A** state concluded that some training is essential; but it takes a personal commitment to use the **software** before training becomes meaningful. Other comments suggest encouragement and training should not **be** limited to States who are not using **TIPS**. One response indicated training should be a higher priority for States who are using **TIPS**.

The respondents who ranked this item **as** a low priority state they do not use or need **TIPS**. One **OSM** commenter felt that respondents might mark this initiative **as a** low priority if the capabilities and functions of **TIPS** are not understood. The commenter suggested that a "State to State Forum," whereby States that are effectively using **TIPS**, could demonstrate how **TIPS** can be applied successfully. The commenter felt that States may be more receptive to their peer States, rather than by **OSM**.

Several survey responses dealt with the use of **TIPS**. One **OSM** comment suggested that the level of state permitting activity would dictate if the sophistication of **TIPS** is economical or time-efficient. One commenter believed that States must be encouraged to use **TIPS**, but cannot be forced to do **so--TIPS** use should be optional. One OSM response vehemently suggests that there should be no artificial market

created for **TIPS**. **An OSM** commenter expressed strong reservations about the States' ability to use the sophisticated computers **and software** provided them by OSM. The commenter wondered if it would be more effective to use money to staff Field Office with people capable to use **TIPS** when the level of investigation calls for it--as opposed to having equipment sit unused in the States? One **OSM** respondent believed that this initiative would force "technically-challenged" programs to join the 20th Century."

Several comments suggests that the State *AML* agencies do not use **TIPS** because it **is** oriented to Title V. However, one *AML* program commenter believed "the concept of the 'best-fit reclamation plan' applies to bond forfeiture reclamation and **AML** processes." **An** eastern state *AML* respondent stated that "Central Office makes no use of **TIPS** for the following reasons: (1) high costs for **initial** set-up and for yearly "member" fees, (2) limited applicability to *AML* work, (3) limited technical assistance from OSM for initial set-up of hardware, training, etc." The respondent also stated that "**TIPS** would have greater acceptance and higher usage by state agencies if the log-in time period were extended. Apparently, users are logged off after a certain amount of time passes, whether they **are** finished with their program or not!" Limited access to the system in the past **has** been discouraging would-be users in the east. The wide area network was mentioned **as** a means of providing efficient transfer **of** information. Several commenters further suggested that before the time and effort is expended to expand **TIPS** use in States, there should be a determination of why they have not used it. One commenter said that "a great deal of assistance is available on **TIPS**, but only a handful of staff utilize it on a consistent basis." The same commenter felt **that** some of the programs were not "user-friendly."

One **OSM** commenter cited the high turnover in state personnel **as** slowing "**TIPS** progress"--the commenter believed training should be available **as** needed. Several responses indicated that States often don't have the time to use **TIPS**. One respondent explained that there is a problem finding the time away from regular duties to acquire proficiency with **TIPS**. The commenter felt the same can be said of finding the time to assist States. One state explained that "in a large program with over 1,600 permitting actions per year, **TIPS** use is limited because of the availability of only one computer." Another state suggested that funding be provided by **OSM** for **TIPS** workstation "for all program areas."

### Recommendations

Two members of this team are also members of the **TIPS** Task Force. The **TIPS** Task Force is in the process of developing a 5-year plan for the operation and maintenance of **TIPS**, and for the conduct of **TIPS** support provided to the States and **OSM** offices. One thing is readily apparent in the work of both groups. **TIPS** cannot provide the level of support to the States envisioned by this initiative without additional staff and funding.

**TIPS** hotline calls to **OSM** support centers currently exceeded 2,000 per year—using the old equipment. With the installation of new equipment and more advanced modeling software, support requests **are** expected to increase **dramatically**. **Also**, these new tools will require increased training efforts to **assure** state proficiency. The most-recently completed training survey resulted in requests for over 1,600 slots for state and **OSM** staff who feel that **TIPS** training is needed. Seven hundred and seventy (**770**) of the requests for slots were identified by the States **as** their No. 1 priority for training. However, **TIPS** funding for state participants' travel to Denver or Pittsburgh for training is currently limited to \$100,000 annually. This amount might allow approximately **200** state staff to attend **TIPS** training in FY 1995.

States are also clamoring for **TIPS** equipment and software. Only Title V agencies **are** receiving **TIPS** Next Generation (NG) workstations. If Field Office and **AML** agencies **are** to receive NG or other **TIPS**-compatible equipment; or if Title V agencies are to receive additional workstations, funding requirements will be significant--whether it is through **OSM** direct purchase, or through grants to the States. *Also*, because of funding shortfalls, **OSM** has been unable to meet the need to provide plotters and digitizers to all States with the new NG workstations. **This** means that, while the States can create models and other graphical analyses on their equipment, they cannot print a hard copy for use in court, presentations to management, etc. Under the current distributed **TIPS** network concept, **TIPS** **has** only so many copies of the high-end **software** licenses available for users. If all of these licenses are in use, another user wishing to run a particular software will be denied access. If **OSM** wishes to increase support and expand the number of state and **OSM** users, additional funding for software will be required.

**TIPS** support limitations currently exist due to the number of **OSM** staff who are available to assist the States. This is a two-fold problem. First, not just anyone **can** provide **TIPS** support. The software is specialized, and people in various disciplines must be involved in the software specific to their field. No one person can be proficient in all of the different **TIPS** software. All of the **OSM** technical staff who could be proficient in **TIPS** software are not. Many **OSM** staff do not have access to **TIPS** workstations to learn the software; or they do not have time to learn the software due to other duties. In either case, a sufficient number of **OSM** staff must be **TIPS**-proficient to be able to provide **TIPS** support to the States or their **OSM** peers. The second aspect to this problem is that the limited number of **OSM** technical staff who **are** proficient in the use of **TIPS** have constant demands from **OSM** and the States. An **OSM** **TIPS** staffer who is preparing analyses and exhibits for a state or Federal enforcement action, cannot be preparing for a **TIPS** training course for state people or a **BTI** course; they cannot be exploring **or** learning advanced software "tricks" to polish or increase **TIPS** skills; they cannot be researching the latest technology to keep **TIPS** on the forefront; they cannot be fixing a **TIPS** equipment problem in a state experiencing difficulty; they cannot be assisting in the development of a geographic information system for the Clean Streams Initiative; they cannot be conducting permitting oversight; they cannot be evaluating the environmental impact of a Federal permit; they cannot be "showing

off **TIPS** at a technology transfer forum on mining and reclamation; and they cannot be designing an AML project. All of these activities are extremely important for **OSM**; but the limited number of TIPS-proficient staff to do them is a hinderance. Further, there are only so many TIPS-proficient state staff, and their availability is as, if not more, limited.

Funding for increased **TIPS** equipment, software, training, maintenance, and support has been requested for FY 1996 (over \$2,000,000 request). If the request is funded, it will not be sufficient to fully accomplish this initiative; but it will improve **TIPS** support over that which currently exists. However, without increased staffing for **TIPS**, the success of this initiative will be modest. With no additional funding or increased staff resources, the **TIPS** program is in serious jeopardy.

In conclusion, the implementation of this initiative will require significant funding and increased staffing over current levels. The relative cost for implementation is high (e.g., multi-million dollars). The timeframe for implementation is long-term (e.g., FY 1996-FY 1999). The specific costs and timeframes are being developed by the **TIPS Task Force**, and will be provided in their report. The group responsible for implementation should be the **TIPS Steering Committee**. This committee is chaired by the **OSM Deputy Director** and is made up of representatives from the States and **OSM**. Recommendations for the make-up and duties for the **TIPS Steering Committee** are also being reviewed by the **TIPS Task Force**, and will be addressed in their report.

Upon completion of the **TIPS Task Force** management guidance plan report, the **TIPS Steering Committee** should convene and institute the recommended new structure of the Steering Committee (with specific subcommittees for geographic information systems, training, electronic permitting, technology transfer, etc.). These subcommittees would expand the number of state representatives involved in the specifics of **TIPS**. Deliberations of the Interstate Mining Compact Commission (IMCC), Western Interstate Energy Board (WEIB), and the informal mid-continent States groups could be the mechanism for soliciting state participation in subcommittees. The **TIPS Steering Committee** will also need to consider if representation from the industry (e.g., the National Coal Association) and other public interest groups (e.g., the environmental community) would be appropriate on particular subcommittees.

## B. TOOLS AND TECHNIQUES

### Conti Development of Expert Systems

#### Description

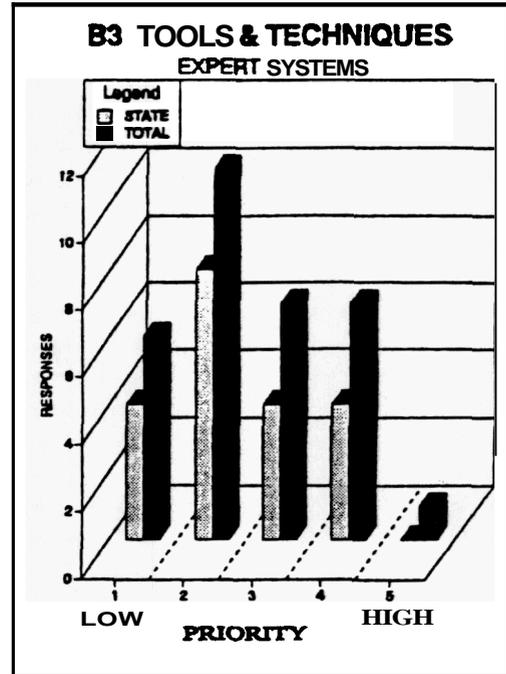
OSM is currently funding development of a computerized system that predicts the hydrologic consequences of mining using "artificial intelligence." The computer program evaluates pre-mine baseline data on geologic, hydrologic, and geochemical characteristics of a minesite as well as the hydrologic regime predicts a worst-case scenario of mining impacts, and assesses the ability of the reclamation plan to successfully mitigate the predicted impacts. The computer has been programmed with the knowledge, thought processes, scientific theories, and "rules of thumb" of experienced hydrologists and geologists to constitute this "expert system." Expert systems are generally used to train or guide entry-level professionals in many fields. While an expert system does not take the place of true expert judgment, it can relieve the burden on senior scientists to evaluate the more complex and controversial issues, i.e., the less experienced staff can utilize the computer to red flag topics where the more experienced professional should become involved.

Artificial intelligence could possibly be used for establishing expert systems for blasting, excess spoil disposal, revegetation, subsidence control, sediment control, or almost any technical area reviewed as part of permitting. Under this initiative, OSM would take a leadership role to provide the expert systems identified by the States as most critical/desirable. In this way, several of the major precepts of Surface Mining Control and Reclamation Act (SMCRA) could be achieved: (1) consistent reviews in state and Federal programs; (2) thorough and improved technical evaluations; (3) application of best professional judgment of the "experts" to all mining and reclamation plans; and, (4) high quality reclamation and enhanced environmental protection. While most suited for regulatory program; Abandoned Mine Land (AML) agencies might benefit from expert systems on landslide correction, subsidence evaluation, etc.

#### Summary of Ranking

This item ranks between a moderately low and medium priority. It ranks last of the fifteen survey responses, averaging 2.6 out of 5.0 possible on the rating scale. In the eastern States this proposal scored 2.5; in the midwestern States, 2.7; and in the western States, 1.6--for a state average of 2.4. In OSM eastern offices the initiative ranked 3.6; in western OSM offices, an average of 2.3; one midwestern OSM office reported a rating of 2.0--for a OSM average of 2.5. For individual numerical responses see Appendix C.

Figure B3 shows the total number of "votes" for each possible numerical rating. Only one (3.1%) of the thirty-two organizations responding to the survey rated continued development of expert systems as a high priority. No state office rated the proposal above moderately high. Fifteen (46.9%) of the organizations (8 States, 6 OSM, and AMC) rated the proposal as medium priority or higher. Seven respondents (21.9%) rated the initiative at moderately high priority. Sixteen (50.0%) rated it below medium priority, and six (18.8%) rated it as a low priority. References to state responses include those from WTEB and IMCC. The AMC response is included as part of the total in figure B3.



### Comments

This idea received mixed reactions among the respondents--although, as the ratings indicate, the majority of comments were negative. Many of the commenters were skeptical that such a system could accurately and objectively perform useful tasks--although it also appeared that a certain amount of misperception of how such systems are developed and actually work exists. The following summarizes the comments received:

The most common reference was to maintaining "a human element." Commenters felt that "expert systems" using artificial intelligence (AI) are impractical and lack validity. Several of the commenters also feared that "expert systems" can be manipulated to give desired results; another said that OSM can use them to invade or to control the SRA; and even as an excuse to eliminate positions. One state elaborated that "OSM's meaning of knowledge, thought processes, and 'rules of thumb' can be and often are different from the States and industry. If OSM's standards are to be applied to what is or is not acceptable using 'artificial intelligence,' then what becomes of a State's authority and primacy? Very impractical." Another comment similarly said that "It's important that...OSM retain appropriate boundaries between state and Federal authority in primacy States ...and where OSM has no role in permitting approval decisions."

Several States commented about the site-specific nature of each permit or problem and felt that it is hard to "generalize all sites." Commenters elaborated, saying, "Too many technical issues require the case-specific application of professional knowledge and experience. Expert systems could take this necessary factor out of the equation, or over-simplify the process by substituting gross assumptions and rules-of-thumb

for professional practice. Further, some systems may reflect the personal biases of their 'expert' developers." One response found the concept: "Not a realistic goal. Computers cannot perform a review with the 'push of button'." Another commenter said that "Computer models are no substitute for trained professionals. A professional should use **all** available tools including computers and computer models, during the decision-making process. Professional judgment should take precedence over "cookbook" approaches." One commenter, indicating that such systems would not be applicable to their program, said that "pre-mining **data** is not available for most of our sites." One **OSM** commenter felt that some States might use the expert system **as** a minimum standard--without review by an expert.

One state considered "expanding AI to other subject areas is a waste of time **and** money. It is a first approximation for less experienced technical people--thus, cannot be considered 'expert'." Another state advanced the belief that there is limited applicability for AI, when the myriad variables encountered in the field are considered. Commenters echoed the theme that other issues are higher priority; or that AI is not **as** important **as** technical assistance to States.

Positive comments supporting this idea stated that **OSM** and the States work together to create this tool. The most in-depth comment came (with some reservation): "**AI** systems generally represent the **integration** of many predictive modeling and optimization techniques. These systems require constant maintenance, updating **and** calibration. Their development **in** many technical disciplines is very promising. However, their inherent limitations must always be considered."

Supporters of the concept suggested that implementation of "any AI system development should be done by consensus only, since each expert tends to have a different opinion on how things should be done." One state said, "Make sure the development of these systems includes state experts." Another said that States and industry should be involved in any such development. One state commented that the use of such systems by States should be optional, and that States should not be oversighted on use. One commenter suggested that the systems should be "geared towards regional coalfields." Another said "**This** is an area that is beyond the state's resources to do themselves. Therefore, we consider this to be a valuable undertaking by OSM to provide to all States."

An OSM Field Office opined: "The medical professions are making great use of this technology and so should we." One state commenter said the expert system will be valuable for "permit reviewers for matching calls on baseline data.." Another state suggested that AI development could be part of TIPS. Several commenters envision positive aspects of AI could speed up varying types of review, establish consistency, and be used **as** a training tool. A commenter also said that training on any such system "would be a must."

Other comments included: So few people understand expert systems at **OSM** that it will take a long time to explain the applications and limitations. **The OSM "Bond Handbook"** could be the basis for a new expert system on bonding.

Several state AML agencies believed that there was little application for expert systems in Title IV programs. A respondent from the AML program welcomed any "training, tools, etc. to help address AML problems." A commenter from an AML agency suggested trying this type of system on "100 sites in a one year to 18-month evaluation." Another AML commenter said that "States presently have adequate information and personnel relating to landslide correction, subsidence evaluation, etc."

### Recommendations

Because of the low level of support for this initiative, **OSM** should confine AI development to the hydrologic expert system, SMARTTEST, at this time. Upon completion of the current contract to expand SMARTTEST to underground mining operations and mid-continent conditions, demonstration of the operation and applicability of AI to SMCRA programs may stimulate increased interest to expand expert systems to other areas. If acceptance of SMARTTEST is widespread, there will naturally be a greater consensus for other types of permitting and AML tools such as expert systems. Such an initiative would be high cost and long term, if similar to the current **SMARTTEST** contract. SMARTTEST development has taken 4 years and approximately \$750,000.

