



**Final Report of the Odour Management Team  
to the CASA Board**

**FINAL**

**September 2015**

## **Acknowledgements**

The Odour Management Project Team gratefully acknowledges the financial support from Alberta Environment and Parks and the Canadian Association of Petroleum Producers in enabling it to undertake its work. The team also thanks the CASA Executive Committee for agreeing to reallocate internal funds in support of the work reflected in this report.

All members of the Odour Management Project Team demonstrated exceptional dedication and commitment to the challenging tasks this project presented. The five task groups showed similar diligence and leadership as they sought to gather new information and develop tools to advance odour management in Alberta. The volunteer time and effort given to this project by individuals and organizations was substantial and very much appreciated.

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# 1 Executive Summary and Recommendation

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Odour management is complex. The compounds contributing to odour and sources of odour are diverse and the range of potential adverse effects is varied. Individual odour perception, preferences, and sensitivity, as well as the transient nature of most odours, make it challenging to assess and manage them. It is also often difficult to establish a firm link between the impacts of odour on health and quality of life. Adding to this complexity is the cumulative impact of industrial activities and regional land use considerations, along with the corresponding array of regulators, interested sectors, and government departments. Lastly, with more people living closer to industrial and agricultural development, the possibility for conflict between odour-producing activities and neighbours is increasing. In response to odour management issues identified by its stakeholders over the years, the Clean Air Strategic Alliance (CASA) formed the Odour Management Project Team (OMT) in March 2013. The goal of the project was to create a good practices guide for assessing and managing odour in Alberta.

To meet this goal, five topics were examined in detail by OMT task groups: Health, Complaints, Odour Assessment, Prevention and Mitigation, and Enforcement and the Role of Regulation. Two other areas in the project charter – Education, Communication, and Awareness; and Continuous Improvement – were also addressed by the team with advice from each of the task groups. An important component of the task groups' work was reviewing approaches used in other jurisdictions to manage odours and odour complaints and then developing suitable tools and practices for application in Alberta. A great deal of valuable background information was also compiled and presented to the OMT. The existence of an odour issue does not relegate the problem to being dealt with exclusively through odour management and the tools presented in this report and in the *Good Practices Guide for Odour Management in Alberta*. Where applicable, other tools, including regulatory tools, can be used irrespective of the odour issue.

Tools and background information from each task group have been incorporated into the Good Practices Guide. Examples include:

- Backgrounder on odour and health;
- A tool for individuals to track health-related impacts of odour;
- Backgrounder on odour complaint management;
- Guidance booklet and tools for managing and responding to odour complaints;
- Odour assessment tools and practices for Alberta;
- Best practices for preventing and minimizing odour and odour-related conflicts and complaints; and
- Regulatory approaches to odour management.

The OMT also prepared a detailed communications plan for the Good Practices Guide, stressing the importance and value of building and maintaining good relationships between odour-producing facilities and their neighbours. All of the deliverables and supporting materials prepared by the task groups and expert consultants are available on the CASA website at [www.casahome.org](http://www.casahome.org), including the Good Practices Guide.

Continuous improvement will ensure that the Good Practices Guide remains a useful document in the management of odour in Alberta. A review of the Guide in five years would enable a multi-stakeholder group to assess if and how the tools are being used and whether new gaps have been identified. Through the CASA process, a working group would conduct an initial screening and

scoping of new and emerging information to help determine if the Good Practices Guide requires revisions.

**Recommendation 1: Review of the *Good Practices Guide for Odour Management in Alberta***

The OMT recommends that:

Within five years of the approval of this report by the CASA Board, CASA begin the first review of the *Good Practices Guide for Odour Management in Alberta* to determine if and where improvements are needed or could be made, based on effectiveness to date of the tools in the Guide and new information. The following elements should be part of this review and assessment:

1. Update of the odour and health backgrounder to reflect new information on the relationship between odour and health;
2. A cross-jurisdictional scan to identify new approaches to enforcement and regulation;
3. Advice on implementing a province-wide integrated complaints response, tracking, and management system;
4. Identifying technical areas where updates are needed in the Good Practices Guide;
5. A comprehensive gap analysis of odour assessment practices and tools in Alberta; and
6. A review of the definition of “adverse odour” as used in this report from the first Odour Management Team, ensuring that the definition is worded to give the term proper and useful legal standing. This is especially important if, as a result of the five-year review, new recommendations are made that include regulatory changes.

To make the review as efficient and effective as possible, the following information and data would be very valuable and should be gathered, where resources are available, by the appropriate stakeholder partners prior to the review commencing:

1. An assessment of the extent to which odour prevention and mitigation charts and tools have been used and how effective their application has been;
2. Statistics on odour complaints received by the Government of Alberta’s Centre for Information and Coordination and, to the extent possible, other agencies that receive and respond to such complaints; and
3. Results of additional pilot testing of the tools and referral process, in particular the *Odour Assessment Guide*, taking into account the number of participants and seasonality of odour complaints.

The review should involve a multi-stakeholder group that:

- a) Consists of representatives from industry, government, and non-government organizations with an interest in odour assessment and management;
- b) Conducts an initial screening to determine which, if any, of the elements in the Good Practices Guide should be updated, as described in CASA’s *Guide to Managing Collaborative Processes*;
- c) Has access to the resources necessary to obtain the information and technical advice needed to complete its review; and
- d) Uses a consensus decision-making process.

## 2 The Context for Odour Management in Alberta

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Air quality can be measured or assessed in many different ways; most people judge it based on sensory perception – smell, taste, visibility, and eye, nose, or throat irritation. Odour issues represent one of the most frequent air quality complaints. Individual responses to odour vary; some people can detect an odour at much lower concentrations than others, and one person may find an odour to be objectionable while another may not.

Odour management is complex. The compounds contributing to odour and sources of odour are diverse and the range of potential adverse effects is varied. Individual odour perception, preferences, and sensitivity, as well as the transient nature of most odours, make it challenging to assess and manage them. It is also often difficult to establish a firm link between the impacts of odour on health and quality of life. Adding to this complexity is the cumulative impact of industrial activities and regional land use considerations, along with the corresponding array of regulators, interested sectors, and government departments. Lastly, with more people living closer to industrial and agricultural development, the possibility for conflict between odour-producing activities and neighbours is increasing.

Sources of odour in Alberta include development and activities associated with industry, agriculture, and municipalities. Complaints about odour issues are generally most acute at the interface between new or existing development or activities and residents in both urban and rural settings. Although Alberta's regulatory agencies and airsheds spend considerable time and resources to address odour-related complaints, these complaints often are not satisfactorily resolved. Successful complaint resolution is problematic for a number of reasons: the subjectivity involved in odour complaints, the difficulty in identifying and measuring odorous compounds, the limitations of current legislation, the absence of clear odour management approaches and outcomes, and the lack of clearly defined roles and responsibilities with respect to who is accountable for addressing complaints.

Although there are legislative limitations in addressing odour specifically, some air emissions are regulated for other reasons and this approach may have the co-benefit of reducing odour-causing emissions. The existence of an odour issue does not relegate the problem to being dealt with exclusively through odour management and the tools presented in this report and in the *Good Practices Guide for Odour Management in Alberta*. Where applicable, other tools, including regulatory tools, can be used irrespective of the odour issue. These include federal or provincial ambient air standards, approval limits, land use planning, and others.

The issue of odour management came to the attention of CASA through its government, non-government, and industry stakeholders. Various odour management issues have been identified by CASA project teams and stakeholders over the years and, in September 2012, the CASA Board agreed to establish a multi-stakeholder working group to further screen and scope the issue and draft a project charter. The Odour Management Working Group, formed in January 2013, designed a process that would assist a larger group of stakeholders to engage in a focused discussion to advance odour management in Alberta. The working group obtained regular feedback from its sector members and this input was incorporated into the project charter. The CASA Board approved the charter in March 2013 and established the Odour Management Project Team (the OMT); the project charter is shown in Appendix A and a list of team and task group members appears in Appendix B.

### 3 The Scope of this Project

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The project team focused on odours that have adverse effects, and when the word “odour” is used in this report, it refers to *adverse* odour. “Adverse effects” are defined according to the *Environmental Protection and Enhancement Act* as: “impairment of or damage to the environment, human health or safety or property.” This is consistent with how the term is used in CASA’s vision for Alberta’s air: “The air will have no adverse odour, taste or visual impact and have no measurable short- or long-term adverse effects on people, animals or the environment.”

Odoriferous compounds and mixtures can have perceived and direct health impacts and can also cause eye, nose, and throat irritation. Depending on the substances involved, these impacts can occur above or below odour thresholds. These issues were considered and the project team consequently focused only on detectable odours as well as direct, indirect, and perceived odour-related impacts on human health. The OMT made a deliberate decision not to consider possible odour impacts on the health of animals.

The team looked at managing odorous compounds (referred to as “odorants”) individually and as a whole and considered all sectors in its approach. While some best practices could be sector-specific, the intent was to develop a comprehensive and integrated approach that could apply to all sectors involved in managing odour in Alberta. The team recognized that in some instances, all reasonable efforts may have been made to manage a source of odour, but eliminating odour entirely may not be feasible.

Existing regulatory processes, including facility approvals and associated emissions limits, often address odour-related emission sources and/or chemicals. Although these processes potentially represent an effective approach to preventing and controlling odours, the team was mandated to review options that could be considered to enhance or supplement existing regulatory approaches.

The primary audiences for the OMT’s work were governments, industries, and airsheds, but materials were created so as to be easily understood by and useful to members of the public. The key deliverable for this project is the *Good Practices Guide for Odour Management in Alberta* (referred to in this report as the Good Practices Guide or, simply, the Guide).

#### 3.1 Project Structure and Management

The team’s work was divided into seven cross-cutting topics, recognizing that the same issue may need to be addressed under more than one topic. The OMT formed task groups to examine five of these topics in detail: Health, Complaints, Odour Assessment, Prevention and Mitigation, and Enforcement and the Role of Regulation. Because the two other areas in the project charter – Education, Communication, and Awareness; and Continuous Improvement – were relevant to all five topics, the OMT chose to ask each task group for advice in these areas rather than establish specific task groups to address these two topics. The team has incorporated this advice into both the Communications Plan and this report.

The five task groups comprised members of the OMT as well as other individuals from stakeholder groups who had experience or expertise in each associated topic. Expert consultants in the topic areas were engaged to prepare reports on odour assessment, prevention and mitigation, and enforcement and regulation, including an evaluation of relevant practices in other jurisdictions. The OMT provided direction to each task group through a work plan and ongoing feedback as the tasks were

undertaken. The final reports with associated deliverables from each task group were presented to the OMT for review and acceptance, and the information was incorporated, as appropriate, into the Good Practices Guide and/or this report. A number of valuable reports, tools, and other materials were prepared by the task groups and these are listed in Appendix C. The Guide and all task group and consultant reports are available by following the links on the CASA website at [www.casahome.org](http://www.casahome.org). This document is the final report of the OMT to the CASA Board and is structured to reflect the work and advice of all five task groups as well as the OMT's recommendations based on all its work.

The OMT gratefully acknowledges a grant from Alberta Environment and Parks (formerly Environment and Sustainable Resource Development) and funds from the Canadian Association of Petroleum Producers in support of its work. Nevertheless, the team experienced some funding challenges and, in the end, internal CASA funds were reallocated to enable the team to complete its work. Additional expected financial support did not materialize, which may limit options related to printing, promotion, and roll-out of the Good Practices Guide, the main deliverable from this project.

Finally, the OMT and the task groups express their satisfaction with CASA's multi-stakeholder, consensus-based approach, which was especially useful and beneficial in producing the project deliverables. This process encouraged all members to contribute collaboratively and constructively and to provide value-added comments and advice.



## 4 Odour-Related Health Concerns

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The project charter objective related to health was: *To improve the management of odour and odour complaints by identifying, understanding, and developing tools and strategies to address health concerns and issues.* Two distinct streams of work were the focus for this topic:

1. Compile background material on odour and health, to be included in the Good Practices Guide as well as inform the OMT to help build common understanding; and
2. Develop a tool for individuals to track symptoms they think may be related to odour exposure, along with a plan for distributing the tool.

