

Smoke Management Review Committee Meeting
Oregon Department of Forestry
Santiam Conference Room, Operations Bldg, Salem
0830-1500 May 27, 2004

Attendance: Stephen Fitzgerald, Brian Jennison, Stan Benson, Erik Christiansen, Harold Merritt, Mike Dykzeul, Gary Stevens, Gregory McClarren, Jim Wolf, Jim Russell, and Julie Welp.

1. **Administrivia**

Jim Wolf

2. **Minutes**

Corrections:

Delete duplicate of Erik Christiansen name in Attendance.

Page 1: Item 3, second set of bullets, Bullet three, change "BRAINS" to "RAINS"

Page 1: Item 3, second set of bullets, Bullet Four, should read "EPA changed from PM10 to PM2.5 because of ultra-fine particles in the urban air."

Page 2: First Bullet, should read "Jim Russell noted that the committee could help DEQ by making recommendations relative to DEQ taking responsibility for unregulated burning which could potentially change state statute."

Page 2: Bullet Four should read: "Jim Russell responded that if each small community was a DA would make it difficult to operate under the smoke management plan."

Page 2: Delete Bullet 7, Brian Jennison's comment about Sisters.

Page 2: Bullet 8, delete the word "we".

Page 2: First full Paragraph, "an other" should be "another".

Page 4: First line: West should not be capitalized.

Page 4: Item 5, delete Bullet 2.

Note: Clarification is needed on point of fact regarding broadcast burning in western Washington, and where it occurs – on federal or private land?

The minutes were approved as amended.

3. **Final Draft**

M. Dykzeul, G. McClarren

"Are Burning Objectives Being Met" - Matrix B

Copies of the Second Draft of the Committee Report and the Final Draft of Matrix Item B were distributed. See attachment 1. Mike Dykzeul suggested that the pie chart of all source contributions to reduction of visibility in Class 1 Areas be included. He proposed that the background information need not be repeated for each of the Matrix items in order to avoid redundancy.

Discussion:

- Need to develop a statement to lead into the assumption that the trade off for reducing fuels will reduce the potential for uncontrolled wildfire and likely NAAQs violations during the summer months.
- Brian Jennison said it must be recognized because it isn't speculative. There is data to show that there were exceedances of the national standard in Medford and Klamath Falls due to wildfire. Even if the EPA doesn't count it against us, from a health perspective people were still exposed to it.
- Gregory McClarren added that he and Mike recognized that and noted that they could site the number of exceedances in those communities.
- Mike Dykzeul explained that nothing had drastically changed from the last draft of Matrix Item B. He noted that regarding developing best day strategies, he has become convinced that

everything is being done with the tools available to give everybody the maximum amount. The concept of 'best burning' already exists, therefore that bullet under "What are the Options to deal with it" has been revised to "Continue to maximize 'best burn day' strategy." Technology may help but the concept already exists.

- Jim Russell asked if the applying the 'best burn day' strategy should be considered 12 months of the year?
 - Gregory McClarren responded that a similar discussion had come up at the Class 1 visibility review for managing visibility on a year round basis,
 - Jim Russell noted that if the expectation was to move this plan to cover the entire state, at some point in time any part of the state could be in prescription and there should be consistency throughout the year.
- Rather than eliminating acreage/tonnage limits, it was determined that it was more realistic to eliminate acreage administrative unit limits.
 - Jim Russell said the acreage as discussed in the tonnage limitations was based on initial acres – the size of a district. Jim added that there was no credence in terms of those tonnage limits in today's environment - both in prescribed fire work as well as how they relate to what the total tonnage could be produced over a geographic area and have an affect on land. Jim added that there are things that have taken their place and he saw no reason to maintain an artificial tonnage limitation when it's forty years old.
 - Gregory McClarren said he had been in agreement with Jim until he spent more time talking to Mike and the forecasters. Gregory added that the tonnage limits aid the people in the field.
 - It was asked if permits were issued based on tonnage limitations. Jim Wolf replied that he was not aware that it was.
 - Jim Russell said it appeared to be in opposition to 'best burn day' strategy and is outdated technology.
 - Gregory McClarren pointed out that the system presently works.
 - Stan Benson questioned the value of the numbers.
 - Mike Dykzeul said there was more to loose by taking away the safeguards and doing so could set the program back.
 - Gregory McClarren explained that the program currently has three criteria that the forecasters use and the field has available to them – they are acreage, miles from the DA and tonnage. The program has worked well with those criteria but will eliminate the miles and the acreage, as they are no longer germane. Keeping the tonnage limitation would be a reference point.
 - Mike Dykzeul added that OEC would be very concerned if a program was taken to DEQ with no tonnage limits, no acreage limits and no mileage limits, especially with the movement from PM 10 to PM 2.5.
 - Jim Russell responded that he could support if geographic areas with assessed variation in fuel type of NW, Central, SW and East Side with revised tonnage limitations based on local conditions and an historical review of burning that has taken place in those areas – what's been burned, how it was burned and what the tonnage limitations in those areas should be.
 - Harold Merritt agreed with Jim Russell.
 - Stephen Fitzgerald said he liked the idea of benchmarks and the tonnage limits being guidance.
 - Gregory McClarren reminded members that they had all agreed to this at one time.