## **B. TOOLS AND TECHNIQUES**

### **4. Develop and Maintain Geographic Information Systems (GIS) for the Coalfields**

#### Description

Most States are in the process of developing, or have expressed the desire to develop, GISs for use in establishing a reliable database of retrievable environmental resource and other types of information necessary to run an efficient State program. Wyoming is in the process of developing an Oracle-based data system on a "shell" created under contract from OSM. **This** database shell contains many fields used by all States for geologic and hydrologic information **as** a result of surveys done of **all** the coal States during the contract work. West Virginia is developing an ArcInfo system to help conduct their program. **OSM**, in the Western Support Center, has developed **an** ArcInfo system for keeping track of more than \$1 billion in bonds on Federal permits. All of these systems are powerful tools for technical staff to analyze such simple things **as** what data already exists in a particular area where **a** new permit application has been received, to such complex things **as** the cumulative impact of mining in a watershed. The GIS might provide a map showing where all coal waste impoundments, sediment ponds, mountaintop removal operations, longwall mines, postmining lands uses **of** silvaculture, or any number of possible permutations desired in a particular geographic area of interest.

Currently **OSM** field offices individually evaluate grant requests for funding of state-by-state GIS development with no consistent approach, no requirement to adhere to the Federal Geographic Data Committee standards, and no long-range plan. **An** OSM/state work group could pave the way for all GIS development efforts and effect coordination, consistency, and cost-savings. **This** type of initiative is equally applicable to both Title IV and Title V.

#### Summary of Ranking

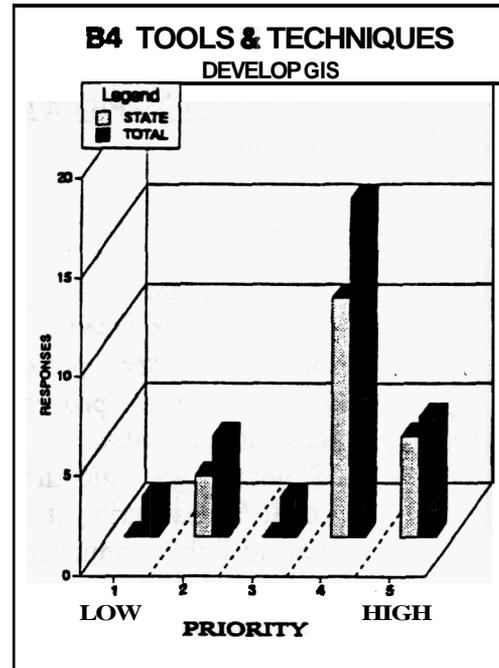
This item ranks **as** a moderately high priority. It ranks third overall in the survey responses, averaging 3.6 out of 5.0 possible on the rating scale. In the eastern and midwestern States, this proposal scored **4.2**; in the western States, 3.0--for a state average of 3.9. In **OSM** eastern offices, the initiative ranked 3.9; in western OSM offices, an average of 3.0; the lone midwestern **OSM** office reported a rating of 1.0--for a **OSM** average of 3.0. For individual numerical responses see Appendix C.

Figure **B4** shows the total number of "votes" for each possible numerical rating. Seven (**21.9%**) of the thirty-two organizations responding to the survey rated development of geographic information systems **as** less than medium priority. Three state offices rated the proposal below medium priority. Twenty-five (78.1%) of the organizations (17 States, 7 OSM, and AMC) rated the proposal as medium priority

or higher. Twenty-two respondents (68.8%) rated the initiative at or above moderately high priority, and five (15.6%) rated it as a high priority. References to state responses include WIEB and IMCC. The AMC response is included as part of the total in figure B4.

Comments

This topic was a hit with most States. Comments concerned what level GISs should be implemented, consistency of format and standards, the need for Federal support, types of data for GISs, the need for training, and concerns about GIS utility and cost.



Positive comments included: "Long overdue." **"Hurry!** The work group has a big job to do." "A way of the future within Title IV and Title V." Several States agreed that: "A good GIS system will go a long way in resolving many issues from technical aspects (e.g., what new permits/studies do exist) to the national AML Inventory. It **will** also be good...for project...and environmental enhancement tracking." "We believe this and related technologies, such as GPS (global positioning systems) and three-dimensional modeling have great potential." **"This** would be extremely valuable and provide much needed assistance." One state said, "The more hydrologic, geologic, and topographic data OSM has in electronic form, the more realistic the decision will be." "This is the future of technical assistance--there are a host of uses for GIS right now, too numerous to mention." "If baseline data collection locations were on a GIS, it would cut down on the need for repetitive data gathering for other operations in the same watershed." **As** with several other of the initiatives, States said that GISs could be done on TIPS.

One theme of the comments was who should implement GISs. One state felt that OSM should help States develop GISs by sharing technology (e.g., gathering ideas from other States/Federal agencies); provide funding for initial hardware, initial software, and training during development; and support maintenance, data entry, and updates for software once the GIS is running. Another state commented: "Anything OSM gets involved in takes too much time and product is usually useless. States should take the lead." Several States asserted that: "State-by-state development is desirable without OSM intervention.." Another state believed that "...a joint state/OSM initiative is critical to the success of this program." Other States agreed that "OSM should take a leadership role with substantial input from States." **One** state agreed with this approach, with the caveat that OSM "must not, however, set out to control such efforts by States.

Some commenters underscored the need for training **as** an important part of **GIS** initiatives. One state said "Different States **are** at different levels of understanding about **GIS**. OSM should sponsor a symposium to promote convergence of understanding and enhancement of good **GIS** ideas."

Several States were in agreement that consistency of format, system compatibility and common standards were essential parts of a **GIS** development effort. One state thought that: "It would be most unfortunate if we (state) had to "reinvent the wheel" expending considerable time and funds for a **GIS** tool." Another said "Without coordination, there will be many state **GISs**--none **of** which will be universally useable." One state made the valid point about Federal standards in saying: "OSM dictating state **GIS** standards can lead to conflicts with state standards." One state voiced the opinion that "**OSM** needs to develop **an** overall umbrella which provides individual States the needed assistance in developing their own **GIS**. While it would be nice to have all coal-producing States using the same system, it is probably impractical. Individual States also have to pursue the integration of their program, including **GIS** databases, with other state programs." Another state concurred with this comment that they "will be 'pulled' simultaneously toward **OSM** and...natural resource utilization perspectives."

Suggestions on the **type** of data which could/should be on **GIS** varied: "I'm sure we could use a national Zip Code **GIS** to show the locations of the **3200** mines reporting coal production." "Permit boundaries, permanent ponds (and information on volume, height, hazard classification, etc.), baseline data." "Surface and groundwater, overburden quality database, comparing baseline to monitoring data." "This would resolve many issues regarding the **AML** inventory and **AML** project selection." "The Wilkes-Barre **GIS** should be accessible by the state." "The OSM Mine Map Repository should be on a **GIS**."

Negative comments included the following: "There have to be specific needs and uses to make it worth the cost and time." "**GIS** development is time and labor intensive. Although a good tool, it can become prescriptive. **OSM** may benefit from it, but some States will not." "Limitations of any **GIS** developed may occur based on the size of the coal program in a particular state." "This has applicability in the prevention of re-work on hydrologic, etc., impact reports on areas; but the OSM should first further evaluate the potential for use of such **a** system, which may be limited." "All internal--no benefit to anyone trying to mine coal."

### Recommendations

Because so many state and Federal programs are either in the various stages of **GIS**-building, or are contemplating it, it is imperative for OSM to coordinate these efforts if consistency and cost-savings are to accrue. President Clinton's April 1994 Executive Order (EO) illustrates that the National Performance Review recognized the disjointed, un-coordinated **GIS** efforts being funded in the Federal sector. The

Department of the Interior (DOI), under the EO, is supposed to establish a clearinghouse for spatial data collection, in order that agencies do not "reinvent the wheel." The DOI is envisioned **as** being the "one-stop shopping center" to see if spatial data requirements may have already been **fulfilled** before any agency would spend money to develop or collect additional data. It is inevitable that States will be applying for grant funding for GIS development. **This** funding should be contingent upon adherence to **OSM** criteria for GIS which is consistent with the Federal Geographic Data Committee's metadata **standards** (data about data). In recognition of the state's needs to have GISs that comport with state agency requirements, **OSM** should formulate a Federal/State work group to develop **GIS** criteria for Title IV and Title V applications. The TIPS Steering Committee is a logical, natural work group for this function. Plans **are** already under development by the TIPS Task force to redesign the TIPS Steering Committee to include subcommittees on pertinent topical areas such **as** GIS, training, **software** applications, electronic permitting, etc.

It may be that a study by a TIPS-related subcommittee would identify economies of scale for software procurement; for mass-purchasing hardware (such **as** mass storage devices to be centrally located for use by **all** States and OSM); for cost-effective procurement of spatial data such **as** digital satellite imagery; and other common costs shared by **all** GIS development. Nevertheless, the cost and time frames for **this** initiative are high. Hardware/software costs **are small**, relative to the costs of data entry and system maintenance. It is assumed that system utilization and maintenance will be long-term.

Several States are presently working on GISs, and some may have good models to follow. The committee should evaluate the status of the States' systems and gather information to assist other States. The committee should develop plans on how **to** best adapt future GIS coordination to the States' ongoing efforts in this area.

## B. TOOLS AND TECHNIQUES

### 5. Establish Automated Information Transfer

#### Description

The **OSM** installed telecommunication equipment, or Wide Area Network (*WAN*) components, in each **OSM** location and state program central office links them to the Applicant/Violator System (AVS), **TIPS**, the worldwide Internet (Information Superhighway) and other shared systems. **This** link also can ultimately serve as an information source for all users with access. With the completion of the **OSM** WAN, many possibilities for information sharing exist. **OSM** plans to add software to the WAN which will allow passing of **mail** from office to office (state and/or Federal). With the advent of the Internet **and** **WAN** telecommunications, several other possibilities exist beyond electronic mail. Expansion should include access at all program and staff levels. **OSM** could also expand the Bulletin Board System concept to establish electronic technical forums. **A** state scientist with a particular question on, e.g., overburden analysis, could pose it to the geochemical forum and get responses or ideas from other state and **OSM** scientists throughout the country. Another forum could be set up for technical papers on mining and reclamation topics written by scientists from around the country. These **types** of networks could even be open to environmental groups, industry, **and** other countries. **This** type of initiative would also **be** applicable to **AML** issues. The benefits **from** establishing **this** type of networking for technical staff **are** readily apparent.

#### Summary of Ranking

**This** initiative ranks **as** a moderately high priority. It **ranks** fifth overall in the survey responses, averaging **3.5** out of 5.0 possible on the rating scale. In the eastern States, this proposal scored **3.7**; in the midwestern States, **3.7**; **and** in the western States, **3.4**--for a state average of **3.6**. In **OSM** eastern offices, the initiative was rated at **3.1**: in the western **OSM** offices, **an** average of **3.2**; the lone midwestern **OSM** office reported a rating of **2.0**--for an **OSM** average of **3.2**. For individual numerical responses see Appendix C.

Figure **B5** shows the total number of "votes" for each possible numerical rating. Only seven (22%) of the thirty-two organizations responding to the survey rated automated information transfer as less than a medium priority. Twenty-six (81%) of the organizations (18 States, **7 OSM**, and AMC) rated the proposal as medium priority or higher. Fifteen respondents (**47%**) rated the initiative at or above moderately high priority, and six (19%) ranked it **as** a high priority. References to state responses include WTEB and IMCC. The AMC response is included as part of the total in figure **B5**.

## Comments

Written comments were submitted by 21 state representatives, 13 OSM representatives, and by the American Mining Congress. The following summarizes those comments received:

The overall consensus for this item is that it is **an** excellent idea. One state felt **that** access to task force reports and findings would be especially useful. A commenter indicated that information screening should be incorporated and that forums for specific disciplines that allow responses from scientists in different States would be very helpful. One state responded that they have already established "linkage" with **two OSM** Field Offices. They feel that following

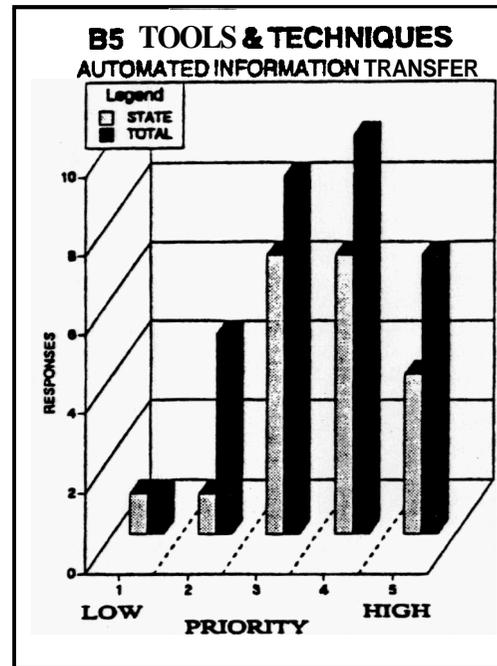
through on appropriate software **and** access procedures; billing arrangement and procedures; and control and security procedures **are** important in effectively implementing this objective. Several responses mention that this tool should be made available to industry and other agencies. One commenter suggested that **this** effort be coordinated and combined with expanded use of **TIPS, GIS,** and the skills directory.

Lack of equipment and cost to implement this idea is **a** main concern, **as** well **as** where to begin looking for the right components. There is mention of security **as** possibly being a problem when opening systems to outside groups.

Several commenters reference the fact that there is already widespread open communications with OSM's WAN. One response States that "the technological tools already exist for such information transfer." One commenter stated that to attempt to develop a proprietary system is wasteful. Making use of existing resources, i.e., the Internet would be more practical and cost-effective. Another stated that it would not be worth the funds expended to increase this network.

Other comments/questions included concerns that this should be a tool, but not a requirement. Who is liable for information (or misinformation) placed on the system? The usefulness of this system depends on how current the system is. We are working with "stone age" approaches in the "electronic age" world. Automated Information Transfer is more than a priority, it is critical to survival.

Additional concerns expressed included the concern of unnecessary expense, without much dividend. One commenter indicated that people who need it wouldn't use it



and people who use it are probably already accomplishing the same end in another manner. Someone expressed a concern that questionable exports might arise. One commenter stated that this is nice, but our technical staff has more important matters to contend with than playing with computers.

### Recommendations

OSM's Wide Area Network (WAN) is currently established and functional in all Field Offices and Area Offices. In addition, connectivity to each of the state offices has been accomplished. However, current plans do not call for all state area office locations to be included. In order to realize all benefits of this initiative it is important to make access to the WAN and/or Internet fully available to every SMCRA-related staff in all of both state office, as well as OSM office locations. Only then can each and every individual have access the full range of information that can assist in effectively implementing SMCRA. To accomplish this objective OSM should offer expansion of the WAN to every state office, including AML as well as regulatory locations. Access to Internet should be included, thereby making access to information resources outside of OSM and States also available. A rough estimate of resources necessary to complete this expansion would be in the \$1,000,000 range for equipment/software and an additional estimated \$100,000-\$200,000 annually for operating expenses. Installation and operation could be accomplished with existing manpower (or through contract). These estimates may vary, depending upon the extent to which the States wish to participate and the number of additional state offices that are included in the expansion.

Key to the success of information transfer under the WAN and Internet will be the usability of the system and the structured programs established to satisfy user needs. Such structured programs would best be established by a permanent OSM/state steering committee established as a partnership and charged with promoting effective intercommunication through extensive use of the WAN and Internet. To effectively implement this partnership it is recommended that the Pittsburgh or Denver Regional Office, in coordination with WIEB and IMCC, take the lead in establishing and maintaining such a partnership. It is also recommended that a technical advisor from ISM also be included. The main function of the committee would involve the establishment of programs and processes designed to facilitate intercommunication between interested parties. An example might include the establishment of a system of "Forums" on specific topics--similar to those that exist on such on-line computer services such as CompuServe and Prodigy. The committee would also develop procedures for communication and transfer of data to maintain consistency in operation. They would also encourage and promote individual and independent communication activities.

## B. TOOLS and TECHNIQUES

### 6. Develop Skills Directory

#### Description

In addition to OSM technical staff, state regulatory and AML agencies contain a wealth of technical professionals with wide experience in many of the issues relative to day-to-day decisions in all program areas. **This** initiative envisions the creation of a database, listing scientists throughout the States and OSM by specialty. If a scientist in one state wanted to seek advice from a scientist in another state on flyash disposal in the backfill, he/she would simply get on the LAN and select the technical skills database, query for flyash expertise, and the agency location and telephone number. Direct information exchange could also take place over the WAN/Internet system. This system would be updated and maintained by OSM.