### 4.1 Backgrounder on Odour and Health

Many knowledge and research gaps exist with respect to the relationship between odour and health. To clarify what is known and not known and to increase understanding about this relationship, the Health Task Group developed the *Odour and Health Backgrounder*. Among other things, the backgrounder focused on:

- Human health, using the World Health Organization's definition of health;
- Health effects caused by odorant stimulation of the trigeminal<sup>1</sup> and olfactory neural systems, which can have both irritant and nuisance effects;
- Epidemiology rather than physiological and toxicological mechanisms to simplify the document; and
- Odours, not individual chemicals.

Task group members conducted a literature search using the databases PubMed, Scopus, and ISI Web of Science, accepting only original articles published in English. The literature search included studies published from the 1970s to July 2013. Members also reviewed components of the Alberta Energy Regulator's Peace River Proceedings, many grey literature sources (e.g., government documents from Texas and New Zealand), and additional materials that were brought to the group by various members as they deemed them relevant.

Task group members drafted sections of the backgrounder drawing on the literature sources as applicable. The group then worked collaboratively to refine the content and align it with the objectives and vision of the project. A writer was hired to edit the document for readability and prepare an executive summary and glossary.

In completing its work, the task group found ambiguity and a lack of consistency in odour-related definitions in the field of odour and health, along with gaps in knowledge and research. Knowledge about the relationship between odour and health is evolving; thus, although the literature review was extensive, not all available information was likely captured. A broad spectrum of opinion exists on the subject of odour and health, and the backgrounder attempts to reflect this diversity and varying interpretations.

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<sup>1</sup> The trigeminal nerve is the chief sensory nerve of the face and the motor nerve of the muscles of chewing. (<http://medical-dictionary.thefreedictionary.com/Trigeminal+system>)

## 4.2 Symptom and Odour Tracking Tool

In its second stream of work, the Health Task Group was asked to review any available tools for tracking health-related impacts of odour and to develop a tool for individuals to track these impacts. The task group was also asked to prepare advice for how such a record-keeping tool could be distributed. In contemplating the requirements for such a tool, it was agreed that the tool should be:

- Generic, short (one page), and capture all of an individual's self-reported symptoms in a non-judgmental way (that is, it did not focus on reaching a diagnosis);
- Flexible enough that it could be used as often as the user experiences odour exposure and/or health effects; and
- Freely available online to download or print.

The tool is intended to help individuals speak to their health care professional about their odour-related symptoms and not to validate or prove causation or lay blame. At some future time, the tool could possibly be used to collect research data.

Task group members gathered information about currently available tools for tracking the health-related impacts of odour, including generic symptom recording mobile application software (app) and odour diaries. They then discussed what information the tool might record and its format, and developed a prototype that was pilot tested to: ensure ease of use, comprehensiveness, and comprehensibility; test aesthetics and format; and test wording of symptom intensity scale. Overall, the tool was well-received and was subsequently refined and updated.

For this component of work, the task group:

- Reviewed best practices and tools for individuals (and potentially health care professionals) to track the health-related impacts of odour;
- Evaluated the inventory of best practices to determine their applicability to Alberta's context;
- Developed a tool for individuals (and potentially health care professionals) to track the health-related impacts of odour; and
- Outlined a plan for distributing the record-keeping tool to relevant organizations.

Based on its findings, the Health Task Group noted that research continues into the relationship between odour and health. As new information becomes available, both the backgrounder and the tool should be updated to remain useful and current. A reasonable review period for the backgrounder is every five years; future work could focus on the possible health effects of odorant mixtures, emerging challenges, updates to existing information, and regulatory changes. With adequate funding, an app for the tool could be developed to make it more convenient and more widely available. Use of the tool for research purposes could be explored, but further work will likely be needed first. These topics for future work are addressed in Section 10.2.

## 5 Managing and Monitoring Odour Complaints

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The project charter contains two objectives related to complaints:

1. *To effectively manage odour complaints; and*
2. *To monitor long-term trends in odour complaints.*

Two main products were delivered to meet the first objective:

1. A backgrounder entitled *Alberta Odour Complaints Overview* describes and improves understanding of mechanisms now in place to manage odour complaints. This backgrounder, along with a brief cross-jurisdictional review, was used to inform the development of the guidance document and associated tools; and
2. A guidance booklet and tools on the complaints management process, entitled *Odour Complaints in Your Area: A Guide to Developing an Odour Complaint Process*. The guidance booklet includes information on communications and information exchange and roles and responsibilities for responding to odour complaints.

The Complaints Task Group did not pursue a province-wide tracking system to monitor long-term trends in odour complaints (objective 2). Some data are available for calls that enter through the regulatory system but no system exists to capture the information for calls that are made to other organizations, including municipalities and industry. This information could be useful, but collecting and reviewing the data would be time-consuming and resources were not available to undertake the work at this time. This matter is addressed in the OMT's recommendation (Section 10.1).

### 5.1 Backgrounder on Complaint Management and Response

To understand the current system for managing and responding to odour complaints in Alberta, ten agencies were identified that have a process in place for handling odour complaints. These include municipal and provincial authorities, industries, and one non-government organization. The task group met with these agencies and compiled the information received to enable comparison of the various processes, identify strengths and weaknesses, and learn how the processes overlap and/or interact with each other. Three specific areas were examined in detail:

- The overall odour complaint process, including where calls are received, number and type of complaints, and roles and responsibilities;
- Complaints response overview, including how complaints are handled by different agencies, what mechanisms are used to keep complainants informed after they make a complaint, feedback mechanisms to evaluate responses, and the effectiveness of these responses; and
- Tracking mechanisms used to track complaints and how agencies share information.

The task group was also directed to examine best practices related to complaint response and tracking mechanisms outside Alberta, using existing published research. A March 2005 report<sup>2</sup> included comprehensive information on odour management processes in the US, Europe, Australia, and New Zealand. This report, combined with the provincial overview, gave the task group enough information to create usable tools for managing and responding to odour complaints in Alberta.

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<sup>2</sup> RWDI AIR Inc. 2005. *Odour Management in British Columbia: Review and Recommendations Final Report*.

## **5.2 Guidance Booklet and Tools for Managing Complaints**

This deliverable provides non-experts who handle odour complaints, such as employees of municipalities and industries, with the tools they need to respond to the complaints themselves or refer the caller to the appropriate agency. Using the information gleaned from the background research, a customizable suite of tools was created to effectively manage odour complaints.

A comprehensive complaints process guidance booklet was developed. The booklet includes minimum requirements and good practices related to data collection, investigation response, and initial response times. The guidance booklet contains a decision tree and call log tool, a comprehensive data collection form, a public handout that organizations can use to increase public awareness of how odour complaints are managed, and information that agencies can use to design and develop their own complaints management process.

The decision tree is accompanied by a reference guide and call log, for use by government and industry. It allows operators to quickly triage calls and direct callers to the most appropriate agency using a standardized approach. The decision tree is generic and can be easily customized for specific processes or organizations.

The decision tree and referral guide were pilot tested and received a positive, although limited, response. More thorough testing would help to continuously improve the decision tree and referral guide. The guidance booklet and tools have been incorporated in their entirety into the Good Practices Guide.

## 6 Assessing Odours in Alberta

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The project charter contains one objective related to odour assessment: *To provide information on options, tools and recommended action for odour assessment.*

Two deliverables were produced for this component of the project and are highlighted in the Good Practices Guide:

- An analysis of odour assessment tools and practices and their applicability to the Alberta context including when they are appropriate to use; and
- A “key” or guide to facilitate access to the information in the analysis.

### 6.1 Odour Assessment Tools and Practices for Alberta

The Odour Assessment Task Group first undertook a literature review to develop an inventory of odour assessment tools and practices. Documents including odour management guides from British Columbia, Scotland, and New Zealand were reviewed in this process. A list of odour issues for Alberta was then compiled to determine when a particular tool or practice might be applicable in the province and when and how it could be used. In the analysis, each tool was briefly described, accompanied by references for further technical information; details on the type of information provided by each tool were also noted along with applicability to Alberta, a basic explanation of usage, and costs and logistical aspects. Suggestions were made to address any identified gaps. The task group worked with a consultant to prepare an assessment report that also included a user guide as well as context about odour assessment and how the nature and character of an odour issue influence the selection and use of odour assessment tools.

The final report from the consultant, entitled *Review of Odour Assessment Tools and Practices for Alberta*,<sup>3</sup> reviews and summarizes existing national and international odour assessment tools and practices considered applicable to Alberta. It is meant to be used primarily by local authorities, regulators, and industry professionals engaged in activities related to the investigation, understanding, and management of odour issues. It is structured as a reference document to allow readers to easily identify and access information on specific topics without having to read the entire document.

With the review of tools and practices complete, a CASA odour assessment guide was then developed to enable users to access, use, and interpret the assessment report. This guide, Appendix A in the consultant’s report, is intended to help users easily link an odour issue with appropriate assessment tools and practices to decide which tool is appropriate for their odour assessment needs. The guide is primarily intended for non-experts who need to determine the steps for conducting an odour assessment. Such users could include representatives of municipalities dealing with odour complaints, industries wishing to change their operations, communities with odour concerns, the provincial government, and regulators.

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<sup>3</sup> Millennium EMS Solutions Ltd., and Environmental Odour Consulting. 2015. *Review of Odour Assessment Tools and Practices for Alberta*. 108 pages + appendix. The consultant’s report is appended to the Task Group’s final report.

## 7 Preventing and Mitigating Odours

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The project charter contains one objective pertaining to odour prevention and mitigation: *To provide a suite of tools to help prevent odour issues from arising that can be applied at the source, the pathway, and the receptor.*

Odour prevention and mitigation consider odour based on the source-pathway-receptor model. The **source** relates to what actually emits the odour. The **pathway** relates to possible source-to-receptor routes and what is between the source and receptor. The **receptor** relates to the person becoming exposed to and perceiving the odour. Odour prevention techniques block the linkages in the source-pathway-receptor model, while mitigation options reduce the severity of the odour impact.

Two main deliverables were provided for this component of the odour management project and are highlighted in the Good Practices Guide:

1. An inventory of best practices for preventing and minimizing odour and odour-related conflicts and complaints at the source, along the pathway, and at the receptor, based on tools now in use in Alberta and those being applied in other jurisdictions; and
2. A review of the applicability of the identified best practices and recommendations regarding their potential applicability in Alberta.

A third deliverable was initially proposed but not undertaken due to time constraints. This would have entailed using the inventory to identify gaps where tools could be developed and applied to help prevent and mitigate odours in Alberta, and is recommended for future work.

### 7.1 Best Practices Inventory and Tool Development

Working with a consultant, the Prevention and Mitigation Task Group first compiled an inventory of tools being used to prevent and mitigate odours in Alberta, across all sectors. The consultant then reviewed odour management tools used in other jurisdictions. Each of these tools was assessed for its applicability in Alberta for managing odour.

The consultant's final report, entitled *Review of Odour Prevention and Mitigation Tools for Alberta*,<sup>4</sup> identifies a suite of tools that could target the source, the pathway, and/or the receptor. Odour prevention tools include land use and planning development; raw materials, formulation, process and operational modifications; and management planning groups and guides. Odour mitigation tools include atmospheric dispersion optimization and pathway buffering, engineering controls, and the use of masking and neutralizing agents. Tools that provide both prevention and mitigation benefits include site management, establishing community and neighbourhood relationships, and real-time downwind monitoring. A separate category – receptor-based tools – is also noted. These tools are typically used for multiple sources and require cooperation of various parties for effective implementation. Some receptor tools include restricting receptor land uses, warning signage, agreement clauses and receptor mitigation. There is limited information on the use and effectiveness of these tools.

The consultant's report notes that "Most facilities will use a variety of prevention and mitigation tools and the feasibility and impact must be assessed based on the synergistic effects. As the

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<sup>4</sup> Pinchin, Ltd. 2015. *Review of Odour Prevention and Mitigation Tools for Alberta*; 58 pages + appendix. This report is incorporated into the Good Practices Guide and is also appended to the Task Group's final report.

assessment becomes more complicated, decision matrices, advanced air dispersion modeling and statistical models are sometimes used to help predict the combined effects of using multiple tools. Once the scenarios and combinations of tools are established, an economic assessment should be completed and factored into the decision making process. Preferred cost models should be employed that review both capital and operating costs in relation to effectiveness” (Pinchin, Ltd., p. 14).

A review of the applicability of each of the best practices to Alberta is included in the consultant’s report, as is the Guideline for Planners, Regulators and Facility Operators, which provides user-friendly guidance for using the best practices and tools in Alberta. This guideline and associated tools appear as appendices in the consultant’s report.

