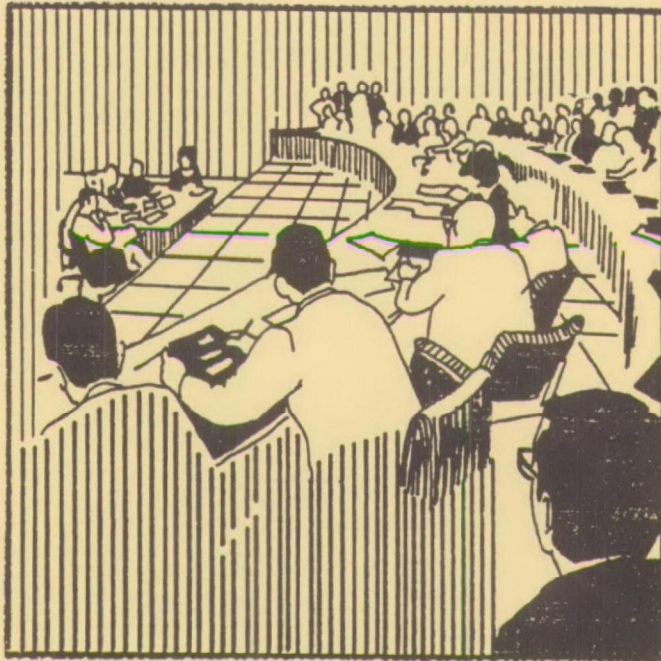


WORKSHOP ON IMPLEMENTING
THE
DECEMBER 2, 1980 VISIBILITY
REGULATIONS



MARCH 10-11, 1981
RALEIGH, NORTH CAROLINA

MARCH 16-17, 1981
DENVER, COLORADO

MARCH 19-20, 1981
SEATTLE, WASHINGTON

WORKSHOP ON IMPLEMENTING
THE
DECEMBER 2, 1980 VISIBILITY
REGULATIONS

Prepared by

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OFFICE OF AIR QUALITY PLANNING AND STANDARDS
U.S. ENVIRONMENTAL PROTECTION AGENCY

MARCH 1981

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AGENDA

WORKSHOP ON IMPLEMENTING THE
DECEMBER 2, 1980 VISIBILITY REGULATIONS

TIME	TOPIC	SPEAKER
DAY 1		
8:30	Registration	
9:00	Welcome	Darryl Tyler Robert DeSpain Richard Thiel
	Introduction	David Dunbar
	Scope of the Regulations	Johnnie Pearson
10:15	BREAK	
10:30	BART	Julie Horne
	Open Discussion	
	FLM/State/EPA Coordination	Julie Horne
	Open Discussion	
12:00	LUNCH	
1:30	Integral Vistas	Julie Horne
	Open Discussion	
	Long-Term Strategies	Johnnie Pearson
	New Source Review	Johnnie Pearson
	Open Discussion	
3:00	BREAK	
3:15	Monitoring Requirements	David Dunbar
	Phase II	David Dunbar
	Preparation of SIP Submittal	John Pratapas
	Panel Discussion	Regional Office Representatives
5:00	ADJOURN	

AGENDA (continued)

TIME	TOPIC	SPEAKER
DAY 2		
8:30	Group Discussion	Johnnie Pearson
	Modeling Requirements	David Dunbar
	Technical Aspects of Modeling	Doug Latimer
10:00	BREAK	
10:30	Monitoring Guidance	David Dunbar
	Technical Aspects of Monitoring	William Malm
	Open Discussion	
12:00	LUNCH	
1:30	Federal Land Manager Responsibilities	Victoria Evans
	Open Discussion	
3:30	ADJOURN	

SPEAKERS

Darryl Tyler
Acting Director
Control Programs Development Division
U.S. Environmental Protection Agency, MD-15
Research Triangle Park, North Carolina 27711

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John Paratpas
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SPEAKERS (continued)

Doug Latimer
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William Malm
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Las Vegas, Nevada 89114

Victoria Evans
National Park Service
Air Quality Programs (492)
Room 3021, Main Interior Building
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1.0 INTRODUCTION

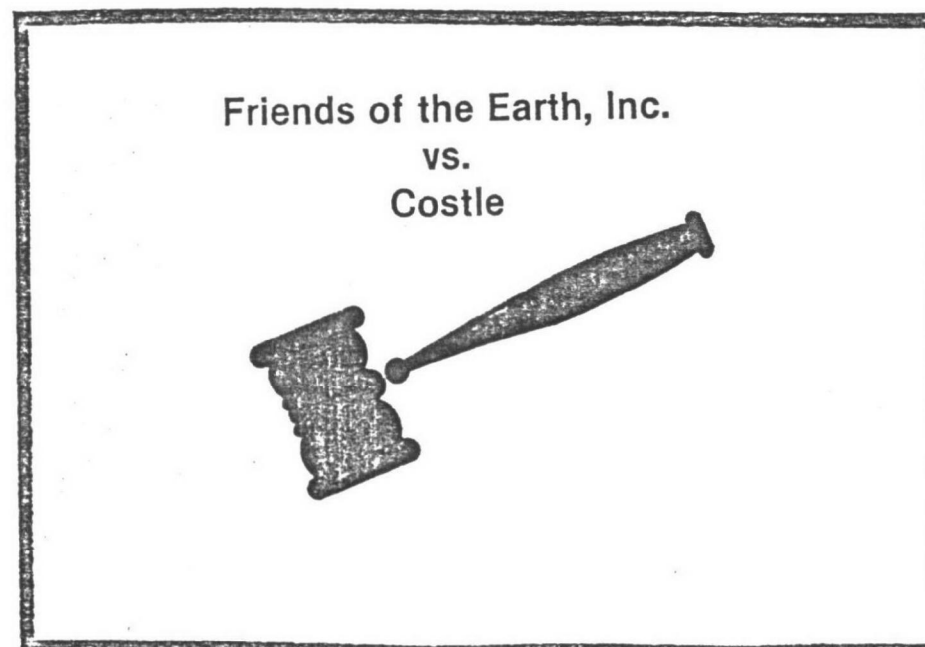
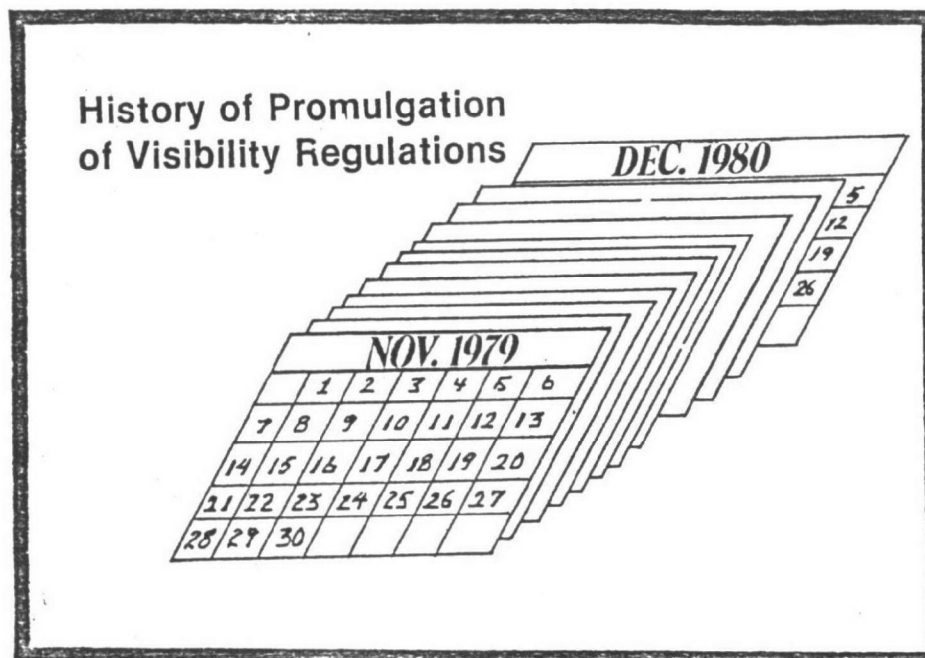
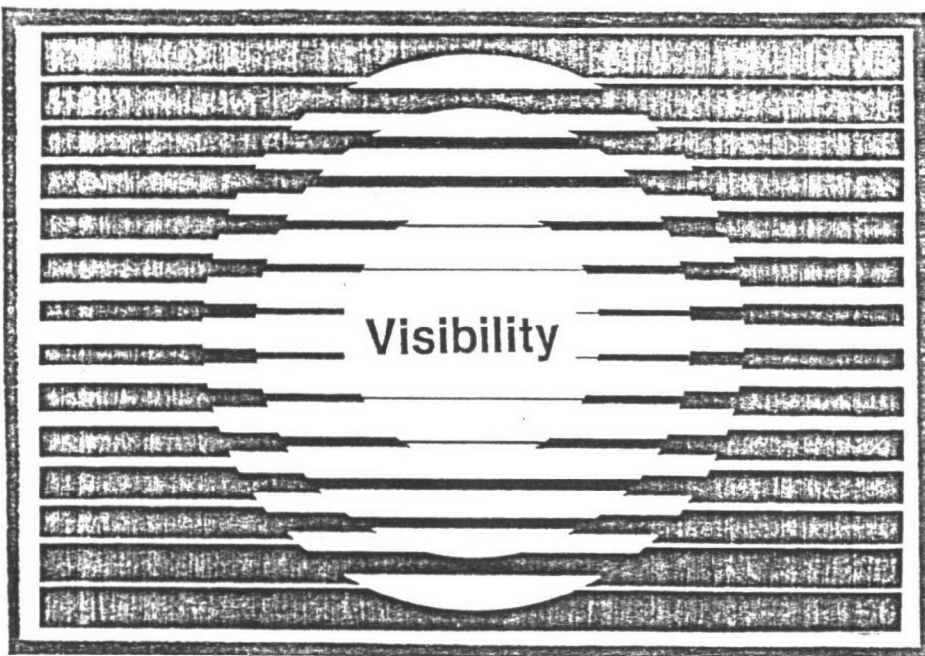
I. History of Promulgation

- A. Friends of the Earth, Inc. v. Costle No. 80-3081 - Inability of the Agency to promulgate within statutory deadline.
- B. ANPRM - November 30, 1979 (44 FR 69116) purpose - (1) provide background information on the key components of the regulatory program, (2) outline tentative positions, and (3) solicit public comment.
- C. Designation of mandatory Class I Federal Areas where visibility is an important value (44 FR 69122).
- D. Proposed Rulemaking - May 22, 1980 (45 FR 34762) - (1) purpose to publish proposed language for the regulatory program and (2) solicit comment.
- E. Public Hearing - January 30, 1980 (Washington, D.C.), July 2, 1980 (Salt Lake City) - purpose - to hear oral presentation of comments.
- F. Notice of Guideline Availability - July 23, 1980 (45 FR 49110) purpose - to announce document availability and solicit comments.
- G. Extension of comment period July 23, 1980 (45 FR 50825).
- H. Notice of Final Rulemaking - December 2, 1980 (45 FR 80084).

II. Guideline Documents

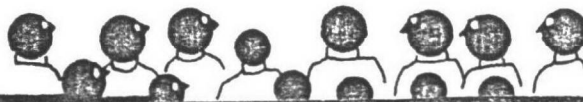
- A. Protecting Visibility: An EPA Report to Congress (EPA-450/5-79-008).
- B. The Development of Mathematical Models for the Prediction of Anthropogenic Visibility Impairment (EPA-450-3-78-110,a,b,c).

- C. Guidelines for Determining Best Available Retrofit Technology for Coal-fired Power Plants and Other Existing Stationary Facilities (EPA-450/3-80-009B).
- D. Assessment of Economic Impacts of Visibility Regulations (EPA-450/2-80-084).
- E. User's Manual for the Plume Visibility Model (PLUVUE) (EPA-450/5-80-032).
- F. Workbook for Estimating Visibility Impairment (EPA-450/5-80-031).
- G. Interim Guideline for Visibility Monitoring (EPA-450/2-80-082).

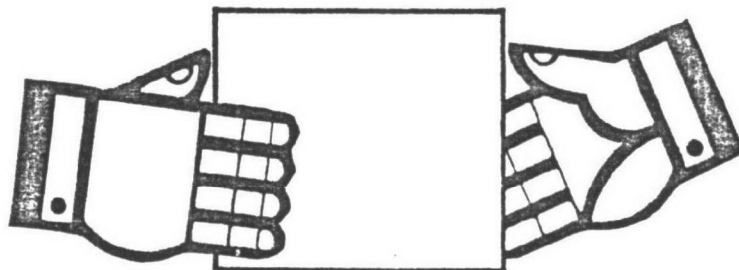


- ANPRM . . . November 30, 1979
- Designation of mandatory Class I Areas where visibility is an important value . . . November 30, 1979

- Proposed Rulemaking May 22, 1980
- Public Hearing June 30 and July 2, 1980



- Notice of Availability of Guidelines July 23, 1980



- Extension of Comment Period July 23, 1980

federal register

Tuesday
December 2, 1980

Part IV

Environmental
Protection Agency
Visibility Protection for Federal Class I
Areas

GUIDELINE DOCUMENTS

- Protecting Visibility: An EPA Report to Congress.
EPA-450/5-79-008
- Mathematical Models for the Prediction of
Anthropogenic Visibility Impairment.
EPA-450/3-78-110a, b, c
- BART. EPA-450/3-80-009b

MORE GUIDELINE DOCUMENTS

- Assessment of Economic Impacts.
EPA-450/2-80-084
- PLUVUE. User's Manual. EPA-450/5-80-032
- Workbook for Estimating Visibility Impairment
EPA-450/5-80-031
- Interim Guideline for Visibility Monitoring.
EPA-450/2-80-082

AVAILABILITY
OF
GUIDELINE
DOCUMENTS

NOTES

2.0 SCOPE OF THE REGULATIONS

I. Pending Litigation

Utah Association of Counties
Kerr-McGee Chemical Corporation
American Paper Institute
Commonwealth of Virginia
Chevron, Inc.
Stillwater PGM Resources
Utiliites Air Regulatory Group
Magma Copper
West Associates

II. The national goal - "the prevention of any future, and the remedying of any existing impairment of visibility in mandatory Class I Federal areas which impairment results from man-made air pollution."

III. Applicability

A. Phased Program

B. Phase I deals with "reasonably attributable" visibility impairment.

C. "REASONABLY ATTRIBUTABLE" means attributable by visual observation or other techniques the State deems appropriate.

D. Regulations apply to 36 States all of which have mandatory Class I Federal areas within their boundaries.

IV. Other Key Terms

A. Best Available Retorfit Technology - based on the degree of reduction achievable through the application of the best system of continuous emission reduction. Determination takes into account technology available, cost of compliance, energy

and nonair quality environmental impacts, existing pollution control equipment, remaining useful life of the source, and degree of improvement to be achieved.

- B. Existing Stationary Facility - large, greater than 250tpy, sources in existence on August 7, 1977, but not in operation prior to August 7, 1962. Sources reconstructed between these dates must be analyzed for BART.
- C. Federal Land Manager - Secretary of Interior, Secretary of Agriculture.
- D. Natural Conditions - Includes naturally occurring phenomena that reduce visibility.
- E. Significant Impairment - Impairment which interferes with the management, protection, preservation or enjoyment of the visitor's visual experience of the area.
- F. Adverse Impact - Impairment which interferes with the management, protection, preservation or enjoyment of the visitor's visual experience of the area.
- G. Significant Impairment and Adverse Impact - considers the geographic extent, intensity, duration, frequency and time of visibility impairment, and how these factors correlate with times of visitor use and the frequency and timing of natural conditions.

