

2013 Performance Measures Committee Report



Prepared by the  
Performance Measures Committee  
for the  
Clean Air Strategic Alliance  
Board of Directors

13 February 2014

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## **Acknowledgements**

The Committee would like to thank various CASA team members and implementers for their assistance reviewing the implementation of past CASA project team recommendations. The Committee would also like to thank Andrew Clayton, Crystal Parrell, Bob Myrick, and Richard Melick of Alberta Environment and Sustainable Resource Development for their help preparing this year's performance indicators.

The members of the Committee are: Martina Krieger (Alberta Environment and Sustainable Resource Development), Keith Murray (Alberta Forest Products Association), Ruth Yanor (Mewassin Community Council), and Celeste Dempster (CASA Secretariat) and former members Peter Darbyshire (Graymont Western Canada Inc.) and Crystal Parrell (Alberta Environment and Sustainable Resource Development).

## Executive Summary

In December 2012, the CASA Board approved the new CASA Performance Measurement Strategy. The Strategy adopts new definitions of performance measure and performance indicator which differentiate between areas where CASA has a high degree of control over results (measure) and areas where CASA has a lower degree of control over results (indicator). The Strategy contains new performance measures and indicators for the Secretariat, the Board, the goals from CASA's Strategic Plan as well as project teams. These new measures and indicators were incorporated with CASA's pre-existing metrics and reorganized according to the new definitions of performance measure and indicator. 2013 will be the first year reporting on the new Strategy.

In 2013, the Performance Measures Committee was charged with three tasks:

1. To calculate CASA's performance measures and indicators,
2. To review the Strategy after the first calculation and reporting cycle is complete and make any adjustments as required, and
3. To follow-up on low-rated recommendations from previous years.

The Committee calculated the results of CASA's performance measures and indicators which are outlined in Table 1 and Table 2 respectively. Overall, CASA met its performance measures targets. Performance indicators are not compared to a target, but rather provide context for the bigger picture in which CASA works.

After completing the first calculation and reporting cycle, the Committee reviewed the Strategy to determine if any adjustments were required. The Committee has recommended six adjustments which are outlined in Table 3 to help improve the Strategy for the 2014 reporting period.

The Committee collected updates on the low-rated recommendations from previous years which are tracked in a living document called the low-rated recommendations matrix. In light of this information, the Committee recommends that: 1) one recommendation be closed because it is complete, 2) one recommendation be closed because it is being addressed in other ways, and 3) two recommendations be closed because there is no implementing agency.

## Introduction

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In December 2012, the CASA Board approved the new CASA Performance Measurement Strategy. The development of the Strategy involved investigating new trends and developments in the field of performance measurement, reviewing the relationship between performance measurement and CASA's audience, mission, vision, Strategic Plan, Strategic Plan goals, Principles and Criteria, as well as conducting consultations with current CASA project team co-chairs, the CASA Communications Committee, the CASA Board and a performance measurement professional from Alberta Energy.

The Strategy adopts new definitions of performance measure and performance indicator which differentiate between areas where CASA has a high degree of control over results (measure) and areas where CASA has a lower degree of control over results (indicator). This provides a resolution to a longstanding Board concern that these two levels of performance assessment had been treated similarly.

The Strategy contains new performance measures and indicators for the Secretariat, the Board, the goals from CASA's Strategic Plan as well as project teams. These new measures and indicators were incorporated with CASA's pre-existing metrics and reorganized according to the new definitions of performance measure and indicator. This combination of performance measures and performance indicators provides a well-rounded description of CASA as an organization and provides meaningful information that supports continuous improvement at CASA.

Some of CASA's performance measures and indicators are calculated annually and some are calculated every three years. These three-year metrics were last calculated in 2010 and are reported, as scheduled, in this 2013 report. 2013 will be the first year reporting on the new Strategy.

In 2013, the Performance Measures Committee was charged with three tasks:

1. To calculate CASA's performance measures and indicators,
2. To review the Strategy after the first calculation and reporting cycle is complete and make any adjustments as required, and
3. To follow-up on low-rated recommendations from previous years.

## Performance Measures

Table 1 outlines the 2013 performance measures results. Additional information can be found in Appendix 1.

**Table 1: Performance Measures** (\* indicates that the measure will be included only in the PMC Annual Report and NOT in the CASA Annual Report. These measures are for internal consideration only. All other measures will be included in the PMC and CASA Annual Report)

Objective	Performance Measure	Target	Actual	Notes
<i>Secretariat</i>				
Ensure that CASA is financially efficient and accountable.	<ul style="list-style-type: none"> <li>Annual operations and cash flows are in accordance with Canadian generally accepted accounting principles (GAAP).</li> </ul>	In compliance	In compliance	
	<ul style="list-style-type: none"> <li>*Sufficient operating funds are available to bridge CASA's and GoA's fiscal years.</li> </ul>	3 months of operating funds	3 months	
Implement the CASA Strategic Plan.	<ul style="list-style-type: none"> <li>*Percentage of objectives from the Strategic Plan listed as in progress or complete (according to the Secretariat's colour coded rating system).</li> </ul>	100%	81%	The Board designated the objectives under Goal 1 and 2 as the top priorities for CASA. The % of objectives under these two goals listed as in progress or complete is 100%. Most of the objectives not being acted upon are related to communications.
Monitor the implementation of CASA recommendations.	<ul style="list-style-type: none"> <li>*Percentage of low-rated recommendations being monitored.</li> </ul>	100%	100%	
Provide support to CASA stakeholders.	<ul style="list-style-type: none"> <li>Degree of CASA members, partners and stakeholders' satisfaction with CASA.</li> </ul>	Maintain or increase	50%	Satisfaction increased by 3% from 47% in 2010.
	<ul style="list-style-type: none"> <li>*Project teams' degree of satisfaction with support provided by Secretariat.</li> </ul>	Maintain or increase	86%	This is the first year this measure has been calculated.
<i>Board</i>				

Objective	Performance Measure	Target	Actual		Notes	
Encourage Board member participation in CASA.	<ul style="list-style-type: none"> <li>Percentage of Board attendance at Board meetings by sector.</li> </ul>	75%	Government – 53% Industry – 83% NGO – 95%		The target for government was not met. The government caucus consists of federal, provincial, municipal, First Nations, and Métis representatives.	
	<ul style="list-style-type: none"> <li>*Project teams' degree of satisfaction with support provided by Board member counterparts, by sector.</li> </ul>	Maintain or increase	Government – 86% Industry – 90% NGO – 75%		This is the first year this measure has been calculated.	
<b><i>Strategic Plan Goal 1: To provide strategic advice on air quality issues and the impacts of major policy initiatives on air quality.</i></b>						
Influence and inform AQ policy.	<ul style="list-style-type: none"> <li>Documents produced to inform GoA &amp; other stakeholders which includes a summary of the document and a qualifying description of the anticipated influence on air quality.</li> </ul>	Demonstrate influence	Demonstrated influence		CASA produced seven documents that engaged stakeholders, shaped CASA's policy agenda and focus, and influenced air quality in Alberta. See Additional Information in Appendix 1.	
<b><i>Strategic Plan Goal 2: To contribute to the continued development and implementation of effective and efficient air quality management in Alberta.</i></b>						
Develop reports and recommendations using the CDM process.	<ul style="list-style-type: none"> <li>Degree of satisfaction with project team work by sector team: <ul style="list-style-type: none"> <li>The Project Charter was completed.</li> <li>The work was completed in a timely manner.</li> <li>The process was collaborative.</li> <li>The team developed SMART (Specific, Measurable, Actionable, Realistic, Time-bound) recommendations.</li> </ul> </li> </ul>	75%	PMOIT	HAHT	PMOIT – Particulate Matter and Ozone Implementation Team HAHT – Human and Animal Health Team The HAHT did not meet the target for completing work in a timely manner or that the team developed SMART recommendations.	
			100%	86%		
			75%	100%		29%
			75%	100%		86%
75%	100%	71%				
<b><i>Strategic Plan Goal 3: To contribute to the development of a reliable, comprehensive, objective knowledge system with respect to air quality, health, and environmental impacts, and management and mitigation mechanisms.</i></b>						
Provide available AQ information.	<ul style="list-style-type: none"> <li>Number of visits to CASA's Information Portal webpage.</li> </ul>	Maintain or increase	No data available		The Information Portal webpage is still in development.	