## **8 Enforcement and the Role of Regulation in Odour Management**

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The project charter contains one objective pertaining to enforcement and the role of regulation in odour management: *To analyze the effectiveness and comprehensiveness of existing regulations, including the roles and responsibilities of federal, provincial, and municipal governments, which address odour in Alberta.*

Odour related regulations and their associated enforcement is one of many odour management tools. For enforcement to effectively resolve or prevent odour issues, it must be based on a set of comprehensive and appropriate regulations. For discussion purposes, “regulation” as used in this report refers to any law, bylaw, rule, code, standard, objective, or other order prescribed by a government authority (federal, provincial, or municipal) that regulates or guides conduct and provides oversight.

Three deliverables were completed on this topic and have been added to the Good Practices Guide as appropriate:

1. An inventory of regulatory practices, regulations, and enforcement approaches to odour management;
2. A list of gaps in current regulations and a comprehensive description of how odour control and management are or are not incorporated in facility approvals; and
3. The link between regulation and enforcement, which is briefly described in the consultant’s report prepared for this topic.

As well as this work, one other deliverable was partially addressed by the Enforcement and Role of Regulation Task Group – a compilation of common definitions and relevant terms, and development of a common language to discuss enforcement and the role of regulation in odour management. Language used in approvals and codes of practice for the last five years was examined, along with a list of recent environmental protection orders issued under the *Environmental Protection and Enhancement Act*. The language used in these documents was considered to represent the common language needed to discuss enforcement and the role of regulation as the OMT completed its work.

Enforcement and regulation are key roles of government or government agencies, specifically but not exclusively regulatory bodies with enforcement capabilities (e.g., Alberta Energy Regulator, Alberta Environment and Parks, and Alberta Agriculture and Forestry). Thus all orders of government (federal, provincial, and municipal) represent the primary audience for this component of the OMT’s work. Industry was also a target audience. Deliverables were prepared so as to be easily understood by and useful to the public.

In addition to meeting the objective in the project charter, Alberta Environment and Sustainable Resource Development (ESRD)<sup>5</sup> requested assistance in implementing a recommendation from the *Report of Recommendations on Odour and Emissions in the Peace River Area* (March 2014) by the Alberta Energy Regulator. This recommendation was that “ESRD assess the feasibility of defining an ambient odour objective for Alberta based on a perception threshold.” The task group agreed to this request, but indicated that it would not be providing any specific recommendations regarding regulatory approaches or regulatory requirements as this was beyond its mandate. Rather, an assessment of possible regulatory options for odour management in Alberta would be undertaken and

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<sup>5</sup> This department has since been renamed to Alberta Environment and Parks.



the results provided to the Government of Alberta without any specific comments or recommendations.

## 8.1 Odour Regulation and Enforcement

Information was first assembled on odour regulatory practices and enforcement in Alberta. Using this information, a consultant explored practices in other jurisdictions, analyzed the strengths and weaknesses of approaches that may be relevant to Alberta, and identified gaps. Facility approvals were specifically examined to determine the extent to which odour had been incorporated.

The consultant's report,<sup>6</sup> *Report to the Clean Air Strategic Alliance Odour Management Team, Enforcement/Role of Regulation Task Group: Final Report*, is the mechanism through which the main products for this component of the project were delivered. It includes a discussion and review of various odour management approaches and frameworks in the Americas, Europe, Australia and New Zealand, and notes which of these could be applied in the Alberta context. Ten approaches were considered, three of which were regarded as capable of forming a framework for regulating odour in Alberta; these three approaches were studied in more detail as described in the consultant's report:

- Ambient concentration criteria for odour;
- Minimum separation distances; and
- Complaint criteria.

The consultant noted several points that should be considered in any potential odour management framework:

- Clarity is essential to the selection of a suitable odour management approach. If the approach is not clear and well-defined, it will not work once put to a legal test.
- Good relationships between facilities and surrounding residents are a significant benefit and should be promoted where possible, regardless of the odour management approach selected.
- The development of best practices guides are highly recommended for various categories of facilities to avoid potential odour issues, or to help identify solutions if or when issues do arise.
- Cumulative effects from neighbouring facilities, as well as location-specific geography and meteorological conditions can be an issue.
- Certain combinations of geography and meteorological conditions may also exacerbate odour issues, and should be considered in the siting process for new facilities or developments near existing facilities.
- No one approach will apply to all situations or industries and, therefore, some flexibility is critical. Implementing more than one approach is likely beneficial, as it can help deal with a wider variety of situations, giving both facilities and the regulator additional options.

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<sup>6</sup> RWDI. 2015. *Report to the Clean Air Strategic Alliance Odour Management Team, Enforcement/Role of Regulation Task Group: Final Report*. 47 pages + tables. This report appears as an appendix in the final report of the Task Group.

## 9 The Role of Education, Communications and Awareness in Odour Management

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The project charter contains two objectives related to education, communication, and awareness:

1. *To increase awareness and clarify expectations about odour and odour management in Alberta and describe its importance in air quality management and protection; and*
2. *To increase the capacity of relevant multi-stakeholder groups (e.g., industry associations, synergy groups, airshed zones) to engage in the management of odours in Alberta.*

The OMT received good advice from all task groups with respect to communications and outreach, most of which has been incorporated into the Communications Plan for the Good Practices Guide (see Appendix D). Some of the main points are reiterated in this report to reflect key decisions and underscore their importance and the need for action.

The Good Practices Guide is being developed and designed to be available predominantly online and only a limited number of hard copies will be printed. CASA will host the Guide on its website, and will explore options for gathering analytical data to help evaluate the usefulness of the Guide and its tools. Stakeholders and partners (e.g., Alberta Environment and Parks, Alberta Health, Alberta Agriculture and Forestry, non-government organizations, individual industries and industry associations) are being asked to include short descriptions of the tools and a link to the Guide in an appropriate area of their own websites.

The OMT recognizes the value of customized, sector-specific fact sheets or summaries of both odour assessment practices and prevention and mitigation practices and tools, and strongly encourages sector partners to create appropriate materials as needs are identified.

Good communications are a very important part of managing odours. Regulatory processes already support and encourage the establishment and maintenance of good relationships between facilities and their neighbours, and the OMT stresses the value of continuing and enhancing these efforts.

## 10 Continuous Improvement

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The project charter contains three objectives related to continuous improvement:

1. *To evaluate the implementation of a CASA best practices guide;*
2. *To foster the continuous improvement of a CASA best practices guide; and*
3. *To encourage continuous improvement at odour generating facilities.*

The OMT identified two important aspects of the commitment to continuous improvement:

1. The tools and practices developed for this project, as reflected in the Good Practices Guide, should be reviewed and updated as needed on a regular basis using a multi-stakeholder process; and
2. Future work should be undertaken to fill gaps and build a more solid foundation for odour assessment and management in Alberta.

The team agreed that a multi-stakeholder review would fulfill the first need (see Recommendation 1); areas for future work, based on the outcomes and deliverables from this project, are also proposed.

### 10.1 Review of the *Good Practices Guide for Odour Management in Alberta*

A review of the Good Practices Guide in five years' time would enable a multi-stakeholder group to assess if and how the tools developed by the OMT are being used and whether new gaps have been identified. Through the CASA process, a working group would conduct an initial screening and scoping of new and emerging information. The results would help determine if the Good Practices Guide requires revisions.

#### **Recommendation 1: Review of the *Good Practices Guide for Odour Management in Alberta***

The OMT recommends that:

Within five years of the approval of this report by the CASA Board, CASA begin the first review of the *Good Practices Guide for Odour Management in Alberta* to determine if and where improvements are needed or could be made, based on effectiveness to date of the tools in the Guide and new information. The following elements should be part of this review and assessment:

1. Update of the odour and health backgrounder to reflect new information on the relationship between odour and health;
2. A cross-jurisdictional scan to identify any new approaches to enforcement and regulation;
3. Advice on implementing a province-wide integrated complaints response, tracking, and management system;
4. Identifying technical areas where updates are needed in the Good Practices Guide;
5. A comprehensive gap analysis of odour assessment practices and tools in Alberta; and
6. A review of the definition of "adverse odour" as used in this report from the first Odour Management Team, ensuring that the definition is worded to give the term proper and useful legal standing. This is especially important if, as a result of the five-year review, new recommendations are made that include regulatory changes.

To make the review as efficient and effective as possible, the following information and data would be very valuable and should be gathered, where resources are available, by the appropriate stakeholder partners prior to the review commencing:

1. An assessment of the extent to which odour prevention and mitigation charts and tools have been used and how effective their application has been;
2. Statistics on odour complaints received by the Government of Alberta's Centre for Information and Coordination and, to the extent possible, other agencies that receive and respond to such complaints; and
3. Results of additional pilot testing of the tools and referral process, in particular the *Odour Assessment Guide*, taking into account the number of participants and seasonality of odour complaints.

The review should involve a multi-stakeholder group that:

- a) Consists of representatives from industry, government, and non-government organizations with an interest in odour assessment and management;
- b) Conducts an initial screening to determine which if any of the elements in the Good Practices Guide should be updated, as described in *CASA's Guide to Managing Collaborative Processes*;
- c) Has access to the resources necessary to obtain the information and technical advice needed to complete its review; and
- d) Uses a consensus decision-making process.

## 10.2 Future Work

The OMT stresses that further work is needed in various areas to improve odour assessment and management in Alberta. Based on its findings from this project, the team has identified several areas that are particularly in need of additional effort and research. The team has not made a recommendation regarding who should do this work but strongly encourages stakeholders and partners to find opportunities to advance government and industry efforts on these topics:

- Ways to improve how odour "hot spots" are managed and complaints responded to, in particular the way information is shared among industry and government agencies;
- Improving data collection and analysis of odour complaints to identify trends and areas of concern. This could include examining odour in relation to overall air quality as well as cumulative effects of odour-producing facilities;
- Research to objectively evaluate the relationship between odour and health;
- Compiling information on mixtures that contribute to odours and the impact of these mixtures on health;
- Development of an app for the health symptom tool that includes coding of symptoms so the data can be used for research. Specialized support would be needed to do this, including legal advice related to gathering health information. A formal validation study of the tool should be undertaken; and
- Improving training for those who take odour complaints.

The team also notes that the health tracking tool may need to be made available in French or other languages at some future time.

## 11 Lessons Learned

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As is customary with complex projects involving many individuals and stakeholders, important lessons were learned through this experience. The OMT has summarized the main lessons learned from its work over the last two years with the hope that this information and advice will benefit future CASA project teams.

### **Realistic Project Scope**

When the statement of opportunity and project charter are being prepared, the scope of the project needs to be realistic in terms of the time and resources available.

### **Sharing Information**

Any project team with several task groups should establish a clear mechanism to encourage and facilitate exchange of information and products between groups. This will enable informed comments and feedback to be shared among the groups, strengthening the deliverables and avoiding potential duplication.

### **Considerations in Engaging Consultants**

- The team or task group must recognize that there may be trade-offs between securing the necessary technical expertise and having it communicated in a non-technical way.
- Potential consultants need to understand the complex demands of working with multi-stakeholder groups and agree to work within the consensus decision-making process.
- Consultants must understand and accept the extent to which the team or task group needs to be engaged as the products are developed. Some collaboration will be required, with the team or task group providing comments and suggestions as the report is prepared.
- The team or task group needs to develop a detailed request for proposals and then do its due diligence in checking contractor references to ensure they have sufficient experience and expertise in the topic area.
- The project manager is crucial to establishing a positive and productive relationship with the consultant, project team and task groups as the work proceeds. Having clear guidance for providing feedback (e.g., drafts with changes tracked) between the consultant and the project manager on behalf of the team or task group, and vice versa, helps ensure a smooth and efficient process.
- Face-to-face meetings between the consultant and the team or task group significantly enhance communications over the long term.

### **The Nature of the Product**

The primary deliverable from this project – the Good Practices Guide – is an unbiased and valuable reference that represents a unique approach to addressing odour management. The CASA process is well-suited to developing this type of thoughtful and structured solution, and future project teams may want to examine the potential for a similar product as opportunities arise.