#### Summary of Ranking

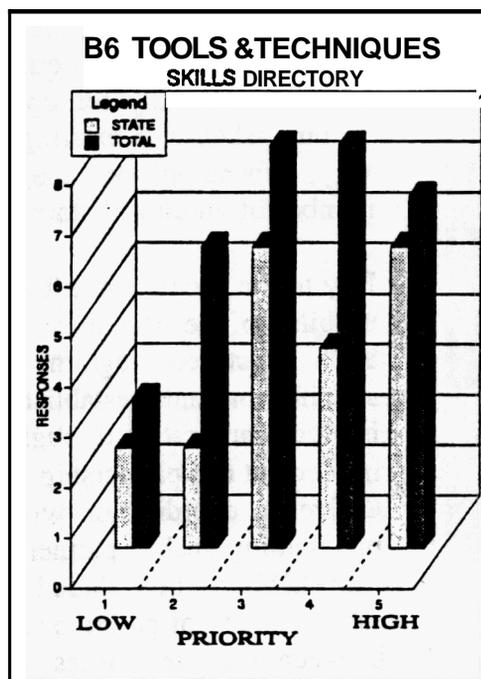
**This** initiative ranks as a moderately high priority. It ranks seventh overall in the survey responses, averaging 3.3 out of 5.0 possible on the rating scale. In the eastern States, this proposal scored 3.2; in the midwestern States, 3.7; and in the western States, 2.8--for a state average of 3.5. In OSM eastern offices, the initiative was rated at 3.0; in the western OSM offices, an average of 2.8; the lone midwestern OSM office reported a rating of 2.0--for an OSM average of 2.6. For individual numerical responses see Appendix B.

Figure B6 shows the total number of "votes" for each possible numerical rating. Only eight (25%) of the thirty-two organizations responding to the survey rated automated information transfer as a medium priority.

Twenty (62%) of the organizations (18 States, 7 OSM, and AMC) rated the proposal as medium priority or higher. Thirteen respondents (41%) rated the initiative at or above moderately high priority; 6 (19%) ranked it as a high priority. References to state responses include responses from WEB and IMCC.

#### Comments

Written comments on this element were submitted by 14 States and 6 OSM offices. The following summarizes those comments received:



The overwhelming consensus for this item was that it is a good idea. Only one negative comment was received, and that **person** believed that word of mouth works fine. The majority of the commenters, **both** state and **OSM**, believe **this** to be **an** excellent idea, would be easy to do, would be low cost, could be done very quickly, and would be very helpful.

The commenters stressed that maintenance of such a system would be important to its continued use and value. The commenters believe that making **this** directory available on the WAN/Internet will make it much easier to use and maintain. The directory should be open to everyone and include such information **as** how the person can be reached by voice, E-mail, and telefax. This concept should promote networking and resource sharing **with** professional associations. This will be **a** very valuable tool for information transfer purposes. One commenter indicated that **this** will be useful to facilitate communication, consistency, and a shared commitment to implement **SMCRA**.

Commenters suggested that this task be coordinated by the regional offices and that expertise from throughout the government, industry, and academia should be considered for inclusion. Some concern **was** expressed about maintaining quality control and what criteria would determine where a person would be listed in the directory. One commenter expressed concern that the listing might increase staff workload due to an increase in telephone calls. A couple of state commenters pointed out that they already have such directories for state staff in place. One commenter fears that state supervisors might limit personnel in getting or receiving assistance. The **Eastern** Support Center has a skills directory, and the Branch of Training and Technical Information has created one for the OSM training courses.

### Recommendations

Although some **OSM** and state offices have developed technical skills directories in the past, they have had limited success, primarily because they were not effectively maintained and advertised. **The** overwhelming majority of reviewers believe that if this directory were set up and properly maintained it would be a very valuable tool and promote technology transfer and communication.

This directory can be assembled relatively quickly and at a relative low cost. It is recommended that a fairly small (4/5-person) committee of **OSM** and state staff be established to work out the details on how to set up and maintain the directory on the WAN/Internet. Once the directory is established it should be updated at least annually. The responsibility for maintenance of this directory should fall to each regional coordinating center. Because this task can be accomplished fairly quickly and easy, it is recommended that it be defined and implemented within the next 6 months to 1 year. The committee that develops this directory should investigate privacy and access issues associated with the use and maintenance of this system.

## B. TOOLS AND TECHNIQUES

### 7. Creation of Rapid-Response Technical Teams

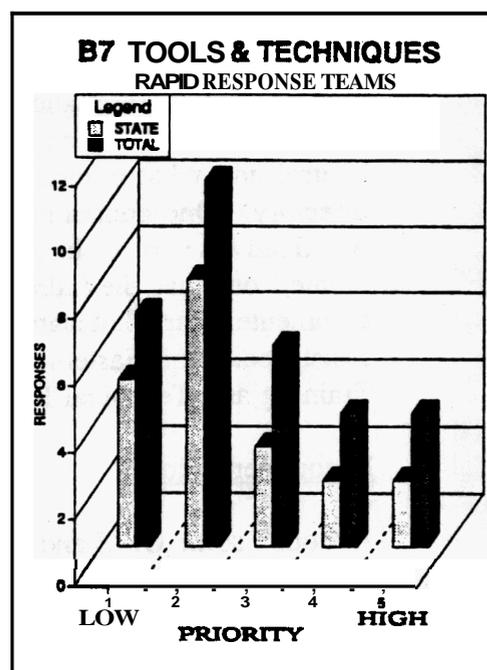
#### Description

This proposal would evaluate the potential of forming a team of top scientists from OSM and/or state staffs to rapidly deploy when a serious environmental problem occurs, or where there was a situation for a high risk potential. In conjunction with the proposed skill directory, certain senior level experts would be coded in a separate field as possible rapid-response team members. This concept was partially developed for use in OSM and could be expanded to include state counterparts.

#### Summary of Ranking

This initiative ranks as a low priority. It ranks seventeenth overall in the survey responses, averaging 2.6 out of 5.0 possible on the rating scale. In the eastern States, this proposal scored 2.2; in the midwestern States, 2.3; and in the western States, 1.8--for a state average of 2.4. In OSM eastern offices, the initiative was rated at 3.3; in the western OSM offices, 3.3; in OSM's midwestern office, 1.0--for an OSM average of 2.9. For individual numerical responses see Appendix C.

Figure B7 illustrates the total number of votes for each numerical rating. Only eight (25%) of the thirty-two organizations responding to the survey rated the formation of rapid-response teams as higher than a medium priority. Twenty-four (75%) of the organizations (16 States, 7 OSM and AMC) rated the proposal as a medium or less than medium priority. References to state responses include WIEB and IMCC. The AMC response is included as part of the total in figure B7.



#### Comments

Written comments were submitted by 24 state representatives and 21 OSM representatives. The comments are summarized below.

The responses to this item varied greatly, with some commenters feeling that rapid-response teams were a good idea; while others felt that this item was redundant to

existing state functions and a waste of resources. Of those who felt that the formation of teams **was** a "good idea," some offered no further discussion, while others indicated that the concept should be implemented with caution, team members should be rotated, and should include inspectors. Limiting team activity only to AML emergencies or similar situations on active coal mines was proposed. Another commenter expressed the opinion that these teams would **be** a tremendous help, "if these persons were well versed in state problems and offered assistance instead of taking over." OSM should be willing to work in tandem with state employees. Another commenter did not feel the need for teams as proposed, but suggested that technical teams "be established to review and evaluate nationwide . . . various technical issues" on a continuous basis.

The remainder of the written comments expressed varying degrees of concern about the rapid-response team concept. Three commenters felt that implementing rapid-response teams opened the possibility for "storm trooper" or "SWAT team" type activities. The rapid-response team approach was characterized **as** "unrealistic and counter productive," interfering with state primacy and requiring "extensive resources of time and money." The team might wrest control from the approved regulatory authority.

Many commenters responded that the **types** of activities which the rapid-response teams would be investigating **are** currently handled adequately by state emergency response teams in conjunction with **OSM** emergency program **staff** or by specialized Federal entities. Others indicated that specialized expertise may be needed from **OSM** to handle serious or complex problems and described the current assistance available from OSM **as** "satisfactory" and not in need of augmentation or remedy. One commenter felt that any assistance requests should come from the state, implying that a rapid response team might be activated without state input. Rapid-response teams could pit **OSM** technical experts against state experts.

Several commenters expressed concerns over delays in team deployment, especially if an interagency effort was required. These delays might defeat the purpose of a quick, effective response to a difficult problem. OSM's inability to "rapidly" deploy was noted.

Specific questions were: "Who would be in charge--the state or OSM?; what if the state and OSM disagreed?; who will be responsible for requesting rapid response teams?; what if the goals of the state are different from OSM's--who prevails?"

One commenter did not like the idea at all, specifying that "OSM should provide assistance as timely **as** it can," keeping in mind the significance of the problem. Another commenter felt that this was not a very important or needed resource. One commenter wanted acid mine drainage problems solved before the rapid-response team concept was implemented. One commenter proposed that telephone conferences with technical experts would suffice, rather than developing a system

of teams. Another proposed that, instead of forming standing teams, all **OSM** scientists and specialists should be put on notice that they **are** subject **to** serve on a special team. **As** with any new initiative, concerns over the availability of funds for complex investigations as well **as** who would pay for the teams' expenses were expressed.

One commenter expressed the concern that most problems, due to their complexity, would not be amenable to a rapid response, but should be approached conservatively.

Some related that there may not be any problem serious enough to warrant this approach. Ideally, careful planning should prevent emergencies.

### Recommendations

Although comments were received in the affirmative, the majority of comments indicate that States have the capability to handle the types of problems which rapid-response teams are envisioned to tackle. Significant concern **was** expressed about the dynamics between **OSM** rapid-response teams and the state entities receiving the assistance, specifically about control over the project and the solutions.

Rather **than** develop a special system of rapid-response teams, **OSM** should continue to strengthen its capabilities to rapidly respond to serious environmental problem, but primacy States should retain the authority to request the needed assistance. This review did not indicate the need to form rapid-response teams **as** a separate program under OSM technical support. The concept of multi-discipline self-directed work teams should be incorporated into the proposal when it is developed.

## B. TOOLS AND TECHNIQUES

### 8 State/OSM Shared Commitments on Technical Projects

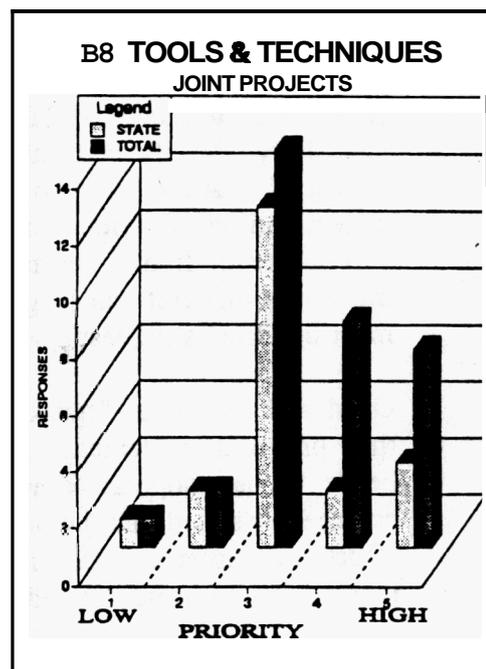
#### Description

The Kentucky Department for Surface Mining Reclamation and Enforcement technical staff joined forces with the Lexington Field Office (LFO) technical staff to evaluate excess spoil disposal; and, subsequently, conducted a joint study on coal mine waste disposal practices in the Commonwealth. Other joint efforts have been undertaken in the western States, such as Wyoming and Missouri, to tackle bond forfeiture and AML reclamation projects. In this manner, technical staff from the state and Federal levels work together to reach agreement on the technical facts, concur on the existing or potential problem areas; and, collectively develop recommendations for solving problems or improving practices. With technical agreement on these areas, the management of Field Office and State regulatory authority (SRA) can make science-based decisions on how to proceed. Other benefits include mutual respect and understanding built between the technical staffs; shared resources result in more quickly resolved issues; and collective opinion usually results in better decisions. A plan would be developed under this proposal to establish a process to jointly identify and study potential issues of mutual concern.

#### Summary of Ranking

This initiative ranks as a medium to moderately high priority. It ranks 10 overall in the survey responses, averaging 3.5 out of 5.0 possible on the rating scale. In the eastern States, this proposal scored 2.8; in the midwestern States, 3.1; and in the western States, 3.0--for a state average of 3.15. In OSM eastern offices, the proposal was rated at 3.8; in the western OSM offices, an average of 4.1; the lone midwestern OSM office reported a rating of 4.0--for an OSM average of 4.0. For individual numerical responses see Appendix C.

Figure B8 shows the total number of "votes" for each possible numerical rating. Six (19%) of the thirty-two organizations (6 States) responding to the survey rated the proposal as less than a medium priority. Ten (31%) of the organizations (9 States and 1 OSM) rated the proposal as medium priority. Sixteen (50%) of the



organizations (5 States, 10 OSM, and AMC) rated the proposal above medium priority. References to state responses include responses from WIEB and IMCC. The AMC response is included as part of the total in figure B8.

### Comments

A couple of the comments indicated that they do not have a need for joint projects. Another noted that the States have capable staff indicating that outside assistance is not necessary. Funds would be better spent elsewhere. A couple other comments noted that joint reviews are currently available and consequently there is no need to formalize the proposal through any new initiatives.

Three comments from different States expresses negative views of the proposal. One of these comments indicated they previously had problems with OSM technical reviews; another noted that some OSM staff will not defer to state technical judgments. Another commenter stated that this goes beyond technical assistance and actually integrates OSM as a partner in the state program. One said this is another self-serving idea; technical people are like attorneys, they are right only 50% of the time.

The remainder of the comments express support for the proposal. Additional specific comments follow.

Plans must be agency-wide and reflect both eastern and western or regional viewpoints to minimize duplicate efforts and assure consistency. The plans should not be on a state-by-state basis.

OSM needs to recognize SRA involvement and individual state programs. The key is "jointly identify and study potential issues of mutual concern--not just OSM concern." And, this would strengthen OSM/state relationships and promote understanding of various points of view. Further, the process would result in better acceptance of final determination. A commenter noted that politics will tend to make this difficult and lengthy, but, therefore, important. Another stated that this must be OSM's highest priority; if OSM does nothing else, do this!

OSM and the States "speak different languages; if technical agreement is reached then program implementation follows." Another comment noted that it is much better to be cooperative as agencies, rather than engage in "turf wars." One commenter stated that the program needs a process for disbanding the team once an effort is completed. OSM management must dedicate the staff to specific projects if this is to be useful. Funds may also be required.

## Recommendations

The state comments note the positive aspects of the proposal and indicate a preference to implement it. While negative comments were made, these comments should be useful in avoiding some of the problems of the past.

The team recommends that the proposal be implemented on a regional basis with the associated States and **OSM** identifying and jointly working on common issues. **As** an example, problems common to a ~~multi-state~~ geographic region could be investigated by technical representatives from **OSM** and the various States. For issues that do not extend beyond a state boundary, the individual state and Field Office would continue their joint reviews in the **same manner** they currently use. Existing and past efforts that have proven successful should be evaluated **as** potential models for future efforts.

## **C. INFORMATION/TECHNOLOGY TRANSFER**

### **1. Develop a National Information Transfer Program**

#### Description

A program of information exchange and dissemination should be developed for the purpose of keeping **all** segments of **OSM**. States, and other stakeholders current on pertinent events, projects, issues and policy matters, and research. Such an information transfer program would not only focus on research activities, but would **also** emphasize everyday technical and programmatic issues of potential interest to others. Included would be project reports on significant technical investigations **and** court decisions concerning significant issues. New or markedly different mining and reclamation technologies could readily be disseminated more **efficiently** to a greater number of people. Technically unique or novel mining-related determinations would be readily available. Both failures and successes that can help define regulatory and AML policy could be quickly disseminated to **all**. New policies, **as** they are developed, would be transmitted to all stakeholders. Information transfer under this type of program would be widespread and quick, facilitating program responsiveness in decision-making.

The research segment of such a program would include **a** review, and if appropriate, **a** redesign of the current program for dissemination of research information, including experimental practices. The program should focus on identifying and categorizing research efforts in various technical areas and ensuring that information on project status **as** well **as** results are being provided to the people who are most interested and can maximize utilization of the results.

**Also** included should be **an** improved technical publication program. A standard review procedure for technical publications should be developed, and ways for improving current publications such as the "RecTech" and "**TIPS** Newsletter" should be examined. Final distribution of publications should include States and outside stakeholders. Formal programs to prepare and disseminate specific findings of a technical nature have been very effective in other agencies that deal in technical matters. Examples of successes include the **U.S.** Bureau of Mines publications of "Report of Investigations" and "Information Circular," and the formal reports published by the Environmental Protection Agency (EPA) to disseminate their technical findings. **OSM** should consider a similar program.

Finally, all efforts should include both Title IV and Title V programs, and, if such a program is to provide for the efficient and expedient transfer useful information, all efforts must be developed around the concept of electronic transfer.

## Summary of Ranking

Originally, the technical assistance team proposed three separate initiatives on information transfer, research and technical publications. **As** a result of a number of comments suggesting that these initiatives appear to be similar, they have been combined into a single technology transfer concept. The numerical ratings of all three initiatives have been averaged, creating an initiative that now **rank**s as a medium priority. Survey responses showed a ranking of eighth by the States and twelfth by **OSM**, with a combined average of **3.0** out of a possible 5.0 on the rating scale. In the eastern States, this combined proposal scored **3.4**; in the midwestern States, 3.2; and in the western States, 2.5—for a state average of **3.2**. In **OSM** eastern offices, the initiative was rated at 2.8; in the western

**OSM** offices, an average of 2.4; the lone midwestern **OSM** office reported a rating of 2.0—for an **OSM** average of 2.6. For individual numerical responses see Appendix C.