Objective	Performance Measure	Target	Actual	Notes
	<ul style="list-style-type: none"> <li>Number of phone inquiries for information.</li> </ul>	Maintain or increase	No data available	Data collection was unsuccessful. <sup>1</sup>
<b><i>Strategic Plan Goal 4: To communicate information that builds awareness, understanding, and commitment to air quality management in Alberta.</i></b>				
Improve project team knowledge of the CDM process.	<ul style="list-style-type: none"> <li>*Project teams' degree of satisfaction with capacity to participate in collaborative processes.</li> </ul>	Maintain or increase	90%	This is the first year this measure has been calculated.
Increase awareness of CASA, CASA projects and CDM.	<ul style="list-style-type: none"> <li>Number of 3<sup>rd</sup> party requests for CASA assistance.</li> </ul>	Maintain or increase	No data available	Data collection was unsuccessful. <sup>1</sup>
	<ul style="list-style-type: none"> <li>Number of return and unique visitors to website.</li> </ul>	Maintain or increase	Return – 2928 Unique – 4597	Return visits decreased from 3480 in 2012. This is the first year that unique visitors has been calculated.
	<ul style="list-style-type: none"> <li>Number of news stories about CASA.</li> </ul>	Maintain or increase	16	This is an increase from 8 in 2012.

**Recommendation 1: Approve performance measures results.**

The Performance Measures Committee recommends that the Board approve the results of the 2013 performance measures and the inclusion of the appropriate performance measures in the 2013 CASA Annual Report.

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<sup>1</sup> The Secretariat is responsible for data collection for these two measures. The method used to collect the data was unsuccessful. The PMC has offered the Secretariat several suggestions to improve data collection for the 2014 reporting period.

## Performance Indicators

Table 2 provides a summary of the 2013 performance indicator results. Additional information can be found in Appendix 2.

**Table 2: Performance Indicators Summary** (all indicators will be included in CASA's Annual Report)

Objective	Performance Indicator	Actual	Notes
Implement CASA recommendations.	<ul style="list-style-type: none"> <li>Percentage of substantive recommendations from 4 years prior (2009) that have been implemented.</li> </ul>	17%	See Additional Information in Appendix 2, Section 1. Note that this % is based on 3 recommendations that were classified as substantive (out of a total of 32 recommendations from 2009). It is also important to note that all 14 recommendations (classified as operational) from the Clear Air Strategy Project Team were incorporated into Alberta's Renewed Clean Air Strategy.
Measure impact of completed project team work.	<ul style="list-style-type: none"> <li>Each completed project team comes up with one specific metric to measure success of team 5 years in the future.</li> </ul>	N/A	No team metrics are scheduled for reporting in 2013.
Improve air quality in Alberta.	<ul style="list-style-type: none"> <li>Annual average ambient concentrations of: NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>2.5</sub>, H<sub>2</sub>S, O<sub>3</sub>, benzene, and wet acid deposition.</li> </ul>	Decrease: Benzene, H <sub>2</sub> S, NO <sub>2</sub> , SO <sub>2</sub> , wet acid deposition Increase: O <sub>3</sub> N/R: PM <sub>2.5</sub>	Data looks at 1994-2012. See Additional Information in Appendix 2, Section 2. N/R: not representative - for this period, there is not enough data available to produce a meaningful trend due to the lack of a sufficiently long period of time using accepted methods at most stations.
	<ul style="list-style-type: none"> <li>Annual peak concentrations of: NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>2.5</sub>, H<sub>2</sub>S, O<sub>3</sub>, and benzene.</li> </ul>	Decrease: Benzene, H <sub>2</sub> S, NO <sub>2</sub> , SO <sub>2</sub> , Increase: O <sub>3</sub> N/R: PM <sub>2.5</sub>	Data looks at 1994-2012. See Additional Information in Appendix 2, Section 2. N/R: not representative - for this period, there is not enough data available to produce a meaningful trend due to the lack of a sufficiently long period of time using

Objective	Performance Indicator	Actual			Notes
					accepted methods at most stations.
	<ul style="list-style-type: none"> <li>Percent hourly exceedances of: NO<sub>2</sub>, SO<sub>2</sub> and H<sub>2</sub>S.</li> </ul>	No significant trends			See Additional Information in Appendix 2, Section 3.
	<ul style="list-style-type: none"> <li>Percentage of stations assigned to action levels defined by the CASA Particulate Matter and Ozone Management Framework based on annual three-year data assessments completed by Alberta Environment.</li> </ul>	%	PM	O <sub>3</sub>	Data based on 2010-2012 3-year average. See Additional Information in Appendix 2, Section 4. B- Baseline; S-Surveillance; M-Management Plan; E-Canada-wide Standard (CWS) Exceedance
		B	46	0	
		S	25	100	
		M	21	0	
	<ul style="list-style-type: none"> <li>Annual total emissions from power generation for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>2.5</sub>, and mercury.</li> </ul>	No significant trends			See Additional Information in Appendix 2, Section 5.
	<ul style="list-style-type: none"> <li>The change in flaring and venting associated with solution gas, well test and coalbed methane.</li> </ul>	Flaring: +13.2% from 2011 Venting: +28.7% from 2011			Latest data is from 2012. See Additional Information in Appendix 2, Section 6.
Improve capacity to monitor AQ in Alberta.	<ul style="list-style-type: none"> <li>The percentage of monitoring stations and/or parameters implemented from the 2009 Ambient Monitoring Strategic Plan (AMSP).</li> </ul>	Overall: 50%			See Additional Information in Appendix 2, Section 7.
	<ul style="list-style-type: none"> <li>Geographic percentage of province covered by airshed zones.</li> </ul>	46%			

**Recommendation 2: Approve performance indicators results.**

The Performance Measures Committee recommends that the Board approve the results of the 2013 performance indicators for inclusion in the 2013 CASA Annual Report.

## Review of Performance Measurement Strategy

When the new Performance Measurement Strategy was approved by the Board in December 2012, the Board also approved a recommendation that the Strategy be reviewed after the first calculation and reporting cycle is complete to determine if any adjustments are required.