V. Mandatory vs. Nonmandatory Class I Areas

- A. Section 162 of the Clean Air Act defines mandatory Class I Federal areas as all:
 - (1) international parks,
 - (2) national wilderness areas which exceed 5,000 acres in size,
 - (3) national memorial parks which exceed 5,000 acres in size, and
 - (4) national parks which exceed 6,000 acres.

- B. There are 158 such areas.
- C. On November 30, 1979, EPA identified, in accordance with Section 169A(a)(2), 156 of these areas as having visibility as an important value.
- D. Two areas excluded.
 - (1) Rainbow Lake, Wisconsin
 - (2) Bradwell Bay, Florida
- E. Visibility Provisions Under Section 169A apply only to these 156 areas.
- F. Visibility protection provisions for new sources comes under the provisions of Section 162 of the Act and applies to all Federal Class I areas which are defined as "any Federal land that has been classified or reclassified Class I."
- G. State Class I areas are not required to be afforded visibility protection under the Clean Air Act. However, the State may do so if it desires such protection.

Under Section 165(e)(3) all new sources must analyze their impact on visibility on the area particularly affected.

VI. Anticipated Impact of the Regulations

- A. Three primary pollutants of concern:
 - (1) Particulate Matter (TSP)
 - (2) Sulfur Dioxide (SO₂)
 - (3) Oxides of Nitrogen (NO_x)
- B. Existing Sources
 - (1) SO₂ is primarily a contributor to regional haze through atmospheric conversion of SO₂ to SO₄ (sulfate) forming light-scattering aerosols.
 - (2) NO_x creates a brown plume which in some cases can be "reasonably attributed" to a single source. However, current controls generally can not reduce the impact of these emissions on visibility. Sources should be analyzed but probably no control at this time.

- (3) TSP was found to be a problem at only one source. That source has committed to clean up, which is predicted to considerably reduce the problem.

C. New Sources

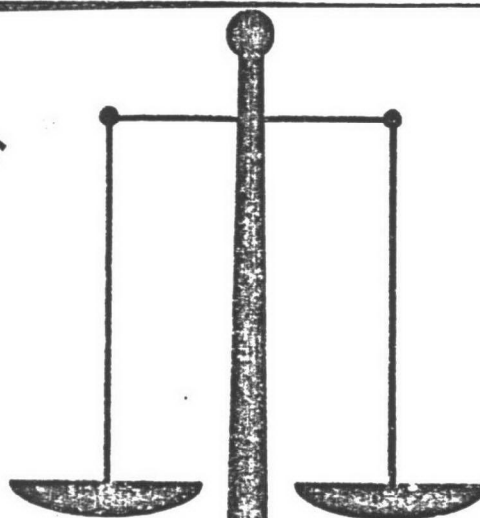
- (1) Most of the new source requirements are procedural in nature
- (2) little impact is expected beyond the impact of the PSD rules.

VII. Timetable

- A. December 2, 1980 - Publication of final rules.
- B. January 2, 1981 - State notifies Federal Land Managers of State contact.
- C. March 2, 1981 - Identification of impairment by Federal Land Manager to be considered by State in preparing SIP.
- D. March 2, 1981 - Identification of Integral Vistas by Federal Land Managers to be protected in SIP.
- E. September 2, 1981 - Visibility SIP due to Regional Office.
- F. December 2, 1981 - EPA approval/disapproval of SIP.
- G. December 1984 - First report on long-term strategy.
- H. December 31, 1985 - Cutoff date for identification of integral vistas by Federal Land Manager.
- I. December 1986 - BART must be installed and operational on all sources identified in 1981 plan.

SCOPE OF THE VISIBILITY REGULATIONS

Impending Litigation

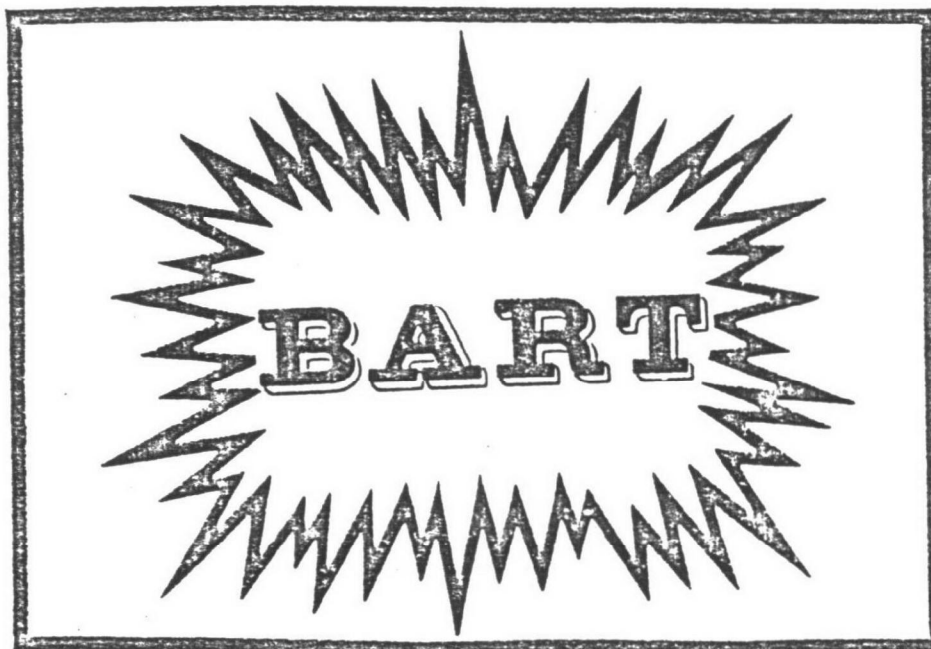
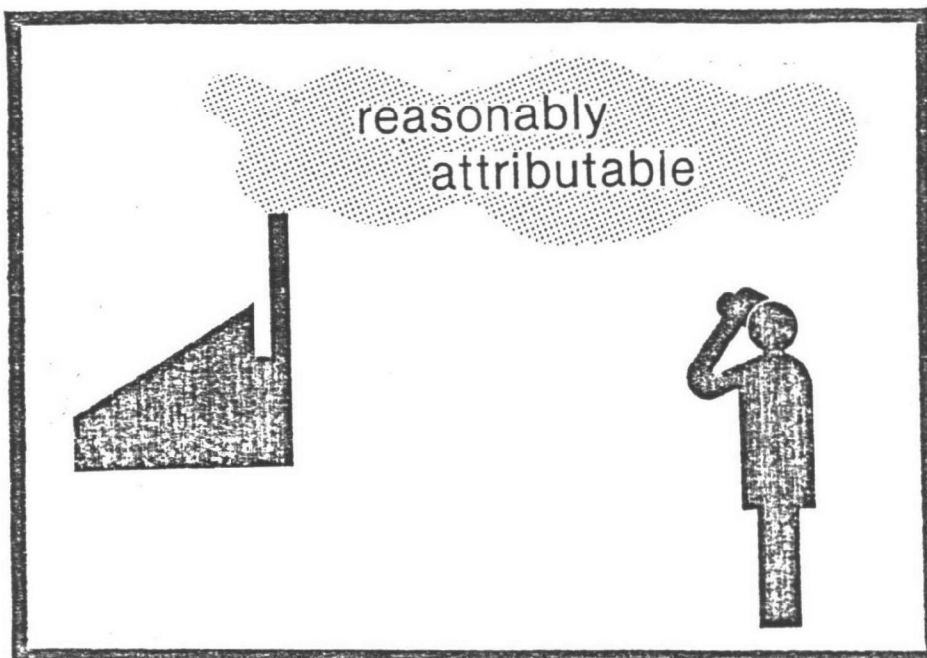


NATIONAL GOAL

"Prevention of any future
and remedying of any
existing impairment..."

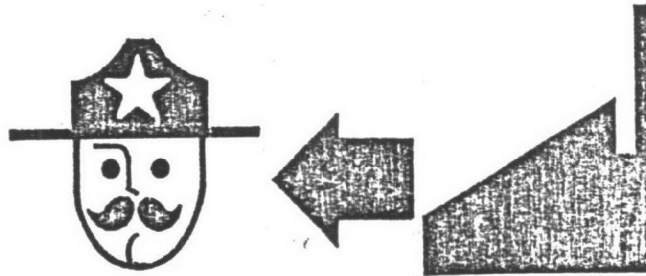
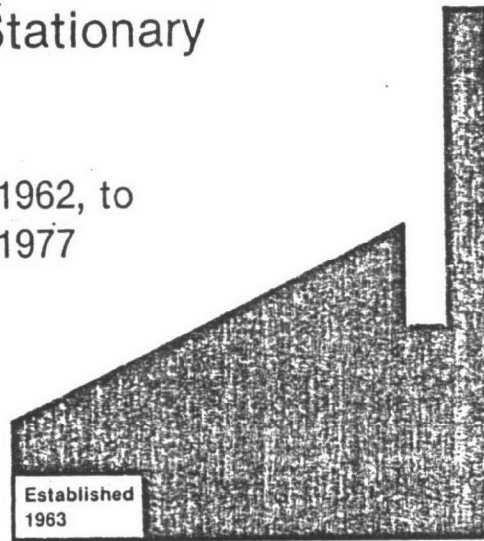
Applicability

- Phase I
- Mandatory vs. nonmandatory Class I areas



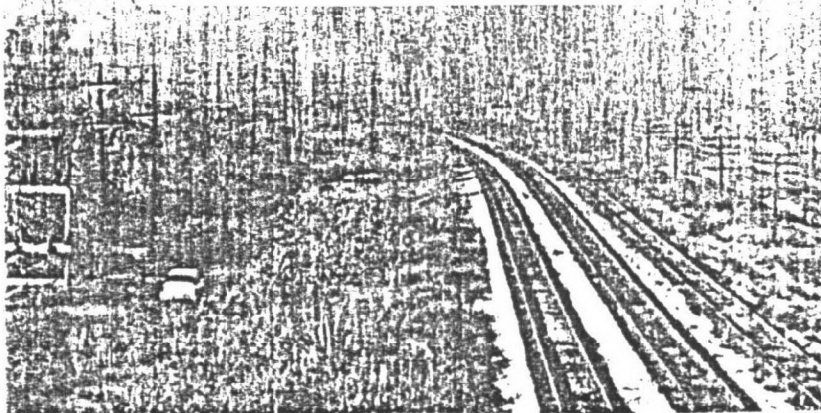
Existing Stationary Facility

August 7, 1962, to
August 7, 1977

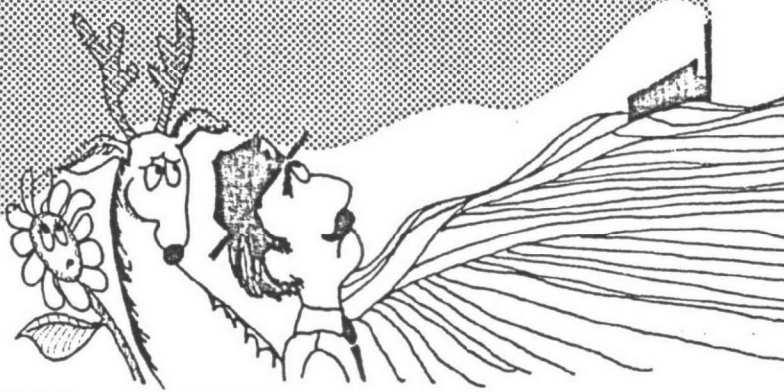


Federal Land Manager

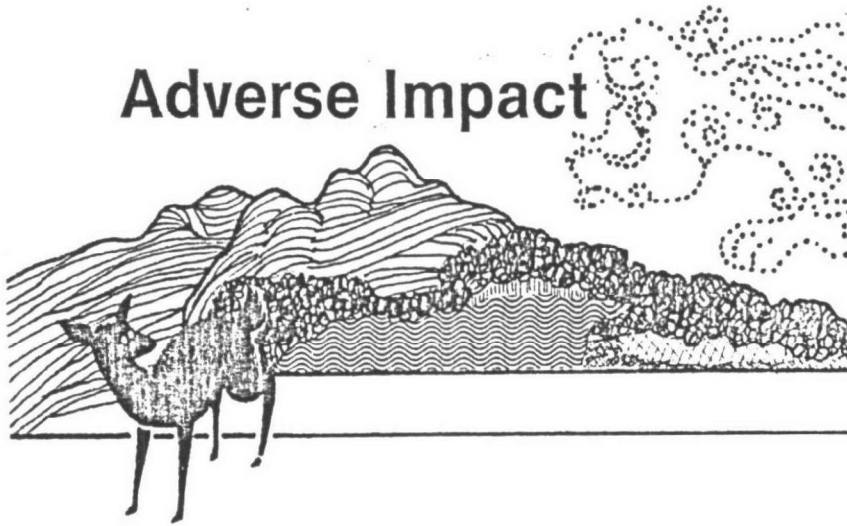
Natural Conditions



Significant Impairment

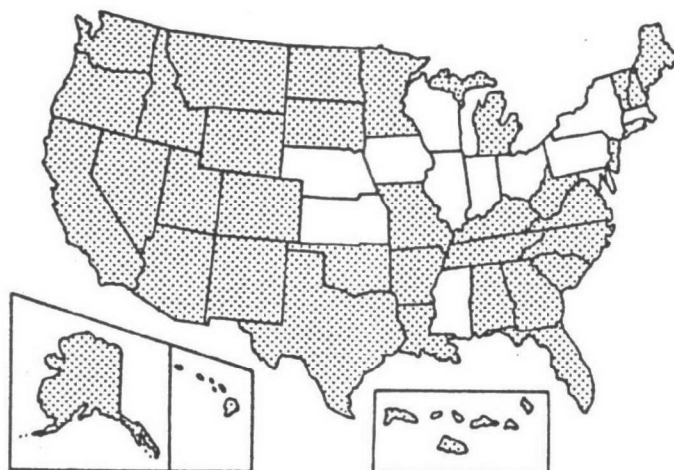


Adverse Impact



Significant and Adverse Considerations

- Geographic extent
- Intensity
- Duration
- Frequency
- Time
- Factors correlate with use and natural conditions



CLASS I AREAS

INTERNATIONAL PARKS

NATIONAL WILDERNESS AREAS – 5,000 ACRES

NATIONAL MEMORIAL PARKS — 5,000 ACRES

NATIONAL PARKS — 6,000 ACRES

Visibility identified as important value in all areas except

- Rainbow Lake, Wisconsin
- Bradwell Bay, Florida

Section 169A Regulations
apply *only*
in these 156 areas

NSR Visibility Requirements

"...any Federal land classified or
reclassified Class I."