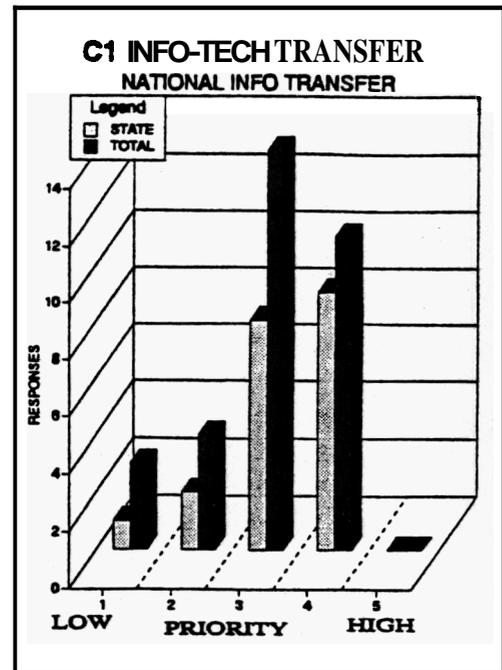


Figure **C1** shows the combined average total number of "votes" for each possible numerical rating. Only seven (21.9%) of the ~~thirty-two~~ organizations responding to the survey rated automated information transfer as less than a medium priority. Twenty-six (**81.3%**) of the organizations (17 States, **8 OSM**, and AMC) rated the proposal as medium priority or higher. Eleven respondents (**34.4%**) rated the initiative as a moderately high priority; nobody ranked it as a high priority. References to state responses include responses from WIEB and IMCC. The **AMC** response is not included in figure **C1**.

## Comments

Fifty (50) written comments were submitted on the three initiatives by state representatives, and **43** by **OSM** representatives. The following summarizes those comments received:

As previously indicated, there were a number of comments suggesting that proposed initiatives **C1**, **C4**, and **C6** be merged (this was done). The overall consensus for the three initiatives was positive. One commenter noted that it would be helpful observing court cases in other States and that the WAN could be used. Another indicated that new policy information dissemination to stakeholders must be a high

priority, and that OSM and the States need better communication. A commenter also stated that it would be useful for both past and current research to be readily accessible. With regard to technical publications, one commenter noted that publication of accomplishments might earn **more** respect **from** congress, state programs, industry, and environmental groups. One respondent stated that the availability of excellent **OSM** and state technical resources would provide opportunities for constructive peer review that is essential in any technical publication.

There were a number of suggestions related to the three **initiatives**. It was suggested that specific information to be transferred be targeted by users and that people be notified directly by **WAN** since the bulletin board is often not read. It was suggested that an annual forum be set up to evaluate results and make changes. One person stated that the focus should be regional. One commenter suggested making use of a file transfer protocol (**FTP**) site for **OSM** on the Internet. Another commenter suggested that research information should be disseminated on the **WAN**. One person indicated that a process for funding is needed. One comment suggested that all research be coordinated together. It was proposed that there **be** a combined effort with other programs and agencies (**AML**, **EPA**, **USBM**, **SRAs**) to create a "combined publication program" by using **MOUs**, etc.

Other comments included concerns that such **an** effort would be duplicative, limited in value, and require a huge effort. One commenter expressed concern over broadcasting how specific companies were prosecuted. One person noted that **Coalex** and **Lexis/Nexis** did not gain acceptance. A limited number of staff would **use** this according to one respondent. Concerns expressed on research efforts included one statement that a technical committee should review research results and accept "good science" results without being biased by politics and favoritism. One commenter indicated that research information is already available on the **OSM** bulletin board and soon on the **FTP** site. A person asked if trade magazines and publications didn't already do this. One suggestion was to use other agency systems already in place. Concerns about a technical publication program included lack of funds and the length of time for producing publications, resulting in information being obsolete. One person indicated that several attempts had been made to develop written, audio/visual and speaking initiatives with an effort to establish **an** author's style handbook and procedures for review and processing of reports, but this effort was pigeonholed. It **was** also mentioned that a drawback was getting **OSM** to report findings when completed and not put it off for various reasons. One commenter expressed concern that since **OSM** is a regulatory agency, many investigations are of a legal nature and are not suitable for widespread dissemination.

### Recommendations

While this initiative did not rank among the top five, it still received strong support. Strong, effective dissemination of information is a cornerstone of any good

organization, particularly where there **are** numerous interrelated organizations. Therefore, this initiative should receive a fair amount of emphasis. With **the** possible exception of the development of **an** independent publication program, little additional monetary resources are likely to be needed. In fact, much of the remainder **of** the initiative can be dovetailed into the initiative on automated information transfer.

It is recommended that the information transfer program be developed around the concept of electronic transfer and that these efforts should fall to the steering committee established under the automated information transfer initiative. Representation from the Headquarters' Reclamation and Regulatory Policy should be added to the steering committee to aid in identifying and incorporating issues, policy, and other nationally-related matters into information transfer processes.

The automated transfer steering committee should coordinate with the Research Committee in developing a program to effectively disseminate research information directly and quickly to **all** individuals through the network. Experimental practices should also be included. The steering committee should incorporate this effort into its workplan development. No additional monetary resources for this effort **are** required beyond those needed to implement the automated information transfer initiative.

With regard to efforts to improve the technical publication **program**, it is recommended **that** WSC take the lead in developing a workplan to examine ways to enhance **both** the "RecTech" and "**TIPS** Newsletter," including electronic dissemination. It is also recommended that **ESC** take the lead in exploring the possibility of **an MOU** with the U.S. Bureau of Mines (or U.S. Geological Survey?) to utilize their publication program **as** a vehicle for establishing a **formal** SMCRA publication effort. ESC should develop a workplan with recommendations and cost estimates related to this effort within 60 days.

## C. INFORMATION/TECHNOLOGY TRANSFER

### 2. Develop a Program to Provide Technical Assistance/Information to Outside Stakeholders

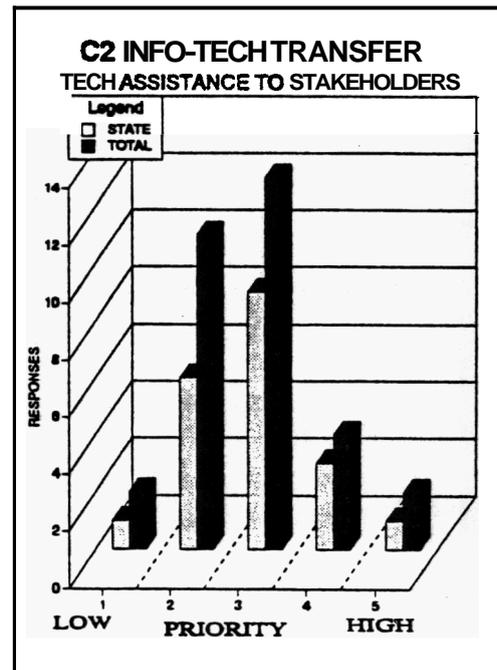
#### Description

Develop a process/procedure designed to provide direct assistance and information to outside stakeholders. There is a need for a process to disseminate information relating to policy, and other significant issues to industry and citizens in a structured fashion. In addition, a mechanism should be developed to provide direct technical assistance to industry under limited circumstances that would facilitate compliance with SMCRA.

#### Summary of Ranking

**This** initiative ranks **as** a moderately low to medium priority. It ranks fourteenth overall in the survey responses, averaging 2.7 out of 5.0 possible on the rating scale. In the eastern States, this proposal scored 2.6; in the midwestern States, **2.9**; and in the western States, 2.4—for a state average of 2.8. In OSM eastern offices, the initiative was rated at 2.8; in the western OSM offices, an average of 2.0; the one OSM midwestern office that responded did not give a rating--the average for OSM offices was 2.2. For individual numerical responses see Appendix C.

Figure C2 shows the total number of "votes" for each possible numerical rating. Twelve (39%) of the thirty-one organizations responding to the survey rated the provision of technical assistance/information to outside stakeholders as less than a medium priority. Nineteen (61%) of the organizations (13 States, 5 OSM, and AMC) rated the proposal as medium priority or higher. Six respondents (19%) rated the proposal at or above moderately high priority, and two (6%) rated it as a high priority. References to state responses include **WIEB** and **IMCC**. The AMC response is included **as** part of the total in figure C2.



#### Comments

Written comments were submitted by 19 state representatives, 13 OSM representatives, and by the American Mining Congress. The comments are summarized below.

Generally commenters felt that this was a good proposal, although not as high a priority as other proposals under consideration. There was general consensus that OSM should communicate information relating to policy and other significant issues to industry and citizens. One commenter felt that the development of this program would serve a twofold purpose: "strengthening technical compliance with performance standards while at the same time building bridges with industry." Compliance with SMCRA could be enhanced by a "more open exchange and availability of information and resources with industry." As an extension of that idea, open forums for the public and industry were promoted so that open dialogue on policy could be enhanced. One responder felt that, if this initiative would reduce the misunderstandings which the public has of state and Federal processes/procedures, it would be "time well spent." The American Mining Congress felt that it would be an excellent idea. Although this proposal might be more useful for Title V issues as opposed to Title IV issues, the use of information exchange technology so that agencies can be "as responsive as possible to outside stakeholders" was supported.

One commenter felt that an outreach program could "increase awareness of AML problems and potential reclamation available" with a target audience including real estate personnel and local politicians. "Programs could include slide shows, informal talks or short seminars." Interagency seminars/training were recommended as these would benefit industry and private individuals. The resource provided through OSM's Mine Map Repository was noted with an encouragement to promote the service more widely to customers and stakeholders.

Some confusion as to the definition of "stakeholders" was evidenced in survey responses. The term "stakeholder" needs to be defined and understood. One commenter felt that citizens would be the main beneficiary of this service. While another felt that the program could be helpful, one commenter was unsure who would receive the information and for what purpose. Although another commenter felt that the program would "enhance state and Federal agency credibility with" stakeholders, there was concern that the program would "demand considerable technical support to be done right."

Several commenters indicated that information provided "would need to clearly differentiate between established program policies and directives and contemplated changes." One responder cautioned that "care would be required to avoid premature dissemination of incomplete or draft information and potential legal conflicts." One commenter stated that OSM should provide requested information to outside stakeholders, but felt that direct technical assistance to industry should be provided by private consulting and engineering firms, if possible. Direct assistance might be perceived as a conflict of interest. A commenter questioned if direct assistance to industry would create a government liability if the advice proved unsuccessful.

The main dissent to the item was that the "information on policy and other issues, and technical assistance to industry from OSM must flow through the States, or at

least be provided with the state's knowledge or permission, not be provided directly from OSM to stakeholders. The provision of technical assistance/information to outside stakeholders was seen as a state function. One state was noted as already engaging in such activities.

Four commenters felt that the proposal was either a duplication of existing systems (Isn't OSM doing this already to some extent?) or could be handled in concert with other items proposed in the survey (i.e., B.5., Establish Automated Information Transfer, or C.1., Develop a National Information Transfer Program). One commenter did not feel that the coal industry requested OSM assistance very frequently, while another felt that "we must get our acts together" before embarking on stakeholder outreach.

### Recommendations

This initiative could be implemented in part through the B.5. initiative, Establish Automated Information Transfer, by establishing a directory on the Wide Area Network (WAN) for information on OSM policy changes and other significant issues of interest to industry and citizens. No separate delivery mode need be established since the informational needs expressed by commenters could be met in part through the full implementation of the WAN in all OSM and state offices. Since there was concerted dissent to providing information directly from OSM to stakeholders, without state knowledge or permission, utilization of the WAN as the delivery vehicle could resolve that problem.

Once this initiative is implemented, care should be taken to describe each informational entity as to its status of completion (i.e., draft, final, comments solicited). Materials for distribution should be screened so that the premature disclosure of unresolved discussions does not occur. The Reclamation and Regulatory Policy Directorate should establish the capability to screen policy and issues for inclusion on the WAN in addition to setting up a system for routine collection and dissemination of appropriate information on issues.

It is recommended that, prior to the initiation of this informational exchange, all States and tribes be queried concerning their willingness to be the primary distribution source to stakeholders. The term "stakeholder" should be clearly defined to eliminate the confusion expressed by several commenters in the use of this term. Once the service is established, its availability should be advertised to OSM offices, state offices, citizen groups, industry associations, and other interested parties with instructions on how to access the information.

An adjunct recommendation which would further this initiative is the development of an outreach program on topics of interest to the public and industry. This could be implemented by polling significant citizen and industry groups concerning topics of interest. Based on the results of this survey, a series of canned presentations

could be developed by OSM Public Affairs and disseminated to OSM offices upon request. OSM offices would be required to offer a rotating series of informal talks/seminars utilizing the materials borrowed from Public Affairs.

The concept of OSM providing direct technical assistance to industry was not well received. It is recommended that OSM be the last resort for technical assistance, after industry has exhausted the capabilities of private consulting and engineering firms. Technical information developed by the government should be provided either free of charge (downloadable from WAN would not require copying charge) or with only photocopying charges required.

## C. INFORMATION/TECHNOLOGY TRANSFER

### 3. Topical Seminars/Interactive Forums/ Publish Papers on Technical Issues

#### Description

As a result of the comments received, items **C.3.** and **C.5.** have been combined.

Establish a program of regular seminars and interactive forums focusing on the everyday technical issues encountered in running the regulatory and *AML* programs. Seminars **and** forums would be specific to individual technical areas or issues and would be aimed specifically at staff level technical specialists. Input would be solicited from technical sources within the States, **OSM**, and other stakeholders.

Outputs from these seminars and forums would include published documentation in some form relating the discussions, ideas and recommendations that might arise. The results of these efforts could be utilized to help decide on technical **areas** needing more research, policy and/or procedural guidelines.

#### Summary of Ranking

**As** a result of a number of comments suggesting that **C.3.** and **C.5.** are similar, they have been consolidated, and are now represented **as** a new **C.3.** The numerical ratings of the two initiatives have been averaged, creating an initiative that now ranks **as** a medium priority. Survey responses showed a ranking of **fifth** by the States and by **OSM** with a combined average of **3.4** out of a possible 5.0 on the rating scale. In the eastern States, the combined proposal scored 3.8; in the midwestern States, **3.2**; and in the western States, 3.3--for a state average of **3.5**. In the **OSM** eastern offices, this combined item was rated at 3.0; in the midwestern office, 2.0; and in the western office, 3.5--for an **OSM** average of **3.1**. For individual numerical responses see Appendix **C.**

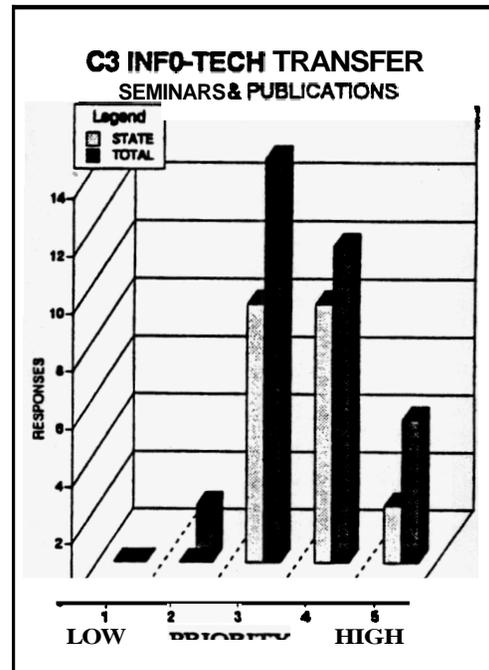


Figure **C3** shows the combined average total number of "votes" for each possible numerical rating. Only Two (**62.5%**) of the thirty-two organizations responding to the survey rated Topical seminars and interactive forums **as less than** a medium priority. Thirty (**93.8%**) of the organizations (20 States, 9 **OSM**, and **AMC**) rated

the proposal **as** medium priority or higher. Ten respondents (31.3%) rated the initiative **as** a moderately high priority, **and** five (15.6%) ranked it **as** a **high** priority. References to state responses include responses from WIEB and **IMCC**. The AMC response is not included in figure **C3**.

### Comments

Thirty-nine written comments were submitted on the two initiatives by state representatives, two by outside stakeholders, and thirty-three by **OSM** representatives.