### Recommendation 3: Adjustments to the Strategy.

The PMC recommends the Board approve the adjustments to the Strategy as outlined in Table 3:

**Table 3: Adjustments to the Performance Measurement Strategy.**

<b>Adjustment To:</b>	<b>Recommended Adjustment</b>	<b>Reason</b>
Measure, Secretariat - Degree of CASA members, partners and stakeholders' satisfaction with CASA.	Make the PMC responsible for administering the Stakeholder Satisfaction Survey (from which this measure is derived) rather than the Communications Committee.	Since the PMC must analyze and report this data, logistically, it is more straightforward if they are also responsible for data collection.
Measure, Goal 2 - Degree of satisfaction with project team work by sector.	Change "by sector" to "by team".	The PMC found that when the team survey responses were broken down by sector there were no longer enough responses to make the analysis significant. If reported by sector, it may also be possible to deduce who answered the survey compromising the anonymity of respondents. The breakdown by sector, however, will still be available for internal use as required.
Indicator - Percentage of stations assigned to action levels defined by the CASA PM and Ozone Management Framework based on annual three-year data assessments completed by Alberta Environment and Sustainable Resource Development.	Change "action levels" to "management levels" and change "CASA PM and Ozone Management Framework" to "Canadian Ambient Air Quality Standards".	In 2014, AESRD will begin reporting against the Canadian Ambient Air Quality Standards (CAAQS) rather than the CASA PM and Ozone Management Framework. This change will align the indicator with the new terminology.
Indicator - Geographic percentage of province covered by airshed zones.	Change "airshed zones" to "airshed zone organizations".	Under the Air Quality Monitoring System (AQMS) there is some confusion over new terminology, this change will align the indicator with

		the AQMS terminology and prevent confusion.
Performance Measurement Strategy, Section 6.2: Review Process	Add additional wording to this section: “In terms of timing, the review should follow the review and approval of CASA’s Strategic Plan.”.	CASA’s performance measures are linked to CASA’s Strategic Plan. Logistically, the performance measures review should follow the review and approval of CASA’s Strategic Plan in accordance with the strategic planning cycle.
Appendix 3 - Calculation Instructions	After completing the first round of calculations, the PMC was able to locate some additional detail to the calculation instructions which should be added to Appendix 3.	Detailed calculation instructions in the Strategy helps to add memory to the system and help ensure consistent calculation.

## Review of Low-rated Recommendations

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In June 2008 the CASA Board identified the need to follow-up on low-rated recommendations on a longer term basis, rather than just the one year snapshot provided in the related performance indicator. The Committee developed a matrix of all low-rated recommendations since 1997 as well as a Decision Tree for assessing low-rated recommendations which was approved by the Board in 2009 (see Appendix 3). The matrix is intended to be a living document that will be updated as the Committee gathers information from implementers. The Committee will then use this information to advise the CASA Board on appropriate follow-up for the low-rated recommendations.

The Performance Measures Committee would like to submit four (4) low-rated recommendations to the Board for follow-up. The Committee recommends that one (1) recommendation be closed because it is complete, one (1) recommendation be closed because it is being addressed in other ways, and two (2) recommendations be closed because there is no implementing agency.

The CASA Board has the final decision whether to consider a recommendation closed (i.e. CASA no longer pursues information on its implementation). There are three criteria to weigh in the decision that were approved by the Board in September 2009:

1. Priority level: Is the current importance of the issues and/or recommendation high, medium or low?
2. Need for the recommendation: Given legal, technological, societal and economic changes since the recommendation was made, is the action prescribed still needed?
3. Practical challenges: Given the current work of the implementing body, are the necessary resources and capacity available to implement the recommendations?

**Recommendation 4: Close low-rated recommendation as is complete.**

The Performance Measures Committee recommends that the CASA Board deem the following one (1) low-rated recommendation closed because it is complete:

**Table 4: Low-rated Recommendation Complete**

Recommendation	Original Rating	Recommendation from PMC
2003		
<i>PM and Ozone Team</i>		
10. Science and Analysis Recommendations c) It is recommended that Environment Canada conduct research to investigate the vertical structure of ozone in the atmosphere to better determine the contribution of stratospheric intrusion and tropospheric mixing to ground level ozone. A report on this work to be delivered to the CASA Board in 2005.	3	<u>Recommendation:</u> Close.  <u>Reason:</u> Complete.  This research has been completed and the article “A modeling assessment of the origin of Beryllium-7 and Ozone in the Canadian Rocky Mountain” was published in the Journal of Geophysical Research in September 2013.

**Recommendation 5: Close low-rated recommendation as is addressed in other ways.**

The Performance Measures Committee recommends that the CASA Board deem the following one (1) low-rated recommendation closed because it is being addressed in other ways:

**Table 5: Low-rated Recommendation Addressed in Other Ways**

Recommendation	Original Rating	Recommendation from PMC
2005		
<i>Renewable and Alternative Project Team</i>		
Recommendation 16(b): Use and implementation of a tracking system in Alberta As soon as possible, and on an ongoing basis when the system is available to accept the data, AESO submit generation data for facilities registered with WREGIS (or a similar system).  [NB: WREGIS is the Western Renewable Energy Generation Information System and AESO and AESO is Alberta Electric System Operator.]	0	<u>Recommendation:</u> Close.  <u>Reason:</u> It is being addressed in other ways.  Renewable generators can voluntarily supply offset credits to the regulated Alberta carbon market. There is an Alberta registry, protocols and infrastructure for doing so developed and maintained by Environment and Sustainable Resource Development. This goes beyond what is required to track RECs (Renewable Energy Certificate) as it is a quantification of greenhouse gas emissions savings rather than only of MWh produced.

**Recommendation 6: Close low-rated recommendations as no implementing agency.**

The Performance Measures Committee recommends that the CASA Board deem the following two (2) recommendations closed because there is no implementing agency:

**Table 6: Low-rated Recommendation No Implementing Agency**

Recommendation	Original Rating	Recommendation from PMC
2003		
<i>Data Issues Group</i>		
<p>5-10 Regularly report pollution trends, together with correlated health effects.</p> <p>AND</p> <p>6-8 Link vehicle emissions to ambient data, human exposure and health effects.</p>	3	<p><u>Recommendation:</u> Close.</p> <p><u>Reason:</u> No agency to generate these links.</p> <p><u>Additional action by PMC:</u> The type of work referred to in these recommendations, while important, is most often addressed by researchers rather than CASA stakeholders. Both of these two recommendations are very broad and wide-reaching. In the spirit of CASA’s new policy of creating SMART recommendations (specific, measurable, actionable, realistic, and time-bound), the PMC would like to create a short document that could be provided to teams contemplated research-related recommendations. This document would outline general research methodology and needs around pollution and health trends that would allow teams to create SMARTer recommendations in the future. The PMC will design a letter outlining this request, send it to several researchers, compile the document, and make it available to teams.</p>

## Summary of Recommendations

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### **Recommendation 1: Approve performance measures results.**

The Performance Measures Committee recommends that the Board approve the results of the 2013 performance measures and the inclusion of the appropriate performance measures in the 2013 CASA Annual Report.

### **Recommendation 2: Approve performance indicators results.**

The Performance Measures Committee recommends that the Board approve the results of the 2013 performance indicators for inclusion in the 2013 CASA Annual Report.

### **Recommendation 3: Adjustments to the Strategy.**

The PMC recommends the Board approve the adjustments to the Strategy as outlined in Table 3.