165 (d)

Anticipated
Impact of
Regulations

TSP
SO₂
NO_x



EXISTING SOURCES

SO₂ → Regional Haze

EXISTING SOURCES

SO₂ → Regional Haze

NO_x → Brown Plume

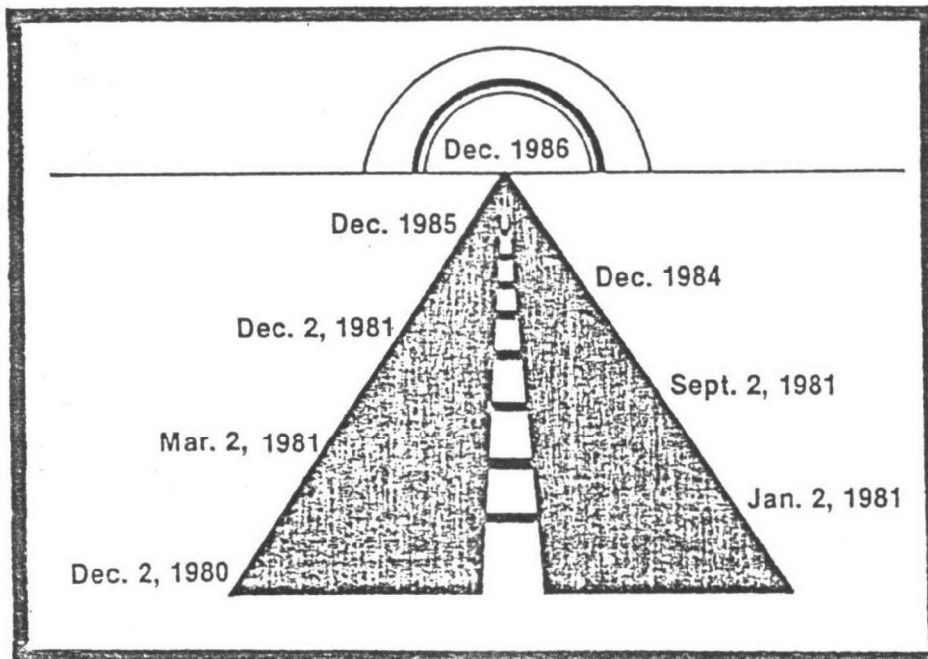
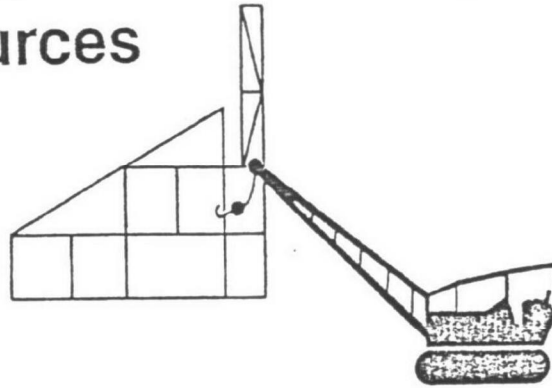
EXISTING SOURCES

SO₂ → Regional Haze

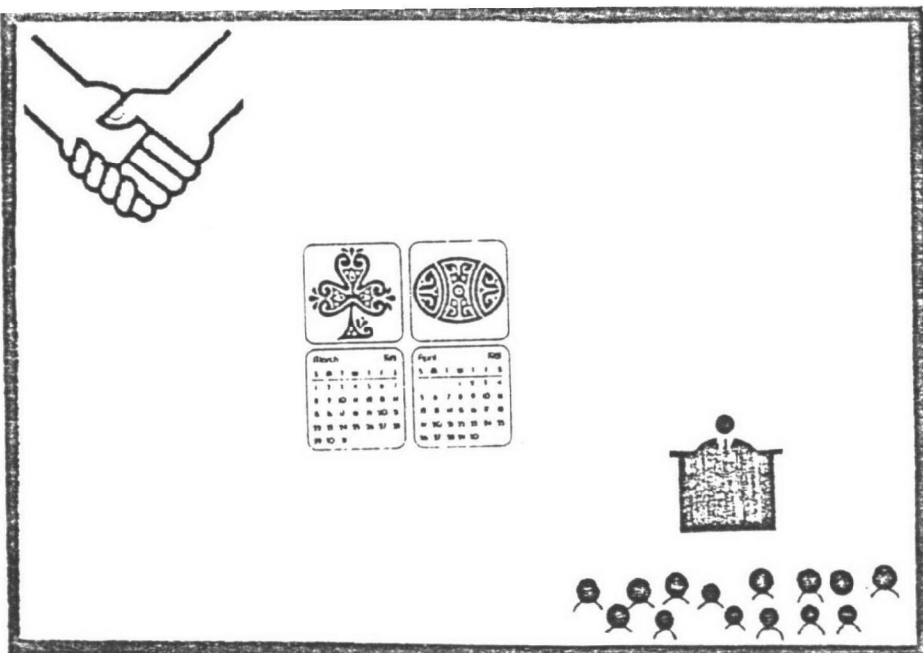
NO_x → Brown Plume

TSP → One-Source Problem

New Sources



- | | |
|------------------|---|
| December 2, 1980 | Final regulations published |
| January 2, 1981 | State notifies FLM of state contact |
| March 2, 1981 | FLM identifies integral vistas |
| | FLM identifies impairment to be considered in SIP |



September 2, 1981 SIP's due

September 2, 1981 SIP's due
 December 2, 1981 Approval/disapproval

September 2, 1981	SIP's due
December 2, 1981	Approval/disapproval
December 1984	First report on long-term strategy

September 2, 1981	SIP's due
December 2, 1981	Approval/disapproval
December 1984	First report on long-term strategy
December 1985	Cutoff date for identification integral vistas

September 2, 1981	SIP's due
December 2, 1981	Approval/disapproval
December 1984	First report on long-term strategy
December 1985	Cutoff date for identification integral vistas
December 1986	BART installed and operating on 1981 SIP sources

3.0 SIP REQUIREMENTS

3.1 Best Available Retrofit Technology (BART)

- I. Applicability: Any existing stationary facility (as defined in the Act). In existence as of August 7, 1977. In operation after August 7, 1963.
- II. The BART Analyses
 - A. The Federal Land Manager identifies visibility impairment in a mandatory Class I area.
 - B. The visibility impairment is "reasonably attributable" to an existing stationary facility.

Reasonably Attributable - Attributable by visual observation or any other technique the State deems appropriate. Basically this means the impairment can be physically traced to a source. Monitoring techniques such as visual observation, tracing the plume with an aircraft or any other appropriate technique.

- C. Determine if the maximum achievable control will result in a perceptible reduction in the visibility impairment.

Perceptibility - A comparison should be made between the source's existing emissions' contributions to the visibility and that expected from imposition of the maximum achievable control. Maximum achievable control is generally represented by the NSPS. If this comparison shows a perceptible improvement in visibility - the analysis continues. Both analytical techniques and empirical methods can be used to determine the degree of improvement anticipated. These include modeling and comparison photographic techniques.

- D. An engineering analysis is done to analyze the impacts of alternative retrofit systems.

Except - If a State chooses an emission limitation which represents the NSPS this analysis need not be done.

- E. If a level of control other than NSPS is chosen, it must be demonstrated that the emission limitation chosen reflects a reasonable balance of the BART factors.
- F. After assessing all alternative retrofit systems, an emission limitation representing BART is determined. This emission limitation is incorporated into the SIP.

III. Exemptions from BART

- A. The Administrator may exempt from BART requirements those existing stationary facilities which:
 - (1) do not cause or contribute to significant visibility impairment
 - (2) the exemption is effective only upon concurrence of all affected Federal Land Managers.

IV. Reanalysis

- A. Purpose - to ensure new technology is considered as it becomes reasonably available.
 - (1) The Administrator determines new technology is reasonably available.
 - (2) Pollutants, for which BART has not been previously applied, are analyzed for their impact on visibility.
 - (3) The analysis would follow the previous BART procedures.

V. Control of TSP, NO_x, and SO_x

- A. TSP - most controllable at present. If an uncontrolled source produces a primary particulate plume the results of controlling it are fairly obvious.
- B. NO_x - can cause a traceable plume, but present techniques do not result in a perceptible amount of improvement. Advances in NO_x control technology are expected within the next few years.

- C. SO_x - primary contributor to regional haze which will be dealt with in Phase II.

3.2 FLM/State/EPA Coordination

I. Coordination with Respect to BART

- A. The Federal Land Manager identifies visibility impairment in the mandatory Class I area which starts the process.
- B. The Federal Land Manager may identify potential BART sources to the State.
- C. Most coordination would take place within the consultation of § 51.302(b)(2).

II. Consultation Procedures

- A. Consultation, in person, between the FLM and the State.
- B. Opportunity must be made for discussion of the FLM's assessment of impairment in the Class I area.
- C. Opportunity to discuss FLM recommendations on elements of the long-term strategy.
- D. State must identify to FLM the official to who certain information is submitted.

III. Continuing Consultation

- A. Plan must include procedures for continuing consultation between the State and FLM.

Exchange of Information - This requirement is to ensure continued input from both sides. The FLM has valuable information on the conditions of the Class I areas which is important to informed decisionmaking by the States. These provisions need to allow for maximum information flow.

- B. Some examples of this continuing process:

- (1) Early notification of the FLM of any action the State takes concerning Class I areas.

(2) Handling requests for information from either party.

IV. Coordination Between States

- A. There will need to be some effort between States to deal with some visibility impairment.
- B. Each State is responsible for controlling the industry in that State, however, sometimes that industry may pollute a park in another State. Therefore, some communication must take place between all affected parties to remedy the situation.

V. EPA's Role

- A. Continuing visibility research.
- B. Consultant to State.
- C. Consultant to FLM.
- D. Approval/disapproval SIP.

3.3 Integral Vistas

I. Regulatory Definition

II. Identification Procedures

A. FLM input:

- (1) FLM identify integral vistas according to criteria he develops
- (2) FLM notifies State of any integral vistas and the reasons they were selected.

B. State requirements

- ✓ (1) State must list in its SIP any integral vista identified at least six months prior to plan submission.
- (2) For integral vistas identified after that the State must list them in its SIP at earliest opportunity and in no case later than at the time of the periodic review.
- (3) The State does not have to list an integral vista if it demonstrates the identification was not made in accordance to criteria.

III. State Responsibilities

- A. When a source impacts, or is anticipated to impact, an integral vista, the State must evaluate the source in terms of making reasonable progress towards the national goal. This means the State may allow a balancing of interests when determining the measure of protection if that balancing is within the definition of reasonable progress.

3.4 Long-term Strategy

- I. Purpose to assure reasonable progress toward the national goal (10 to 15 years).

What is reasonable progress - reasonable progress is not defined by the regulations, it is to be defined by the State with impact from the Federal Land Manager.

- II. Two basic parts of the long-term strategy.

- A. Existing problems.
- B. Future problems.

Strategy must address not only areas within the State but areas outside the State that may be affected by sources in the State.

III. Existing Problems

- A. BART is intended to only address the largest sources.
- B. The long-term strategy must address non-BART sources which may also be reasonably attributable.
- C. State must consider any land management plans to protect or enhance visibility in the mandatory Class I area.
- D. State should first consider any existing air quality management programs because current control efforts around the mandatory Class I Federal area may improve visibility.
- E. State should consider encouraging the retirement of older, less well controlled facilities by providing opportunity for

newer, well controlled facilities to construct. Some degradation in visibility may be acceptable over the short-term in order to make long-term gains.

F. The State should consider smoke management programs which can reduce the impact of forestry and agricultural burning. This does not mean that forestry and agricultural burning must be eliminated but rather consideration is to be given the various ways and alternatives available to reduce the impact.

G. The State must demonstrate that measures, including emission limitations, are enforceable.

IV. Future Problems

A. The review of new sources will be a key component of the long-term strategy.

(1) Replacement of old sources by new, well-controlled sources will help eliminate existing problems.

(2) Problems created by new sources will be longer in duration and be considerable more difficult to solve.

V. Review of the Long-term Strategy

A. Must be accomplished at least every three years.

B. Purpose - to provide a periodic assessment of the ability of the long-term strategy to make reasonable progress.

C. Report to the public and the Administrator must include:

(1) As assessment of the progress achieved in remedying existing impairment.

(2) An evaluation of any change, improvement or degradation in visibility.

(3) An assessment of the ability of the long-term strategy to prevent future impairment.

(4) Identification of additional measures necessary to remedy or prevent impairment.

(5) An assessment of the progress achieved in implementing BART.

(6) An assessment of the impact of any exception from BART.

3.5 New Source Review

I. Overview

A. New source review is imperative in order to assure reasonable progress toward preventing future visibility impairment.

B. The requirements of the PSD program if incorporated into the visibility program will provide many of the review requirements necessary to satisfy this requirement.

II. Visibility Provisions of PSD

A. PSD program requires that all PSD sources must be reviewed for their potential impact on all Federal Class I areas.

B. PSD provisions provide the opportunity for the Federal Land Manager to demonstrate that an adverse impact on visibility would occur even though air quality increments are not violated.

C. If the Federal Land Manager demonstrates to the satisfaction of the State that an adverse impact would occur the State may not issue the permit.

D. The source may attempt to demonstrate to the Federal Land Manager that even though air quality increments are violated no adverse impact will occur.

E. If the Federal Land Manager agrees with the demonstration, the State may under certain conditions issue the permit.

F. If the Federal Land Manager provides an analysis of adverse impact and the State does not find in favor of the demonstration, the State must explain its decision.

~~III~~ Additional New Source Visibility Provisions

A. PSD does not require the review of new sources locating in nonattainment areas.

- B. Section 307 requires that all "major stationary sources" be reviewed if they potentially impact visibility in a mandatory Class I Federal area.
- C. Sources locating in nonattainment areas are not subject to the adverse impact test, rather the State must ensure permitting of the source is consistent with the long-term strategy.
- D. Notifications.
- E. The State must notify the Federal Land Manager within 30 days of receipt of an application from a source that may affect visibility in any Federal Class I area.
- F. Notification of Federal Land Manager must be at least 60 days before any public hearing on the permit.
- G. Notification must include all relevant information including an analysis of the anticipated impact of the source on visibility.
- H. While advance notification is received the State must notify the Federal Land Manager within 30 days of the advance notification.

IV. Integral Vistas and New Source Review

- A. New source permit applications must address the potential impact on integral vistas if identified at least one year before submission of a complete permit application.
- B. Integral vistas subjected to public review and comment must be addressed, if identified, at least 6 months prior to permit application.
- C. The State in permitting sources with an impact on integral vistas shall ensure that permitting the source will be consistent with the long-term strategy.