## 12 Measuring Performance

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To measure the impact of a completed project team's work, the *CASA's Performance Measures Strategy* requires each project team develop a specific metric to measure its success in the future. The Strategy specifies that when a project team is completing its final report and is ready to disband, the team should create one performance indicator that can be used to assess overall success of the project team five years in the future. Teams are asked to make their indicator as specific as possible, taking into consideration data availability, and should provide clear instructions for the Performance Measures Committee to follow-up on the indicator in the future. As such, the OMT considered: "Five years from now, how will we know if our work has been successful?"

The team's key deliverable is the *Good Practices Guide for Odour Management in Alberta* (the GPG). Therefore, they focussed on developing a metric for determining if the GPG was a successful tool for assessing and managing odour in Alberta. Key questions the team considered were:

- Was the GPG used?
- How was it used? and
- Was it effective?

The team agreed that it would be challenging to develop a metric for two reasons:

- The fundamental value of the GPG cannot be accurately reflected by a quantitative metric (such as data gathered by Google Analytics). Therefore, a qualitative metric would also be required (such as a survey).
- Without a baseline, the team found it challenging to set specific targets for defining "success".

Despite these challenges, the team was able to agree on three measures. This information will need to be submitted to the CASA Board within 5 years to assist them in determining requirements for further work on odour management in Alberta and the GPG. The measures include:

1. A targeted survey to users of the GPG,
2. The number of times the GPG is cited in various sources, and
3. Data gathered via Google Analytics.

Please see Appendix E for further details.

## Appendix A: Project Charter

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### Odour Management Project Charter



Prepared by the  
Odour Management Working Group  
for the  
Clean Air Strategic Alliance  
Board of Directors

6 March 2013

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## **Introduction**

The issue of odour management came to the attention of CASA through its government, non-government, and industry stakeholders. The CASA Secretariat subsequently undertook a preliminary assessment of the issue to enable the Board of Directors to determine whether further action through a collaborative, multi-stakeholder process at CASA was advisable.

In September 2012, the Board agreed to establish a multi-stakeholder working group that would further screen and scope the issue and develop a project charter for the Board's consideration. In January 2013 the Odour Management Working Group was formed to undertake this task. The working group worked collaboratively to design a process that would assist a larger group of stakeholders to engage in a focused discussion directed at advancing odour management in Alberta. The members of the working group also obtained regular feedback from their membership which was incorporated in the project charter. The group considered the broad issue of odour management as well as what could realistically be accomplished by a CASA project team in approximately 18-22 months. This timeline is in keeping with Board direction that project teams should be more nimble and timely. Odour management is a complex issue and the working group discussed the need for a phased approach. As such, the working group developed a vision for odour management in Alberta to guide ongoing and future work as well as a goal for the work of this CASA project team. The group broke down the work of the project team into specific topics and objectives and provided additional process-related guidance. This project charter is meant to offer direction and advice to the convening CASA project team, subject to receiving approval from the Board.

## **Background**

Air quality can be measured or assessed in many different ways, but sensory perception, e.g. smell, taste, visibility and eye, nose, or throat irritation, is the method most people use to judge air quality. Odours are one of the most common air pollution complaints and can have significant direct and indirect effects on health and quality of life.

There is a subjective element associated with the acceptability or degree of nuisance or offensiveness associated with a particular odour. This subjectivity is related to the circumstances or locations in which the impact is occurring. For example, some level of odour may be tolerated if an individual is travelling through an area of industrial development but that same level of odour may not be tolerated if it occurs in a residential area.

Responses to odour vary from individual to individual and can result in a variety of reportable effects, especially if the odour is noted as problematic and occurs on a frequent basis. Some individuals are able to detect an odour at much lower concentrations than others. In addition, one person may find an odour to be objectionable while another may not.

Odour management is complex. The compounds contributing to odour and sources of odour are diverse and the range of potential adverse effects is varied. Individual odour perception, preferences, and sensitivity, as well as the transient nature of odour, make it challenging to find reliable methods of assessing odour. It is also often difficult to establish a firm link between odour and health and quality of life impacts. Adding to this complexity is the cumulative impact

of industrial activities and regional considerations, as well as the corresponding array of regulators, interested sectors, and government departments. Lastly, with more people living closer to industrial and agricultural development, the possibility for conflict between odour-producing activities and people is increasing.

Sources of odour in Alberta include development associated with industry, agriculture, and municipalities. Complaints about odour issues are generally most acute at the interface between new or existing development and residents in both urban and rural settings. A great deal of time and resources are expended by Alberta's regulatory agencies in addressing odour-related complaints, which in many cases are not effectively resolved. The satisfactory resolution of these complaints is problematic for a number of reasons: the subjectivity involved in odour complaints, the difficulty in identifying and measuring odourous compounds, the limitations of current legislation, the absence of clear odour management approaches and outcomes, and the lack of clearly defined roles and responsibilities with respect to who is accountable for addressing complaints.

It should be noted that although there are legislative limitations in addressing odour specifically, some air emissions are regulated for other reasons and this may have the co-benefit of reducing odour-causing emissions.

### **Project Scope**

The work of the project team should focus on odours that are "adverse". Throughout this project charter, wherever the word 'odour' is used, it is referring to *adverse* odour. The term adverse is defined according to the Environmental Protection and Enhancement Act as: "*impairment of or damage to the environment, human health or safety or property*". This is in line with the definition of adverse used in CASA's vision for Alberta's air: "*The air will have no adverse odour, taste or visual impact and have no measurable short- or long-term adverse effects on people, animals or the environment*".

Odour related compounds and mixtures can have perceived and direct health impacts, i.e. non-odour-related health impacts, and can also cause eye, nose and throat irritation. Depending on the substances involved these impacts can occur above or below odour thresholds. The working group considered these issues and agreed that the project team should only focus on detectable odours and direct/indirect and perceived odour-related health impacts. Health and well-being are drivers of odour management and should be embedded throughout the work of the project team.

The project team should be aware that existing regulatory processes, including facility approvals and associated emissions limits, frequently address odour-related emission sources and/or chemicals. These processes potentially represent an effective source control and preventative approach to odour management. However, this does not preclude evaluating the effectiveness of the regulations. The project team should focus on odourous compounds as a whole and stay at a high level.

The work of the project team should apply to all sectors, no individual sector is meant to be singled out. While some best practices could be sector specific, the project team should focus on

creating processes (ex. for complaints, odour assessment, etc.) that provide a consistent approach to managing odour in Alberta. It should be recognized that in some instances, all reasonable efforts may have been made to manage a source of odour, but eliminating it may not be feasible.

The working group discussed the need for a phased approach to odour management in Alberta. Odour management is a large, complex issue that cannot be fully dealt with in 18-22 months by this project team. A phased approach would see this project team completing their work as well as identifying next steps. This could include next steps for a CASA project team as well as potential work for other groups. The project team should use the Project Goal to guide their work and the Vision for Odour Management in Alberta to guide next steps and to provide context for the work of this project team within the bigger picture.

### **Vision for Odour Management in Alberta**

There is a comprehensive framework for odour management in Alberta.

### **Project Goal**

To create a good practice guide for assessing and managing odour in Alberta.

### **Project Objectives**

The work of the Project Team can be divided into seven cross-cutting topics. That is, the integrated nature of the work means that in developing the guide the same issue may need to be discussed and addressed under more than one topic. The 'Potential Outcomes/Deliverables' outlined in the shaded boxes under each objective are not meant to be prescriptive or limit the creativity of the project team, but rather to provide additional texture around the intent of the objectives.

1. **Complaints:** *Alberta regulatory agencies, facility operators and municipalities all may receive complaints related to odour concerns. A great deal of time and resources are expended by Alberta's regulatory agencies in addressing odour-related concerns. When odour issues are not satisfactorily addressed, it may result in more protracted issues where complainants and proponents are more polarized and entrenched.*

Objective: To effectively manage odour complaints.

- Understand the current mechanism(s) in place to manage odour complaints (ex. where are complaints coming from, who received the complaint, what information was recorded, how the information was recorded, how the complaint was resolved, what mechanisms for feedback to complainant were used, etc.).
- Clarify roles and responsibilities for responding to odour complaints.
- Develop a predictable, consistent, timely, step-wise, comprehensive process to document, investigate and address odour complaints. The process will incorporate the interests of all parties, be applicable to any odour incidence and include a clear process flow and guidance for decision-making.
  - Develop a mechanism for the complainant and the complaint manager to communicate throughout the process including information exchange at first contact and communicating results at the end of the process.
  - Make information available about the response to odour complaints.

- Consider the role of odour assessment in responding to complaints.

Potential Outcomes/Deliverables:

- A process to document, investigate and address odour complaints that incorporates the interests of all parties and which incorporates measurement and assessment tools.
- A graphic representation(s) that clearly outlines the process (ex. decision tree, process map, flow chart, etc.)
- Guidance for phone operators/respondents responding to complaints.
- Guidance for regulators and complainants including roles and responsibilities and coordination of the various aspects of the complaints management system.

Objective: To monitor long-term trends in odour complaints.

Potential Outcomes/Deliverables:

- A documentation process (ex. database, odour report card, etc.) for tracking complaints as they move through the system to resolution.
- An understanding of the distribution and concentration of odour complaints as a means to develop proactive management mechanisms (e.g. identifying hotspots, cumulative effects).

2. **Odour Assessment:** *Effective response to odour complaints requires practical, credible and appropriate tools to assess odour. The results of an odour assessment can be used to determine the appropriate type and level of response to address an odour issue.*

Objective: To provide information on options, tools and recommended action for odour assessment.

Potential Outcomes/Deliverables:

- A review of protocols and criteria for investigating and characterizing odour and how they are applicable in Alberta (e.g. FIDOL - Frequency, Intensity, Duration, Offensiveness, Location).
- An assessment of available and practical options for assessing (measuring, monitoring, modeling, etc.) odour and how they might be applicable in Alberta.
- An understanding of when it is appropriate/not appropriate to use each option.
- Protocols and criteria for investigating and assessing odour and its impacts.
- An understanding of the role of odour assessment in odour management.

3. **Health:** *Health and well-being are drivers of odour management and are embedded throughout the work of this Project Team. Many odour issues are driven by health-related concerns (real or perceived). There is a large body of literature which examines the relationship between odour and health that could be used to inform the work of the team.*

**Objective:** To improve the management of odour and odour complaints by identifying, understanding, and developing tools and strategies to address health concerns and issues.

**Potential Outcomes/Deliverables:**

- A review of best management practices for tracking health impacts of odour and how they are applicable in Alberta.
- A record keeping tool that allows individuals to track the health-related impacts of odour in a standardized, quantifiable way.
- A summary of the way in which the most recent odour and health literature informed the work of the team and influenced the development of recommendations.<sup>7</sup>
- Options, gaps, and opportunities for management of health and odour complaints.

4. **Prevention/Mitigation:** *Exposure to odours can be assessed using the source-pathway-receptor model<sup>8</sup>. By anticipating where odour issues may occur it is possible to prevent and/or minimize odour as well as odour-related conflicts/complaints.*

**Objective:** To provide a suite of tools to help prevent odour issues from arising that can be applied at the source, the pathway and the receptor.

- o Conduct a cross-jurisdictional review to identify best practices for preventing and minimizing odour and odour-related conflicts/complaints at the source, pathway and receptor.
- o Review best practices for managing odour at the interface between odour-causing activities and residents.
- o Analyze best practices to determine their applicability to Alberta.

**Potential Outcomes/Deliverables:**

- An inventory of best practices for preventing and minimizing odour and odour-related conflict/complaints at the source, through the pathway and at the receptor.
- Recommendations related to the implementation of best practices.

5. **Enforcement/Role of Regulation:** *Odour related regulation and associated enforcement of these regulations is one of many odour management tools. In order for enforcement to effectively resolve or prevent odour issues, it must be based on a set of comprehensive and appropriate regulations. For discussion purposes, regulation here refers to any law, bylaw, rule, code, standard, objective or other order prescribed by a government authority (federal, provincial or municipal) that regulates or guides conduct and provides oversight. The objective under this topic applies to all odour-producing sources and is not meant to single out any particular source.*

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<sup>7</sup> Alberta Health has recently completed a literature review on odour and health.

<sup>8</sup> In the source-pathway-receptor model, the source is the location where an odour is produced, the receptor is the person experiencing an odour, and the pathway is the space between the source and receptor. For example, a person exiting their vehicle smells freshly-baked bread. The person is the receptor, the bakery across the street is the source and the physical environment and distance between the two is the pathway.