### **Recommendation 4: Close low-rated recommendation as is complete.**

The Performance Measures Committee recommends that the CASA Board deem the following one (1) low-rated recommendation closed because it is complete:

- 2003 – PM and Ozone Team: #10c

### **Recommendation 5: Close low-rated recommendation as is addressed in other ways.**

The Performance Measures Committee recommends that the CASA Board deem the following one (1) low-rated recommendation closed because it is being addressed in other ways:

- 2005 – Renewable and Alternative Project Team: #16b

### **Recommendation 6: Close low-rated recommendations as no implementing agency.**

The Performance Measures Committee recommends that the CASA Board deem the following two (2) recommendations closed because there is no implementing agency:

- 2003 – Data Issues Group: #5-10 & #6-8

## Appendix 1: Additional Information for Table 1 (Performance Measures)

Documents produced to inform GoA & other stakeholders which includes a summary of the document and a qualifying description of the anticipated influence on air quality:

<b>Document Title</b>	<b>Document Description</b>	<b>Anticipated Influence on Air Quality</b>
PM and Ozone Implementation Team 2013 Report	This document outlines the rationale for disbanding the team, progress made against the team's terms of reference and implementing the CASA PM and Ozone Framework, and offers advice to the Board on next steps.	The team has worked diligently since 2006 to support and when required, facilitate the timely implementation of the CASA Framework. The high level of implementation of the recommendations from the CASA Framework and the development of three Regional Management Plans testifies to this effort as well as the adoption of the CASA model at the national level (CAAQS). The final report is available on the CASA website.
Electricity Framework Review Project Charter	This document outlines the goals, objectives, and scope of work of the 2013 Electricity Framework Review Team.	The project charter was developed with extensive consultation and involvement from government, industry, and NGO CASA stakeholders. It is a tool that will shape CASA's policy agenda and focus. The outcomes from this project will have noteworthy impacts on Alberta's electricity generation sector. The project charter is available on the CASA website.
Odour Management Team Project Charter	This document outlines the goals, objectives, and scope of work of the Odour Management Team.	The project charter was developed with extensive consultation and involvement from government, industry, and NGO CASA stakeholders. It is a tool that will shape CASA's policy agenda and focus. The outcomes from this project will have noteworthy impacts on industry, government, and communities impacted by odour. The project charter is available on the CASA website.
Climate and Clean Air Coalition Overview	This document was developed for CASA's Executive Committee and provides an overview of UNEP's Climate and Clean Air Coalition and outlines areas of overlap and links between CASA and CCAC activities.	This document generated a protracted discussion by CASA's Executive Committee about CASA's policy reach and the need for integration across levels of government. This document will be refocused and brought to the Board for continued discussion – the outcome of which will shape CASA's policy agenda and focus.
Non-Point Source Emissions Statement	This document provides a summary of stakeholder commentary about the	This document was developed with extensive consultation and involvement from industry, government, and NGO stakeholders. It

of Opportunity	issue of NPS and groups these concerns thematically.	generated a rich Board discussion and shaped CASA's agenda and focus – acting as the stimulus for a workshop to further scope the issue of non-point source emission management.
Non-Point Source Emissions Workshop Proceedings	This document outlines the discussions and top three priorities to address NPS that were identified at the workshop.	The workshop brought together a wide-range of interested players. The proceedings generated a dynamic Board discussion and will be used to develop a focused Statement of Opportunity for a CASA project team. The proceedings are available on the CASA website.
Human and Animal Health Team Final Report	This document contains the rationale for disbanding the team, outlines the current status of previously incomplete recommendations, and offers advice to the Board on next steps.	The team provided several pieces of advice to the Board to encourage updates around new and ongoing human health initiatives and ensure that ecological health (including animal health) is considered in the terms of references for new project teams. The final report is available on the CASA website.

## Appendix 2: Additional Information for Table 2 (Performance Indicators)

Section 1: Percentage of substantive recommendations from 4 years prior (2009) that have been implemented.

For 2013, the Performance Measures Committee considered the recommendations approved by the CASA Board in 2009. In this year, the CASA Board approved ten recommendations from the Electricity Framework Review Team, fourteen recommendations from the Clean Air Strategy Project Team and eight recommendations from the Enhanced Collaboration with the Water Council Committee. Of these, three recommendations from the Electricity Framework Review Team were deemed substantive by the Committee. The remaining recommendations were deemed either administrative or operational and so are not subject to further evaluation. It is important to note that all 14 recommendations from the Clear Air Strategy Project Team were incorporated into Alberta's Renewed Clean Air Strategy.

Overall, the degree of implementation of CASA recommendations approved in 2009 is 17%.

Table 1 shows the rating of the three substantive recommendations and subsequent calculation of overall implementation of recommendations and Table 2 summarizes the results since 1997.

**Table 1: Rating of Substantive Recommendations**

Project Team (No. of substantive recommendations)	Rating of Recommendations (Original recommendation numbers placed in appropriate rating column)										
	0	1	2	3	4	5	6	7	8	9	10
Electricity Framework Review Team (3)	7, 8					6					
Total number (3)	2					1					
Mean Calculation: $0 \times 2 + 5 \times 1 = 5$											
Overall (average rating) = $5 / 3 = 1.7$ or 17%											
Reviewer(s): Electricity Framework Review Team: Randy Dobko (ESRD)											

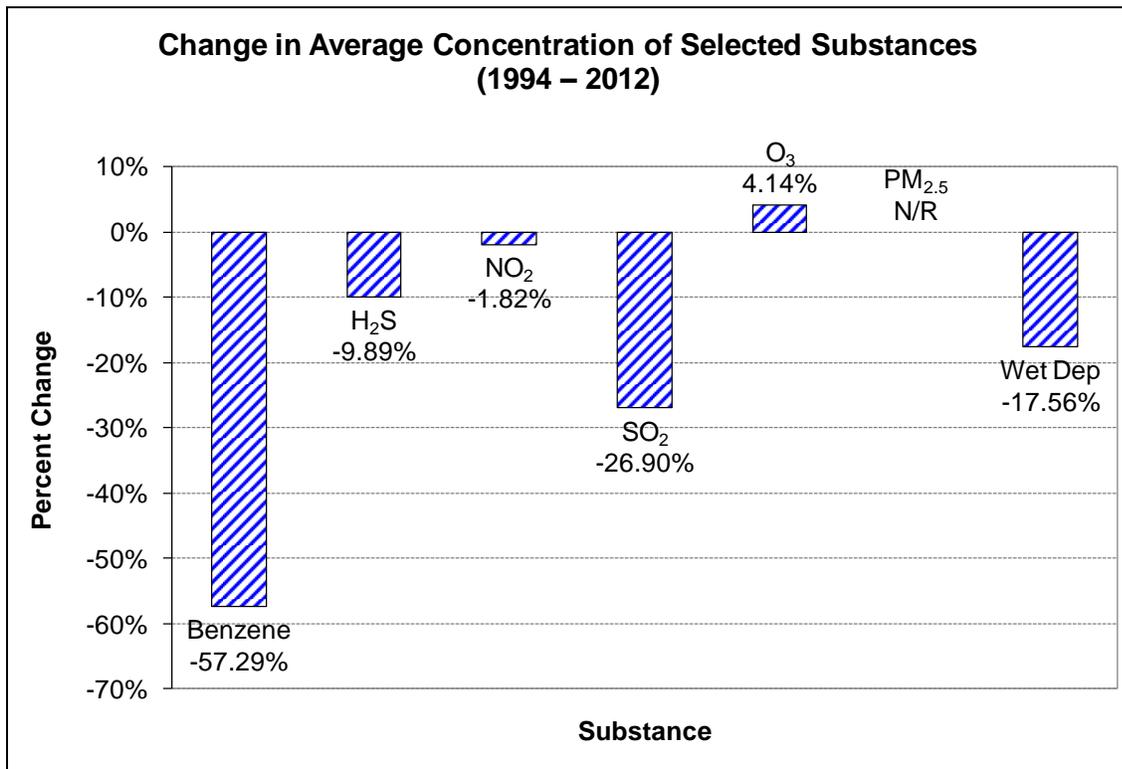
**Table 2: Summary of Results for Recommendation Implementation**