- Jim Russell said the tonnages needed to be revised.
- Stephen Fitzgerald suggested inserting the word “size” into the third bullet under “What are the options to deal with it?”
- Nick Yonker suggested that he had an email from Jim Trost that mentioned the possibility of removing the specific tonnage numbers and inserting something like “maximum allowable tonnage on any day will be determined by ODF meteorologists based on meteorological conditions and existing and forecasted air quality.”
- Erik Christiansen said he liked the idea of going in that direction but asked what the meteorologists would base their judgment on.
- Nick suggested that there needed to be coordination of large burns. (Larger than 2,000 tons).
- Asked if the current tonnage limitations have ever limited his forecasts, Nick said they use Smoke Management restrictions.
- Gregory McClarren added that as far as NAAQs exceedances, we don’t have them and should go with what Nick and Jim are suggesting.
- Mike Dykzeul said the language is old and needs to be changed but need to be careful not to “fix” something that’s not broken and end up breaking it. He liked the language suggested by Nick and Jim and suggested adding a limitation on tonnage that needs to be coordinated – based possibly on tonnage and distance from the DA.
- It was suggested that the bullet on page 2 regarding expanding the SMP be changed to “Expand SMP to encompass all prescribed burning on all forest and rangeland... and all private landowners.”
- The “to provide “ paragraph was moved from the front to the Committee Recommendation section on page 3.
- Directive work will be done by staff. Rule and Statute work will be done later.
- Some of the work can possibly be done with guidance rather than Directive.

A Final Draft will be provided.

4. Public Comments

Mike Dykzeul, Oregon Forest Industries Council, brought a copy of an article, *‘Tax Credits for Wood Chippers’* published in the May 1, 2001 *“Oregon Insider”* dealing with alternatives to burning, to share with the group. The contact person was David Collier, DEQ. A copy of the article is filed with the minutes.

- Stephen Fitzgerald noted that this information should probably be made available to the public at the places where the equipment is sold.

Mike Dykzeul also noted that he had been looking at the fire protection program review and in the overview, the last statements talks about the Smoke Management Program and states that it regulates prescribed burning on all forestland in Oregon.

Gregory McClarren provided members a copy of an editorial – on the back page was early research indicating that ultra fine particles may affect the central nervous system. Everything to date had only talked about the respiratory system. The article closed with the statement, “With the emergence of so many unanswered questions, the health consequence of inhalation of ultra fine particles (PM2.5 or less) remain an important area of investigation.”

- Gary Stevens added that he had been looking at WebPages dealing with the health effects of the impacts of the forest fires of southern California and noted that there was a lot of information available and research going on.

- Stephen Fitzgerald asked if all PM 2.5 particulate matter equal?
 - Brian Jennison responded that it is not – it’s a size fraction but it’s chemically very diverse. Smoke from petrochemical combustion sources are perhaps more harmful than smoke from vegetative combustion sources. And of course, we know diesel smoke is potentially carcinogenic.
 - Gary Stevens said that is why he brought up the wildfire study. Because the information would be more relevant.

5. Second Draft

B. Jennison, G. Steven

"Are AQ Standards and Objectives Being Met" - Matrix A and K - See Attachment 2.

Discussion:

“Is There a Problem?”