SIP Requirements

Best Available Retrofit Technology

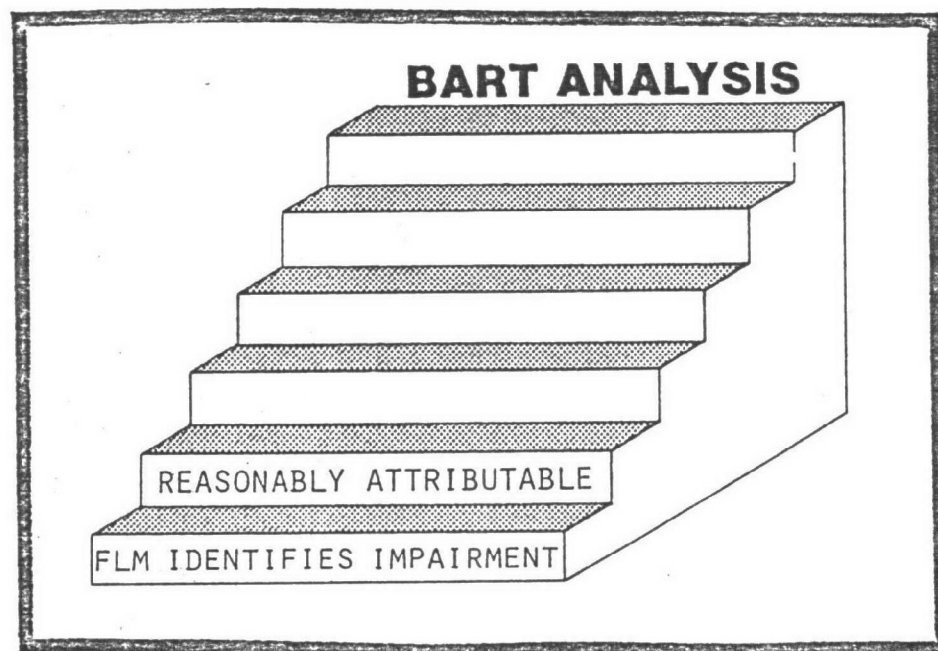
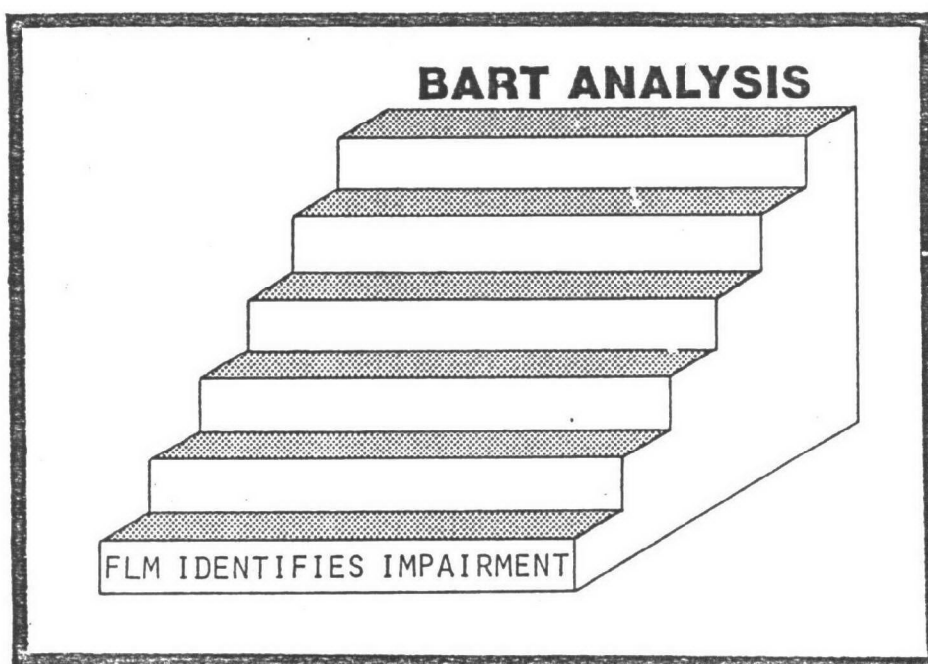


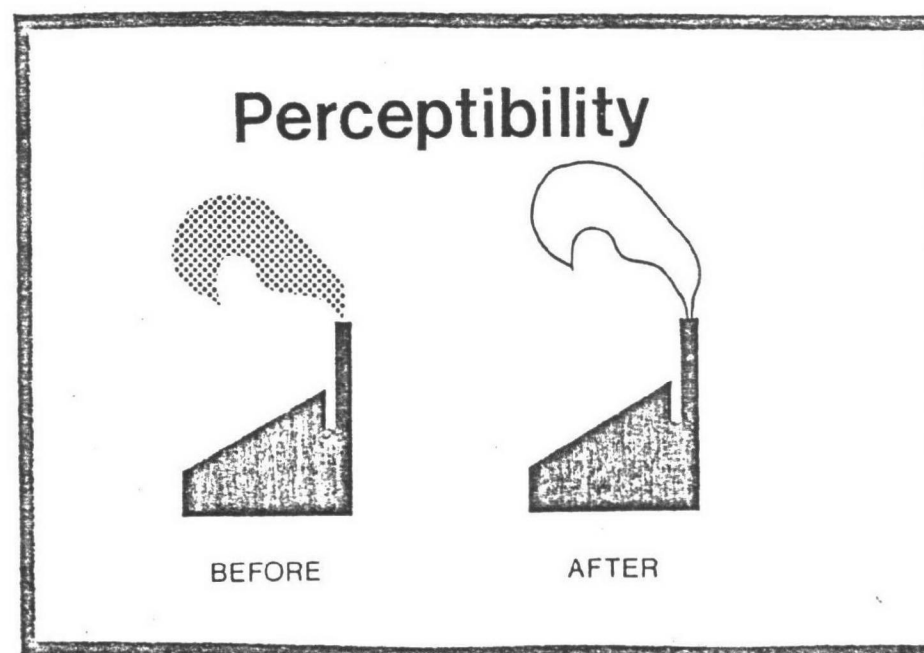
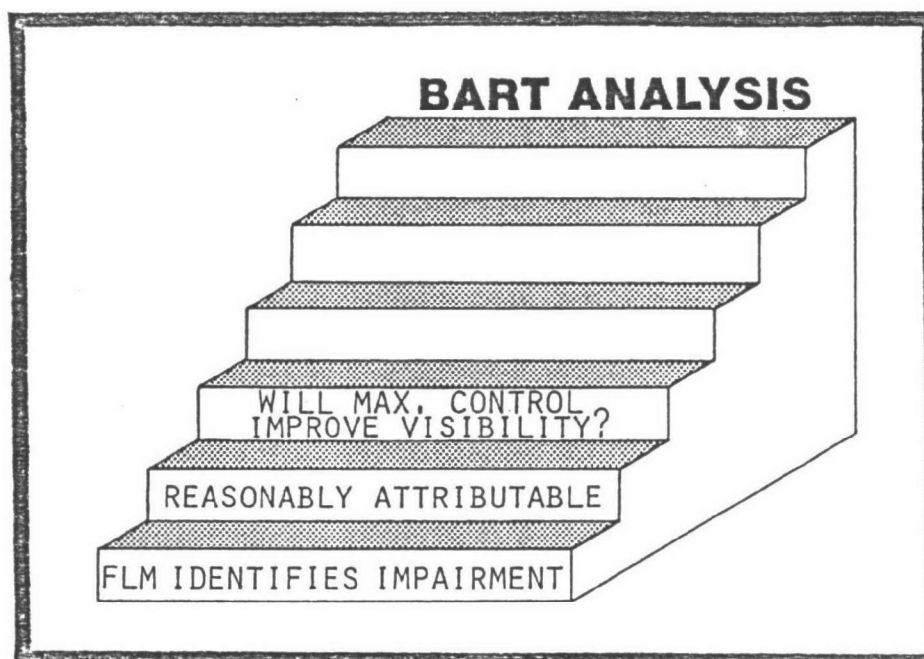
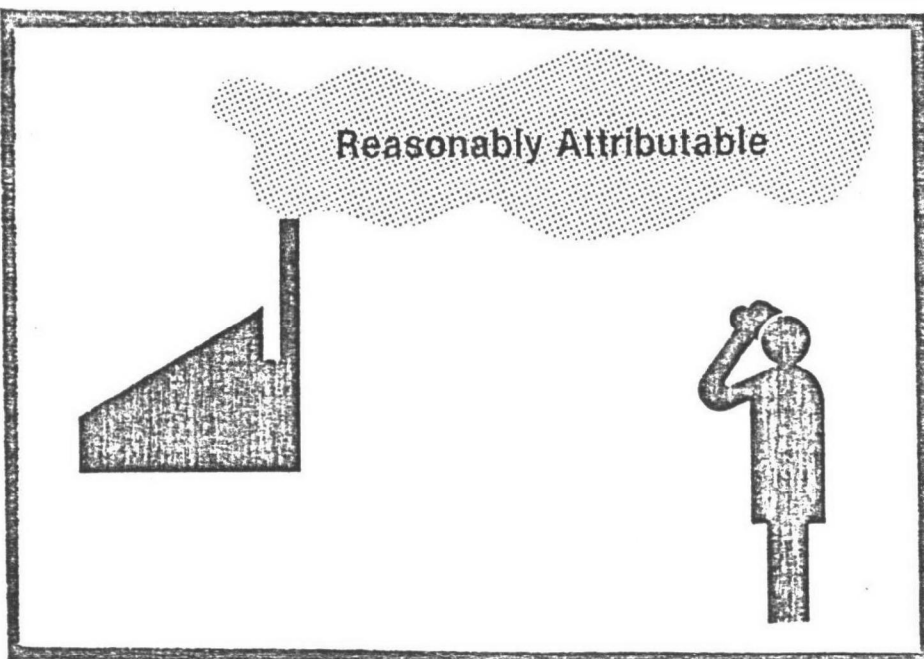
CLEAN AIR ACT

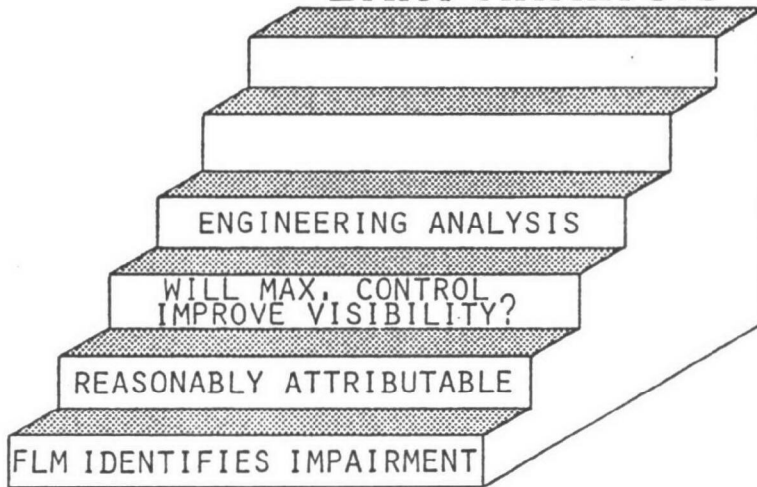
Applicability	Definition
169 A(b) (2)	169 A(g) (2)

Applicability

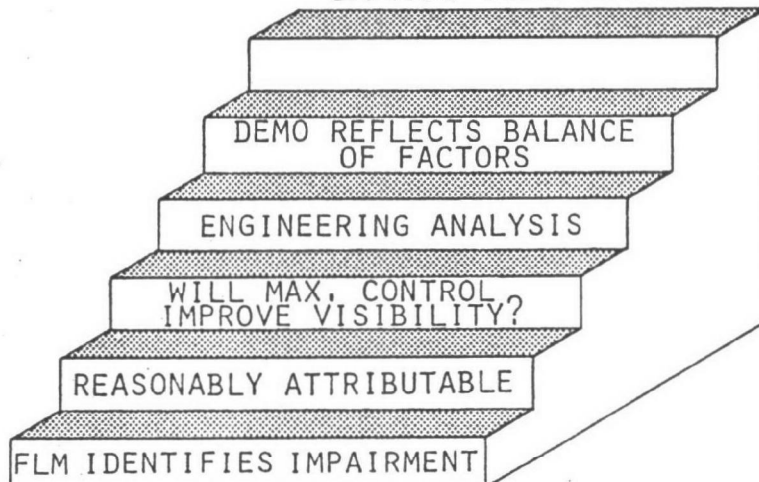
- 28 categorical sources
- Potential to emit 250 tons/year
- < 15 years old as of August 7, 1977
- "Reconstructed" after August 7, 1962

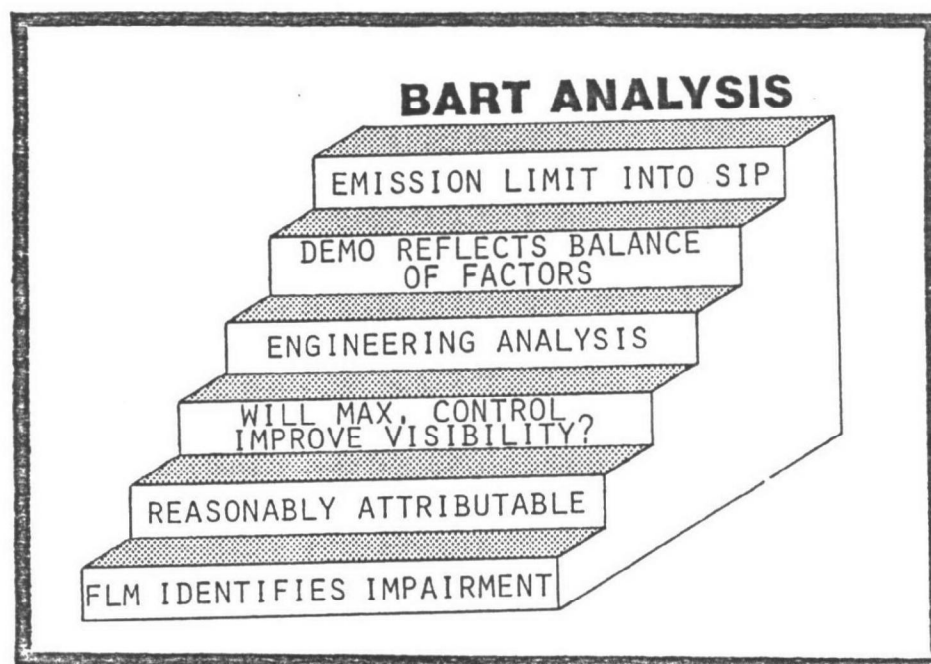
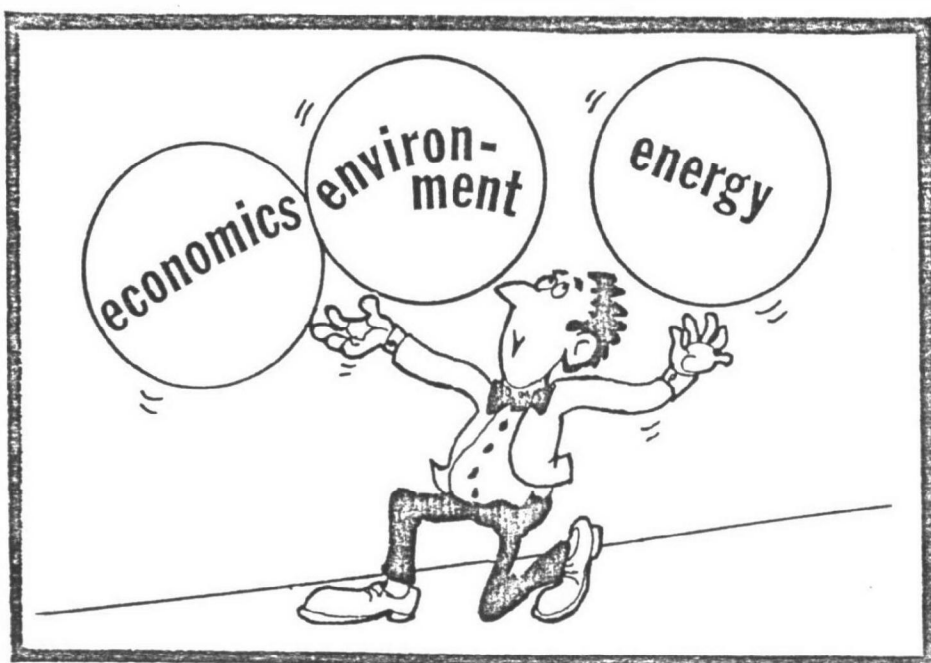




BART ANALYSIS**EXCEPTION:**

If ^{possible} limit = NSPS no
analysis is needed.