**This** combined initiative received an overall positive response and **was** considered a good means for interaction between the States and **OSM** and between individual States. One comment even suggested that the idea is superior to the development and implementation of guidance documents. Specific topics mentioned include abatement techniques for landslides and subsidence, revegetation success for bond release, inspection issues, and computer technology issues. A number of respondents suggested combining the **OSM** forums and **seminars** with established meetings such **as** ASSMR or the annual *AML* conference. Several also suggested that these seminars/forums could also be developed in conjunction with technical training. Regionalization of the seminars/forums was mentioned **as** being important. One proposal **was** that this concept be a "springboard for investment **by** **OSM** into downlink capabilities (see also item B.5., Automated Information Transfer) at each Field Office or at least in appropriate locations. These could be used for all types of information transfer" and would be "extremely useful for the efficient dissemination of knowledge at the technical level. Employees could participate in any number of informational exchanges without the expense and disruption of travel. The use of **WAN** downlink systems would also enhance agency consistency since many employees could hear the same message **at** the same time." Videotaping the seminars/forums was also mentioned **as** a means **of** wider distribution of information. A suggestion **was** made to examine the successful approach used by WSC Denver in identifying topics.

Few specific comments were directed toward publication of technical papers. One commenter stated that: "Published papers would be good if they are valid and reviewed by peers. They would be harmful if they are outlets for opinions of individual authors."

Concerns were raised by several state respondents on whether the seminars/forums would result in policy decisions, and what "official" status the results of the seminars and papers would have. This would cause "the value of the forums to diminish significantly as each party moves to protect its interests rather than *seeking* to expand knowledge." Several States were concerned about the cost of traveling to the meetings. Also, there **was** caution about having too many of this type of activities.

The general consensus **is** that seminars/forums are a good idea that should be developed and that state participation is crucial.

### Recommendations

The only successful **OSM** seminars/forums that have been done were through WSC. The interactive forums on bonding and alternative sediment control measures were both highly successful. The **WSC** is currently working on a plan for the development of western seminars/forums in the future. ESC is planning an interactive forum with the Commonwealth of Kentucky in the fall of **1994**. Recently ESC put a lot of effort into the highly successful American Society for Surface Mining and Reclamation International meeting that was more effective in reaching a wide audience of state, industry, environmental, academia, and consultant representatives. OSM should evaluate the most effective way for technology transfer to occur. It takes a lot more effort and cost to do individual interactive forums than to support an national/international forum; however, interactive forums target more specific groups who otherwise might not get to go to an international meeting. ESC and Headquarters **are not as** involved **in** this effort. Therefore, there needs to be an eastern initiative started on **this** item. This could possibly be done **as** part **of** the External Communications Task Force effort or **by** the Technical Training Steering Committee. The committee should coordinate their efforts with the **OSM** Public Relations Office in Headquarters.

**OSM** does not have a process for the formal publication of technical papers. **In** order for the seminar/forum technical papers to be credible, OSM must have a publications program. This effort would take time and money to develop and would take additional staff to maintain. Recommendation for the development of an OSM technical publication program is covered in item C.1. in this document.

## D. TRAINING

### 1 Enhance Current Technical Training Program

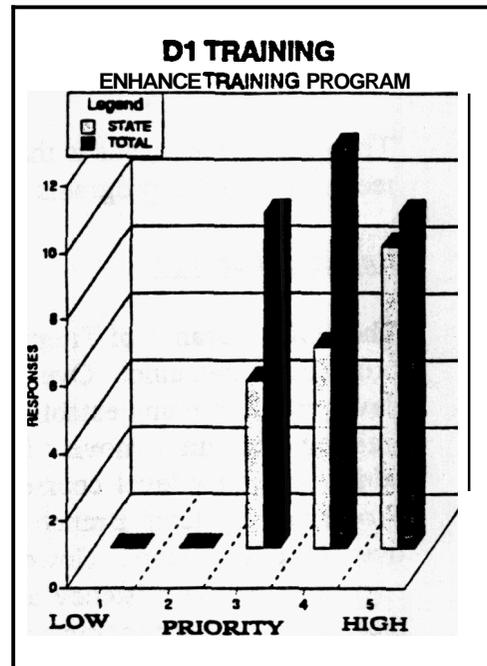
#### Description

The majority of the current technical training offered by OSM is geared either: (1) to the entry level person; (2) to increase awareness of someone in another technical discipline; or (3) to teach a specific TIPS software application. The agency must create more advanced technical training classes for experienced employees that combine both the technology and the regulatory aspects of SMCRA. These classes would be designed for specific technical areas (i.e., water quality impacts of mining, rock durability and mechanics, subsidence prediction techniques, prime farmland yield, blast design analysis, revegetation success or advanced stability analysis).

#### Summary of Ranking

This initiative ranks as a very high priority and received the highest ratings of all survey responses, averaging 4.0 out of 5.0 on the rating scale. In the eastern States, this proposal scored 4.3; in the midwestern States, 3.9; and in the western States, 4.2--for a state average of 4.2. In OSM eastern offices, the initiative was rated at 3.7; in the OSM western offices an average of 3.8 and 3.0 for the single OSM midwestern response--for an OSM average of 3.6. For individual numerical responses see Appendix C.

Figure D1 shows the total number of "votes" for each possible numerical rating. None of the thirty-two organizations responding to the survey rated enhancement of the technical training program as less than medium priority. Twenty-two (68.8%) of the organizations (15 States, 6 OSM, and AMC) rated the proposal as moderately high priority or higher. Eleven respondents (34.4%) rated the initiative as both moderately high priority, and eleven as a high priority. Reference to state responses include WIEB and IMCC. The AMC response is included as part of the total in figure D1.



#### Comments

Written comments were submitted by eighteen state representatives, one outside stakeholder, and twelve OSM representatives. The following is a summary of the comments:

OSM's technical training program received high praise from almost all state commenters. Practically all respondents felt the need for enhanced technical training to be critical. As well as the topics mentioned in this item, a need for advanced training in hydrology, acid-forming materials, vegetative sampling, statistical analysis for revegetation success, AML reclamation activities, and expansion/improvement of computer training were also indicated as needed areas for training. It was even mentioned that topical seminars (C.3.) and interactive forums (C.5.) could help develop this element of technical training.

One respondent stated that there should be an emphasis on "quality and not quantity" when it comes to training. Also, one respondent felt that more "hands on problem than theory" training is needed. Several commenters suggested that OSM could bring in outside trainers such as professors or scientists for some of the more highly-specialized training. The importance of using instructors from the States whenever possible was mentioned. It was suggested that advanced training could be used as continuing education for professional certification requirements and will keep professionals up-to-date with current technology. However, the continued need for the introductory level training courses was also emphasized. One commenter suggested that OSM should evaluate its objectives for training and be careful that we do not try to substitute this training for a college education.

The general consensus is that advanced training is essential for both state and OSM technical staff as programs develop and mature.

### Recommendations

The OSM's Branch of Training and Technical Information (BTTI) technical training program is dynamic. Over the past 5 years a number of new classes have been developed and many established classes are being upgraded and improved. OSM's training program is moving in the right direction. However, BTTI must continue to add new higher level courses and to upgrade others. The Technical Information Processing Systems Branch (TIPS) computer training program has also expanded over the past 5 years. However, the BTTI training and TIPS training are basically separate. For consistency and better overall communication, the management of these two training programs should be combined, at least to some degree, especially for scheduling. This has been done in part in FY 95. BTTI is developing short courses (1- to 1-1/2-days) on technical topics which go into more depth than the overview given by other BTTI courses. An example is the recent Erosion and Sediment Control Course developed by ESC and premiered in Knoxville this spring. These types of courses have the potential to fulfill this initiative.

Since 1989, BTTI program offerings have expanded from 11 core courses to 24 core and specialized courses.

Beginning in FY 1994, **BTTI** began piloting mini-courses which **are** specifically aimed at meeting the advanced needs of experienced inspection and program staff (e.g., Soil Erosion and Sediment Control, Wetlands, and Expert Witness). Additionally, over the past few years **BTTI has** made major revisions to most original courses to adapt them to meet regional needs and to more specifically address on-the-ground issues. For example, discussions on prime farmlands have been added to Midwestern versions of both the Principles of Inspection and Soils and Revegetation courses.

The Advanced Training Team report (**MGPE. 8**) will recommend that **BTTI** should continue to assess student needs by conducting **annual** and periodic needs surveys and by obtaining input through the Technical Training Steering Committee whose members represent all State, Tribal, and **OSM** offices. (**TIPS** representatives **are** included on the committee.)

The development of advanced training courses is costly. The Technical Training Steering Committee could look into determining what advanced technical training classes are most needed by the States. The recommendation of hiring outside trainers for the highly specialized classes might be feasible. **TIPS** has already done this for several of their advanced computer classes.

The **BTTI** is currently working on a program for continuing education units (**CEU**) which would give more **validity** to OSM's **training** courses. **Some TIPS** classes currently being taught at the University of Wyoming do give CEUs.

## D. TRAINING

### 2. Initiate an Employee Exchange Program for Technical Staff

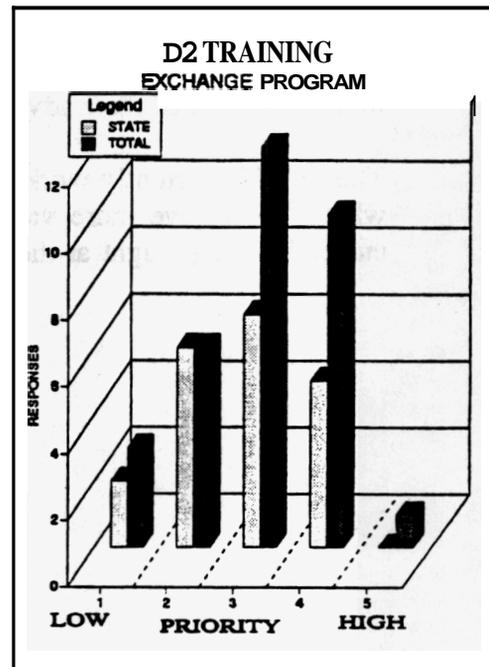
#### Description

OSM's technical staff needs to broaden its **outlook** on dealing with technical issues. **An** employee exchange program would enhance the staffs technical capability and improve **SMCRA** consistency. The program could consist of temporary assignments both inside and outside **OSM**, such as temporary assignments to different groups with **OSM** (i.e., permitting or inspection) or Intergovernmental Personnel Act (IPA) assignments to a state to provide hydrology or engineering assistance. The result would be a technical staff with a better understanding of the broader picture and a greater level of direct assistance to the States.

#### Summary of Ranking

**This** initiative ranks as a medium priority. It ranks 12 overall in the survey responses, averaging 3.0 **out** of 5.0 possible on the rating scale. In the eastern States, this proposal scored 2.4; in the midwestern States, 3.0; and in the western States, 2.8--for a state average of 2.8. In **OSM** eastern offices, the proposal was rated at 3.3; in the western **OSM** offices, an average of 3.4; the lone midwestern **OSM** office reported a rating of 1.0--for an **OSM** average of 3.2. For individual numerical responses see Appendix C.

Figure D2 shows the total number of "votes" for each possible numerical rating. Eleven (34%) of the thirty-two organizations (9 States and 2 **OSM**) responding to the survey rated the proposal as less than a medium priority. Ten (32%) of the organizations (6 States and 4 **OSM**) rated the proposal as medium priority. Eleven (34%) of the organizations (5 States, 5 **OSM**, and AMC) rated the proposal above medium priority. References to state responses include responses from **WIEB** and **IMCC**. The AMC response is included as part of the total in figure D2.



#### Comments

Two state commenters indicated that the proposal would provide little benefit to the States and gave the proposal a low priority. A couple commenters expressed

concern that **OSM** staff assigned to States would do more than provide technical assistance; **while** not expressly stated, the concern appears to **be** that issues **observed/identified** by the staff would later be reported **as** state problems. Two state commenters positively noted the **AVS** assistance **OSM** provided was rated medium low, the other medium **high**. Two other States provided positive comments, one noting that it would have positive effects **on OSM** staff development **as well as** the relationship with state program personnel. ESC has successfully performed **this type** of detail in two eastern States.

The AMC gave the proposal a high priority and noted that **training** should involve site visits to mining operations. The AMC further commented that the visits should be mandatory for **all OSM** and Solicitor personnel. **An** initiative entitled the “Time at Mine” program is currently being developed by OSM under the Management Guidance Plan, which is expected to deal in part with the issue of site familiarity.

Although there was a good degree of positive response to **this** idea, there **seems** to be much reservation about the impact a cross-training program would have on workload in the offices and about the high cost, such **as** travel, it would take to implement such a project. The **IPA** was mentioned several times **as** the vehicle for **this** initiative. One statement was that an **IPA** policy **was** already in place; another was that an **IPA** disrupts an office when the employee is gone for an extended period.

Even respondents who gave marks of priority from 3 to **4** had some reservations listed in their remarks. It seems that most respondents who **think** this is a good idea, **are** reserved about the way it has been previously approached and past outcome. One commenter noted that EPA already does this and recommended that OSM should contact them for feedback.

One respondent stated that “the emphasis may need to be on managers’ initiating and implementing temporary duty transfers to augment staff capabilities. The availability of temporary transfers should be widely publicized to encourage staff participation.” One respondent also suggested that OSM and state **staff** would benefit from learning about reclamation practices and policies from other parts of the country.

### Recommendations

The need to enhance the technical capabilities is generally recognized. However, the eastern high-production coal States rate the proposal **as** low to medium-low priority. On the other hand, about half of the midwestern and western States rate the proposal medium to high priority.

Because of the lack of unanimity between the States, the team does not recommend that the proposal be implemented on a national basis. Rather, the team recommends that **OSM** continue its current practices with regard to enhancement of OSM’s technical capabilities. Specifically, the Regional Directors **and** Field Office Directors

consider exchanges in consideration **of** their staff levels, technical needs, **and** budget, and the interest expressed by the **States**. **Depending** on the regional **and** States needs and interests, training or interactive technical **forums may** provide the technical enhancement.

#### IV. RESPONSE TO SURVEY QUESTIONNAIRE

In addition to the eighteen initiatives provided for review, respondents were asked to answer three questions. The first set of questions explored the respondent's use of OSM technical assistance capabilities. Respondents were asked if they routinely asked **OSM** for technical assistance. If they did not routinely **ask** for assistance, they were asked to explain why they did not use the service. If they did routinely ask OSM for technical assistance, they were asked to provide a characterization of their level of satisfaction. The second and third questions asked the respondent to list his/her greatest technical assistance needs and then to tell how **OSM** could meet those needs.

A total of 79 responses were received relative to these questions. Twenty-four (30%) of the respondents indicated that they routinely asked **OSM** for technical assistance. Thirty-six (46%) did not routinely request technical assistance. Nineteen (24%) did not provide a written answer.

##### Comments

The majority of the responses indicated that they did not request assistance because the expertise of the office staff was capable of handling situations that might **arise**. In addition, many responded that the request frequency could not be characterized **as** "routine," and requests **are** usually initiated only for very technical matters.

Another reason for not asking for assistance was frustration with lack of timeliness for a response, inconsistent responses, or responses that were "opinionated"(no elaboration) or overbearing. One agency stated that they looked to Bureau of Mines for assistance, since the perception is that OSM does not conduct much **research** on technical issues. **A** lack of procedures and a current **OSM** technical contact list were cited by several responders. Three responders cited difficulty obtaining OSM technical help or difficulty with the routing of their technical request through the Field Office.

When asked about their level of satisfaction, the respondents were divided. Most of the satisfied responders cited the good work quality and good relationships with OSM staff. Other responders was generally satisfied, but requested that the "scope of technical assistance" be expanded, including the addition of advanced technical training courses. The reason most stated for not being satisfied was "timeliness." One reason for a lack of timeliness was stated as **OSM** having insufficient staff to adequately respond to requests (i.e., **OSM** has only one archeologist to serve the entire nation; or no hydrologist was available because all the hydrologists were busy). Another respondent stated that his requests were answered in a useful and timely manner, but that this process was hampered when going through "appropriate channels." It was also stated that it was "often difficult for OSM personnel to act only as 'assistance'. The oversight and enforcement hat often accompanies the assistance uniform" with "OSM 'experts' trying to take over control rather than provide the assistance in the spirit needed, **as** a technical 'consultant' to the state."

In response to the second question, **44** separate topics of "greatest technical needs" were provided, ranging from 39 respondents asking for help **on** hydrology-related issues to 25 needs expressed by only one respondent. The most frequently expressed technical needs, in order, were: hydrology (39), subsidence (9), blasting (7), revegetation (6), advanced **TIPS** training and support (6), engineering (6), assistance with computer skills and data management (6). Results of the surveys are provided **as** Attachment 1.

Twenty-nine separate methods for **OSM** to meet technical assistance needs were presented. Eleven methods were proposed by more than one respondent. Eighteen needs were expressed by only one respondent. **The** most frequently expressed methods, in order, were: advanced **training** in all areas (12); employing sufficient technical staff for a timely response (**4**); developing a "skills directory" of scientists for regional coalfields (3); further developing ideas **from** the technical assistance survey (3); and, getting experts in the field or making experts out of field people (3).