Objective: To analyze the effectiveness and comprehensiveness of existing regulations, including the roles and responsibilities of federal, provincial, and municipal governments, which address odour in Alberta.

- Conduct a review of the effectiveness of existing regulations that address odour.
- Identify successes, challenges, and learnings of existing regulations that address odour.
- Consider ways to address existing gaps, including examples from other jurisdictions.

Potential Outcomes/Deliverables:

- A comprehensive understanding of the regulations that address odour in Alberta and where improvement could be made.
- Lessons learned that can be applied to the development and enforcement of future regulation.

6. **Education/Communication/Awareness:** *Communicating relevant information on odour and odour management will help to encourage more informed decision-making and help stakeholders engage more effectively in a credible and robust approach to the management of odours in Alberta.*

Objective: To increase awareness and clarify expectations about odour and odour management in Alberta and describe its importance in air quality management and protection.

Potential Outcomes/Deliverables:

- A communication and engagement strategy that increases public and stakeholder awareness about odour which considers:
  - Basic information about odour as well as the relationship between odour and health as well as odour and perceptions of general air quality.
  - Clarity regarding the nature and extent of what is possible for the management of odours in Alberta.
  - Increased understanding of jurisdictional responsibilities (ex. Municipalities don't have influence over facilities outside their boundaries).
  - Increased awareness of odour management strategies.
  - The most appropriate ways and means to communicate with target audiences are identified.
  - Increased awareness of on-going initiatives to assess and manage odour in Alberta.
- A strategy to communicate to stakeholders and the public the implementation work that will result from project team recommendations as well as the process that the team undertook and the Good Practice Guide.
- More informed decision-making.

Objective: To increase the capacity of relevant multi-stakeholder groups (Ex. industry associations, synergy groups, airshed zones, etc.) to engage in the management of odours in Alberta.

Potential Outcomes/Deliverables:

- Improved relationships, coordination, divisions of responsibility and ways in which established, influential stakeholders can contribute to management of odour in Alberta.

7. **Continuous Improvement:** *CASA is a proponent of continuous improvement in the management of air quality in Alberta. This can be achieved through self evaluation and adaptive management as well as encouraging managers to stay abreast of new developments in emission reduction.*

Objective: To evaluate the implementation of a CASA best practices guide.

Potential Outcomes/Deliverables:

- A 5-year performance indicator for the work of the project team as described in the CASA Performance Measurement Strategy.

Objective: To foster the continuous improvement of a CASA best practices guide.

Potential Outcomes/Deliverables:

- A process for the regular review of the best practices guide.
- Recommendations for future odour-related research.
- New information and developments in the field of odour and odour and health as well as any other relevant studies are incorporated into the best practices guide.

Objective: To encourage continuous improvement at odour generating facilities.

- o Consider how continuous improvement would be implemented and evaluated.
- o Identify and consider continuous improvement options for odour management for odour-generating facilities.

Potential Outcomes/Deliverables:

- The guide encourages and provides options and recommendations to promote continuous improvement at odour generating facilities.

## Project Deliverables

The Project Objectives outline an ambitious amount of work for the project team; the project team should ensure that at the end of the process work has been conducted under each of the seven topics, recognizing that the level of detail of the work may vary by topic. In the allotted timeframe, the project team may be able to delve more deeply into some topics, but may make recommendations for future work in others. This relates to the phased approach described in the Project Scope section. The ‘Potential Outcomes/Deliverables’ accompanying each objective provide an idea of the types of specific outcomes that could result from the work of the project team. As the project team undertakes their work, they should ensure that they remain focused on creating useable products for managing odour in Alberta that also contribute to the overall deliverables for the project team:

- Final Report and Recommendations:

- The project team should prepare a final report which includes a package of SMART (Specific, Measurable, Action-Oriented, Realistic, Time-bound) recommendations generated from the work under the seven categories of objectives.
- The report should also identify and prioritize any further work.
- Good Practice Guide:
  - In conjunction with the final report and recommendations, the project team should prepare a Good Practice Guide which can be used to communicate the results of project team work as well as the ‘Toolkit’ resulting from their work. The ‘Toolkit’ should contain a variety of tools that support odour assessment and management in Alberta as well as an understanding of when it is appropriate to use each of the tools. The Guide should be clear and concise. The purpose of the Guide is that people involved in odour management or an odour issue can easily access the work of the project team and apply it.

## **Projected Resources**

### **Potential Costs:**

The working group foresees the following potential external costs over the life of the project team. The funds to complete this work would need to be raised. The accompanying figures are estimates ONLY and, as the work of the project team progresses, they would need to create a more detailed budget. It should be noted here that funding for the work of the project team is front-loaded (see Project Structure and Schedule section).

### Studies and Contracts: ~\$150,000-\$200,000

- Possible studies/contracts are described under a number of objectives:
  - Complaints
  - Odour Assessment
  - Prevention/Mitigation
  - Enforcement/Role of Regulation
  - Health
- This work would likely be contracted to consultants, or the project team could determine other ways to gather the information (ex. Students or interns working for project team members).
- Work on the Good Practice Guide as described in the ‘Deliverables’ section would likely require the assistance of a consultant.

### Consultation/Workshop: ~\$100,000

- Under the Education/Communication/Awareness objective, there are several Potential Outcomes/Deliverables that describe outreach activities. The project team would need to decide what this would look like but it could require funds. For example, at the end of the process could undertake communication with the public, hold a workshop on best practices, etc. to raise the profile of the work and the issue.
- The project team may undertake a consultation process to engage with certain groups (ex. impacted communities)
- Necessary funds would depend on the activities the project team agrees to undertake.



### **Potential Sources of Funding:**

The working group identified an initial list of possible sources of funding:

- Government, possibly:
  - Direct funding and grant funding
  - Alberta Environment and Sustainable Resource Development
  - Alberta Health
  - Alberta Agriculture and Rural Development
  - Alberta Energy
- Industry
- Federal Government (Health Canada, Environment Canada)
- Sewage treatment facilities

### **Project Structure and Schedule**

The working group broke down the work of the project team into four phases and provided suggested timelines for each phase.

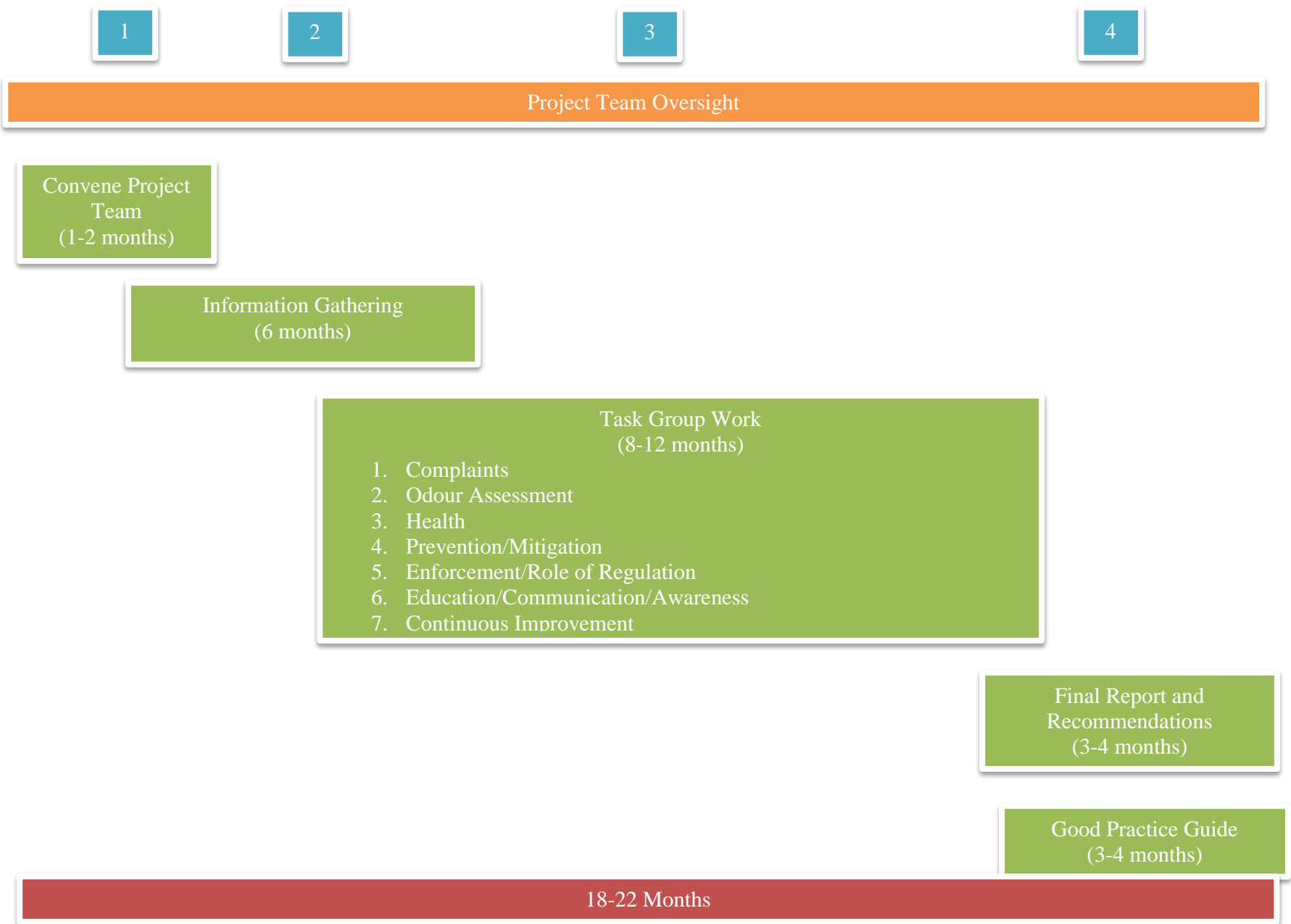
1. Convene the Project Team ~1-2 months
  - Review the project charter; complete work outlined under the Operational Terms of Reference section
  - Project Team training in collaborative processes and consensus decision-making
  - Identify all information gathering pieces of work from all objectives
  - Determine how these pieces of information should be gathered (ex. consultants)
  - Prepare any Requests for Proposals (RFPs)
  - Project Team designs, and makes available, task groups and task group workplans
    - As the project team designs the task group workplans, they should be mindful of timelines as well as the considerations outlined in the Deliverables section vis-à-vis the level of detail of the work.
2. Information Gathering ~6 months
  - Project Team oversees and coordinates all information gathering efforts
3. Task Group Work ~8-12 months
  - Task group formation may be staggered as information becomes available
  - Project Team oversees and coordinates task group work
  - Task groups prepare reports and consensus recommendations
4. Project Team Agreement on Final Report and Recommendations AND Creation of Good Practice Guide ~3-4 months
  - Project Team reviews task group report and recommendations
  - Project Team prepares and reaches agreement on final report and recommendations
  - The creation of the Good Practice Guide should run parallel to work on the final report and recommendations. This will most likely be done with the help of a consultant.

It should be noted that funding for the work of the project team is front loaded (see Project Resources section). The timelines as outlined are dependent on this funding being made available. In developing this project charter the working group considered what the project team

## Project Charter

could realistically accomplish in an 18 month period. The timelines that accompany the four phases allocate the project team 18-22 months (beginning from the date of the first meeting) to complete their work. These phases are not discrete, but rather overlap. The project team should take a staggered approach to the four phases in order to meet the timeline of 18-22 months. The phases and timelines described above are summarized in the graphic below.

Project Charter



The working group also considered the time commitment that would be required from participants based on the outlined project structure and schedule. It is difficult to state how many meetings will be required until the project team is underway. To provide some context for participants, there will be an estimated 12 project team meetings and 50 task group meetings *over the life of the project*. The working group has provided the following information on meeting frequency for participants to consider:

<b>Phase</b>	<b>Timeframe (months)</b>	<b>Meeting Frequency</b>
1: Convene the Project Team	1-2	-The Project Team will need to meet several times over a short period to initiate the project
2: Information Gathering	6	-The Project Team will meet periodically (ex. every 2 months) to monitor information gathering
3: Task Group Work	8-12	-The Project Team will need to meet periodically to monitor and coordinate the work of the task groups -The frequency of the task group meetings will depend partly on the task group design and workplans from phase 1 -Task groups would likely meet once per month -Participants who sit on more than one task group should be prepared to meet more frequently
4: Final Report and Recommendations and Good Practice Guide	3-4	-The project team will need to meet several times over a shorter period of time to finalize the team's report and recommendations and to supervise and finalize the Good Practice Guide

### **Risk Analysis**

The working group identified risks as well as possible mitigation strategies that the project team should consider as they undertake their work. The project team should be aware of the risks that could undermine the success of the project so that they can engage in proactive risk management.