- Brian and Gary will wordsmith the paragraph to include a statement concerning the 2002 and 2003 Wildfires.
- Jim Russell added that it should read that prescribe fire has seldom contributed to an exceedance. There was an exceedance two weeks ago in the Burns area.
- Jim Russell proposed a paragraph addressing the ecological role of fire, the tradeoffs experienced between wildfire and prescribed fire emissions and forest health.
- A second paragraph suggested by Gary Stevens was discussed.
 - Stephen Fitzgerald said he liked the paragraph but suggested it would fit better under “Will There be a Problem in the Future?”
 - Gary noted that even though we have not had NAAQs violations there have been impacts to health in certain instances.
 - Jim Russell said the first sentence could go with the first paragraph in “Is there a Problem?” and the second part would go under “Will there be a Problem in the Future?” Brian will incorporate it accordingly for the next meeting.

“Will There be a Problem in the future?”

- It was agreed to delete the end of the last sentence in the first paragraph by placing a period after southwestern Oregon and deleting the rest of the sentence.

“What are the Options to Deal with Potential Future Problems?”

- It was noted that the fourth bullet should be revised to read: “use state of the art models e.g. Blue Sky, for predicting and tracking emissions.”
- Bullet 5 needs to be revised to be consistent with the changes crafted earlier.
- Add new Bullet “Use DEQ nephelometers to determine impact of smoke elsewhere.”
- Include Gary’s additional areas of concern that need to be monitored or tracked.
- It may be possible to combine some of the bullets. Consider combing the 4th bullet and the 9th, the 1st and the 3rd bullets.
 - Jim Russell reminded members that in Matrix Question B – Committee recommendations, it was recommended that the entire state become a regulated area and the term regulated area would be used in lieu of restricted area. This terminology will replace the 4th and 9th bullets with a reference to Matrix Question B to explain the change.

“Rule Changes”

- Gregory McClarren suggested that Bullet 2 – should read “Use alternatives to burning where feasible, especially in WUI areas.”
 - Stephen Fitzgerald pointed out that defining the WUI could make it impractical.
 - Erik Christiansen suggested using something other than WUI as a descriptor when human health is the concern.
 - Jim Wolf added that there are conflicting definitions of community at risk and definitions of WUI and recommended the use of a different term.
 - Greg McClarren suggested “promote alternatives to burning to reduce human health effects.” The committee agreed.

“What are the barriers and opportunities?”

- Brian Jennison suggested the second sentence should be revised to read “Any changes in statutes needed to expand the SMP might meet with resistance from various stakeholders and would require the coordination of the responsibilities of several state departments.”
- Eliminate the sentence “Most of the improvements called for would cost money.” And change the last sentence to read “new technology will cost additional money.”
- Insert “human health” after “air quality” in the first sentence.

“How will success be measured in the future?”

- Bullet 1 – delete “PM10 and PM2.5”
- Bullet 2 – “inter-agency coordination of all federal, state, local and tribal entities...”

6. First Draft

E. Christiansen, Lee Miller

"Underburning/Forest Health" - Matrix C

Copies of the First Draft of Matrix Question C were distributed – see attachment 3.

The use of the word underburning in the Charter question was discussed. Stephen Fitzgerald suggested revising it to read “Evaluating the Smoke Management Plan (SMP) given the assumed increase in prescribed burning for ecosystem forest health reasons.” The definitions of prescribed burning¹ and forest health² will be in a footnote. (1. Defined in OAR 340-20-047, section 5.2 – page 5) (2. Defined in OAR 629-43-041, section 3, burn fee rules).

Erik commented that he could put together data showing emissions from 1985 and 2003 and it would demonstrate a significant reduction in emissions.

Discussion:

“Is there a problem?”

- No changes were suggested.

“Will there be a problem in the future?”

- Stephen asked if WFU is given an exemption?
 - Jim Russell replied that if it was an ecosystem health issue, it should be a consideration in Smoke Management.
 - Gregory McClarren noted that it can be anticipated that the objective of a WFU fire may potentially conflict with air quality (NAAQs, human health and visibility.)
 - Smoke will remain a consideration in the SMP for implementation of WFU decision making.

“What are the options to deal with the current problems?”