BART ANALYSIS



Exemptions from BART

Do not contribute to significant visibility impairment

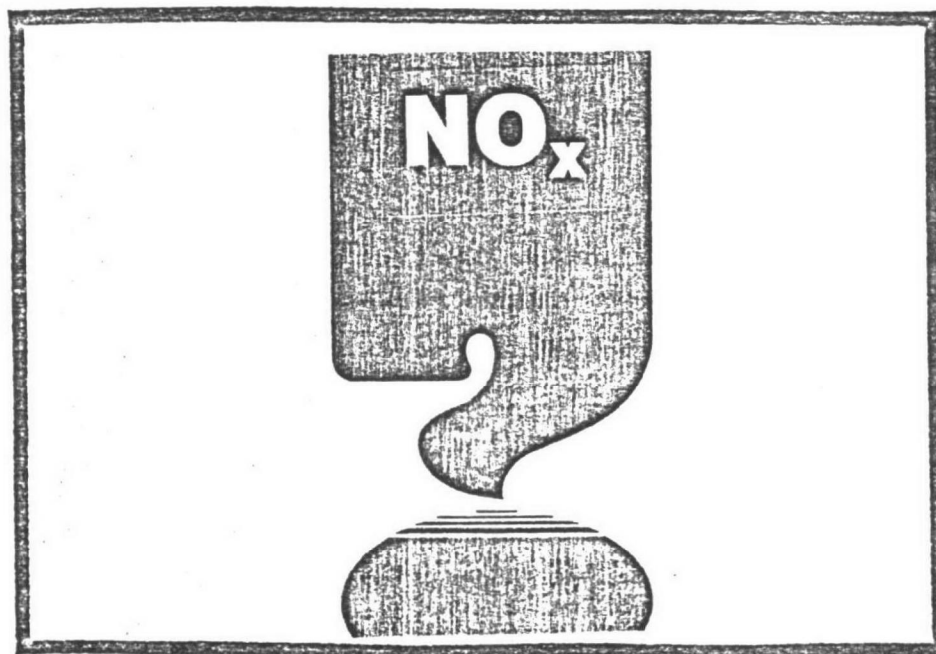
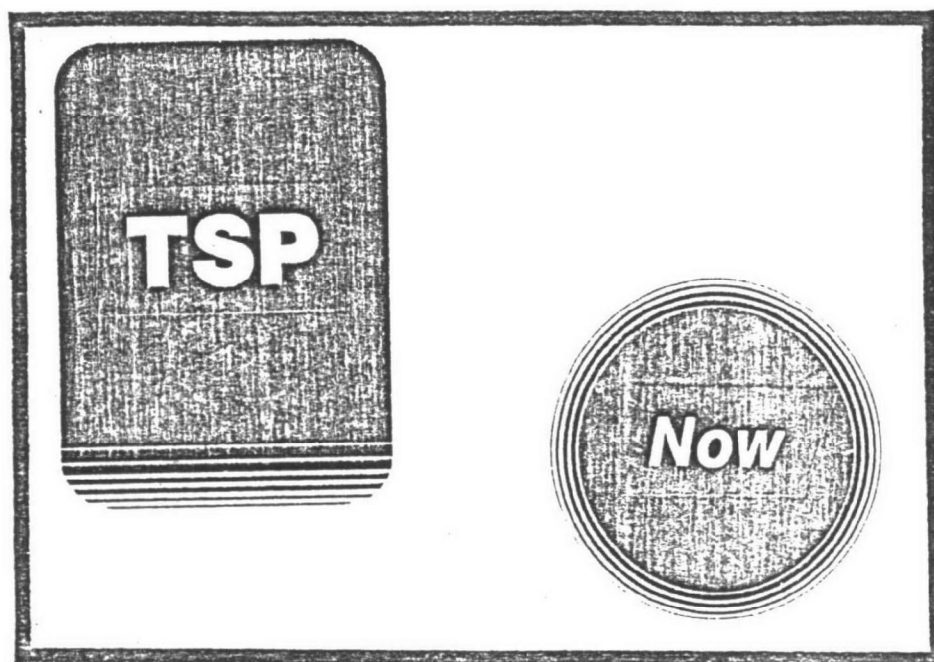
Only effective upon concurrence of affected FLM

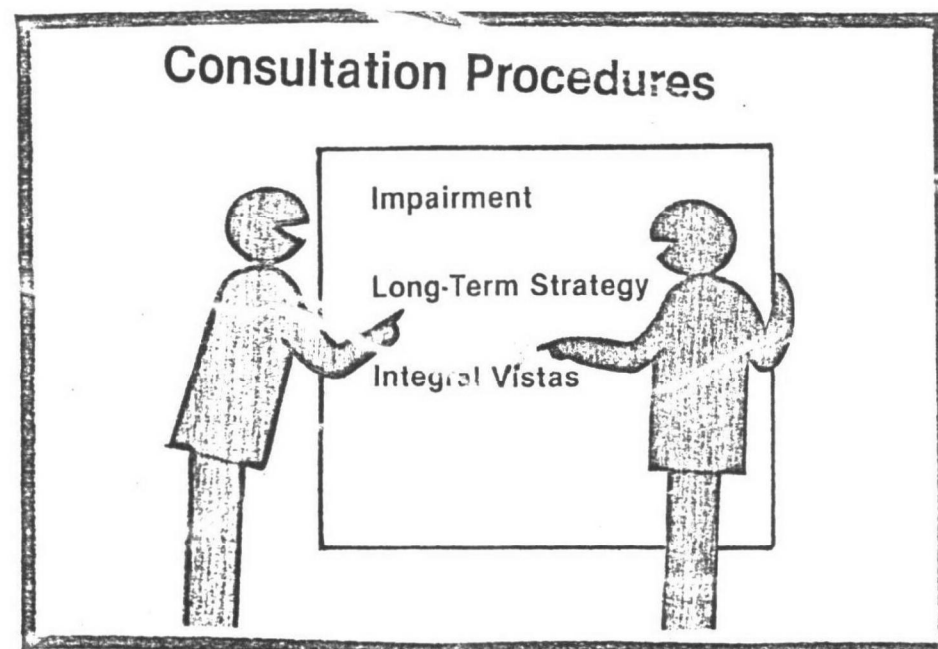
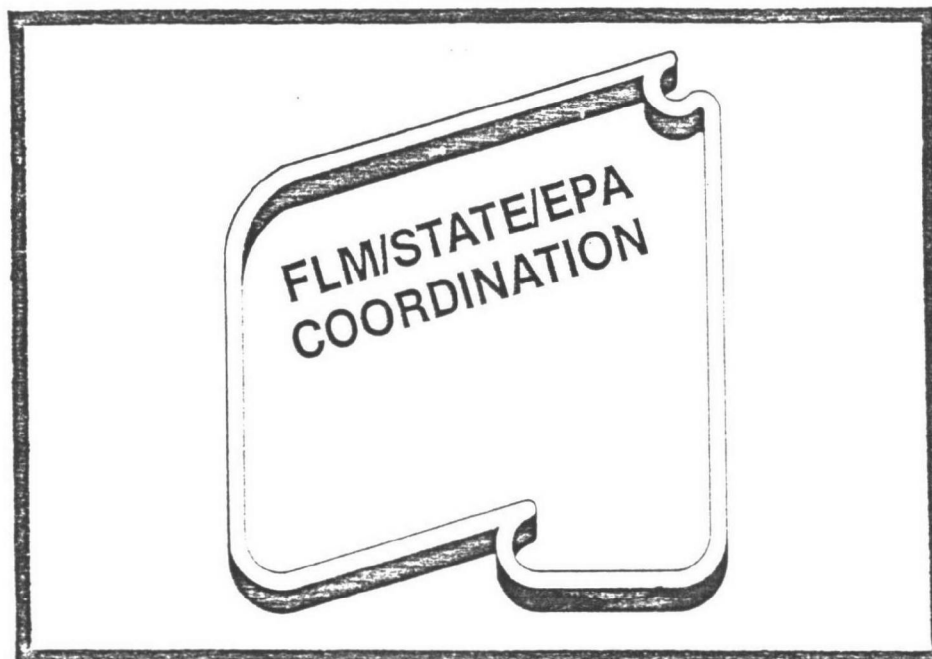
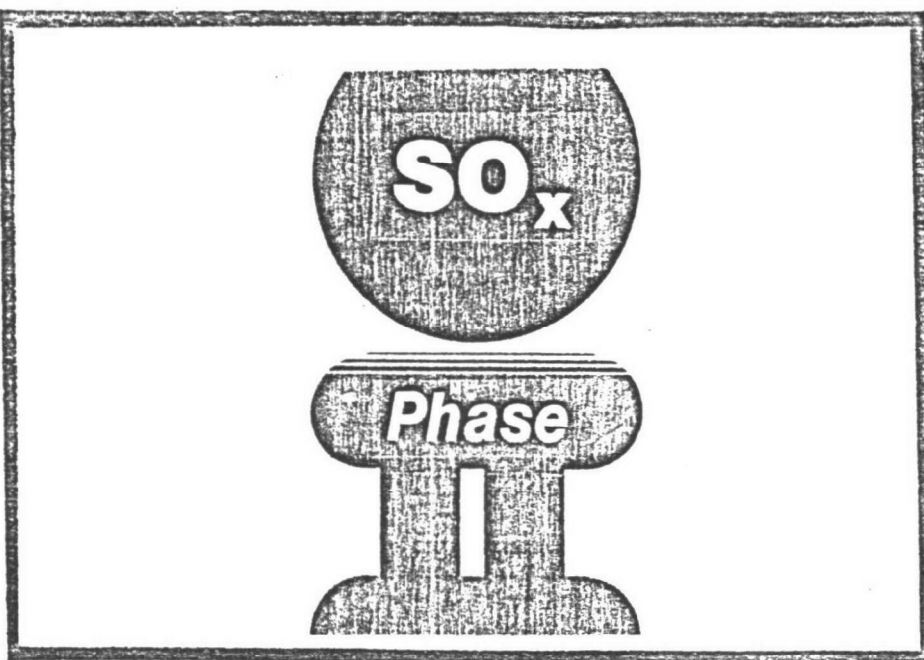
BART Reanalysis

New technology is
reasonably available.

Pollutants for which
BART not previously
applied.

Follow BART procedures





Opportunity to Discuss

- FLM's assessment of impairment
- FLM's recommendations on elements of long-term strategy

BART Coordination

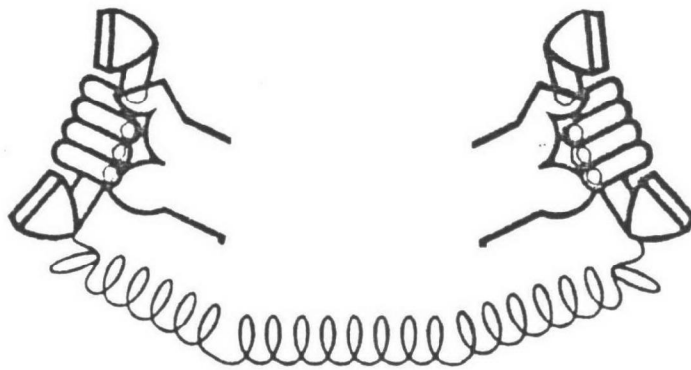
- FLM identifies impairment
- FLM **may** identify potential sources
- Most coordination under 51.302 (b) (2)



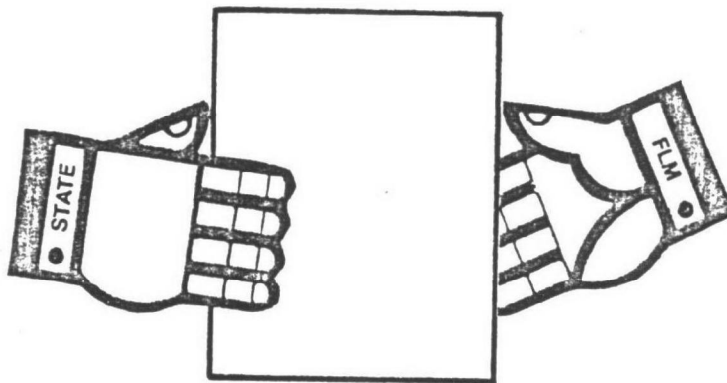
I'm the one
to get the
information.

Integral Vistas
Impairment
Monitoring

Continuing Consultation



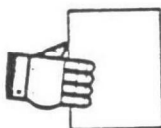
EXCHANGE



Examples:



- Early notification



- Handling requests



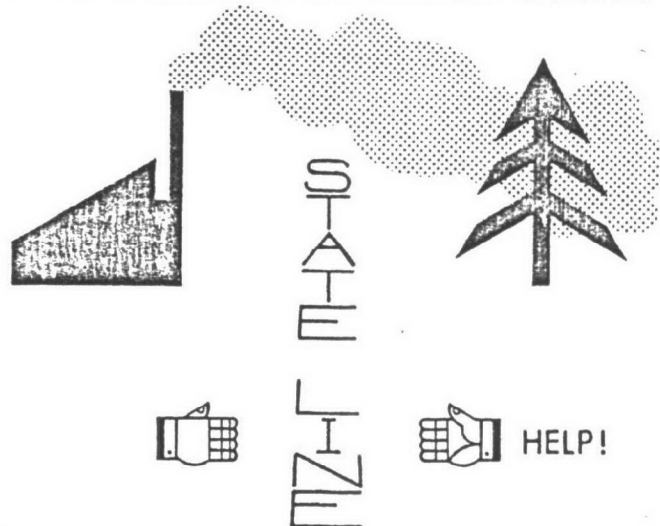
- Periodic meetings



- Seminars

Coordination Between States

NOTES



EPA's Role



Visibility Research



Consultant to State

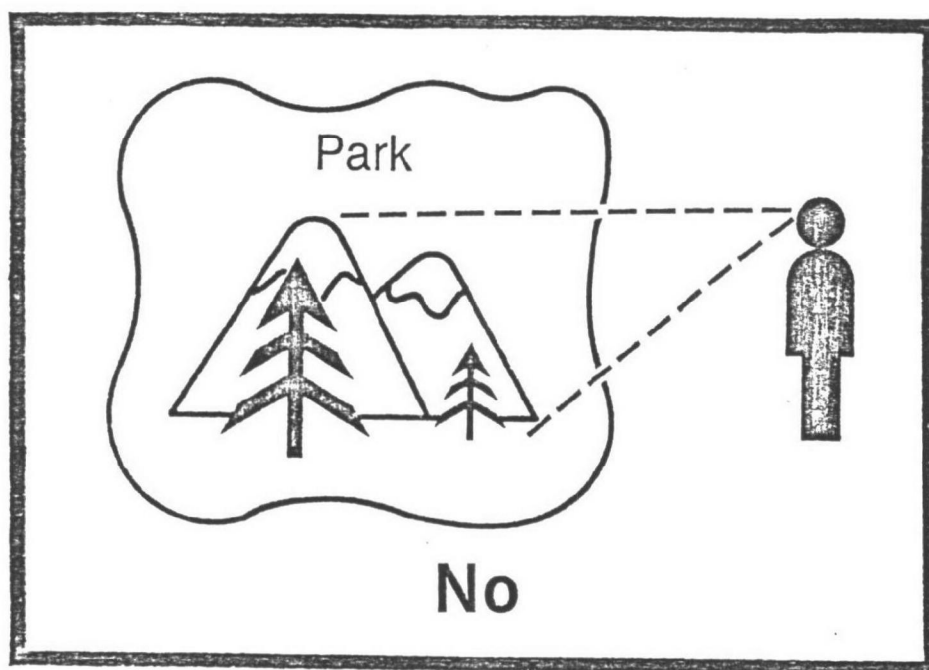
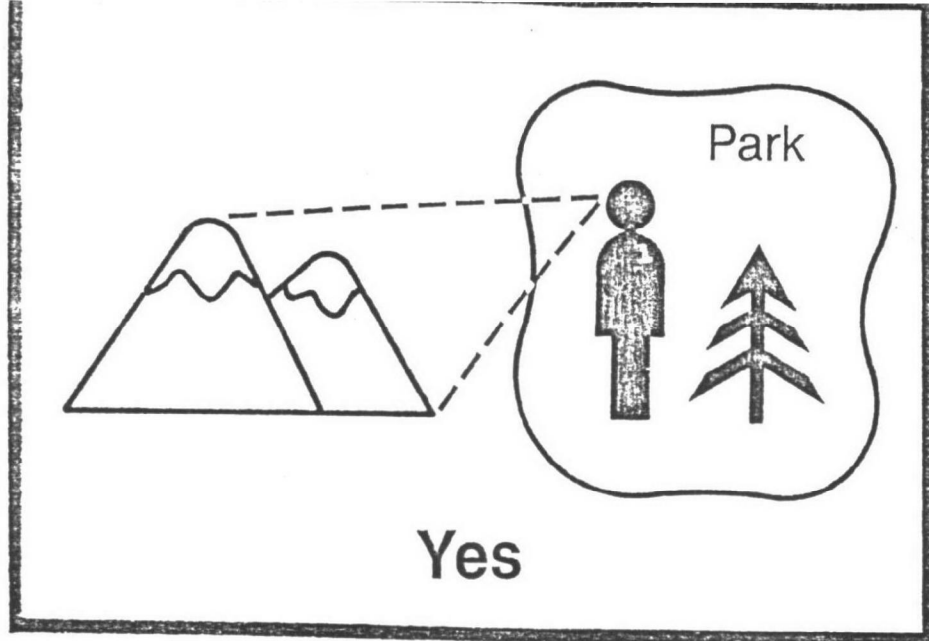


Consultant to FLM



Review/Approval SIP

Integral
Vistas



Identification Procedures



<input checked="" type="checkbox"/>
<input type="checkbox"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>

FLM Input

- Identify according to criteria developed.
- Notify state of integral vistas, along with reasons for selection.