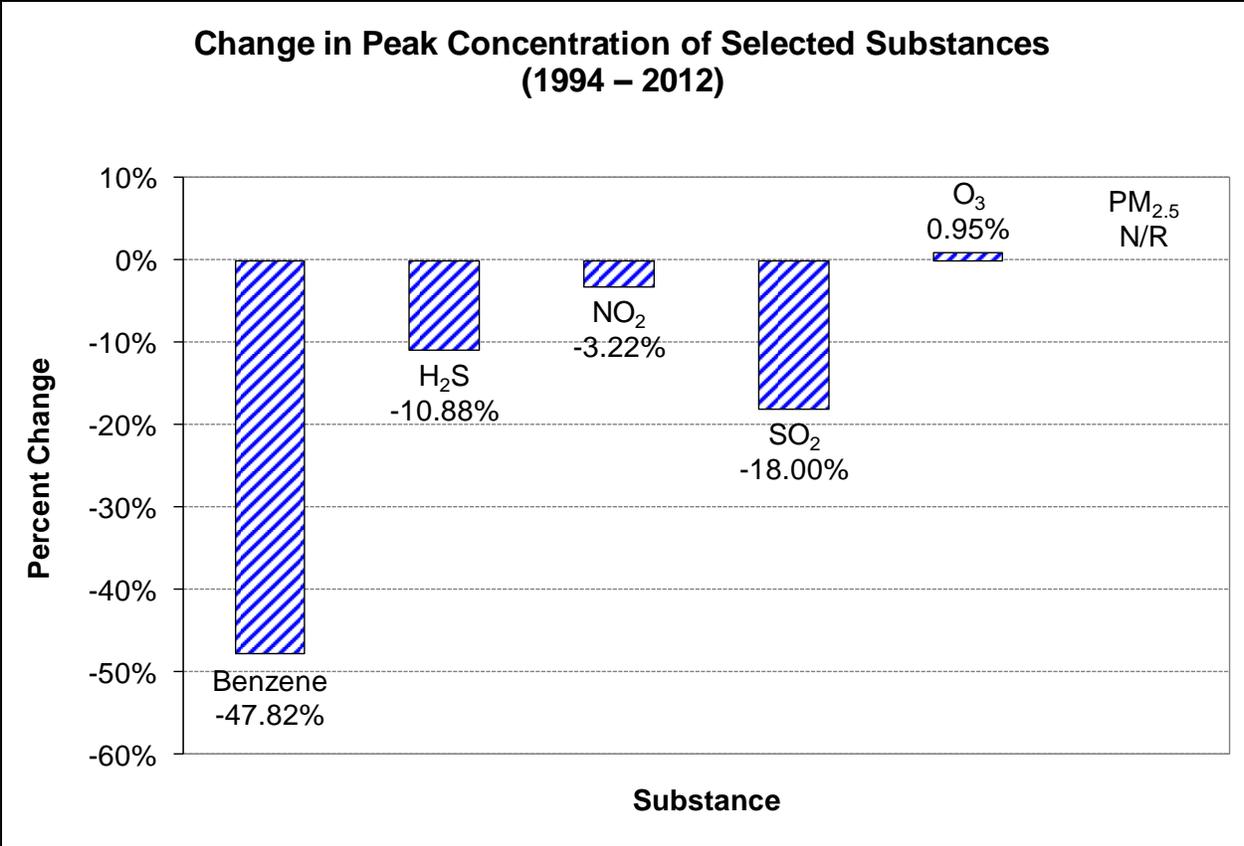
Year Approved by CASA Board	Number of Substantive Recommendations	Degree of Implementation of Substantive Recommendations (%)
1997	25	77
1998	54	76
1999	30	62
2000	0	n/a
2001	5	94
2002	53	74
2003	79	73

2004	47	91
2005	18	77.2
2006	1	100
2007	1	30
2008	2	90
2009	3	17

**Section 2:** Annual average ambient concentrations of: NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>2.5</sub>, H<sub>2</sub>S, O<sub>3</sub>, benzene, and wet acid deposition.

Annual peak concentrations of: NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>2.5</sub>, H<sub>2</sub>S, O<sub>3</sub>, and benzene.





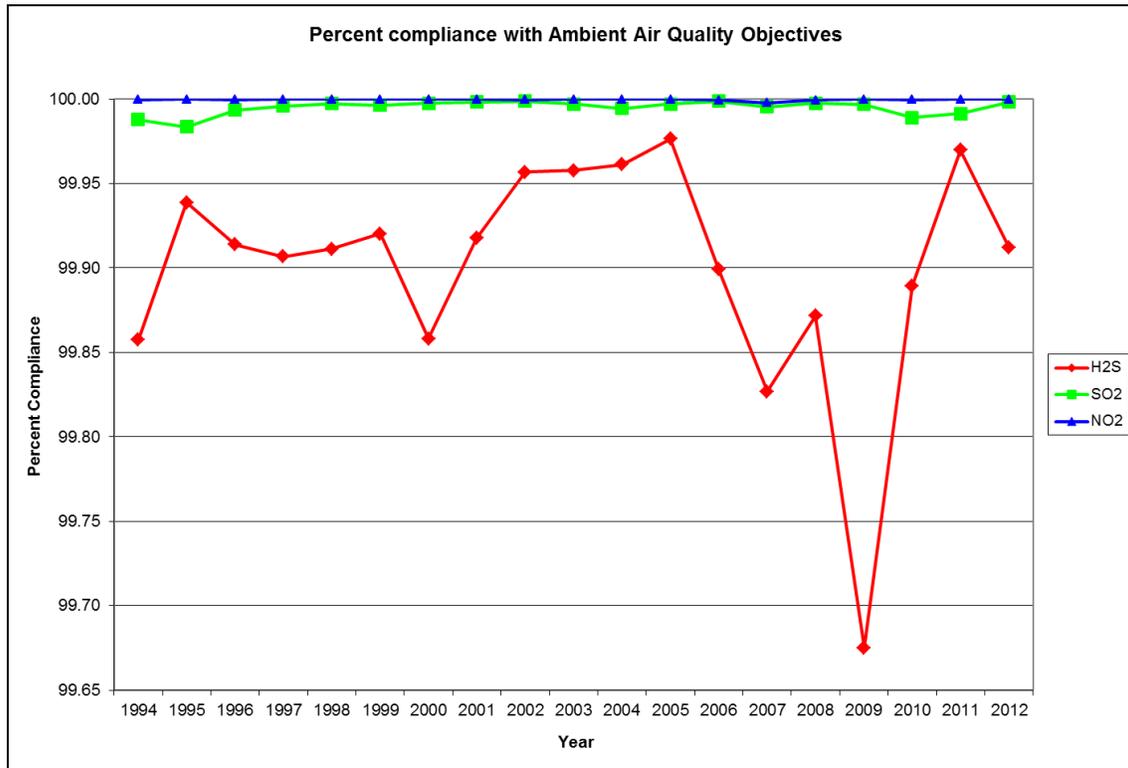
**Notes:**

PM<sub>2.5</sub> can only be calculated from five out of thirty-five sites, two of which are continuous, three intermittent. This is because in 2009 and 2010, the monitoring technology was changed at most sites. The results from the new technology are not comparable to the old, so they cannot both be used in the test trend significance. Nor is there a sufficiently long time span with the new technology to be able to determine trend significance. Due to the small number of sites which are available, the results are considered not representative, and are noted with an "N/R" on the chart. Of the five sites that do have a long enough time span, there were no significant trends either increasing or decreasing.