- Second paragraph, second sentence – should say “and validation”.
- Third paragraph, last sentence – should read “Thus, a change in the SMP fee structure to include these burns is advocated.”
- Stephen suggested that there are two reasons for tracking – one for emissions and one for fees and they may not be the same.

“Will these changes require changes in statutes, rules, or directives?”

- Second paragraph – Should read “No changes in or rules are anticipated with the adoption of more sophisticated smoke predicting models; however, changes in directive may be needed.

“What are the barriers and opportunities?”

- First sentence was wordsmithed to read “Should the need for additional services from the ODF Smoke Management Program be required as forest health burning increases; funding, necessary technology, and enough staffing to provide the requisite services may be limited.”
- Third paragraph should read – “ Forest health maintenance burns assume that sufficient biomass has first been removed to preclude fire from entering the tree crowns. As that biomass is no longer on site, it is assumed that it will be used in some way to benefit society, such as improved utilization. Less smoke would be generated, as less material would be burned. Cost of the mechanical treatments necessary to reduce biomass to a more burnable level may prove to be a barrier to implementation.
- Fourth paragraph should read “An effort to change the fee structure of an existing program may engender some political opposition. However, it is expected that a streamlined and strengthened fee collection system is a desirable thing, and better program management is also likely to result.

“How will success be measured in the future?”

- First paragraph – replace maintenance underburning with “forest health burning”.
- Second paragraph – delete the last sentence.

7. Next Section Assignment

Stephen Fitzgerald suggested that Matrix Question H be next.

Gregory McClarren suggested that the fee question (Matrix Question I) should be next because some of the committee members (Erik and Jim) would soon be involved in Fire and unable to attend. He added that Matrix question F should also be on the agenda.

The committee decided to work on Matrix Question I. Brian Jennison volunteered to take on Matrix Question J.

Mike Dykzeul and Gregory McClarren will continue to update the background for all the Matrix questions.

8. Public Comments

There was no public comment at this time.

9. Adjourn

The meeting adjourned as scheduled.

1500

Next Meeting June 24, 2004

Committee information may be found on the web at:

http://www.odf.state.or.us/DIVISIONS/protection/fire_protection/smp/SMR/SM_Review.asp

**FIFTH DRAFT
(FINAL)**

5-6-04

**Smoke Management Program Review
Matrix Item B
2003-2004**

Charter Question "B":

Are burning objectives being met?

Matrix Questions: Narrative Description

Is there a problem?

Not consistently at present, however, some industrial landowners, especially within a sub-region, believe there is due to 'tonnage limitations', 'carryover costs,' and risk tolerance levels. No conclusive data exists to indicate a consistent problem with attaining forest and range management goals e.g. statutory reforestation standards. The more urban or populated the area, designated DA or not, the greater the likelihood for issues.

Will there be a problem in the future?

Probably and it will grow. Industrial forest land burning levels remain static. Federal ownership patterns do not seem to be approaching historic levels (acres or tons) although more agencies do seem to be burning for ecosystem management and forest health benefits. Agriculture burning trends, in fact, are significantly below prior decades. Yet, there is evidence of:

- more WUI areas state-wide;
- more burning especially on Federal lands, forest and range, in and out of current 'restricted area';
- greater number of 'populated areas' and 'urban centers' (neither well-defined);
- poorly integrated regulations and loosely defined jurisdictions exist between local, State and Federal authorities;
- more accurate tonnage estimation, better spot or micro-forecasting as well as improved real time emissions tracking is needed;
- increasing restrictions in Air Quality and human health matters e.g. PM2.5 revisions and adopted Regional Haze Rule; and
- more 'NIMBY-ism'(Not In My Back Yard), more 'sensitive populations' (e.g. elderly, children and those with respiratory ailments) and growing population areas that are not currently established as DA's.

What are the options to deal with it?

- Continue to maximize 'best burning day' strategy.
- Reduce marginal day ignition volumes in proximity to DA's other sensitive areas.
- Eliminate acreage administrative unit size limits.
- Develop a restricted area or designated area protocol that can be revised as needed based on annual review and monitoring [e.g. adaptive management].
- Expand the SMP to encompass all prescription burning on forestlands and rangelands in the state and wildlife/range land burning done by Federal and state agencies and private landowners. Track large industrial private landowners [range/ranch operations].
- Invest in improved technology for forecasting, communication, tracking, monitoring and public education.
- Develop a fee schedule that is both equitable and encompassing of emission sources by future burning type and across all ownership.
- Prepare for RHR Phase II in 2007 including an Oregon-wide smoke management program with integrated statewide forecasting and tracking systems.