<b>Risk</b>	<b>Possible Mitigation Strategies</b>
Timely funding is not available -funding for the work of the project team is front-loaded -a decision is required quickly with respect to funding	-be open and upfront about funding requirements and timelines -explore a variety of funding sources -understand how funding delays will impact timelines
Project team prioritizes work and subsequently work is not undertaken under all seven topics of objectives	-recognize and understand the interrelated nature of odour management and the seven topics

<b>Risk</b>	<b>Possible Mitigation Strategies</b>
Unrealistic expectations of what can be accomplished by the project team in the proposed timeframe of 18-22 months	<ul style="list-style-type: none"> <li>-use the project charter to help manage expectations</li> <li>-reference the Vision for Odour Management in Alberta</li> <li>-be open and upfront with participants</li> </ul>
The timeline of 18-22 months is not met	<ul style="list-style-type: none"> <li>-timelines could be impacted for a variety of reasons, some of which are outlined in this risk analysis table</li> <li>-participants should remain aware of how their actions will impact timelines</li> <li>-understand the amount of work detailed in the project charter</li> <li>-regularly track progress against project charter</li> </ul>
Human resources -capacity to staff project team and task groups -identifying qualified people to participate -participants and CASA staff become overwhelmed	<ul style="list-style-type: none"> <li>-be upfront with participants about the level of engagement/work required</li> <li>-Identify early participants with the right skill set to participate</li> <li>-keep work on topic, stay SMART</li> <li>-be supportive of other members, help other members to participate</li> </ul>
Scope creep, remaining on track	<ul style="list-style-type: none"> <li>-use SMART principles to keep participants and work focused</li> <li>-reference guidance from the project charter</li> <li>-remind participants that the Board must approve any changes to the project charter</li> </ul>
Ignoring the cross-cutting nature of the seven topics	<ul style="list-style-type: none"> <li>-recognize and understand the interrelated nature of odour management and the seven topics</li> <li>-be prepared for overlap in discussions</li> </ul>
Unable to hire qualified consultants who can complete information gathering in timely manner	<ul style="list-style-type: none"> <li>-build on work of previous consultant's</li> <li>-access participants networks of contacts to help speed the hiring process</li> <li>-start the hiring process in a timely manner</li> </ul>
Poor communication between task groups, lack of coordination between task groups	<ul style="list-style-type: none"> <li>-the project team is regularly updated on the work of the task groups, the project team provides oversight</li> <li>-cross participation between task groups</li> <li>-cross participation between task groups and the project team</li> <li>-regular coordination meetings between task group co-chairs</li> </ul>

<b>Risk</b>	<b>Possible Mitigation Strategies</b>
Lack of communication and coordination with CASA caucuses during task group work affecting their ability to reach consensus	<ul style="list-style-type: none"> <li>-ensure participants are aware of the requirement to coordinate with CASA caucuses</li> <li>-regular communication between task groups and CASA caucuses</li> <li>-the secretariat can provide communication and coordination support</li> <li>-regular Board updates</li> </ul>
Task groups do not complete their work on time	<ul style="list-style-type: none"> <li>-good communication between task groups</li> <li>-communication and coordination with CASA caucuses</li> <li>-prepare clear workplans for the task groups</li> <li>-be open and upfront about timelines</li> </ul>
Participants narrow their focus to the oil and gas sector (or any other specific odour producing source)	<ul style="list-style-type: none"> <li>-refer participants to the Scope section of the project charter</li> <li>-participants should focus on approaches to odour management that apply to all sectors, not just oil and gas</li> </ul>
Outputs of the project team are not useable and do not directly support odour assessment and management in Alberta	<ul style="list-style-type: none"> <li>-the project team should consider how the products they produce will be used to ensure that the project team remains focused on creating useful and useable products</li> <li>-refer participants to the Deliverables section of the project charter</li> </ul>
Implementers are not aware of their role in implementing the project team's recommendations	<ul style="list-style-type: none"> <li>-Ensure that implementers fully understand their role in implementing the recommendations of the project team</li> <li>-Implementers should be members of the project team and involved in creating the consensus agreement</li> <li>- Ensure that recommendations are SMART (clearly outline responsibilities and expectations)</li> </ul>

## **Operating Terms of Reference**

The project team should discuss and reach consensus on the following items that describe how they will work together:

- Requirements for quorum
- Frequency of project team meetings
- Frequency of updates and reports to the CASA Board
- Meeting protocols
- Ground Rules
- Protocols for handling media requests
- Protocols for providing updates to interested parties
- Any other considerations for working together

## **Stakeholder Analysis and Engagement Plan**

The working group identified a draft list of stakeholders for involvement with this project team. As the project team proceeds with their work they will need to review this list and make any changes as required. The working group identified three categories of stakeholders:

- **Project Team:** Stakeholders who are required at the table to reach a consensus agreement
- **Task groups:** Stakeholders who have specific interests or expertise and can be engaged in a more focused way
- **Engaged in Other Ways:** Stakeholders who can be engaged as required in ways other than participation on the project team or task groups (ex. consultation, giving presentations, providing advice, etc.)

It should be noted that there has been a high level of interest in this subject from many stakeholders. The project team may wish to consider methods to help provide updates to interested parties.

**Project Team:** *Project team members should consist of those stakeholders who are required to reach a consensus agreement. The project team will oversee and direct the work of the task groups. The project team should promote coordination amongst stakeholders wherever possible to help keep the number of project team members at manageable levels.*

### Government:

- Alberta Environment and Sustainable Resource Development
- Alberta Agriculture and Rural Development
- Alberta Energy
- Alberta Health
- Alberta Urban Municipalities Association
- Alberta Association of Municipal Districts & Counties
- First Nations

### Industry:

- Chemical Industry
  - Chemistry Industry Association of Canada
- Oil and gas industry/Petroleum producers
  - Canadian Association of Petroleum Producers

## Project Charter

- Canadian Fuels Association
- Small Explorers and Producers Association of Canada
- Agriculture (rendering and processing, CFOs)
- Food Manufacturers
  - Ex. Alberta Food Processors Association
- Forestry (Pulp and Paper)
- Waste management/composting
- Wastewater management entities/Municipal sewage treatment
  - Ex. Epcor

### NGOs:

- ENGOs:
  - Alberta Environmental Network
    - Ex. Pembina Institute
- Health NGOs:
  - The Lung Association

### Other:

- Alberta Airshed Council/Airshed Zones

### Corresponding Members:

- Health Canada
- Environment Canada
- Alberta Health Services
- Energy Resources Conservation Board/Single Regulator
- Natural Resources Conservation Board
- Alberta Transportation
- Alberta Infrastructure

**Task groups:** *The working group identified some groups that may be able to provide specific expertise. It would be more effective to engage these groups in a more focused way on a task group to take advantage of their expertise. As described in the Project Structure and Schedule section, the project team will need to design the membership of the task groups based on the work that they have been assigned.*

- Health Canada
  - First Nation and Inuit Health – respond to complaints on reserve
  - Safe Environments – have technical/scientific expertise
- Alberta Health Services
  - Medical Officers of Health – respond to odour complaints in the community, would be interested in tools to track the health related impacts of odour (ex. Odour diary)
  - Environmental and Public Health
    - Health Inspectors
    - Science group and field staff – conduct risk assessment, support field staff, and conduct work in the field



- Alberta Conservation Association – may be able to provide technical expertise
- Environmental Law Centre – may be able to provide expertise on odour regulations
- Alberta Public Health Association – provide communications and health expertise
- Alberta Medical Association – provide health expertise
- City of Edmonton – variety of technical expertise ex. planning, municipal waste management, etc.
- Research Institutions/Academic Community – provide specific expertise (ex. odour assessment, health impacts, etc.)
- Communications experts – provide expertise while discussing Education/Communication/Awareness
- Energy Resources Conservation Board/Single Regulator – provide technical expertise
- Natural Resources Conversation Board – provide technical expertise

**Engaged in Other Ways:** *The working group identified some groups that could provide valuable input to the work of the project team but can be engaged in ways other than project team or task group participation.*

- Impacted communities/individuals – the experiences of those impacted by odour is an important piece of input, could be engaged through outreach and consultation work
- Association/Societies who are engaged in odour management (ex. Cumulative Environmental Management Association, Sundre Petroleum Operators Group) – the project team should liaise with these groups to coordinate and avoid duplicating efforts
- Research Institutions/Academic Community – could be engaged through contracts, conferences, workshops, guest speakers, etc.
- Professional associations – could be engaged with research or communication channels to workers/association members
- Smaller odour producing industries (ex. dry cleaners) as well as non-point sources of odour – could be asked to provide input or presentations on their experiences, or as specific issues arise

## **Appendix A: Additional Working Group Discussions on Objectives**

The Odour Management Working Group worked collaboratively to develop a project charter and design a process that would allow a larger group of stakeholders to engage in a discussion on odour management in Alberta. While completing this work, the working group members engaged in wide-ranging and forward-thinking discussions about objectives and work for a CASA project team as well as odour management in Alberta. The working group wanted these discussions to be made available to the convening project team to provide them with additional context and insight into the development of the project charter. These discussions are not part of the project charter, but all members of the working group viewed them as invaluable conversations starters and texture for the consideration of the convening project team. The working group understands that the discussions in Appendix A will be reviewed and considered by the convening project team, and acknowledges that many other factors will need to be contemplated as work progresses. The discussions in Appendix A are not meant to be part of the consensus agreement but represent the breadth of views and perspectives that were provided by working group members during the development of the Project Charter. Material for Appendix A has been drawn from meeting minutes.

### 1. Complaints:

- Need a standardized approach that can produce results and add credibility to the system. This system should be both reactive and proactive. A process map would be helpful to reinforce the desired approach.
- The current process needs to be clarified and better understood, including clarification of roles and responsibilities.
- There should be better communication with the community and the process should be iterative, but there needs to be an end-point.
- There needs to be communication between government departments.
- A triage system that determines what level of response may be required could be beneficial.
- Establishing levels of complaints, depending on the risks associated with the odour, would be a management tool, triggering what type of response may be necessary. Addressing complaints will require a variety of responses, whether that is prevention, education, enforcement etc. Complaints can also be used to focus and prioritize management efforts as well as identify hotspots.
- As a part of the complaints process, the person receiving the initial complaint should understand how to manage complaints and provide the complainant with all the information they need through the use of specific messaging. In turn, they should solicit all relevant information needed to follow up on the complaint.

### 2. Odour Assessment:

- The working group discussed updating an inventory of tools to assess odours.
  - Review the tools available in Alberta and other jurisdictions.
  - Tools should be practical in terms of human resources and financial cost.
  - Tools could be used for assessing complaints from receptors, managing the source (e.g facilities), monitoring, etc.
  - Need to provide information on when certain tools are appropriate or not appropriate.

- The working group discussed the characterization of odours
  - There should be the ability to identify the source.
  - A means to quantify the odour.
  - Determine the impact of the odour on the individual.
  - Quantify the objective vs. subjective impacts of odour.
- Thresholds and baselines could be used similar to the PM and Ozone Framework.

### 3. Health:

- Health is embedded in all of the objectives and should be taken into consideration when approaching each objective.
- Work under this objective could include reviewing the work that has been done on odour in the broader context and the effects of odour on health.
  - How do we “action” existing literature reviews of odour?
  - What could be done with this information?
  - How will this information fit into the framework?
  - (There is work currently being done by Alberta Health.)
- Could use health concerns to prioritize odour management efforts.
- Currently there is no method for individuals to track health impacts from odour.
- There are examples out there that we can apply to the Alberta situation. (E.g. odour diary). Health could turn into a lot of work for the project team, so the scope of this objective should try to be realistic.

### 4. Prevention/Mitigation:

- Review best practices in other jurisdictions, considering what worked and what did not work.
- There needs to be better planning at the interface (where residential development meets potential odour sources) as well as personal responsibility for choosing where individuals decide to reside.
- Cumulative effects of clustering odour intensive industry in certain areas will need to be addressed. Effective management will need to consider the region as a whole rather than each source individually.
- Prevention and mitigation efforts could consider source, pathway and receptor organized according to:
  - The source (what actually emits the odour).
  - The pathway (what is between the source and the receptor).
  - The receptor (the person becoming aware of the odour).