The benzene trend uses data from three sites in Edmonton and Calgary. There is a continuous monitor now installed at Scotford 2 which monitors benzene and other VOCs, however it has only been operating for six years. This is long enough to determine trend significance, and a statistically significant increasing trend was detected in the annual average concentrations at this site, with a percent change of 1789%. However, the percent difference is calculated from a linearization of the trend, and determining the percent change from the first to the last year of this linearization. The linearization for this particular trend had a very low value for the initial year, which caused the percent difference to be very high. Also the absolute concentrations are lower than the other sites in the province for 5 of the 6 years. As such, Scotford 2 was not used in the change calculations for Benzene.

H<sub>2</sub>S may not have been included in the last report, as at the time of that report, there had been a short-term spike in H<sub>2</sub>S concentrations at some sites which had a large influence on the bar for H<sub>2</sub>S in the charts. This spike has shown itself to be a short-term effect, concentrations have fallen back, and the trends have returned to a more normal state.

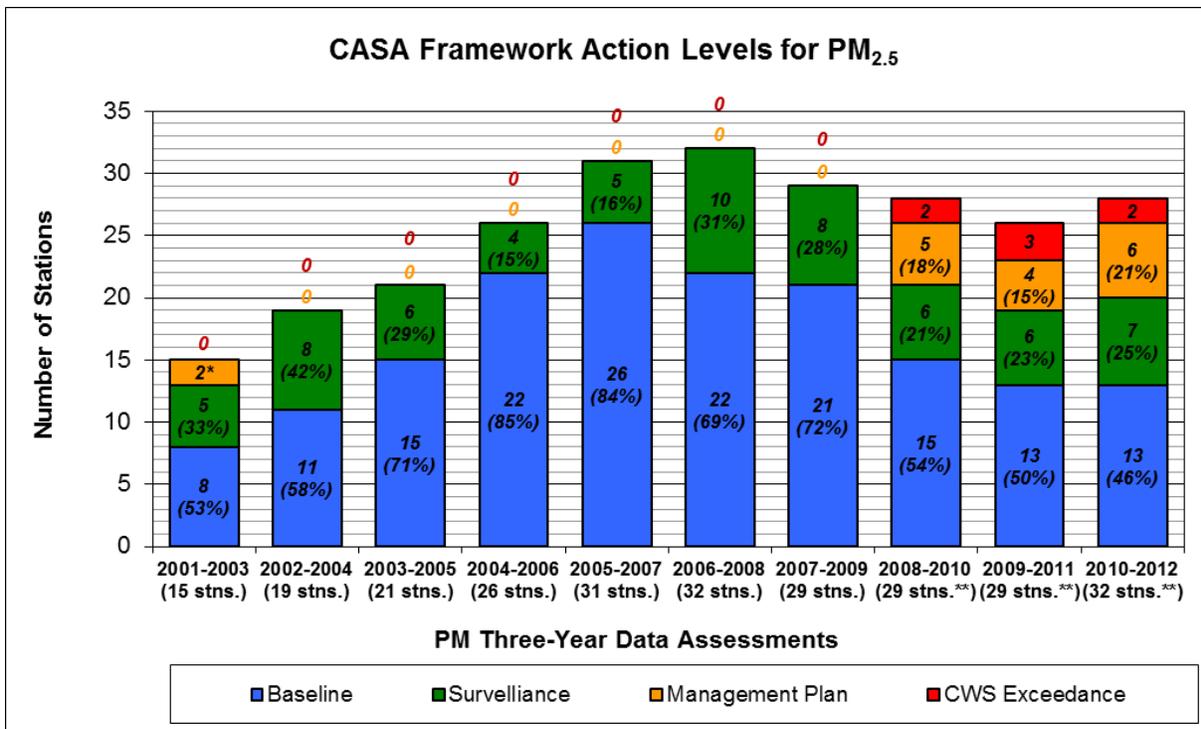
Section 3: Percent hourly exceedances of: NO<sub>2</sub>, SO<sub>2</sub> and H<sub>2</sub>S.



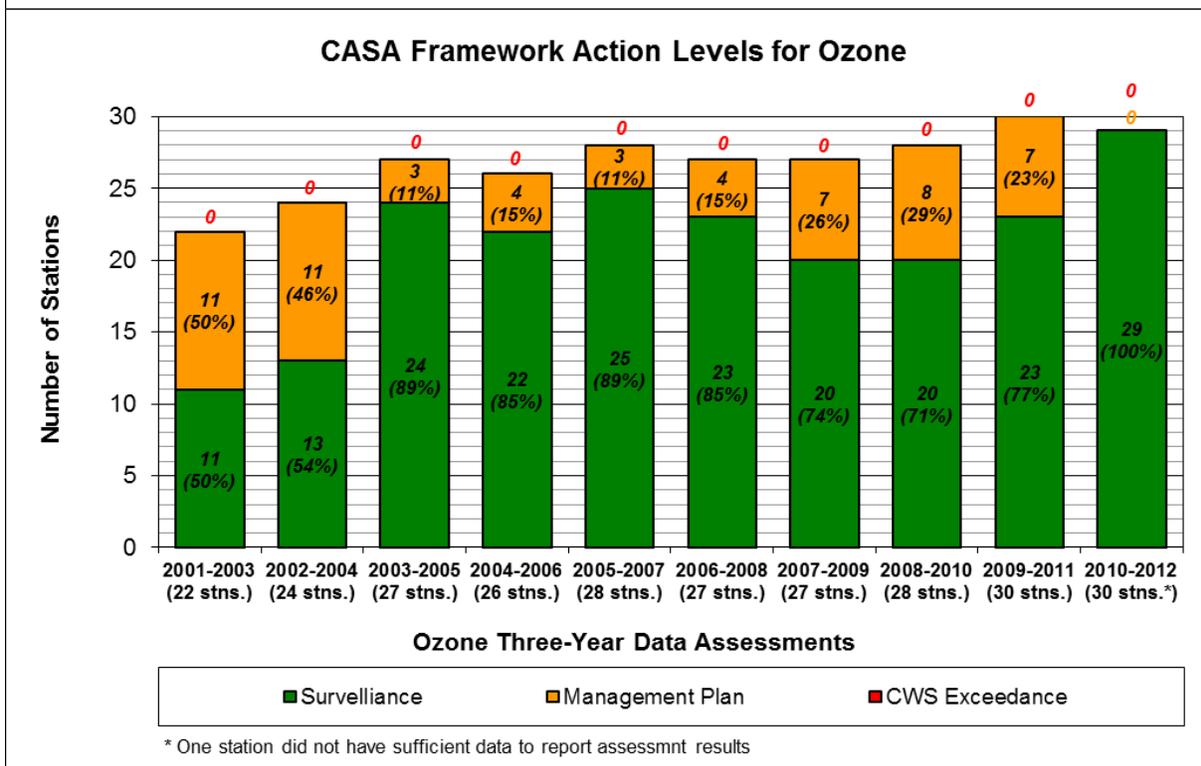
Notes:

There are no significant trends in percent compliance with any of the three objectives charted here.

Section 4: Percentage of stations assigned to action levels defined by the CASA Particulate Matter and Ozone Management Framework based on annual three-year data assessments completed by Alberta Environment.