Will it require changes in rules, statute or directive?

Yes, especially with regard to the OAR and Directives even if the Smoke Management Program remains solely a forestry program. If a more coordinated and encompassing approach is recommended for overall 'smoke management' then a larger change to the Statutes, OAR's and Directives is certain.

What are the barriers and opportunities?

Barriers:

- Natural resistance to change and increased regulation,
- Increased workload for program,
- Perceived loss of individual Departments' programs,
- Funding,
- Technology,

Opportunities:

- Streamlined program [rather than many programs],
- More effective & greater efficiencies,
- Consolidated OAR's, Directives and statutes (minimize conflicting and confusing direction),
- Able to respond better and perceived by citizenry as more credible and responsive.
- Greater equity among stakeholders and participants.

How will success be measured in the future?

- Land management objectives are met more consistently,
- Landowners real & perceived complaints decrease,
- NAAQS are met,
- Nuisance visibility problems not increased, even though burning actually increases,
- Greater public 'acceptance and understanding' of burning as a critical management tool that is well-managed,
- Oregon's SMP continues to be recognized as a 'model' program for both wildland accomplishments and AQ protections.

Do we have data or technology Gaps?

- Gaps exist in forecasting at project level and the tracking of emissions in real-time; and
- At achieving more accurate fuel loading estimation [and maybe emissions/consumption].

Current Standards:

There are a variety of OAR's, Department Directives and/or Rules governing the Program. The parent Statute was enacted in 1969 with current Program Directives and Rules last updated in 1992. Some exist in ODF purview while others are in DEQ and ODA.

Committee Recommendations: *"to promote burning objectives being met"*

The Review Committee supports the following recommendations to achieve the realization of our goal;

To provide the maximum opportunity for land management objectives to be met while maintaining air quality, health standards and visibility objectives. Burning can be managed more effectively with improved coordination, communication, technology, public education, increased utilization of forest fuels and maximizing optimum burning conditions whenever possible.

- Rules should expand from only Class 1 forestland to all forestland in state protected areas and districts. *Statute and Rule*
- Continue to maximize optimum mixing and direction burning opportunities through utilization of 'best day' strategies with improved forecasting and tracking capability through technological advances and field data measurements, e.g. pibals, nephelometers, sodar or Blue Sky Rains. *Directive-Funding*
- Reduce marginal day ignition volumes in proximity to DA's other sensitive areas. *Directive-Rule*
- The entire state becomes a Regulated Area. *Rule-Directive*
- Discontinue use of 'restricted area' terminology in lieu of 'Regulated' references. *Statute-Rule-Directive*

- Provide bibliography information to access “Photo Series for Quantifying Forest Residue”. Directive
- Assure that ERTs are both legal and encouraged. (e.g. Pure PE, petroleum products) Rule
- Develop a prioritization protocol to enable local managers to use Department guidance. Directive
- Eliminate references to “per 150,000 acres on any one-day.” Rule
- All types of forest, rangeland, underburning, maintenance, fuels reduction, habitat restoration and forest health burning within the “Regulated Area” should report, track and monitor accomplishments. Equitable fees need to be established that reflect the types of burning [not as currently practiced but as future practices] practiced and should be based on SMP Program costs to administer. Rule
- Eliminate current fee exemptions for forest health burning. Rule and Statute Further fee exemptions should be re-evaluated at the next SMP Review.
- Registration and fees associated with SMP should be based on current Western Oregon Smoke Management Program and other area MOUs. The regulated area (the state) should be used to more effectively track total emissions and use in developing RHR Phase II revisions or designation of new DA’s. [Matrix Item I]

Attachment 2 (Revised May 27, 2004)

May 25th Second Draft: Includes Committee Changes from April 15

Charter Question A: Are Air Quality Standards Being Met? This includes the Committee's Subset K: Intrusions, Visibility and Citizen Complaints of Nuisance Smoke

Matrix Questions: Narrative Description

Is there a problem?