### 5. Enforcement/Role Regulation:

- The group discussed that in some cases regulations are being enforced, but in other cases, the regulation is vague in specific reference to odour, making enforcement difficult. For example, AAQOs are not being exceeded, but people are still complaining about an odour being a nuisance.
- Work under this objective could include doing a review and gap analysis of existing regulations, such as EPEA, Municipal Bylaws, The Public Health Act etc.

- The team should consider that enforcement is only one possible outcome of a complaints process.
- One suggestion was for the project team to develop criteria for enforcement.
- There should be transparency around enforcement and the response should be timely.

6. Education/Communication/Awareness:

- Information to the public should be transparent, timely, responsive, and easy to understand.
- Fundamental awareness material should be made available to help people make informed decisions and could include:
  - Basic factsheets on odours, as well as how odour might impact health.
  - Balanced information.
  - Potential management strategies.
  - Information about what can realistically be expected from odour management (i.e. that there will likely never be ‘zero’ odour)?
- Public consultation could be used to inform the framework and make sure the public’s concerns are addressed, as well as promoting awareness of what the CASA odour management team is doing Cooperation with Industry associations, Synergy groups, and Airsheds should be encouraged.

7. Continuous Improvement:

- The team could develop a five year performance indicator for the overall work of the Project Team as described under the new CASA performance measurement strategy.
  - The performance indicator could act as a report card for the CASA odour framework.
- Promote continuous improvement of the CASA odour framework for example through future audits or reviews.
- Encourage continuous improvement of odour management best practices and approaches to stakeholders.

## **Appendix B: Background Information – Reading Materials**

The working group has compiled a brief list of reading materials which were found to be useful background information for understanding and framing odour. This list is by no means exhaustive, but rather is a starting for project team members who are looking for some initial reading on the topic. All material is available online (except the Frasnelli presentation) or can be requested in electronic format from the CASA Secretariat.

Axel, Richard. October 1995. The Molecular Logic of Smell. Scientific American: p.154-159.

Bokowa, Anna H. 2010. Review of Odour Legislation. Chemical Engineering Transactions (23): p.31-36.

Frasnelli, Johannes. November 2011. Presentation: Our Chemical Environment, Our Brain and Our Health. Odour Workshop, Calgary.

Ministry for the Environment, New Zealand. 2003. Good Practice Guide for Assessing and Managing Odour in New Zealand.

Nicell, Jim A. 2009. Assessment and Regulation of Odour Impacts. Atmospheric Environment (43): p.196-206.

Policy and Planning Department, Greater Vancouver Regional District. 2005. GWRD Odour Management Strategy.

RWDI AIR Inc. 2005. Final Report Odour Management in British Columbia: Review and Recommendations. BC Ministry of Water, Land and Air Protection.

Scottish Environment Protection Agency. 2010. Odour Guidance 2010.

## Appendix B: Odour Management Project Team Members and Task Group Members

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### Odour Management Team

Humphrey Banack*	Alberta Federation of Agriculture
Ann Baran	Southern Alberta Group for the Environment
Kim Eastlick	Alberta Energy Regulator
Francisco Echegaray	Natural Resources Conservation Board
Joseph Hnatiuk	Canadian Society of Environmental Biologists
Kim Johnson	Canadian Association of Petroleum Producers (Shell)
Holly Johnson-Rattlesnake	Samson Cree Nation
Carolyn Kolebaba	Alberta Association of Municipal Districts and Counties
Tanya Moskal-Hébert	Alberta Agriculture and Forestry
Gary Redmond	Alberta Airsheds Council (Alberta Capital Airshed)
Steve Rozee	Solid Waste Association of North America (City of Lethbridge)
Brendan Schiewe	Alberta Health
Richard Sharkey*	Alberta Environment and Parks
David Spink*	Prairie Acid Rain Coalition
Gord Start	Alberta Forest Products Association (Hinton Pulp)
Chandra Tomaras	Alberta Urban Municipalities Association (City of Edmonton)
Kevin Warren	Alberta Airsheds Council (Parkland Airshed Management Zone)
Lorna Young	Chemistry Industry Association of Canada
Amanda Stuparyk	CASA
Robyn Jacobsen	CASA

\* designates a chair or co-chair of the group; applies to both the OMT and all task groups

### Alternate Members, Corresponding Members and Former Project Team Members

Brian Ahearn	Canadian Fuels Association
Roxanne Bretzlaff	Canadian Natural Resources Limited
Keith Denman*	Alberta Environment and Parks
Mandeep Dhaliwal	Alberta Airsheds Council (Calgary Region Airshed Zone)
Amy Elefson	The Lung Association, Alberta and NWT
Brian Gilliland	Weyerhaeuser Company Ltd.
Zaher Hashisho	Alberta Health
Sandi Jones	Alberta Agriculture and Forestry
Christine King	Alberta Energy
Gerald Palanca	Alberta Energy Regulator
Norine Saddleback	Samson Cree Nation
Al Schulz	Chemistry Industry Association of Canada
Janis Seville	The Lung Association, Alberta and NWT
Tracy Smith	Canadian Association of Petroleum Producers (Shell)
Alan Stuart	Alberta Food Processors Association
Merry Turtiak	Alberta Health
Angella Vertzaya	Alberta Urban Municipalities Association (City of Edmonton)
Celeste Dempster	CASA
Michelle Riopel	CASA

*N.B. The affiliations of some former team members and sub-group members may have changed. The affiliation shown for each person was accurate at the time the individual was active with the team or sub-group.*

*Task groups listed below include current, former, alternate, and corresponding members.*

### **Complaints Task Group**

Ron Axelson	Intensive Livestock Working Group
Ann Baran	Southern Alberta Group for the Environment
Michael Bisaga	Lakeland Industry and Community Association
Roxanne Bretzlaff	Canadian Natural Resources Ltd.
Jennifer Fowler*	Alberta Forest Products Association (Hinton Pulp)
Zaher Hashisho	Alberta Health
Joseph Hnatiuk	Canadian Society of Environmental Biologists
Carolyn Kolebaba	Alberta Association of Municipal Districts and Counties
Jim Lapp	City of Edmonton and Solid Waste Association of North America
Darlene Meier	Alberta Energy Regulator
Tanya Moskal-Hébert*	Alberta Agriculture and Forestry
Ludmilla Rodriguez	Alberta Health Services
Amanda Stuparyk	CASA

### **Alternate Members, Corresponding Members, and Former Task Group Members**

Keith Denman	Alberta Environment and Parks
Francisco Echegaray	Natural Resources Conservation Board
Sandi Jones	Alberta Agriculture and Forestry
Merry Turtiak	Alberta Health
Celeste Dempster	CASA

### **Odour Assessment Task Group**

Ron Axelson	Intensive Livestock Working Group
Phyllis Bielawski	Alberta Environment and Parks
Ike Edeogu	Alberta Agriculture and Forestry
Kim Johnson*	Canadian Association of Petroleum Producers (Shell)
David Spink*	Prairie Acid Rain Coalition
Abena Twumasi-Smith	Alberta Airsheds Council (Wood Buffalo Environmental Association)
Amanda Stuparyk	CASA

### **Alternate Members, Corresponding Members, and Former Task Group Members**

Atta Atia	Alberta Agriculture and Forestry
Gerald Palanca	Alberta Energy Regulator
Tracy Smith	Canadian Association of Petroleum Producers (Shell)
Kevin Warren	Alberta Airsheds Council (Parkland Airshed Management Zone)
Celeste Dempster	CASA

## Health Task Group

Raquel Feroe	Alberta Environmental Network
Debra Hopkins	Alberta Environment and Parks
Alvaro Osornio-Vargas	University of Alberta and The Lung Association
Cindy Quintero	Alberta Forest Products Association (Hinton Pulp)
Brendan Schiewe	Alberta Health
Bob Scotten	Alberta Airsheds Council (West Central Airshed Society)
Opel Vuzi	Health Canada
Amanda Stuparyk	CASA

## Alternate Members, Corresponding Members, and Former Task Group Members

Irena Buka	University of Alberta
Laurie Cheperdak	Alberta Environment and Parks
Zaher Hashisho	Alberta Health
Karina Thomas	Alberta Health
Kaitlyn Wall	Alberta Environment and Parks
Celeste Dempster	CASA

## Prevention and Mitigation Task Group

Ron Axelson	Intensive Livestock Working Group
Ike Edeogu	Alberta Agriculture and Forestry
Kim Johnson*	Canadian Association of Petroleum Producers (Shell)
James Jorgensen	Alberta Environment and Parks
David Spink*	Prairie Acid Rain Coalition
Abena Twumasi-Smith	Alberta Airsheds Council (Wood Buffalo Environmental Association)
Imai Thomas Welch	City of Edmonton
Amanda Stuparyk	CASA

## Alternate Members, Corresponding Members, and Former Task Group Members

Atta Atia	
Gerald Palanca	Alberta Energy Regulator
Tracy Smith	Canadian Association of Petroleum Producers (Shell)
Kevin Warren	Alberta Airsheds Council (Parkland Airshed Management Zone)
Celeste Dempster	CASA

## Enforcement and Role of Regulation Task Group

Kim Eastlick	Alberta Energy Regulator
Jennifer Fowler	Alberta Forest Products Association (Hinton Pulp)
Zaher Hashisho	Alberta Health
Debra Mooney	Alberta Health
Tanya Moskal-Hébert	Alberta Agriculture and Rural Development
Intiyaz Moulvi	Canadian Association of Petroleum Producers (Devon)
Maude Ramsay	Canadian Association of Petroleum Producers (Devon)
David Spink	Prairie Acid Rain Coalition
Richard Sharkey*	Alberta Environment and Parks
Lorna Young	Chemistry Industry Association of Canada



Amanda Stuparyk

CASA

**Alternate Members, Corresponding Members, and Former Task Group Members**

Francisco Echegaray

Natural Resources Conservation Board

Joseph Hnatiuk

Canadian Society of Environmental Biologists

Sandi Jones

Alberta Agriculture and Forestry

Al Schulz

Chemistry Industry Association of Canada

Celeste Dempster

CASA

## **Appendix C: Documents and Tools Prepared for this Project**

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A number of documents were prepared for this project, all of which are publicly available. The tools are included in the *Good Practices Guide for Odour Management in Alberta*, which is available online or on request to the CASA Secretariat. Consultant reports are noted in the list below, but these documents have been added to the final report for the appropriate task group. Thus, to view the consultant reports, please access the relevant task group report.

Follow the links on the CASA website at [www.casahome.org](http://www.casahome.org) to view these materials.

### **Odour Management Project Team**

*Good Practices Guide for Odour Management in Alberta*

*Communications Plan for the Good Practices Guide for Odour Management in Alberta*

### **Health Task Group**

*Backgrounder on Odour and Health*

*Symptom and Odour Tracking Tool*

### **Complaints Task Group**

*Alberta Odour Complaints Overview*

*Odour Complaints in Your Area: A Guide for Development an Odour Complaint Process with Odour Complaint Referral Process*

### **Odour Assessment Task Group**

*Review of Odour Assessment Tools and Practices for Alberta*. Prepared for the task group by Millennium EMS Solutions Ltd., and Environmental Odour Consulting. 2015. 108 pages + appendix *CASA Odour Assessment Guide*.

### **Prevention and Mitigation Task Group**

*Review of Odour Prevention and Mitigation Tools for Alberta*. Prepared for the task group by Pinchin, Ltd. 2015. 58 pages + appendix.

### **Enforcement and the Role of Regulation Task Group**

*Report to the Clean Air Strategic Alliance Odour Management Team, Enforcement/Role of Regulation Task Group: Final Report*. Prepared for the task group by RWDI. 2015. 47 pages + tables.

## **Appendix D: OMT Communications Plan**

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# Odour Management Team Communications Plan



Prepared by the  
Clean Air Strategic Alliance  
for the  
Odour Management Team

Final, July 2015

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## 1. Project Background and Overview

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In January 2013, the Odour Management Team (OMT) was formed to undertake work to design a process that would assist a larger group of stakeholders to engage focused discussions directed at advancing odour management in Alberta. The OMT includes representatives from industry, government, and non-government organizations and areas with an interest in odour management. The Clean Air Strategic Alliance (CASA) uses a consensus based decision-making process to conduct all its work and used this process for the odour project. The projects' products were submitted to the CASA Board of Directors in September 2015. The CASA Board will review and accept the team's deliverables which will then be available for distribution.