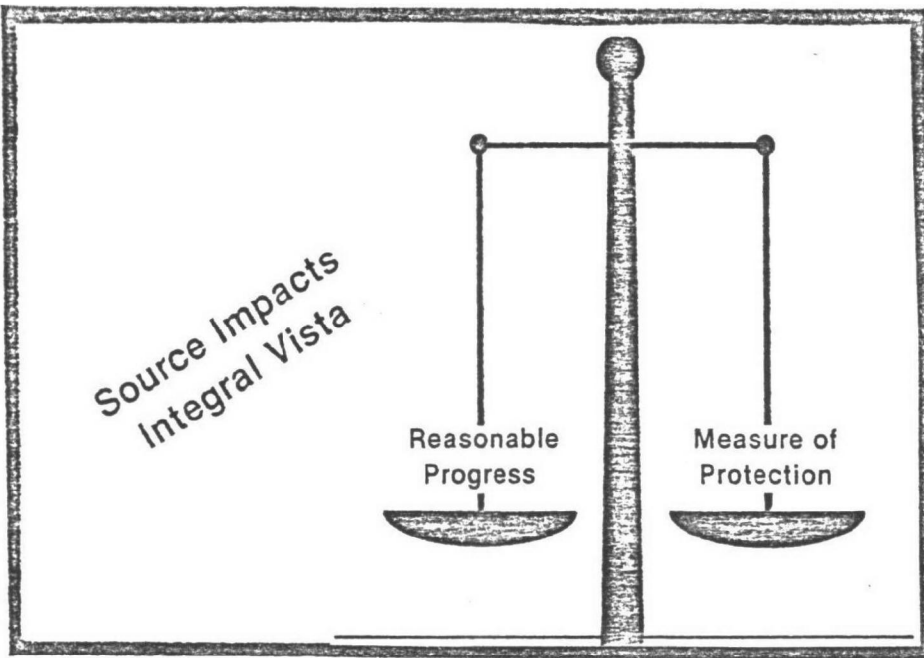
State Requirements

- List in SIP any integral vista identified at least 6 months prior to plan submission.
- List integral vistas identified after plan submission soon as possible, never later than time of periodic review.
- Not necessary to list an integral vista if state demonstrates the identification is not in accordance with criteria.

State Responsibilities to Protect Integral Vistas



Vista



Time Table

September 2, 1981 Date by which SIP's that include integral vistas must be submitted

Time Table

March 2, 1981 Identification of integral vistas

6 months

September 2, 1981 SIPs due

Time Table

September 2, 1981

SIPs due

3 years

September 2, 1984

Period review must include vistas since SIP submitted.

Time Table

September 2, 1981

SIP's due

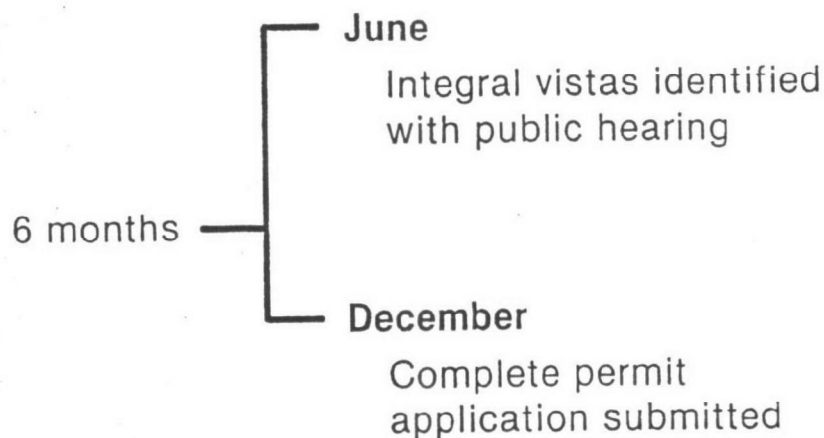
September 2, 1984

Periodic review must include vistas since SIP submitted.

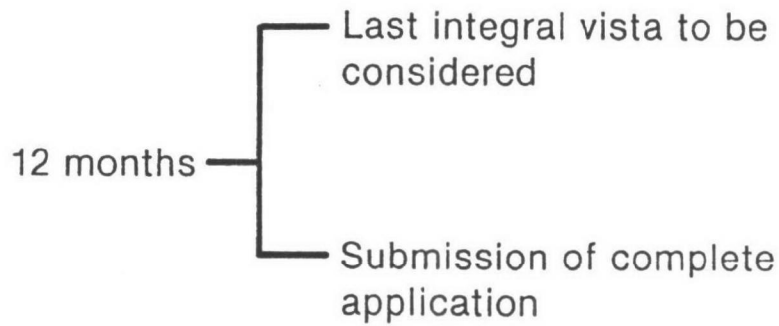
December 1985

Cutoff date for identification of integral vistas.

NSR Impact on Integral Vistas



NSR Impact on Integral Vistas



Long-Term
Strategy

A graphic of a document with a tab on the right side, containing the text 'Long-Term Strategy'.

Assure reasonable progress
toward the national goal
(10-15 years)

Long-Term Strategy

- * Existing

- * Future

Existing Problems

Address non-BART sources that are reasonably attributable.

Consider any land management plans.

Consider any existing air quality management programs.

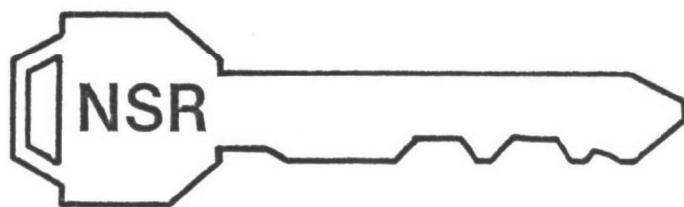
Existing Problems (Cont.)

Consider encouraging retirement of older, less-well-controlled facilities.

Consider smoke management programs.

Demonstrate measures and limitations are enforceable.

FUTURE PROBLEMS



OLD



NEW



Problems created by new sources
will be longer in duration and
more difficult to solve.

1978 Qjandfebonmaroapronayojunjubaugosepooetanovodee
 1979 Qjandfebonmaroapronayojunjubaugosepooetanovodee
 1980 Qjandfebonmaroapronayojunjubaugosepooetanovodee

REVIEW OF LONG-TERM STRATEGY

1981 Qjandfebonmaroapronayojunjubaugosepooetanovodee
 1982 Qjandfebonmaroapronayojunjubaugosepooetanovodee
 1983 Qjandfebonmaroapronayojunjubaugosepooetanovodee
 1984 Qjandfebonmaroapronayojunjubaugosepooetanovodee
 1985 Qjandfebonmaroapronayojunjubaugosepooetanovodee
 1986 Qjandfebonmaroapronayojunjubaugosepooetanovodee
 1987 Qjandfebonmaroapronayojunjubaugosepooetanovodee
 1988 Qjandfebonmaroapronayojunjubaugosepooetanovodee
 1989 Qjandfebonmaroapronayojunjubaugosepooetanovodee
 1990 Qjandfebonmaroapronayojunjubaugosepooetanovodee

Report on Review must:

- * Assess progress achieved
- * Evaluate change, improvement, or degradation
- * Assess long-term strategy's ability to prevent future impairment

- * Identify additional measures
- * Assess progress from BART
- * Assess impact of BART exemption

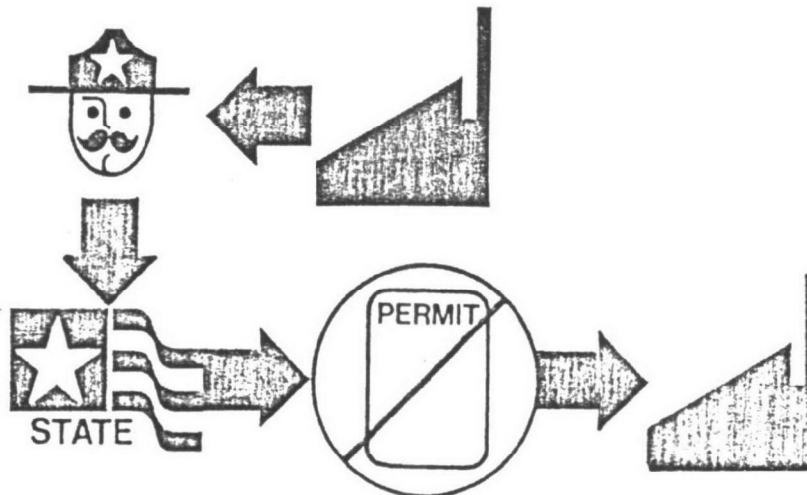


NSR is imperative to assure reasonable progress toward preventing future visibility impairment.

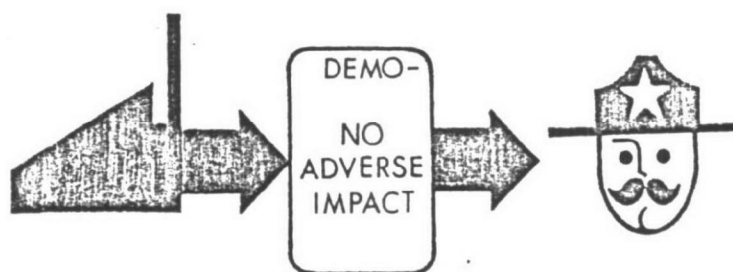
**Visibility
and
PSD**

All PSD sources must be reviewed for their potential impact on ***all*** Federal Class I Areas.

Adverse Impact Demonstrations



If state disagrees with FLM demonstration, state must provide explanation.



Additional NSR/Visibility Provisions
Section 307 — All “major stationary sources” to be reviewed for potential impact on mandatory Class I areas.

Additional NSR/Visibility Provisions



Subject to
Adverse Impact Test



PSD Applies

State Notification to FLM



Time Table

Within 30 days of receipt
of application

At least 60 days before
public hearing



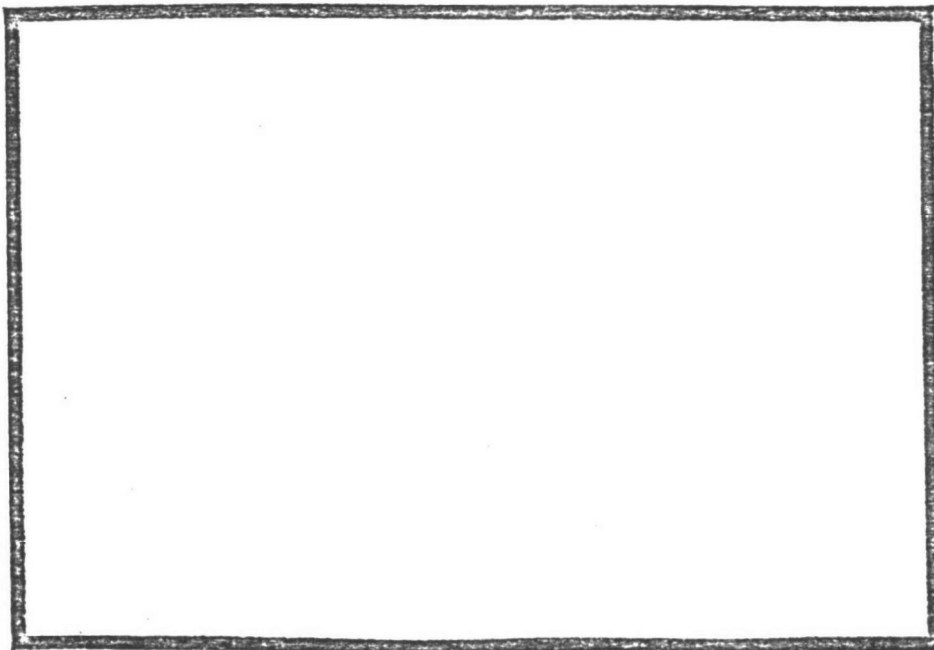
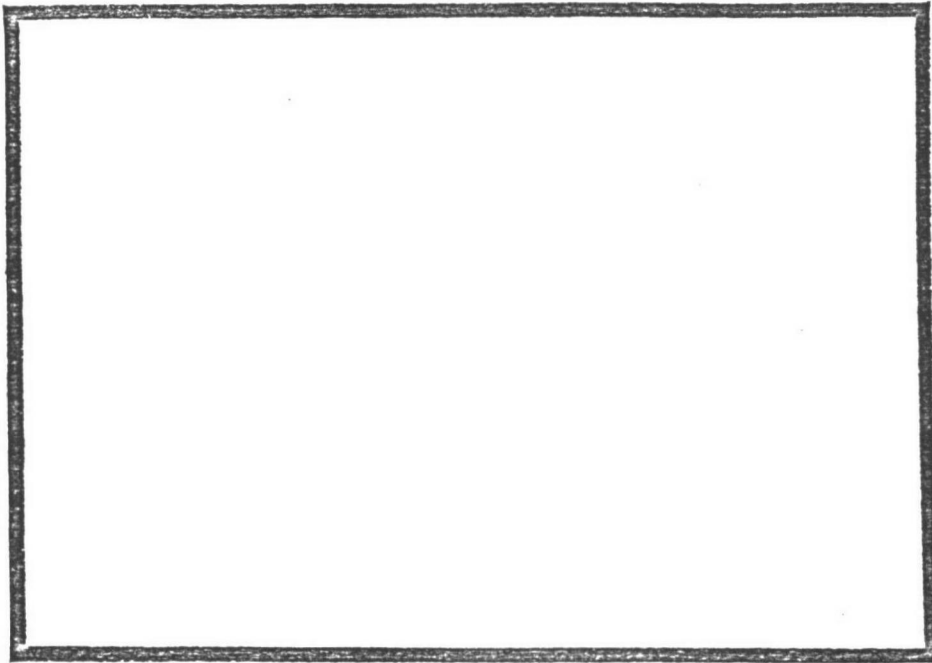
If advance notice
is received, State
must notify FLM
within 30 days of
such notice.