\* Action levels based on non-representative data. \*\* Some stations did not have sufficient data to report assessment results



\* One station did not have sufficient data to report assessment results

**Notes:**

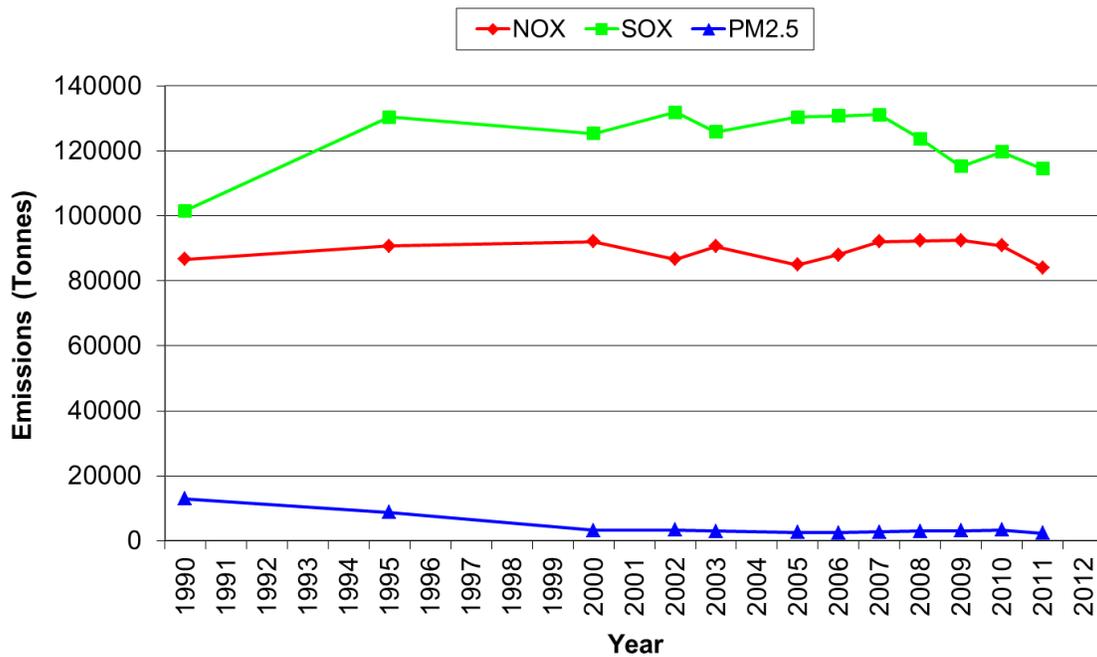
Total number of stations is indicated in the x-axis labels. This number may be higher than the total height of the bar. This is due to some stations having had insufficient data to calculate a three-year average concentration. The sites in question would still be active, and able in future to report a three year average and have an action level assigned to them, however they do not have

such an assignment for the three-year period in question. In 2009, ESRD also determined some sites to be industrial compliance sites, and not suitable for inclusion in the analysis, as they will not be used in Canadian Ambient Air Quality Standards (CAAQS) reporting in the future. As CAAQS reporting is to start with the 2011-2013 period, 2010-2012 is the last period for which ESRD will be assigning action levels under the CASA Framework.

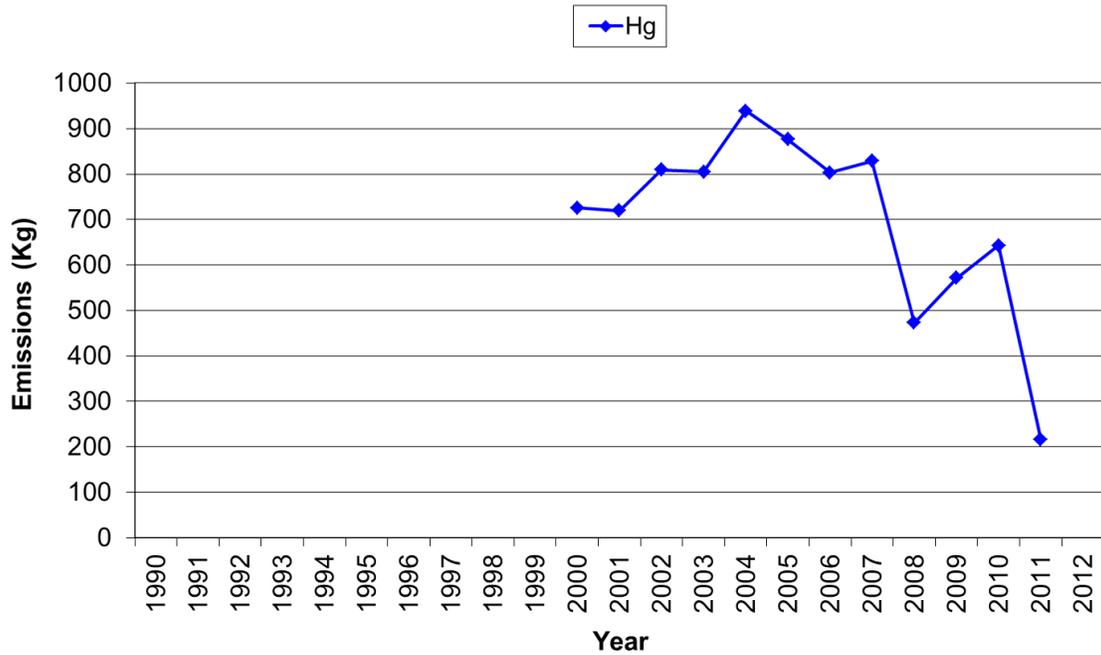
As this measure is based upon data which have been manipulated to remove natural, background, and transboundary influence, it is not appropriate to attempt to determine statistical significance on any trends.

**Section 5:** Annual total emissions from power generation for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>2.5</sub>, and mercury.