Presently the federal health-based National Ambient Air Quality Standards (NAAQS) are being met in Oregon. All areas of the state that were out of attainment with the federal particulate (PM10) standards now have, or are developing, maintenance plans as required by the federal clean air act, meaning that they all have at least three consecutive years' worth of "clean" air monitoring data. There is no evidence of prescribed burning having caused an exceedance of a federal air quality standard in Oregon. (Include a statement regarding the 2002 and 2003 fire seasons.)

Although prescribed fire have not contributed to a N.A.A.Q.S. violation, it may affect the breathing and health of susceptible people living in areas not monitored for particulate matter. Information about the impact on these people is unknown.

Will there be a problem in the future?

Possibly. As Oregon's population grows and the Wildland-Urban Interface expands, more and more people will be living in rural, forested situations, and thus may be impacted by drift smoke from prescribed burns. Although we have not yet seen an increase in the number of acres being burned, there is a general sense that this number will in fact increase. The potential increase in smoke may occur, in part, due to projected increases in prescribed burning on federal lands in eastern and southwestern Oregon.

Further, the federal government recently adopted new standards for fine particulates (PM2.5); most smoke particles are in this size fraction or smaller (cite EPA criteria document). Even areas that presently meet the PM10 standards may have difficulty meeting the PM2.5 standards, and prescribed burning may impact such areas (examples would be Oakridge and Grants Pass). Also, although the NAAQS are presently being met, the smoke management plan needs to consider three other air quality related factors: intrusions, visibility and citizen complaints of nuisance smoke. *(Let's define these 3 terms here in the document)* Finally, those areas that have recently come into attainment for PM10 and have submitted maintenance plans to stay in attainment may be negatively impacted by increased levels of background particulate due to prescribed burning (examples would be Medford, Klamath Falls and Lagrande).

As our population ages and as more people move into rural areas, the potential for health impacts from smoke generated by prescribed fire, especially on vulnerable populations (the very young, asthmatics, individuals with emphysema, COPD or heart disease) increases.

Enhanced management of prescribed fires, even outside of designated areas, is necessary to reduce impacts.

A number of the same factors that were discussed in Charter Question B "Are Burning Objectives Being Met?" must also be considered here:

- expanding WUI areas state-wide
- more burning, especially on federal lands both in and out of "restricted area"
- greater number of (or growing and expanding) populated areas and urban centers
- need for more accurate tonnage estimation, and better spot or micro-forecasting, as well as improved emissions tracking
- the new federal standards for PM2.5 mentioned above, and the new regional haze rules: the impacts of a possible increase in prescribed burning on these new rules can't be predicted but will need to be considered
- the real possibility of an increased number of citizen complaints as a subset of the WUI issue; the possibility that new areas will ask to be given "designated area" status

What are the options to deal with potential future problems?

- further refine forecasting and emissions tracking; invest in improved technology, use the federal Blue Sky model for predicting emissions
- achieve a better idea of fuel loading and consumption for individual burns

- expand SMP to encompass all forestlands in the state, as well as public and private rangeland.
- coordinate with Willamette Valley field burning
- use accurate conversion factors from nephelometer data (expressed as Beta scattering) to gravimetric data (in ug/m3) to accurately the realtime impacts of smoke on a DA or smoke sensitive area Use IMPROVE network in Class 1 areas to determine impact of smoke
- develop system to accurately track citizen complaints; improve communications among agencies concerning complaints; improve response to citizen complaints
- consider changes to boundaries of designated areas; consider establishing new designated areas (see charter question F) develop a restricted area or designated area protocol that can be revised as needed, based on annual review and monitoring (that is, increase operational flexibility)
- continue to encourage alternatives to burning where feasible
- put additional resources into public education and communications, including website with realtime data

Will these options require changes in statutes, rules or directives?

Certainly some of the options would require such changes. As was discussed under Charter Question B, any expansion of the responsibilities of the Smoke Management Plan will require legislative review. Specifically, the following changes would probably be necessary:

Statute Changes:

- expand SMP
- (move to rule change)

Rule Changes:

- increased operational flexibility to allow more burning opportunities
- Promote alternatives to burning to reduce human health effects
- consider new DAs or boundary changes to existing DAs (see charter question F)

Directive Changes:

- achieve more accurate assessments of fuel loadings
- use of state of the art models
- Better complaint tracking

What are the barriers and opportunities?