### Recommendations

OSM should analyze its **mix** of technical staff to determine if staff changes would result in an improvement in the timeliness of responses. Possible solutions to the problem of timeliness could be developed, utilizing a quality improvement process team chartered for this purpose. **OSM** should correct staff attitudes **so** that **OSM** technical support can be presented **as** a consultant service to the States.

**A** thorough review of the technical needs and solutions to technical problems provided by survey respondents should be conducted so that **all** issues raised receive a complete and accurate response. **OSM** should focus on increasing technical competency, seeking involvement in the professional community, and incorporating peer review in the process of building a plan to establish a better well-respected technical cadre of professionals.

Greatest Technical Needs

1. Hydrology (AMD, etc.) - **39\***
2. Subsidence (sometimes in conjunction with the emergency program) - 9
3. Blasting - 7
4. Revegetation (i.e., standards for success) - 6
5. Advanced TIPS training and/or more **TIPS** support - 6
6. Engineering - 6
7. Assistance with computer skills and data management - 6
8. Training - 5
9. Slope stability/landslide analysis - 5
10. **AML** reclamation - 4
11. Cultural resource consultation - 4
12. Bonding - 3
13. Soil science - 3
14. Establishment of technical guidance documents which also reflect OSM's position on substantive technical issues - 2
15. Refuse impoundments and **fills** - 2
16. Stream restoration techniques - 2
17. Hazardous/toxic materials handling during **AML** reclamation - 2
18. Defining terms used by **OSM** - 2
19. Technical support for the Technology Transfer, Research, Blasting, and Experimental Practices Program - 2
20. Geo-Chemistry (coal and soils)
21. Impact modeling
22. Determination of actual strength parameters
23. Valid statistical analysis of large databases
24. Material damage determination and documentation
25. **WAN** implementation support
26. Current technology updates for passive treatment systems in **10%** Set Aside Program
27. Review of mine maps
28. Field expertise in implementing SMCRA to **assist** in the analysis of regulatory and policy issues
29. Transfer of current technology from **OSM** and other agencies in other States and a release of state-of-art technology and demonstration of practical applications
30. Concise definition of desired program end points and the methodology used to determine if such points have been achieved
31. Determining underground water courses
32. Teamwork approach to problems
33. All disciplines
34. Bio-assessments of impacts on T&E species
35. Discussion on permitting practices in other regions
36. Less oversight so that technical issues can be emphasized
37. Biology, wetland science

38. Compaction
39. Sampling methods for prime farm row crops
40. Realty issues
41. Implementation of Earthvision/volumetrics
42. Move stratigraphics back to **DOS**
43. Excess spoil
44. **T&E**

#### Meeting Technical Needs

1. Advanced training in all areas - 12
2. Employ sufficient staff for a timely response - 4
3. Develop "Skills Directory" of Scientists for Regional CoalFields - 3
4. Further develop ideas from this survey - 3
5. Get experts in the field or make experts out of field people - 3
6. Dissemination of published material - 2
7. Improved **TIPS** support - 2
8. Provide more travel money - 2
9. Directory of technical papers relative to particular coalfields - 2
10. Timely response to requests for assistance - 2
11. Open discussions with state and **OSM** technical experts in attendance/interactive forums - 2
12. Develop/conduct short courses and forums
13. Answer phone calls
14. Hire more cultural resource personnel
15. Conduct more research that is pertinent to the AML Program
16. Eliminate duplication of information
17. Maintain the Wilkes-Barre Office and Mapping System
18. Continue providing the Hydro/Engineer Support - 2
19. Facilitate networking with experts from other States
20. Sponsor research/distribute information
21. Provide the SRA with the professional technical expert and permit the two to arrange type and timing of product
22. Straighten out the anti-primacy philosophy that so many employees seem to have
23. Provide timely unbiased technical report
24. Release technical guidance documents as official positions of the agency
25. Apprise States of desired end-points for program areas
26. Assign technical people to field office during technical study
27. Provide list of court decisions and **OSM** preambles according to topics
28. Joint issue identification
29. Guidelines for resolving blasting and groundwater citizen complaints

\*Numerals located after needs or issues indicate the number of respondents who cited that issue or need. No numeral indicates that the need or issue was presented by only one respondent.

## V. ACTION PLANS

### A. INTRODUCTION

Action plans were developed for the twelve highest priority initiatives out of the eighteen originally proposed (see Appendix D). The purpose of the action plans is to list the specific tasks needed to implement each initiative. The plans also **list** the responsible entity or entities that should have the lead on the particular task. A suggested timeframe for completion of each task is also provided. It is anticipated that these suggested timeframes will be carefully reviewed by the entities responsible for development of specific assignments. A more detailed and accurate schedule can then be developed by these entities in coordination with **OSM** management based on resource availability and established priorities for each task. Although certain entities have been designated to have the lead for their development, it is not intended that involvement of other offices would be precluded and wide involvement is encouraged. The St. Louis Coordinating Center was not included in the list of responsible entities due to its uncertain status when this report was developed.

Action plans were not proposed for the three lowest priority items **due to lack of support from** the commenters and suggestions that some items not be pursued altogether. The action plans **also** propose timeframes needed to complete each initiative. The task force recognizes that it will probably not be feasible to develop all the initiatives simultaneously. Consequently, the responsible entities will need to establish appropriate priorities and timeframes for completion of these tasks. Several of the component action plans include the formation of teams, team travel costs have not been included **as** a resource requirement.

The task force recommends that in developing the specific tasks under each action plan, the responsible entity should review the specific comments and suggestions received during the outreach survey. Inclusion of state representation on the various committees and working groups that will develop implementation plans is strongly encouraged in order to facilitate long-term success for meeting the agency's objectives to improve external relations and enhance the agency's credibility.

# ENHANCE TECHNICAL ASSISTANCE

**Category:** A. Procedures/Documentation

**Component:** 1. Develop a definitive process for providing Technical Assistance.

**Objective:** To develop and document procedures for requesting, providing, and evaluating technical assistance to States.

**Responsible Entity:** Regional Coordinating Centers (Pittsburgh/Denver)

**Specific Tasks:**

- |   |          |
|---|----------|
| 1. Each <u>Coordinating Center</u> should establish a joint <b>team</b> that includes representatives from States to initiate <b>work</b> on process development. | 60 days  |
| 2. The team will prepare a draft process and submit for review.   | 120 days |
| 3. The team will submit a final process to the Coordinating Centers for approval.   | 180 days |

**Resource Requirements:**

**This** item can be accomplished within existing budget.

## ENHANCE TECHNICAL ASSISTANCE

**Category:** A. Procedures/Documentation

**Component:** 2. Create Technical Guidance Documents

**Objective:** To finalize, upgrade, create, and develop a process to enhance **and** maintain appropriate guidance for technical **areas** under SMCRA programs.

**Responsible Entity:** Denver Coordinating Center

**Specific Tasks:**

- |  |          |
|--|----------|
| 1. Establish a joint OSM/state team.   | 60 days  |
| 2. The team will develop <b>draft</b> procedures that outline how the tasks will be accomplished along with priorities and timeframes. | 150 days |
| 3. The team will finalize the procedures and recommend assignments for development of various components of the guidance documents.    | 210 days |

**Resource Requirements:**

Development of procedures and recommended assignments can be accomplished within existing budget. Printing and distribution of completed guidance documents will not cost an estimated \$10,000 per year.

RECOMMENDED ACTION PLAN

# ENHANCE TECHNICAL ASSISTANCE

Category: B. Tools and Techniques  
Component: 1. Electronic Permitting by the Year 2000  
Objective: Improve the efficiency and consistency of technical reviewers in state and Federal permitting.  
Responsible Entity: Denver Coordinating Center, Knoxville Field Office

**Specific Tasks:**

- |   |          |
|---|----------|
| 1. Disseminate electronic permitting and data management information by preparing and distributing a catalog of the electronic permitting systems and data management systems used by the <b>States</b> . Update and redistribute annually.         | 180 days |
| 2. <b>The</b> Knoxville Field Office and Denver Coordinating Center should establish a review team to study the feasibility of electronic permitting and storage/evaluation of ground- and surface-water monitoring data in Federal program States. | 90 days  |
| 3. Provide recommendations on electronic permitting and monitoring data for the Federal programs.   | 270 days |
| 4. RRP will pursue the feasibility of electronic permitting for SOAP through their outreach plan.   | 90 days  |

**Resource Requirements:**

The feasibility studies can be accomplished with existing budget. Contract assistance may be needed to accelerate database development. An additional \$100,000 is estimated for this item.

## ENHANCE TECHNICAL ASSISTANCE

**Category:** B. Tools and Techniques

**Component:** 2. Expand and enhance the Technical Information Processing System (TIPS).

**Objectives:** Achieve a higher level of support in hardware/software availability, technical support, and **training** for **TIPS**. Expand **TIPS** through encouragement in States where low level usage exists; in large States where equipment availability limits access; through development of new initiatives.

**Responsible Entity:** TIPS Steering Committee

**Specific Tasks:**

- |   |          |
|---|----------|
| 1. TIPS Steering Committee forms teams with appropriate mix of state, Federal, and other members to <b>initiate</b> workplan development <b>taking</b> into consideration the TIPS Task Force Report. | 150 days |
| 2. Teams complete workplans and submit to Steering Committee.   | 240 days |
| 3. Based on team workplans, TIPS Steering Committee prepares budgets and submits funding request to OSM budget team and/or through state grants processes.  | 300 days |

**Resource Requirements:**

An additional \$2,000,000 is estimated to be needed to complete this expansion for FY 96. Additional staff resources are also expected to be required for this expansion.

## ENHANCE TECHNICAL ASSISTANCE

- Category:** B. Tools and Techniques
- Component:** 4. Develop and maintain Geographic Information Systems (**GIS**) for the Coalfields.
- Objectives:** Provide continually current databases of environmental resource and other spatial-related permitting and **AML** data for State and Federal programs.
- Responsible Entity:** **TIPS** Steering Committee

**Specific ~~Tasks~~:**

1. **TIPS** Steering Committee should convene a **GIS** team to develop guidelines and standards for **OSM** and Federally-funded state **GISs**, and a recommendation for FY 1996 funding levels. The team should be comprised of representation from States, **OSM**, industry, and environmental interest groups. **120** days
2. **TIPS** Steering Committee should develop a workplan based on **TIPS ~~Task~~** Force Report. **240** days
3. Based on team workplans, **TIPS** Steering Committee should submit a funding request to **OSM** budget team and/or through state grants processes. 300 days

**Resource Requirements:**

**An** additional \$500,000 is expected to be required during FY 1996 for purchase of software, hardware, and hiring data-entry/GIS expert personnel to support this initiative.

# ENHANCE TECHNICAL ASSISTANCE

**Category:** B. Tools and Techniques

**Component:** 5. Establish Automated Information Transfer

**Objective:** Expand and promote improved interaction through enhanced automated communications, including automated data transfer, E-mail, subject forums, etc.

**Responsible Entity:** Pittsburgh Coordinating Center

**Specific Tasks:**

- |  |          |
|--|----------|
| 1. Establish a Steering Committee empowered to coordinate the development and maintenance of structured programs designed to meet user needs. A representative from the States, ISM, and the two coordinating centers should be included on the committee. | 60 days  |
| 2. The Steering Committee will develop an initial workplan with emphasis on establishing procedures and guidance to users.   | 120 days |
| 3. ISM, with assistance from the Steering Committee, should complete expansion of the communication network to all state offices.  | 360 days |

**Resource Requirements:**

An additional \$1,200,000 is estimated to be needed to initiate this task, and annual operating expenses could require \$200,000 per year.

# ENHANCE TECHNICAL ASSISTANCE

**Category:** B. Tools and Techniques

**Component:** 6. Develop Skills Directory

**Objective:** To create an OSM/State employee technical skills directory to be placed on the Wide Area Network.

**Responsible Entity:** Pittsburgh Coordinating Center

**Specific ~~Tasks~~:**

- |   |                 |
|---|-----------------|
| 1. Establish a working group (team) composed of representatives from OSM regional <b>offices</b> and States to work on this task.   | 60 days         |
| 2. The team should prepare a guidance, identifying how the directory would be set up, queried, and maintained and distributed for review. Priorities and timeframes would be established. | <b>120</b> days |
| 3. The team would assemble information (people <b>and</b> skills) for the directory from various <b>OSM</b> and state offices.  | 180 days        |
| 4. <b>The</b> team would place the directory "on line" for testing and use.   | <b>240</b> days |

**Resource Requirements:**

This item can be accomplished within existing budget.

# ENHANCE TECHNICAL ASSISTANCE

**Category:** B. Tools and Techniques

**Component:** 8. State/OSM Shared Commitments on Technical Projects

**Objective:** Collectively develop recommendations for solving problems or improving practices

**Responsible Entity:** Regional Directors

**Specific Tasks:**

- |    |  |                 |
|----|--|-----------------|
| 1. | On a regional basis, establish a Technical Team comprised of representatives from the Regional and <b>Field</b> Offices and the States to identify multi-state issues within the region. | <b>90 days</b>  |
| 2. | The teams should identify and prioritize issues and develop a <b>workplan</b> for addressing those issues.   | <b>180 days</b> |
| 3. | Develop procedures for the identification and review of future issues taking into consideration past practices (successes and failures).   | 180 days        |

**Resource Requirements:**

This item can be accomplished within existing budget except for **an** estimated \$5,000 per annum for travel expenses.

# ENHANCE TECHNICAL ASSISTANCE

**Category :** C. Information/Technology Transfer

**Component:** 1. Develop a National Information Transfer Program

**Objective:** Develop/expand a national program of information transfer and dissemination designed to keep **OSM**, States, and other stakeholders current on pertinent events, projects, issues, policy matters, and research.

**Responsible Entity:** Pittsburgh Coordinating Center (Automated Information Transfer Steering Committee established under B.5.)

## **Specific Tasks:**

1. The Steering Committee should identify **all** program areas and specific information which would be of value to a significant number of people and could be disseminated electronically. 90 days
2. The Steering Committee will prepare a workplan to develop and implement those procedures necessary to make operational electronic information transfer of those **things** identified in Task No. 1. 180 days
3. The Coordinating Center should explore the possibility of **an MOU** with the Bureau of Mines to utilize their publication program as a vehicle for establishing a formal SMCRA publication effort and develop a **recommendation** for further pursuit including appropriate cost estimates. 360 days
4. The Coordinating Center should identify areas where improvements could be made in the "RecTech" and "TIPS Newsletter," including electronic transfer and develop an implementation workplan. 360 days

## **Resource Requirements:**

The system development costs for this item are covered by task B.5. The process of information dissemination is expected to be accomplished within existing budget. The workplan should assess impact **on** staff workload to determine whether additional staff resources would be needed to implement this initiative.

## ENHANCE TECHNICAL ASSISTANCE

**Category:** C. Information/Technology Transfer

**Component:** 2. Technical Assistance/Information to Outside Stakeholders

**Objective:** Develop a program to provide technical information to outside stakeholders through enhanced automated communications **and** informal talks/seminars.

**Responsible Entity:** Regional Coordinating Center, RRP, **ISM**, Public Affairs

**Specific Tasks:**

- |  |                 |
|--|-----------------|
| 1. Public <b>Affairs</b> , in coordination with Regional Centers, should develop a <b>workplan</b> to create seminar modules on topics of interest to outside stakeholders.                                | 90 days         |
| 2. <b>ISM</b> should establish a process that would <b>allow</b> stakeholders limited access to the Wide Area Network <b>so</b> that information is available for public access.                           | 180 days        |
| 3. RRP should establish the capability to screen policy and significant issues for inclusion onto the Wide Area Network and develop the system for routine collection and inputting of appropriate issues. | <b>180</b> days |
| 4. Coordinating Centers should develop shared commitment with States and Indian tribes concerning participation in the transfer of information.  | 210 days        |
| 5. RRP and ISM should bring the system on line.  | 270 days        |
| 6. Public Affairs should notify stakeholders of new service.   | 330 days        |

**Resource Requirements:**

This task can be accomplished within existing budget.

RECOMMENDED ACTION PLAN

# ENHANCE TECHNICAL ASSISTANCE

**Category:** C. Tools and Techniques

**Component:** 3. Topical Seminars/Interactive Forums/Publish Papers on Technical Issues

**Objective:** Develop a formal topical seminars/interactive forums program for both the eastern and western regions. Publish technical papers resulting from the topical seminars/interactive forum.

**Responsible Entity:** Denver Coordinating Center

**Specific ~~Tasks~~:**

- |    |   |          |
|----|---|----------|
| 1  | The Coordinating Center should evaluate the most effective methods of technical information transfer and develop formal topical seminars/interactive forums program for the agency. | 180 days |
| 2. | The Coordinating Center should develop a process for preparing and publishing technical papers from the seminars and forum.   | 270 days |

**Resource Requirements:**

The developmental and planning phases of this task **can** be accomplished within current budget. The cost of conducting a forum/seminar is approximate \$3,000 per forum.