Integral Vistas and NSR

Must ensure that permitting sources with impact
on integral vistas will be consistent with
long-term strategy

Time Table

Address impact on vistas if identified at least 1 year
before submission of complete application



4.0 MONITORING

I. Needs

- A. Correct conditions.
- B. Extent of contribution.
- C. Identify specific sources.
- D. Effectiveness of program.

II. Objectives

- A. Optical parameters.
- B. Pollutants.
- C. Meteorological variables.

III. Data Needs

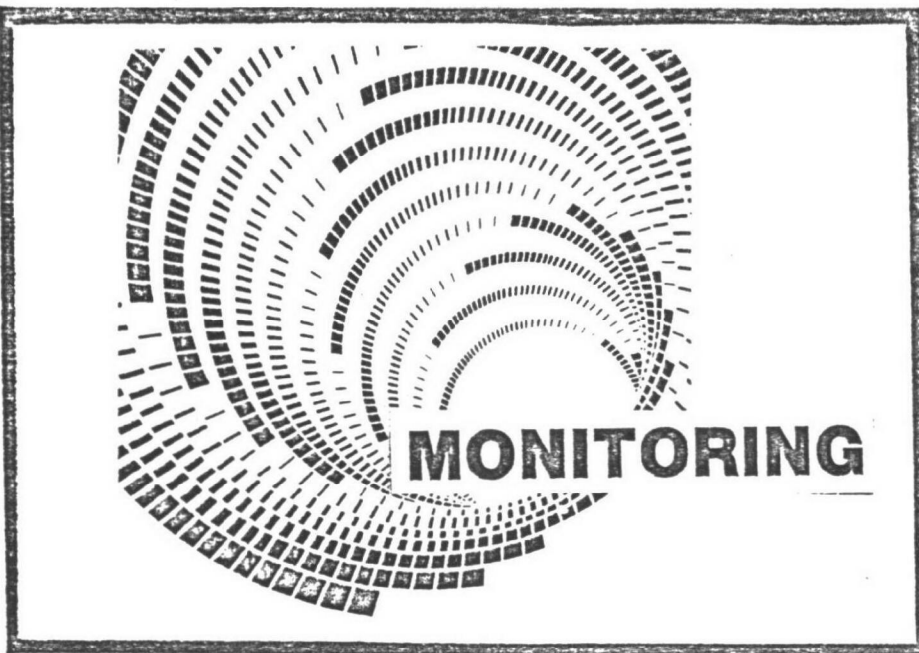
- A. Identify impact of existing sources.
- B. NSR.
- C. Evaluate long-term strategy.

IV. SIP Requirements

- A. Strategy.
- B. Use of available data.

V. NSR

- A. Case-by-case.
- B. Available techniques.



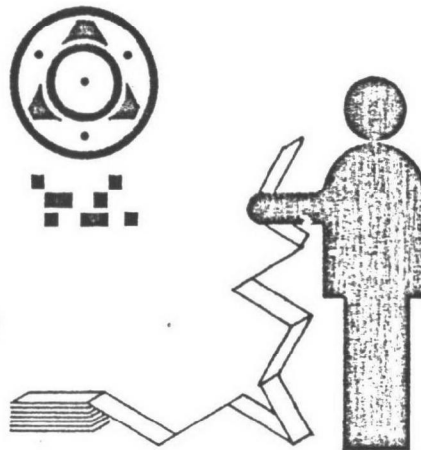
Monitoring is used to:

- Establish current visibility conditions
 - Determine extent of contribution from manmade and natural conditions
-
- Identify specific sources that contribute to visibility impairment
 - Monitor effectiveness of visibility protection program

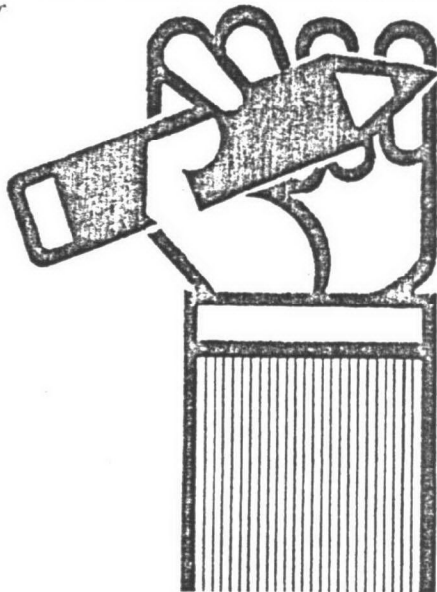
Meeting monitoring objectives will require measurement of:

- Optical parameters
- Pollutants
- Meteorological variables.

Visibility Data
Needed for
Three Aspects of
Visibility Program

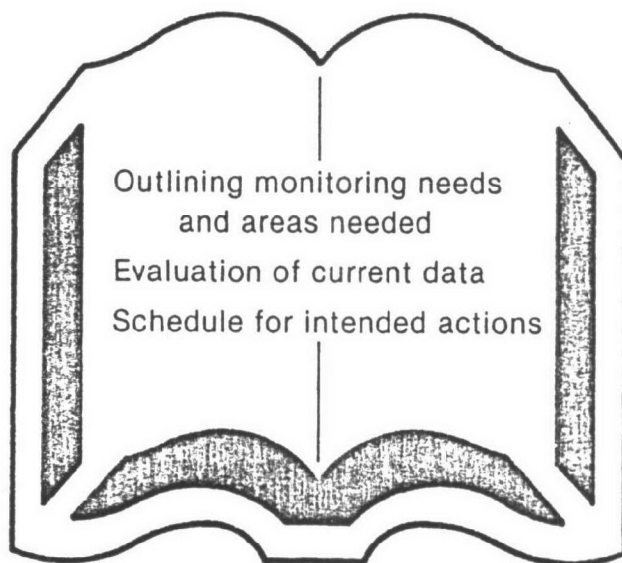


- Identify impact of existing sources
- NSR
- Evaluate long-term strategy to achieve reasonable progress



SIP must include strategy for evaluating visibility in Class I areas.

* FLMS



Outlining monitoring needs and areas needed
Evaluation of current data
Schedule for intended actions

— or —



Will evaluate monitoring as it progresses and implement it when reference method is developed.

Strategy should take into consideration

- Availability of forthcoming techniques
- Current research
- Guidelines

EPA 450/2-80-082

EPA

**Interim Guidance
for
Visibility Monitoring**



Plan must consider
available data
in decision making.

Current Data Uses

- Identify BART sources
- NSR
- Determine protection afforded integral vistas

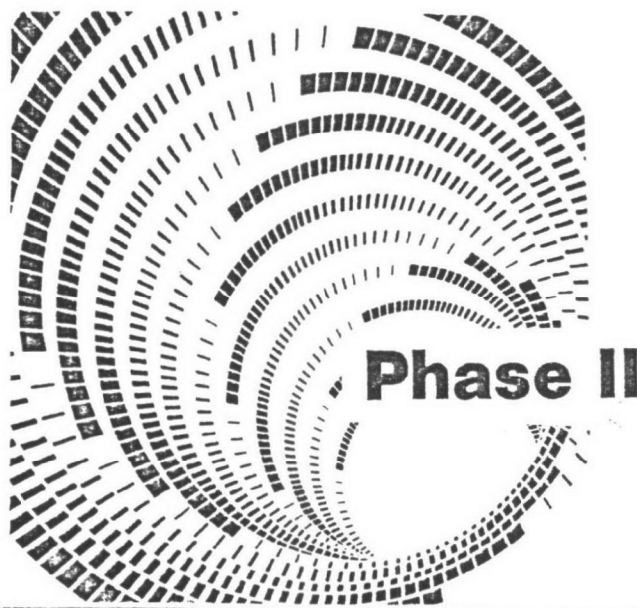
New Source Monitoring as part of NSR Process

Assess need for new source monitoring on a case-by-case basis.

- Available data
- Adequacy of available monitoring techniques

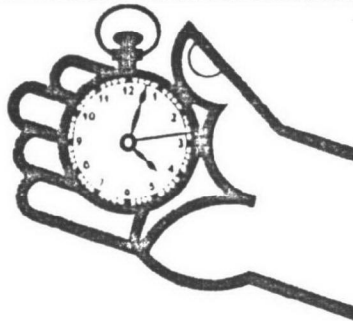
5.0 PHASE II

- I. Visibility impairment to be addressed as regional haze.
- II. Timing dependent upon research into cause/effect relationships.
- III. Will deal primarily with aerosols formed as a result of atmospheric chemical reactions.
- IV. Pollutant of major concern will be SO_2 .
- V. May attempt to address the impact of urban pollutant mixes on visibility.



Visibility Impairment Addressed As

Regional Haze



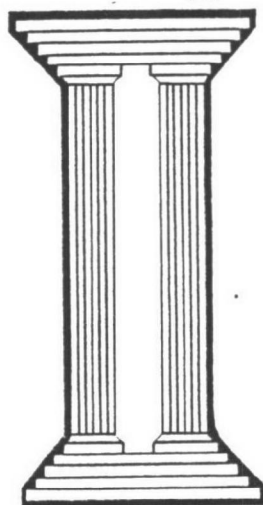
Timing

depends on research
into cause/effect
relationship.

PHASE II



SO_2



Phase II may address
impact of urban plume
on visibility.

6.0 PREPARATION OF SIP

I. Major Elements

- A. Listing/Identifications
- B. BART Analysis
- C. Monitoring Plan
- D. NSR
- E. FLM/State coordination procedures
- F. Long-term Strategy
- G. Commitments

II. Listing

- A. Responsible Individuals
- B. Visibility Impairment
- C. Suspected Sources
- D. Integral Vistas
- E. Mandatory Class I areas.

III. Monitoring

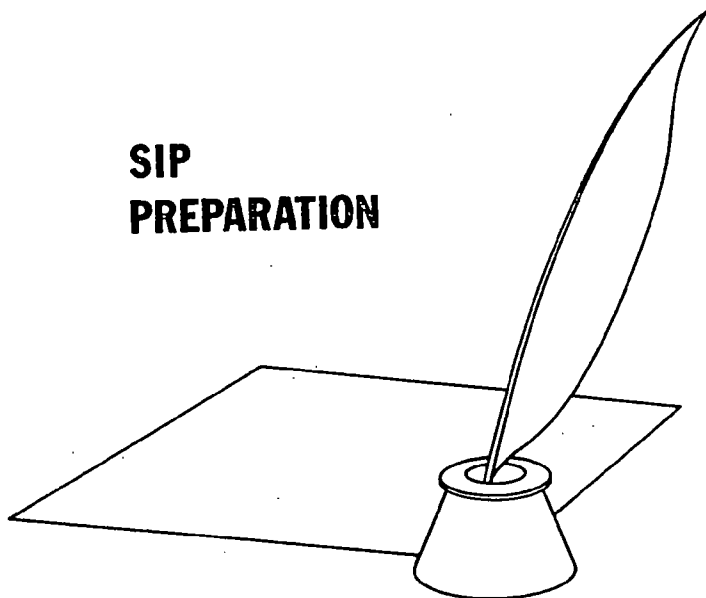
- A. Data Analysis
- B. Decisionmaking

IV. Long-term Strategy

- A. Tracking Progress
- B. Additional Controls
- C. Overall Assessment
- D. PSD

- E. Incentives.
- V. NSR
 - A. 51.18
 - B. 51.24
 - C. Integral Vistas
 - D. FLM/State coordination.
- VI. Commitments
 - A. Periodic Review
 - B. Monitoring Strategy
 - C. FLM/State coordination
 - D. Resources.
- VII. Checklist

SIP PREPARATION



MAJOR ELEMENTS OF SIP

- Listings/Identifications
- BART Analysis (if required)
- Monitoring and Analysis Plan
- NSR
- FLM/State Coordination Procedures
- Long-Term Strategy
- Commitments

LISTINGS/IDENTIFICATIONS

- Responsible Individuals (Names)
- Visibility Impairments (Areas)
- Suspected Sources
- Integral Vistas
- Mandatory Class I Areas

BART ANALYSIS

Visibility Impairment:	Yes	No	Yes
Suspected Stationary Sources:	No		Yes
SIP Requirements:	Nonapplicability Assessment	None	Emission Limit Compliance Schedule Technical Support

MONITORING AND ANALYSIS

- Data Analysis
- Decision Making
 - BART
 - NSR

LONG-TERM STRATEGY

- Tracking Reasonable Progress
- Additional Control Measures
- Overall SIP Assessment
- PSD Reviews
- Incentives

NEW SOURCE REVIEW

Part 51.18 Requirements plus Part 51.24 Requirements plus Integral Vistas plus FLM/State Coordination	}	Adverse Impact Assess- ment
---	---	--------------------------------------

COMMITMENTS

- Periodic Review and Revision
- Development of Monitoring Strategy
- FLM/State Coordination
- Resources

CHECK LIST

- ☐ Class I Areas
- ☐ Names of State Contacts
- ☐ Names of FLMs
- ☐ Areas With Visibility Impairment
- ☐ Integral Vistas
- ☐ Suspected Stationary Sources
- ☐ Other Sources
- ☐ BART Analysis or Nonapplicability Assessment
- ☐ Monitoring Plan
- ☐ Data Analysis
- ☐ NSR Rules
- ☐ Long-Term Strategy
- ☐ Reporting Commitment
- ☐ Periodic Review Commitment

7.0 MODELING

- I. Regulatory Requirement
- II. Uses in Phase I
 - A. Reductions Achieved
 - B. NSR
- III. Application
 - A. Not Absolute
 - B. Real world.
- IV. Guidance
 - A. Workbook for Estimating Visibility Impairment
 - B. PLUVUE
- V. Technical Aspects.