**CAC Emissions from the Electricity Generation Sector**



## Mercury Emissions from the Electricity Generation Sector

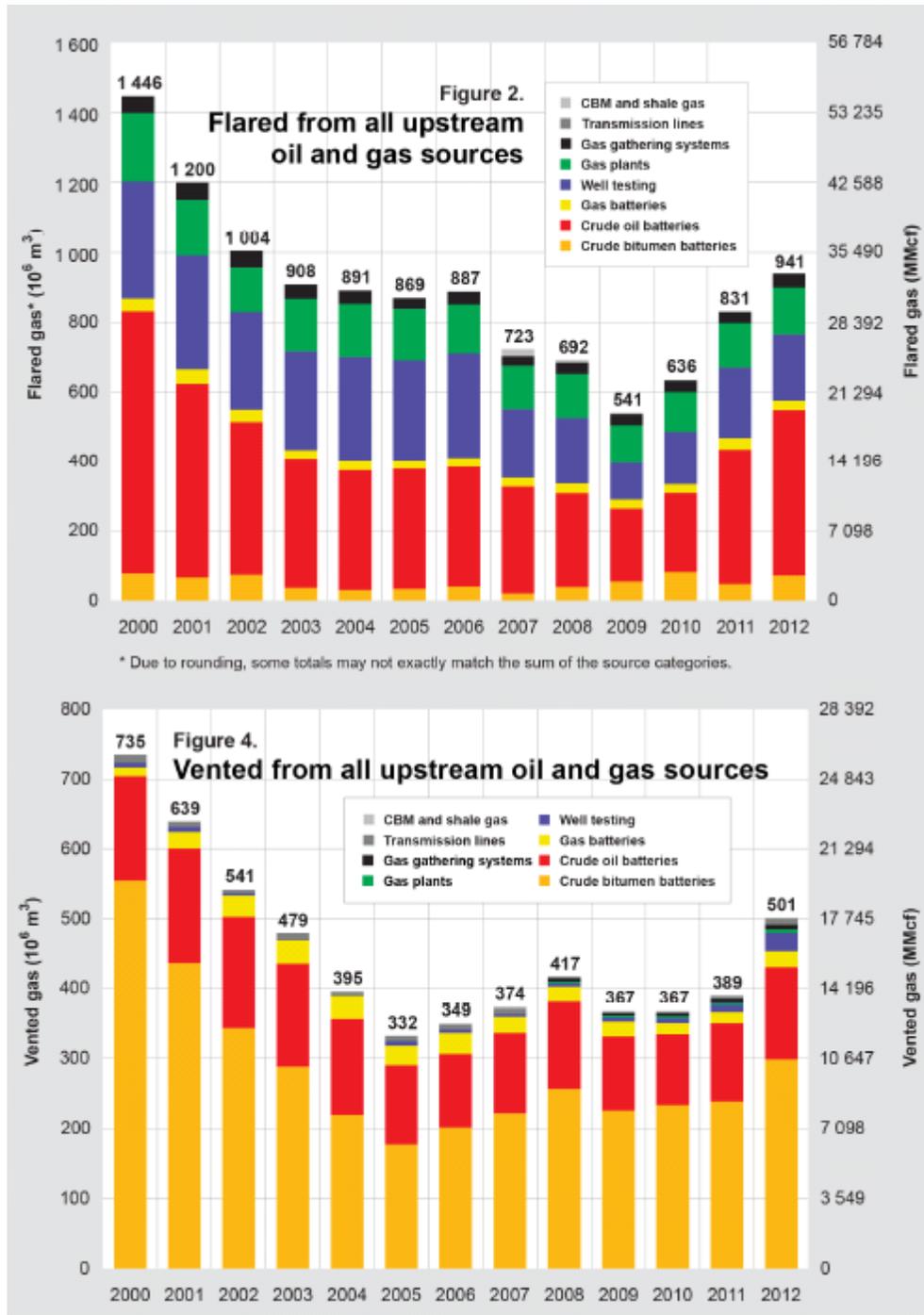


Notes:

Due to an increase in the amount of time taken for results to become available, 2012 data are not available for emissions from the electricity sector.

None of the trends depicted are statistically significant.

Section 6: The change in flaring and venting associated with solution gas, well test and coalbed methane.



Notes:

The total volume flared from all upstream oil and gas sources in 2012 was 941 10<sup>6</sup> m<sup>3</sup> (33 379 MMcf), an increase of 13.2% from 2011.

The total volume vented from all upstream oil and gas sources in 2012 was 501 10<sup>6</sup> m<sup>3</sup> (17 786 MMcf), an increase of 28.7% from 2011.

Section 7: The percentage of monitoring stations and/or parameters implemented from the 2009 Ambient Monitoring Strategic Plan (AMSP).

	2013	2010
<b>1 Population Based Completed:</b>	<b>55%</b>	<b>57%</b>
<b>2 Ecosystem Based Completed:</b>	<b>25%</b>	<b>20%</b>
<b>3 Ozone Completed:</b>	<b>41%</b>	<b>52%</b>
<b>4 Background and Boundary Transport Completed:</b>	<b>44%</b>	<b>44%</b>
<b>5 Pattern Recognition Completed:</b>	<b>47%</b>	<b>40%</b>
<b>Overall Completed:</b>	<b>50%</b>	<b>54%</b>

PLEASE NOTE: In general, this indicator is very subject to interpretation, and misses a lot of the expansion that has happened, simply because the new stations (St. Lina, Bruderheim, upgrades to Edson and Hinton, Anzac, Woodcroft (an Edmonton station operated by Lehigh)) aren't specified by the AMSP. Hopefully there will be some expansion into AMSP specified locations like St. Albert, and a recommissioning of Calgary East by the next PM cycle.

Notes:

1: In 2011, Calgary East was decommissioned in anticipation of relocation. It has unfortunately not yet been brought back online. It's very nearly ready, almost everything is in place, it's just not been finished yet. Hopefully this will be in place in 2014. If it were still in operation, the Population based subprogram would have shown a slight improvement over 2010 with the addition of some parameters at some sites.

2: The Ecosystem subprogram is for acid deposition, and there have been a few new stations including Elk Island, two in WCAS, and a Dry Deposition site at Anzac.

3: ACAA and PAMZ had been doing some work a few years ago in terms of upwind and downwind ozone, however this has not been an ongoing activity and no new permanent sites that would fall into these categories have been placed, therefore there is a decline in this measure.

4: No changes.

5: This count had been a bit of a rough estimate in the past, and has been re-counted for this 2013 report. The original concept was that the province would be covered in passive monitors on a 1° by 1° grid. The number of these grid points that have a passive site located nearer to them than to any other grid point were counted. The original count found that there were 100 such points, and so these were divided up as follows: 40 were estimated to already be covered with SO<sub>2</sub>, NO<sub>2</sub>, and O<sub>3</sub> passives, an additional 40 similar which should be created, and a further 20 which should also monitor H<sub>2</sub>S and NH<sub>3</sub>. The actual count is 110 but some of these (32) are on the border and so their covered area is only half within the province – therefore it's reasonable to leave the total number of stations at 100. According to the 2013 count, 30 grid points have a nearby SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub> monitoring site, in PAS, CRAZ, PAMZ, WBEA, FAP, and LICA. PAZA covers 11 with SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub>, and H<sub>2</sub>S, and WBEA covers 10 with SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub>, and NH<sub>3</sub>. The count found these 21 sites as being 80% implementation of the new ones, giving a total of 40% implementation for the Pattern Recognition program.

## **Appendix 3: Decision Tree for Low-rated Recommendations**

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After three years of implementation, CASA assesses the implementation of recommendations by engaging stakeholders involved in the original team and/or the implementing agency. Assessors are asked to rate the degree of implementation on a scale of 0-10. Low rated recommendations are defined as recommendations receiving a 0-3 rating.

The Decision Tree, as illustrated on the next page, is intended to provide guidance on how to follow-up on low-rated recommendations. The Decision Tree will only be used for low-rated recommendations. The Committee will first follow-up with the implementer for information why a recommendation was not implemented. If no implementer is discernable, the Committee approaches a CASA team (if available) for information. Should neither be available, the Committee can make a recommendation to the CASA Board. Recommendations, whether from the implementer, CASA team or Committee, could include:

- Close the recommendation, and document the explanation
- More work that could be required, such as an implementation team, new work for an existing team, Board involvement, etc
- More information the Board would require to make its decision regarding follow-up or closure of the recommendation.

### CASA Board Decision

The Performance Measures Committee will use the information to advise to the CASA Board on appropriate follow-up for the low-rated recommendation. The CASA Board has decision-making power whether to follow-up or to close the recommendation (i.e. render the recommendation no longer required).

There are three criteria to inform the board's decision to close a recommendation:

1. Priority level: Is the current importance of the issue and/or recommendation high, medium or low?
2. Need for the recommendation: Given legal, technological, societal, and economic changes since the recommendation was made, is the action prescribed still needed?
3. Practical challenges: Given the current work of the implementing body, are the necessary resources and capacity available to implement the recommendation?