## ENHANCE TECHNICAL ASSISTANCE

**Category:** D. Training

**Component:** 1. Enhance Current Technical Training Program

**Objective:** Expand and improve current technical training program through continued development of new courses, upgrading of established courses and integration of BTTI and TIPS training programs.

**Responsible Entity:** Branch of Training and Technical Information (BTTI)

**Specific Tasks:**

1. BTTI should prepare a plan with input from TIPS Steering Committee and Coordinating Center for the development of new advanced training classes and upgrading of established classes. 180 days
2. BTTI in coordination with TIPS Steering Committee should develop a plan for the integration of the scheduling and management of BTTI training and TIPS training. 10/ 15/95
3. BTTI should complete the program for continuing education units. 10/30/95

**Resource Requirements:**

In-house development and upgrading of courses and the CEU program can be conducted within current budget. Hiring of outside instructors would cost an estimated \$10,000 per class. An additional \$100,000 per year is estimated to be required for this task.

# ENHANCE TECHNICAL ASSISTANCE

**Category:** Questionnaire/Additional Needs

**Objective:** Develop a list of technical needs as well as methods for better meeting these needs.

**Responsible Entity:** Deputy Director

**Specific ~~Tasks~~:**

- 1 The Deputy Director should establish a team to evaluate the technical staffing mix necessary to fully meet the technical needs of the States and Field Offices. The team should include representation from each Coordinating Center, RRP, and Field Offices. 60 days
  
2. The team should develop a plan containing staffing recommendations. 150 days

**Resource Requirements:**

The development of a staffing plan can be accomplished within current budget.

## APPENDIX A TASK FORCE PLAN

- Title:** Enhance Technical Assistance
- Activity:** To develop, prioritize, and recommend types of technical assistance to enhance **SMCRA** program effectiveness.
- Performance Goals:** To assure the highest possible level of technical capability necessary to **run** effective programs.
- Outcomes:**
- Providing responsive technical assistance.
  - Provide additional and enhanced tools and techniques,
  - Improve technology and information transfer.
  - Expanded advanced training **program**.
  - Improved procedures and documentation.
- Output Measures:**
- Number of people receiving advanced training.
  - Level of usage of tools and techniques.
  - Number of customer complaints.
  - Timeliness of response.
  - Number of responses that meet needs.
  - Number of requests for technical assistance.
  - Amount of State involvement in technical projects.
  - The availability of appropriate resources at the time of request.
- Implementation Plan:** The task force will develop recommendations to the States to strengthen their ability to fully achieve the goals of SMCRA. The task force will establish an outreach program to the States and establish an open dialogue regarding technical problems and issues. The outreach program will also gather input from Field Offices and Support Centers. Based upon the comments and suggestions received, the task force will then develop a plan to improve technical assistance capabilities of OSM and subsequently promote technology transfer to States. The plan will address how **OSM** will keep abreast of technological advancements in order to assist regulatory authorities in making aggressive, scientifically based decisions. The implementation of the plan will require that the States' needs for technical assistance be prioritized by program area and by geographical distribution of potential problems. The plan will also address how OSM will respond quickly and effectively to specific requests for technical assistance from States on an as-needed basis.

**This** task force ~~was~~ established **in** April **1994**. The initial task force meeting is scheduled in early May **1994**. **A** three-phase effort is anticipated during which the ~~task~~ task force will develop **an** outreach plan, implement the outreach to collect information, and then *draft* a plan with recommendations. **A final** plan is scheduled to be completed by September **15, 1994**.

**Budget:**

The total budget request for the ~~task~~ task force meetings is \$3,000. To date about \$3,000 has been spent for the first meeting, and it is expected that one **final** meeting will **be** required to develop the *draft final report*.

**Task Force Participants:**

George C. Miller (KFO)  
Willis Gainer (KFO)  
Bill Kovacic (**LFO**)  
Jesse Jackson (BFO)  
Brenda Steele (WSC)  
Mike Robinson (ESC)



APPENDIX B  
OUTREACH LETTER AND SURVEY

United States Department of the Interior

OFFICE OF SURFACE MINING  
Reclamation and Enforcement  
530 Gay St., S.W., Suite 500  
Knoxville, TN 37902

May 13, 1994

Memorandum

To: Field Office Directors  
Assistant Director, Eastern Support Center  
Assistant Director, Western Support Center  
Chief, Branch of Research and Technical Standards

From: George C. Miller, Director  
Knoxville Field Office

Subject: Task Force on Technical Assistance

The subject task force has been charged with the responsibility of developing a plan for enhancing OSM's technical assistance to the States. The goal of the plan will be to assist States in achieving and maintaining high quality programs. The purpose of this memorandum is to initiate an outreach program to States, field offices, support centers, and headquarters. Based on the comments and suggestions received during outreach, the task force will develop a plan to improve technical assistance capabilities of OSM and subsequently promote technology and information transfer to the States.

Attached is a survey form that is self-explanatory. We request that the field offices distribute this survey to each of their States and that support centers and headquarters, Branch of Research and Technical Standards staff, review the survey and also provide comments. The task force wants to receive input from a cross section of both management and technical staff in both Title IV and Title V agencies of States and OSM offices.

All comments are to be returned to the Knoxville Field Office by June 10, 1994. If you have questions concerning this outreach survey, please contact your task force representative listed below.

George Miller	Knoxville, Big Stone Gap
Bill Kovacic	Lexington, Kansas City, Tulsa
Jesse Jackson	Birmingham, Columbus, Springfield
Mike Robinson	Eastern Support Center, Harrisburg, Charleston
Brenda Steele	Western Support Center, Casper, Albuquerque
Willis Gainer	Headquarters, Indianapolis

The Directors' Management Guidance **Plan** promotes **the** development of the highest **quality** technical capability **and** will seek to transfer that technology to States **in** order to better accomplish the purposes of **SMCRA**. We want **to** work effectively with States to develop a highly-trained technical staff to assist **regulatory** authorities in reaching decisions that **are** scientifically based. In order to achieve the goals of technical excellence and responsiveness within **OSM**, it is important that **our** task force receive constructive input from **all** interested sources. Please ensure that this survey receives timely attention.

Attachment

cc (w/attachment):

Allen D. Klein, Assistant Director  
Field Operations

## TECHNICAL ASSISTANCE TASK FORCE

### OUTREACH SURVEY

#### BACKGROUND

Director Uram has adopted a goal to improve external relations and enhance the credibility **of** the Office of Surface Mining Reclamation and Enforcement (OSM). **An** initiative of this **goal** is to develop a plan for providing States with technical assistance to improve state programs. OSM has established a task force to develop this plan, and the task force believes that outreach to the States is essential to meeting this objective.

The purpose of our outreach is to solicit opinions, comments, and suggestions for improving technical assistance. We hope to collect sufficient information to allow **OSM** to: **(1)** develop a technical assistance plan that can be successfully implemented; **(2)** make a preliminary assessment of the States' technical assistance needs; and **(3)** identify new **ideas** for improving OSM's technical assistance capabilities.

Our outreach survey is divided into **two** sections. The first section is a preliminary list by major categories of proposed ideas that the task force developed. We would like you to review these ideas and prioritize their importance from your perspective. **Also**, please provide us with any constructive comments on the application of **the** idea. The second section **of** the survey is a list of questions directed at assessing technical assistance needs.

We want to receive input from a representative cross section of your staff and request that you provide responses that reflect opinions of both management and **technical** staff. We wish to promote an atmosphere of open dialogue and communication. In other words, we cannot improve the process unless you tell us what your concerns and ideas are.

Along with the ideas presented here, we would like to hear any other ideas or concepts that you **think** might be helpful in improving OSM's technical assistance capabilities. **You** may include these ideas in your comments on the individual survey pages: or, you may attach separate sheets to describe your suggestions.

Please include the name and phone number of a contact person so that we may seek clarification of comments or new ideas, if needed.

## I. IDEAS FOR ENHANCING TECHNICAL ASSISTANCE

### A. Procedures/Documentation

#### 1. Develop a Definitive Process for Providing Technical Assistance

The Office of Surface Mining Reclamation and Enforcement (**OSM**) should develop a definitive process responding to requests for technical assistance. **This** process would include procedures for: (1) requesting technical assistance; (2) defining the request; (3) how appropriate assignments are made, e.g., single discipline vs. multiple discipline; **(4)** how technical assistance **will** be provided, e.g., reporting format and site investigation protocol; **(5)** defined timeframes for products; **(6)** outlining internal review procedures including **quality** control review; and (7) follow-up actions to evaluate the effectiveness of the technical assistance **and** how the technical assistance was used.

**Priority:** (Least Important) 1\_\_ 2\_\_ 3\_\_ 4\_\_ 5\_\_ (Most Important)

**Comments:** \_\_\_\_\_  
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**B. Tools and Techniques**

**1. Electronic Permitting by the Year 2000**

To improve the efficiency and consistency of technical reviewers in state and Federal permitting, **OSM** could assume a leadership role in moving toward "paperless permitting." Submission of digital information by an applicant would eliminate the necessity to digitize map or other spatial data in order to complete a permitting evaluation. By regulation, or at least by guidelines, OSM could establish standardized data formats for mining permit applications. While every aspect of the permit can become electronic, of particular value to technical staff would be the geologic and hydrologic baseline data, mapping data, parameters for stability analyses, sediment control analyses, reclamation models, etc. In conjunction with expert systems (see Proposal No. 3), electronic submissions could be checked for completeness, data validity, and technical sufficiency. Upon permit issuance, monitoring data would be submitted in a similar format to check if the predicted consequences of mining were on target, or not. Responsiveness to industry would also be improved significantly.

**Priority:** (Least Important) 1\_\_ 2\_\_ 3\_\_ 4\_\_ 5\_\_ (Most Important)

**Comments:** \_\_\_\_\_  
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**B. Tools and Techniques (continued)**

**2. Enhance/Expand Use of the Technical Information Processing System (TIPS) by the States**

The level of TIPS use varies from state to state. Under this proposal, an initiative would be mounted to encourage those States who **are** not reaping the full benefits of **TIPS** to expand their utilization. **OSM** and state technical staff who are proficient in TIPS use would visit the state and gain **an** understanding of the state's technical operation. These **TIPS** representatives would then demonstrate some of the capabilities of TIPS and how they might provide an improved analysis over a permitting review currently performed by hand; how complex technical concepts could be reduced to understandable graphical models; or, how multiple iterations (trial-and-error) analyses impossible to perform by hand, could be easily and quickly performed by TIPS software to result in the best-fit reclamation plan or technical evaluation. Further support of the state technical personnel, in the form of training, hotline support, etc., would occur so that **TIPS** support was provided at crucial stages of **TIPS** development, assuring steadily increasing TIPS proficiency. This initiative is directed primarily toward Title V agencies; but could be applicable to AML agencies as well.

**Priority:** (Least Important) 1\_\_ 2\_\_ 3\_\_ 4\_\_ 5\_\_ (Most Important)

**Comments:** \_\_\_\_\_  
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**B. Tools and Techniques (continued)**

**3. Continued Development of Expert Systems**

**OSM** is currently funding development of a computerized system that predicts the hydrologic consequences of mining using "artificial intelligence." The computer program evaluates pre-mine baseline data on geologic, hydrologic, and geochemical characteristics of a minesite as well as the hydrologic regime predicts a worst-case scenario of mining impacts, and assesses the ability of the reclamation plan to successfully mitigate the predicted impacts. The computer has been programmed with the knowledge, thought processes, scientific theories, and "rules of thumb" of experienced hydrologists and geologists to constitute this "expert system." Expert systems are generally used to train or guide entry-level professionals in many fields. While an expert system does not take the place of true expert judgment, it can relieve the burden on senior scientists to evaluate the more complex and controversial issues, i.e., the less experienced staff can utilize the computer to red flag topics where the more experienced professional should become involved.

Artificial intelligence could possibly be used for establishing expert systems for blasting, excess spoil disposal, revegetation, subsidence control, sediment control, or almost any technical area reviewed as part of permitting. Under this initiative, **OSM** would take a leadership role to provide the expert systems identified by the States as most critical/desirable. In this way, several of the major precepts of Surface Mining Control and Reclamation Act (**SMCRA**) could be achieved: (1) consistent reviews in state and Federal programs; (2) thorough and improved technical evaluations; (3) application of best professional judgment of the "experts" to all mining and reclamation plans; and, (4) high quality reclamation and enhanced environmental protection. While most suited for regulatory program; Abandoned Mine Land ( *AML* ) agencies might benefit from expert systems on landslide correction, subsidence evaluation, etc.

<b>Priority:</b> (Least Important) 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ (Most Important)
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<b>Comments:</b> _____

**D R A F T**

This paper is for comment only and does not necessarily represent the position of **OSM** or the Department of the Interior.

B. Tools and Techniques (continued)

4. Develop and Maintain Geographic Information Systems (GIS) for the Coalfields

Most States are in the process of developing, or have expressed the desire to develop, GISs for use in establishing a reliable database of retrievable environmental resource and other types of information necessary to run an efficient State program. Wyoming is in the process of developing an Oracle-based data system on a "shell" created under contract from OSM. This database shell contains many fields used by all States for geologic and hydrologic information as a result of surveys done of all the coal States during the contract work. West Virginia is developing an ArcInfo system to help conduct their program. OSM, in the Western Support Center, has developed an ArcInfo system for keeping track of more than 1 billion dollars in bonds on Federal permits. All of these systems are powerful tools for technical staff to analyze such simple things as what data already exists in a particular area where a new permit application has been received, to such complex things as the cumulative impact of mining in a watershed. The GIS might provide a map showing where all coal waste impoundments, sediment ponds, mountaintop removal operations, longwall mines, postmining lands uses of silvaculture, or any number of possible permutations desired in a particular geographic area of interest.

Currently OSM field offices individually evaluate grant requests for funding of state-by-state GIS development with no consistent approach, no requirement to adhere to the Federal Geographic Data Committee standards, and no long range plan. An OSM/state work group could pave the way for all GIS development efforts and effect coordination, consistency, and cost-savings. This type of initiative is equally applicable to both Title IV and V. OSM should take a leadership role in supporting the development of these systems.

Priority: (Least Important) 1\_\_ 2\_\_ 3\_\_ 4\_\_ 5\_\_ (Most Important)

Comments: \_\_\_\_\_  
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**D R A F T**

This paper is for comment only and does not necessarily represent the position of OSM or the Department of the Interior.

B. Tools and Techniques (continued)

5. Establish Automated Information Transfer

The **OSM** installed telecommunication equipment, or wide area network ( *WAN* ) components, in each **OSM** location and state program central office that links them to Applicant/Violator System ( **AVS** ), **TIPS**, the worldwide Internet (Information Superhighway) and other shared systems. **This** link also can ultimately serve as an information source for all users with access. With the completion of the **OSM WAN**, many possibilities for information sharing exist. **OSM** plans to add software to the WAN which will allow passing of mail from office to office (state and/or Federal). With the advent of the Internet and **WAN** telecommunications, several other possibilities exist beyond electronic mail. Expansion should include access at all program and staff levels. **OSM** could also expand the Bulletin Board System concept to establish electronic technical forums. A state scientist with a particular question on, e.g., overburden analysis, could pose it to the geochemical forum and get responses or ideas from other state and **OSM** scientists throughout the country. Another forum could be set up for technical papers on mining and reclamation topics written by scientists from around the country. These types of networks could even be open to environmental groups, industry, and other countries. This type of initiative would also be applicable to AML issues. The benefits from establishing this type of networking for technical staff are readily apparent.

**Priority:** (Least Important) 1\_\_\_ 2\_\_\_ 3\_\_\_ 4\_\_\_ 5\_\_\_ (Most Important)

**Comments:** \_\_\_\_\_

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B. Tools and Techniques (continued)

6. Develop Skills Directory

In addition to **OSM** technical staff, state regulatory and *AML* agencies contain a wealth of technical professionals with wide experience in many of the issues relative to day-to-day decisions in all program areas. This initiative envisions creation of a database, listing scientists throughout the States and OSM by specialty. If a scientist in one state wanted to seek advice from a scientist in another state on flyash disposal in the backfill, he/she would simply get on the WAN and select the technical skills database, query for flyash expertise, and the database would provide a report of persons with the particular skills, their agency location and telephone number. Direct information exchange could also take place over the WAN/Internet system. This system would be updated and maintained by **OSM**.