MODELING

**December 2, 1980, Regulations
Do Not
Require Modeling**

**Models are available for
estimating Phase I impacts.**

Determine Reductions
Achieved by
Retrofit of Existing Sources

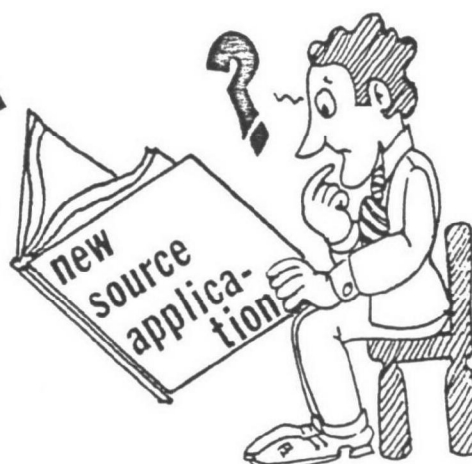


before

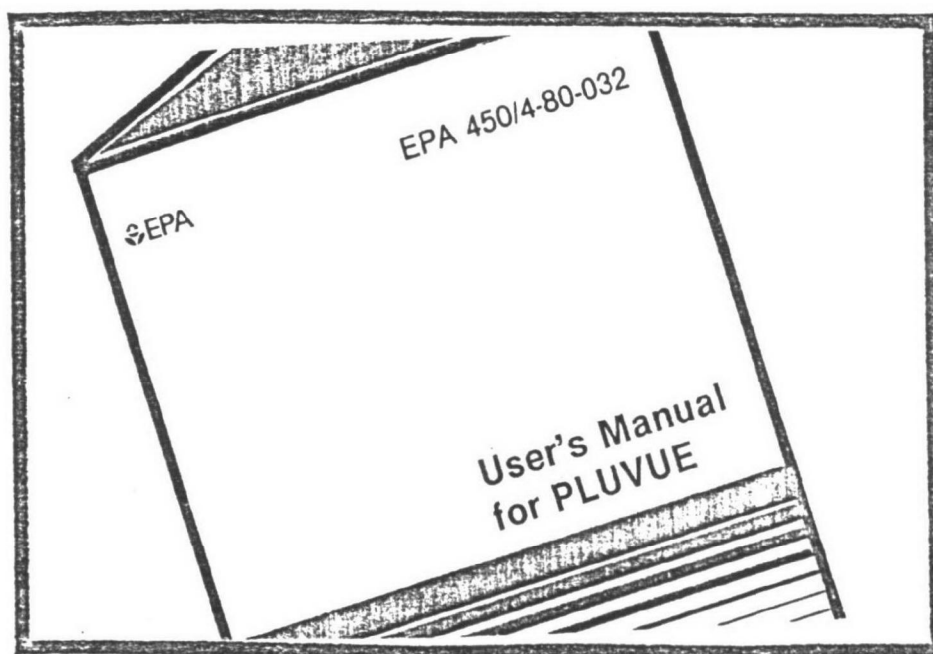
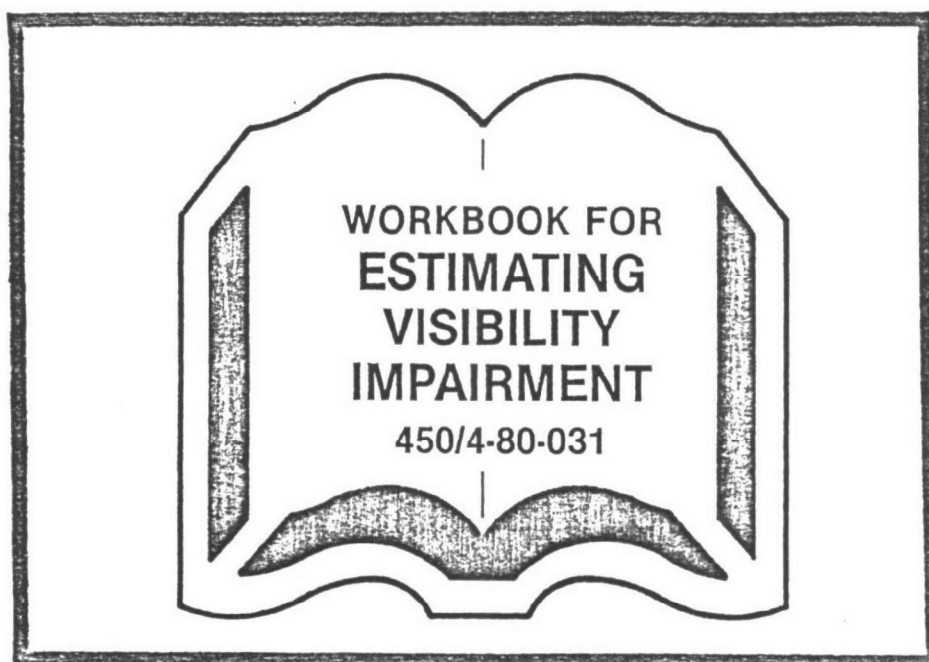
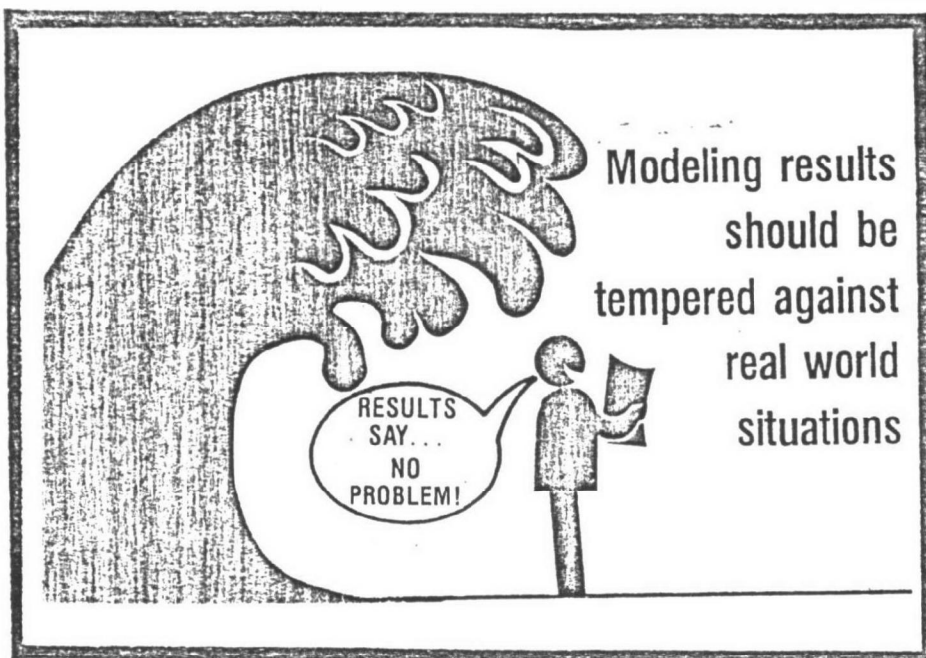


after

what
is the
potential
impact
?



Models should not
be used in an
absolute sense.



TECHNICAL ASPECTS MODELING

8.0 MONITORING GUIDANCE

- I. Regulatory Requirements
- II. Interim Guidance
- III. Detail Procedures
- IV. Reference Method
- V. Monitoring Program Development
- VI. Technical Aspects



MONITORING GUIDANCE

Regulations Consider Monitoring Data

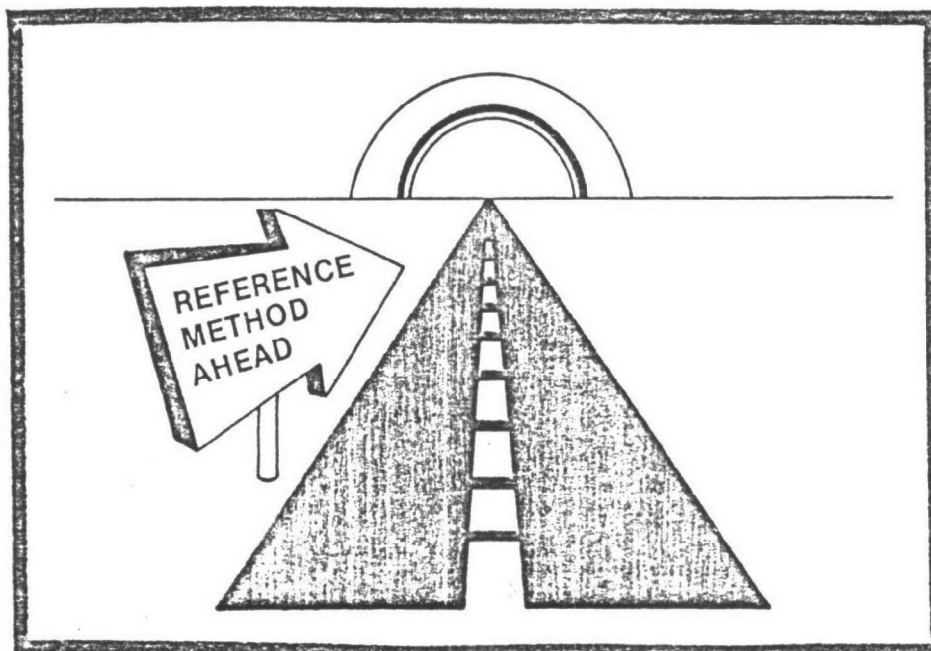
- Identify existing source impact
- NSR
- Evaluate long-term strategy

**Interim Guidance
for
Visibility Monitoring
EPA-450/2-80-082**

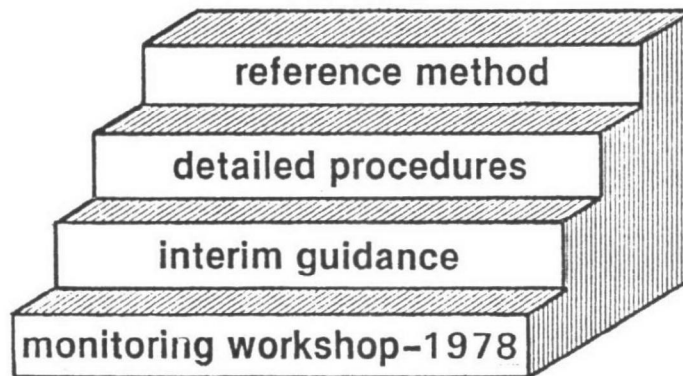
- * Instrumentation
- * Program Design Considerations
- * Nonroutine Monitoring
- * Quality Assurance
- * Data Management/Reporting

More detailed procedures manual
will be available on:

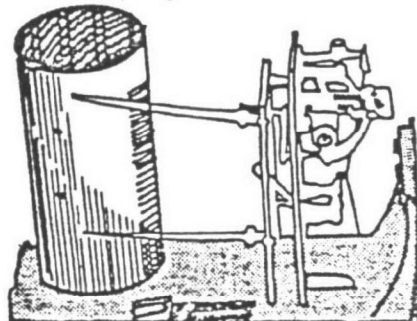
- O/M
- Data handling
- Calibration
- Q/A



STEPS IN MONITORING PROGRAM



TECHNICAL ASPECTS OF MONITORING



9.0 FLM RESPONSIBILITY

I. Federal Land Manager

- A. Affirmative responsibilities-to protect visibility values of lands within Class I areas and not limited to mandatory Class I areas Section 165(d)(2)(B)
- B. Consideration of integral vistas Section 169A

II. Status of Class I Areas

- A. Existing Impairment
- B. Preventing Future Impairment
- C. NPS List of Integral Vistas
- D. Monitoring - Cooperative network

III. FLM Role in State Visibility Programs

- A. Contact Points - Visibility Program Coordinator-Vicki Evans (202)343-4911, State SIP Liaison-Phil Wondra (303)234-6419, and Monitoring-Jim Littlejohn (303)234-6419
- B. Coordination/Cooperation - Within SIP and State Measures Outside of SIP, too

IV. Integral Vistas

- A. Criteria - Based on merits of resource
- B. Notice and Comment by FLM
- C. NPS Integral Vista Process
- D. State review during SIP process
- E. Establish Vista Sensitivity for vistas

V. FLM Role in New Source Permit Review

- A. Contact points

- B. Early notification/coordination of FLM by state and applicant
 - (1) Establish scope of analysis needed
 - (2) Monitoring needs and sites
- C. Review limited to direct effects on visibility values - plume blight or layered haze from stacks
- D. Impact Analysis Considerations
 - (1) Case-by-case review
 - (2) Establish more certainty with more experience
 - (3) Adverse factors - Impact within Class I boundary
 - (a) Geographic extent, intensity, duration, frequency, and time of visibility impairment
 - (b) Correlation with (1) time of impairment and (2) frequency and timing of natural conditions that reduce visibility
 - (c) Interference with the management, protection, preservation or enjoyment of the visitor's visual experience
 - (d) No consideration of energy and economics
 - (e) Does not include effects of integral vistas

VI. Impacts on Integral Vistas

- A. Based on consideration of similar factors, including importance of vista
- B. FLM not to consider energy and economics, State can, as long as makes reasonable progress

VII. Summary of Requirements of the Federal Land Managers

- A. Within 90 days of promulgation (by March 2, 1981)
 - (1) Identify integral vistas and publish notice of identification criteria and list of integral vistas in the Federal Register for public comment.
 - (2) Provide list of integral vistas to EPA and the States for incorporation into the visibility SIP.

- (3) Identify existing impairment of Class I areas and contributing sources for State consideration under BART.
 - (4) Provide list of Class I areas with existing impairment and contributing sources to EPA and the States for incorporation into the visibility SIP.
- B. Within 6 months of promulgation (June 2, 1981):
- (1) Consult with the States on the incorporation of integral vistas in the visibility SIP.
 - (2) Consult with the States on the consideration of remedying existing impairment for Class I areas identified.
 - (3) Identify elements for inclusion in the visibility monitoring strategy.
 - (4) Provide recommendations on the development of the long-term strategy.
 - (5) Work with the States on procedures for continuing consultation on implementation on the visibility SIP.
- C. After adoption of acceptable visibility SIP:
- (1) Participate with States and applicants in assessing visibility impacts from proposed major new stationary sources of pollution locating in the vicinity of any of the 48 NPS Class I areas. Ensure that visibility assessment includes impacts on integral vistas identified by NPS Federal Register notice within 6 months of submission of a complete permit application.
 - (2) Participate with States in their BART analyses for sources affecting NPS Class I areas.
 - (3) Work with States on carrying out long term strategy to make reasonable progress toward remedying existing visibility impairment and preventing future impairment (i.e., other measures may include monitoring compliance schedules, prescribed burning policy and permits, and cumulative effects of new sources).



FEDERAL LAND MANAGERS' RESPONSIBILITIES

FEDERAL LAND MANAGERS' RESPONSIBILITIES

- TO PROTECT AIR QUALITY RELATED VALUES
(INCLUDING VISIBILITY)
- TO CONSIDER IMPACT OF PROPOSED SOURCE
(WITH EPA CONSULTATION)

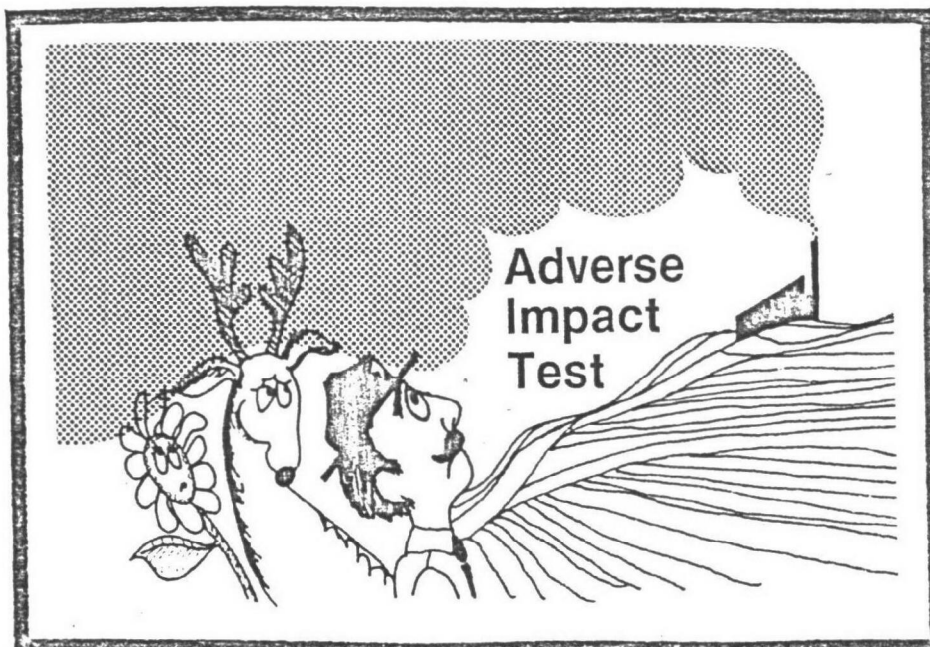


FLM also responsible for

- Identifying impairment
- Identifying integral vistas

Status of Class I Areas

FLM's Role in SIP Development



Integral Vistas Identification Criteria

Integral Vistas