In general, the barriers are political, institutional and financial. Any changes in statutes needed to expand the SMP might meet with resistance from various stakeholders and would require the coordination of the responsibilities of several state departments. New work in public education, coordination with other agencies, improved forecasting, etc. would all require additional staff resources, and the implementation of new technology will cost additional money, at least initially.

The opportunities, however, would include first and foremost, the ability to accomplish more prescribed burning without adversely impacting the air quality, human health or contributing significantly to regional haze. Improved forecasting and the use of the Blue Sky model should also allow additional burning. Increased public awareness might allow additional treatment burns in the WUI, as citizens came to understand the alternatives.

How will success be measured in the future?

- the National Ambient Air Quality Standards for will not be exceeded due to prescribed burning
- inter-agency coordination will be achieved and will function effectively (*Can we offer some method of actually measuring or documenting this?*)
- the number of intrusions will remain low (fewer than five per year)
- citizen complaints of nuisance smoke will be few; citizens who do call will receive accurate information about the prescribed burns that may be impacting them
- new designated areas will be established, if necessary; boundaries of existing areas will be modified as needed (consider with charter question F)

Charter Question C: Evaluating the Smoke Management Plan (SMP) given the assumed increase in prescribed burning¹ for ecosystem forest health² reasons.

Is there a problem?

There are currently problems in determining how exactly to describe the amount (either acres or tons of fuel) to be burned, how best to pay the fees for the SMP (a blanket fee, per ton fee, or per acre fee), how smoke from some unplanned ignitions (e.g. Wildland Fire Use (WFU) fires) should be managed, how to more accurately forecast smoke dispersion, and adequacy of the smoke impacts monitoring network.

Will there be a problem in the future?

All the currently identified problems will continue to exist as time continues, unless they are resolved now.

What are the options to deal with the current problems?

Fuel loading and consumption issues can be resolved by agreement among all parties concerned as to what the data will be used for, then how to collect them. If loading and consumption data are to be used to determine program fees, then one data set and system may be required. If loading and consumption data are to be used to determine potential smoke impacts to downwind communities, then perhaps other sets and systems may be required.

New smoke dispersion models are now available, and forecasters are beginning to use them operationally. These models will get better with time and validation, and should become more effective in the future.

Fee collection will be more thoroughly discussed in Matrix Question I, Economics/Funding. Currently, a prescribed burn undertaken for Forest Health reasons is exempt from SMP fees. As more Forest Health burns are anticipated in the future, smoke management services will still be required, but will not generate any program fees. Thus, a change in the SMP fee structure to include these burns is advocated.

Will these options require changes in statutes, rules, or directives?

Changing the manner in which fuels loading and consumption data are collected may result in a change in the current directives.

No changes in statutes or rules are anticipated with the adoption of more sophisticated smoke prediction models; however, changes in Directive may be needed.

Changing the way the SMP fees are generated and collected may require both statute and rule changes.

What are the barriers and opportunities?

Should the need for additional services from the ODF smoke management program be required as forest health burning increases, funding, necessary technology, and enough staffing to provide the requisite services may be limited. As forest health burning accelerates, healthier landscapes and more acres less prone to stand-replacing wildfires will likely result.

Improved and changing smoke modeling technologies will require time and effort to train people in their use, which would require additional resources. However, it is anticipated that the use of new models would enable more forest health burning to be undertaken, which is generally considered to be a desirable outcome.

¹ Defined in OAR 340-20-047, section 5.2, page 5

² Defined in OAR 629-43-041, section 3, Burn Fee Rules

Forest health maintenance burns assume that sufficient biomass has first been removed to preclude fire from entering the tree crowns. As that biomass is no longer on site, it is assumed that it will be used in some way to benefit society, such as better utilization.. Less smoke would be generated, as less material would be burned. Costs for the mechanical treatments necessary to reduce biomass to a more burnable level may prove to be a barrier to implementation.

An effort to change the fee structure of an existing program may engender some political opposition. However, it is expected that a streamlined and strengthened fee collection system is a desirable thing, and better program management is also likely to result.

How will success be measured in the future?

Successes as described in questions A and B are likely to result if more maintenance forest health burning is accomplished.

If fees are designed to match the services required to run the program, the program can be described as self-sustaining, and any increases in fees would be born by the respective users.