**Priority:** (Least Important) 1\_\_\_ 2\_\_\_ 3\_\_\_ 4\_\_\_ 5\_\_\_ (Most Important)

**Comments:** \_\_\_\_\_



B. Tools and Techniques (continued)

8. State/OSM Shared Commitments on Technical Projects

The Kentucky Department for Surface Mining Reclamation and Enforcement technical staff joined forces with the Lexington Field Office (LFO) technical staff to evaluate excess spoil disposal; and, subsequently, conducted a joint study on coal mine waste disposal practices in the Commonwealth. Other joint efforts have been undertaken in the western States, such as Wyoming and Missouri, to tackle bond forfeiture and AML reclamation projects. In this manner, technical staff from the state and Federal levels reach agreement on the technical facts, concur on the existing or potential problem areas; and, collectively develop recommendations for solving problems or improving practices. With technical agreement on these areas, the management of field office and State regulatory authority (SRA) can make science-backed decisions on how to proceed. Other benefits include mutual respect and understanding built between the technical staffs; shared resources result in more quickly resolved issues; and, collective opinion usually results in better decisions. A plan would be developed under this proposal to establish a process to jointly identify and study potential issues of mutual concern.

Priority: (Least Important) 1 \_\_\_ 2 \_\_\_ 3 \_\_\_ 4 \_\_\_ 5 \_\_\_ (Most Important)

Comments: \_\_\_\_\_

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C. Information/Technology Transfer

A program of information exchange should be developed for the purpose of keeping all segments of OSM, States, and other stakeholders current on pertinent events, projects, issues and policy matters. The ability to interact and transfer information should be developed around the concept of electronic transfer. This information transfer program would not focus on research activities, but would emphasize instead everyday technical and programmatic issues of potential interest to others. Included would be project investigation reports on significant technical investigations and court decisions concerning significant issues. New or markedly different mining and reclamation technologies could readily be disseminated more efficiently to a greater number of people. Technically unique or novel mining-related determinations would be readily available. Both failures and successes that can help define regulatory and AML policy could be quickly disseminated to all. New policies, as they are developed, would be transmitted to all stakeholders. Information transfer under this type of program would be widespread and quick, facilitating program responsiveness in decision making. The focus of this program should include both the Title IV and V programs.

Priority: (Least Important) 1\_\_ 2\_\_ 3\_\_ 4\_\_ 5\_\_ (Most Important)

Comments: \_\_\_\_\_  
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C. Information/Technology Transfer (continued)

4. Improve Coordination and Dissemination of Research Activities

Review, and if appropriate, redesign the current program for dissemination of research information. The program should focus on identifying and categorizing research efforts in various technical areas and ensuring that information on project status as well as results are being provided to the people who are most interested and can maximize utilization of the results. The method of dissemination should be incorporated into the electronic information transfer system. Both regulatory and AML research efforts should be included. Coordination with the OSM technical committee would be necessary. In addition, the results of projects under the experimental practices program should be incorporated into the program.

Priority: (Least Important) 1\_\_ 2\_\_ 3\_\_ 4\_\_ 5\_\_ (Most Important)

Comments: \_\_\_\_\_  
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C. Information/Technology Transfer (continued)

6. Improve Technical Publications Program

A standard review procedure for technical publications should be developed, and ways for improving current publications such as the "RecTech" and "TIPS Newsletter" should be examined. Final distribution of publications should include States and outside stakeholders.

OSM does not, nor has it ever, had a formal program for publishing significant investigations or findings of a technical nature. Formal programs to prepare and disseminate specific findings of a technical nature have been very effective in other agencies that deal in technical matters. Examples of successes include the Bureau of Mines publications of "Report of Investigations" and "Information Circular," and the formal reports published by the Environmental Protection Agency (EPA) to disseminate their technical findings. OSM should consider a similar program.

Priority: (Least Important) 1 \_\_\_ 2 \_\_\_ 3 \_\_\_ 4 \_\_\_ 5 \_\_\_ (Most Important)

Comments: \_\_\_\_\_  
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D. Training

1 Enhance Current Technical Training Program

The majority of the current technical *training* offered by OSM is geared either: (1) to the entry level person; (2) to increase awareness of someone in another technical discipline; or, (3) to teach a specific TIPS software application. The Agency must create more advanced technical *training* classes for experienced employees that combine both the technology and the regulatory aspects of **SMCRA**. These classes would be designed for specific technical *areas* (i.e., water quality impacts of mining, rock durability and mechanics, subsidence prediction techniques, prime farm land yield, blast design analysis, revegetation success or advanced stability analysis).

**Priority:** (Least Important) 1\_\_ 2\_\_ 3\_\_ 4\_\_ 5\_\_ (Most Important)

**Comments:** \_\_\_\_\_  
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D. Training (continued)

2. Initiate an Employee Exchange Program for Technical Staff

OSM's technical staff needs to broaden its **outlook** on dealing with technical issues. **An** employee exchange program would enhance the staff's technical capability and improve SMCRA consistency. The program could consist of temporary assignments both inside and outside **OSM**, such as temporary assignments to different groups within **OSM** (i.e., permitting or inspection) or Intergovernmental Personnel Act (IPA) assignments to a state to provide hydrology or engineering assistance. The result would be a technical staff with a better understanding of the broader picture and a greater level of direct assistance to the States.

**Priority:** (Least Important) 1\_\_ 2\_\_ 3\_\_ 4\_\_ 5\_\_ (Most Important)

**Comments:** \_\_\_\_\_  
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II. **QUESTIONS** (Use additional sheets if necessary.)

A. Do you routinely ask OSM for technical assistance?    Yes ____    No ____
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1. If not, why not?

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2. If yes, were you satisfied? Why or why not? (Please be specific.)

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**D R A F T**

This paper is for comment only and does not necessarily represent the position of OSM or the Department of the Interior.

**II. QUESTIONS (continued)**

**B. What are your greatest technical assistance needs? (Please list in order of importance.)**

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**C. How could OSM best provide technical assistance to meet your needs?**

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**APPENDIX C  
RESPONSE SPREADSHEET**

**The attached spreadsheet reflects the numerical rankings assigned to each Technical Assistance initiative by State, OSM, and stakeholder respondents. Respondents were requested to rate each initiative in terms of its importance to them, with one (1) being the least important and five (5) reflecting the highest degree of importance. Where there were multiple respondents from one State or OSM office the rankings were averaged.**

RESPONDENTS	A1	A2	B1	B2	B3	B4	B5
	PROCEDURES DEVEL. PROCESSES	PROCEDURES CREATE TECH GUIDANCE	TOOLS & TECHNIQUES ELECT. PERMITTING	TOOLS & TECHNIQUES ENHANCE-EXPAND TIPS	TOOLS & TECHNIQUES EXPERT SYSTEMS	TOOLS & TECHNIQUES DEVELOP GIS	TOOLS & TECHNIQUES AUTOMATED INFO TRANSFER
ALABAMA	4.00	5.00	1.00	1.00	2.00	4.00	5.00
KENTUCKY	3.10	2.00	2.30	3.00	2.30	1.10	2.70
OHIO	4.00	0.00	5.00	3.00	4.00	5.00	4.00
PENNSYLVANIA	8.70	4.10	1.50	2.00	2.20	3.50	3.30
VIRGINIA	3.00	3.00	2.00	4.00	2.00	4.00	4.00
WEST VIRGINIA	3.00	3.00	2.70	2.00	2.50	4.90	1.30
EAST AVERAGE	0.47	3.83	2.47	3.00	2.80	4.15	3.72
EAST SUM	20.80	23.00	14.80	22.80	15.00	24.00	22.30
ARKANSAS	3.00	4.00	3.00	3.00	2.00	4.00	2.00
IOWA	4.00	4.00	1.00	4.00	1.00	4.00	4.00
INDIANA	3.00	5.00	3.00	5.00	2.00	4.00	4.00
KANSAS	4.00	1.00	1.00	3.00	4.00	5.00	4.00
MISSOURI	4.00	3.00	4.00	3.00	4.00	4.00	3.00
OKLAHOMA	3.00	4.50	2.00	4.80	3.00	4.50	5.00
TEXAS	1.00	2.00	2.00	4.00	3.00	4.00	4.00
MIDWEST AVERAGE	3.14	3.38	2.20	3.79	2.71	4.21	5.71
MIDWEST SUM	22.00	21.50	16.00	26.80	19.00	29.50	28.00
COLORADO	2.00	4.00	2.00	5.00	1.00	2.00	1.00
MONTANA	4.00	4.00	2.00	4.00	1.00	4.00	3.00
NORTH DAKOTA	3.00	4.00	3.00	4.00	1.00	2.00	3.00
UTAH	1.00	4.00	3.00	0.00	2.00	2.00	3.00
WYOMING	4.00	3.00	3.00	5.00	3.00	1.00	5.00
WEST AVERAGE	3.60	3.80	3.00	4.20	1.00	3.00	1.40
WEST SUM	11.00	18.00	15.00	21.00	0.00	15.00	17.00
IMCC	4.00	4.00	3.00	4.00	2.00	8.00	3.00
WEO	1.00	1.00	4.00	1.00	4.00	4.00	4.00
STATE AVERAGE	3.29	3.40	2.84	3.97	2.40	3.92	3.82
STATE SUM	65.80	70.50	52.80	79.30	48.00	78.40	7290
ARAP	1.00	5.00	4.00	2.00	1.00	3.00	5.00
ESC	1.00	5.00	3.00	3.00	4.00	4.00	2.00
CFO	4.50	2.00	1.00	4.50	4.00	3.50	4.50
LFO	3.60	4.50	3.00	4.00	3.00	4.50	4.00
BSG	1.00	3.00	2.00	5.00	5.00	4.00	2.00
BFO	5.00	4.00	1.00	3.00	1.00	1.00	3.00
OSM EAST AVERAGE	3.00	3.86	2.18	3.90	3.56	3.40	3.10
OSM EAST SUM	15.00	19.30	10.80	19.50	17.80	17.00	15.50
SFO	2.00	4.00	1.00	2.00	2.00	1.00	2.00
OSM MIDWEST AVER	2.00	4.00	1.00	2.00	1.00	1.00	2.00
OSM MIDWEST SUM	2.00	4.00	1.00	1.00	2.00	1.00	2.00
WSD	3.50	4.10	3.00	3.50	3.10	4.10	3.70
CAS	2.00	2.00	3.00	1.00	2.00	1.00	2.00
AFO	3.00	1.00	2.00	5.00	2.00	4.00	4.00
KAN	5.00	5.00	1.00	1.00	3.00	2.00	1.00
OSM WEST AVERAGE	3.38	4.03	1.40	3.13	2.53	3.03	3.18
OSM WEST SUM	13.50	16.10	6.00	12.50	10.10	12.10	12.70
OSM AVERAGE	2.80	4.01	2.31	1.27	2.81	3.01	3.20
AMC	4.00	3.00	5.00	5.00	3.00	3.00	5.00
TOTAL AVERAGE	3.17	3.69	2.80	1.70	2.56	5.18	3.52
TOTAL SUM	101.30	117.00	83.20	12090	81.90	114.50	112.50



TECH ASSISTANCE OUTREACH RESPONSE

RESPONDENTS	C5	C6	D1	D2
	INFO-TECH TRANSFER INTERACTIVE FORUMS	INFO-TECH TRANSFER TECH PUBLICATIONS	TRAINING ENHANCE TRAIN. PROG.	TRAINING EXCHANGE PROGRAM
ALABAMA	5.00	4.00	6.00	4.00
KENTUCKY	3.30	3.10	2.80	2.60
OHIO	4.00	2.00	3.00	2.00
PENNSYLVANIA	3.20	3.60	4.40	2.30
VIRGINIA	3.00	4.00	5.00	1.00
WEST VIRGINIA	2.00	3.00	4.40	2.00
EAST AVERAGE	a.57	3.38	4.27	2.40
EAST SUM	21.40	20.30	25.60	14.40
ARKANSAS	a.w	3.00	4.00	3.00
IOWA	4.00	2.00	3.00	1.00
INDIANA	3.00	3.00	4.00	3.00
KANSAS	4.00	3.00	3.00	4.00
MISSOURI	3.00	3.00	5.00	4.00
OKLAHOMA	3.00	4.50	4.50	3.00
TEXAS	4.00	s00	A 00	3.00
MIDWEST AVERAGE	a.43	3.38	3.93	3.00
MIDWEST SUM	24.00	21.60	27.60	21.00
COLORADO	3.00	2.00	3.00	2.00
MONTANA	3.00	3.00	5.00	3.00
NORTH DAKOTA	4.00	4.00	5.00	2.00
UTAH	4.00	2.00	3.00	3.00
WYOMING	3.00	1.00	5.00	4.00
WEST AVERAGE	3.40	2.40	4.20	2.80
WEST SUM	17.00	12.00	21.00	14.00
IMCC	4.00	4.00	5.00	2.00
WEB	5.00	4.00	5.00	4.00
STATE AVERAGE	3.57	3.10	4.21	2.77
STATE SUM	71.40	63.80	84.10	65.40
RR&P	3.00	2.00	3.00	4.00
ERC	3.00	3.00	4.00	4.00
CFO	2.50	3.50	3.50	2.50
LFO	3.50	3.20	4.20	3.20
BSG	1.00	2.00	4.00	3.00
BFO	5.00	3.00	3.w	4.00
OSM EAST AVERAGE	3.00	2.04	3.74	3.34
OSM EAST SUM	16.00	14.70	18.70	10.70
SFO	2.00	1.00	3.00	1.00
OSM MIDWEST AVER	1.00	1.00	3.00	1.00
OSM MIDWEST SUM	2.00	1.00	3.00	1.00
WSC	3.00	2.00	4.10	3.50
CAS	4.00	2.00	a00	3.00
AFO	2.00	1.00	3.00	4.00
KAN	5.00	2.00	5.00	3.00
OSM WEST AVERAGE	3.90	1.90	3.75	3.40
OSM WEST SUM	15.60	7.00	16.10	13.60
OSM AVERAGE	3.24	2.33	3.62	3.21
AMC	6.00	4.00	4.00	5.00
TOTM AVERAGE	3.50	2.92	4.00	2.00
TOTM SUM	112.00	83.40	127.90	95.70

**APPENDIX D  
PRIORITY OF INITIATIVES**

<b><u>TECHNICAL ASSISTANCE TEAM</u></b> <b><u>PRIORITY OF INITIATIVES</u></b>			
<b>INIT. #</b>	<b>DESCRIPTION</b>	<b>STATE SCORE</b>	<b>TOTAL SCORE</b>
<b>D.1.</b>	<b>Training</b>	<b>94</b>	<b>128</b>
<b>B.2.</b>	<b>Expand TIPS</b>	<b>79</b>	<b>120</b>
<b>B.4.</b>	<b>GIS</b>	<b>78</b>	<b>115</b>
<b>B.5.</b>	<b>Automated Information Transfer</b>	<b>72</b>	<b>113</b>
<b>C.5.</b>	<b>Interactive Forums</b>	<b>71.4</b>	<b>112</b>
<b>C.3.</b>	<b>Seminars/Publications</b>	<b>69</b>	<b>106</b>
<b>A.2.</b>	<b>Technical Guidance</b>	<b>70.5</b>	<b>118</b>
<b>B.6.</b>	<b>Skills Directory</b>	<b>70</b>	<b>105</b>
<b>C.1.</b>	<b>National Information Transfer</b>	<b>67</b>	<b>102</b>
<b>C.6.</b>	<b>Technical Publications</b>	<b>64</b>	<b>93</b>
<b>C.4.</b>	<b>Coordinated Research Status</b>	<b>57</b>	<b>85</b>
<b>A.1.</b>	<b>Develop Procedures for TA .</b>	<b>65</b>	<b>101</b>
<b>B.8.</b>	<b>Joint Projects</b>	<b>63</b>	<b>103</b>
<b>C.2.</b>	<b>Stakeholder TA</b>	<b>56</b>	<b>78</b>
<b>D.2.</b>	<b>Exchange Program</b>	<b>55</b>	<b>96</b>
<b>B.1.</b>	<b>Electronic Permitting</b>	<b>52</b>	<b>83</b>
<b>B.7.</b>	<b>Rapid Response</b>	<b>48</b>	<b>98</b>
<b>B.3.</b>	<b>Expert Systems</b>	<b>48</b>	<b>82</b>

**APPENDIX E  
SUMMARY OF BUDGET PROJECTIONS**

<b>TECHNICAL ASSISTANCE TEAM PROJECTED BUDGET INITIATIVES*</b>		
<b>PRIORITY</b>	<b>DESCRIPTION</b>	<b>ESTIMATED BUDGET</b>
1	<b>Training</b>	\$100,000
2	Expand TIPS	\$2 million
3	GIS	\$500,000
4	Automated Information Transfer	\$1.2 million
5	Interactive <b>Forums</b> Seminars/Publications	\$30,000
6	Technical Guidance	Current
7	<b>Skills</b> Directory	Current
8	<b>National</b> Information Transfer Technical Publications Coordinating Research <b>Status</b>	Current
9	Develop Procedures for <b>TA</b>	Current
10	Joint Projects	Current
<p>* The above projections for budget costs to establish these initiatives <i>are rough</i> estimates only and very little weight should be given to these estimates. It is expected that each entity assigned these initiatives for development <b>will outline more</b> exact budget projections for specific <b>tasks</b>. Caution should be exercised when using <b>the</b> above estimates for decision-making purposes.</p>		