The vision for the odour project was that a comprehensive framework for odour management in Alberta is developed. Therefore the overall goal for the project was to create a good practice guidance document for assessing and managing odour in Alberta. The work was divided into the following seven cross-cutting topics: Complaints, Odour Assessment, Prevention & Mitigation, Enforcement & Role of Regulation, Health, Education/Communication/Awareness, and Continuous Improvement.

The project work will apply to all sectors, no individual sector is meant to be singled out. While some best practices may be sector specific, the team focused on creating processes (for example, complaints or odour assessment) that provide a consistent approach to managing odour in Alberta. It should be recognized that in some instances, all reasonable efforts may have been made to manage a source of odour, but elimination may not be feasible.

Throughout the process, the OMT established five topic-specific task groups to undertake work and develop usable information to be incorporated into main deliverable, the "*Good Practices Guide for Odour Management in Alberta*", (hereafter referred to as the 'GPG').

### **Odour Management Project Deliverables**

The project team's deliverables to the CASA Board includes any recommendations and will be available on the CASA website (available at [www.casahome.org](http://www.casahome.org)).

- A Final Report and Recommendations:
  - The project team will prepare a final report which includes a package of **SMART** (Specific, Measurable, Action-Oriented, Realistic, Time-bound) recommendations generated from the work under the seven categories of objectives.
  - The report should also identify and prioritize any further work.
- A Good Practices Guide
  - The project team will create a guidance document that communicates the results of team work as well as a 'Toolkit' resulting from that work. The 'Toolkit' should contain a variety of tools that support odour assessment and management in Alberta as well as an understanding of when it is appropriate to use each of the tools. The purpose is for people involved in odour management or an odour issue can easily access the work of the team and apply it.

For the development of the GPG, the OMT focused on the following objectives:

- Provide basic information about odour including any relationships between odour and health and odour and perceptions of general air quality.
- Clarification regarding the nature and extent of what is possible for the management of odours in Alberta.
- Increase understanding of jurisdictional responsibilities (i.e. municipalities do not have influence over facilities outside their boundaries).
- Increase awareness of odour management strategies.

- Describe the most appropriate ways and means to communicate with target audiences.
- Ensure awareness of ongoing initiatives to assess and manage odour in Alberta.

This Communications Plan focuses on the strategy for distribution and roll-out of the GPG.

## 2. Communications Objectives

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The OMT, with assistance from the CASA secretariat developed this Communications Plan to meet the objectives of their project charter for Communications/Education/Awareness work and is the main deliverable for this area. The communications and eventual roll-out of the GPG will focus on informing and increasing awareness of CASA stakeholders (industry/government/non-government).

The Project Charter (2013) outlines two communications objectives:

1. To increase awareness and clarify [*any*] expectations about odour and odour management in Alberta and describe its importance in air quality management and protection.
2. To increase the capacity of relevant multi-stakeholder groups (ex. industry associations, synergy groups, airshed zones, etc.) to engage in the management of odours in Alberta.

Communicating and distributing the GPG with its relevant information on odour and odour management will help to encourage more informed decision-making and help stakeholders engage [*in general*] more effectively in a credible and robust approach to the management of odours in Alberta.

There are three targeted actions listed for this area of work:

1. A Education/Communication/Awareness Plan/Strategy, which includes:
  - a. Distributing the GPG
  - b. Actively engaging with people around how it can be used.
2. Sharing the OMT's final report (i.e. a strategy to communicate to stakeholders and the public the implementation work that will result from project team recommendations as well as the process that the team undertook and the GPG).
  - a. The Final Report with Communications Plan will be publically posted on the CASA website ([www.casahome.org](http://www.casahome.org)).
3. A piece in the GPG that emphasizes the importance of good communications.

These objectives have been interpreted to focus specifically on the product, the GPG, and how using a variety of education and communications strategies and techniques will increase awareness and improve capacity of the users to engage in management of odours in Alberta by using the information in the GPG. To effectively achieve these objectives, consideration must be given to the variety of audiences that may use them, multiple methods to reach and inform these audiences and whether the outcome of the engagement is to inform, raise awareness or educate in regard to the management of odours in Alberta. Budgetary considerations may also determine the most effective methods that can be employed.

## 3. Key Messaging

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### CASA ODOUR MANAGEMENT PROJECT

1. The Clean Air Strategic Alliance under the Odour Management Team developed strategies and tools for managing odour in Alberta.
2. The OMT has developed a comprehensive odour 'toolkit' that is a compilation of good practices and ways of thinking and acting that CASA believes will support odour assessment and management.

3. This guidance document was developed in the true spirit of collaboration and is broadly supported by government, industry, and non-government organizations.

## GOOD PRACTICES GUIDE FOR ODOUR MANAGEMENT IN ALBERTA

1. The GPG guidance document toolkit includes:
  - Information on the relationship between odours and health and a tool for individuals to track the health-related impacts of odour.
  - Guidance for complaint management, including a complaint process, a customizable call log, a referral decision tree, and a public handout.
  - Odour assessment tools and practices.
  - Odour prevention and mitigation tools.
  - Regulation and enforcement approaches for addressing odours.
2. Advice is provided when, where, and how to use the specific tools.
3. This is a first-of-its-kind guidance document for Alberta. Additional detailed specific information are provided and referenced.
4. The GPG will be reviewed within 5 years and updated as necessary.

## 4. Target Audiences

The OMT notes this Communications Plan must identify their wide variety of target audiences (such as regulators, industry, call centre responders) and identify ways to reach and engage with them. The OMT acknowledge the importance of its own team members and the CASA Board acting as champions for promoting and distributing the GPG within their own networks.

The following Table 1 resulted from team member input over several meetings and lists the identified targeted stakeholder groups that should be informed of the work of the project team and its deliverables.

**Table 1: Identified Audiences for GPG Communications**

<b>Audience Category</b>	<i>Target</i>	<i>Group</i>
<b>Government</b>	Call centres (operators)	Coordination of Information Centre (CIC) Alberta Energy Regulator (AER) 311 Edmonton 311 Calgary
	Provincial government ministries (Regulators)	Alberta Environment incl. Land Use Secretariat Alberta Agriculture Alberta Energy Natural Resources Conservation Board Alberta Transportation Alberta Infrastructure
	Health	Alberta Health Alberta Health Services incl. Health Link Alberta Alberta Occupational Health and Safety Health Canada incl. Environment and Public health



<b>Audience Category</b>	<b>Target</b>	<b>Group</b>
	Municipalities	City of Edmonton City of Lethbridge City of Calgary - incl. Environment/Planning/Bylaw Departments
	Other	Alberta Urban Municipalities Association Alberta Association of Municipal Districts and Counties Environment Canada First Nations
<b>Industry</b>	Call centres (target operators)	Industry call centers
	Industry associations	Canadian Association of Petroleum Producers Chemistry Industry Association of Canada Small Explorers and Producers Association of Canada Alberta Forest Products Association Alberta Federation of Agriculture Canadian Federation of Agriculture Canadian Fuels Association
	Industry	Oil and Gas Agriculture Mining/ Forestry (pulp and paper) Waste Management/composting Wastewater management
<b>Non-Government</b>	Airshed Zones	Alberta Airsheds Council
	Health Professionals	Alberta Medical Association College of Physicians and Surgeons Alberta Public Health Association The Lung Association Alberta Association of Registered Nurses Canadian Association of Physicians for the Environment

<b>Audience Category</b>	<b>Target</b>	<b>Group</b>
		Other applicable health associations: including psychologist/ psychiatric nurses/ naturopaths
	Alberta Environmental Network	Clean Air and Energy Caucus Pembina Institute Nature Alberta
	Professional Associations	Professional Agrologists Professional Biologists Professional Engineers
		Synergy Alberta
		Mutual Aid Alberta
		Canadian Environmental Network (RCEN)
		CEMA Air Working Group (AWG)
		Western Canada Water and Waste Water Association
		CPANS/Air and Waste Management Association
	Aboriginal groups	
	Academia/ Universities / Colleges / Research Groups  *Distribution to ALL public universities and colleges*	Examples: University of Alberta/ University of Calgary/University of Lethbridge/Macewan University/Athabasca University  NAIT/SAIT/Lethbridge College/Olds College/Lakeland/Keyano College
	Other Non-Government	Target zones – Peace River Region / Heartland / Fort McMurray
	The Public  *Note: Not the main focus of the GPG, however should still take the means to make publicly available.	Public can access all information available on CASA website at <a href="http://www.casahome.org">www.casahome.org</a> .

## 5. Communications Approach

This has been discussed by the OMT to be a one-time mass distribution through email and online promotion, once the GPG is approved by the CASA Board. Further efforts were discussed in relation to continuous advertisement and distribution, including ongoing online exposure, presentations, and media coverage.

1. Initial distribution through email of project/guide information to identified targeted stakeholder list.
  - a. May also involve initial mailing of printed hard copies to key stakeholder groups.
2. A press event/release/ event where the GoA (Energy, Environment, Health, Ag) and a CASA director (board representation) launch the GPG.
3. Ongoing distribution and promotion of the GPG.
  - a. OMT members conduct presentations as requested.
  - b. OMT member attend any related conferences, annual meetings, applicable to their stakeholder groups.
  - c. CASA secretariat to maintain stakeholder distribution list and share information or materials as requested.

### **Identified Targeted Specific Actions**

These are specific actions that have been identified by members that may be pursued for the promotion of the GPG, but no specific commitments have been made.

1. Materials/Attendance at AAMDC Convention (occurring twice yearly).
2. Materials/Attendance at Airshed Zone meetings.
3. Materials/Attendance at AEN general meetings.
4. Materials/Attendance at CEMA AGM/Board Meetings (4 times a year).
5. Materials/Attendance at Synergy Alberta Conference.
6. Identification and targeting of materials to locations described as “hot spots”.
7. Newsletters and Publications: Environmental Compliance newsletter; AAMDC/AUMA newsletters.

### 5.1. Strategies and Tactics

*For information only.* The following table lists the various strategies that were identified for consideration as part of the OMT’s Communication Plan and roll-out strategies.

Identified Strategy	Comments / highlights of strategy
<b>GPG Highlight Sheet</b>	
An at-a-glance reference guide can provide stakeholders with sector-specific information regarding odour management best practices, in addition to answers to FAQ’s.	<ul style="list-style-type: none"> <li>– Ability for mass distribution - Email or print?</li> <li>– Create summary article (GPG ‘fact sheet’) with links that can send to newsletters and out to stakeholders</li> <li>– Higher level written summary of the GPG</li> </ul>
<b>Media Coverage</b>	
Press releases/ press events. Applicable media outlets	<ul style="list-style-type: none"> <li>– Print, radio, online, social media</li> <li>– Target rural area papers/printing</li> <li>– Eg. Group on Facebook, ‘Odour group’ on LinkedIn</li> </ul>
<b>Online Content &amp; Exposure</b>	
Ensuring that applicable content is available on the websites of applicable stakeholders. Stakeholders could further add value through establishing email alerts/notifications. This tactic can be improved by ensuring that the materials and websites are a top hit on search engines.	<ul style="list-style-type: none"> <li>– Making information available online (CASA website)</li> <li>– Develop a micro-site to host odour materials.</li> <li>– Engage organizations directly to reach people (ex. CAPP, AUMA)</li> <li>– Make information available online so can access later, keep links handy.                             <ul style="list-style-type: none"> <li>○ Could be ‘document-style’ or more interactive</li> <li>○ Could bookmark links and pull up as needed</li> </ul> </li> <li>– Develop an app? Applications that assist with an aspect of the odour management process</li> </ul>
<b>Newsletter (Organization-specific)</b>	
These informational packages can be sent via the post, email or can be hosted on organizations websites. CASA can act as a central repository, and in addition will be able to include important information and links in the Clean Air Bulletin. Other examples could include industry, environmental and health related compliance newsletters.	<ul style="list-style-type: none"> <li>– Newsletters and publications (ex. Environmental Compliance Newsletter)</li> <li>– Short information session/presentation with staff</li> <li>– Organizational newsletters (ex. APEGA, agrologists)</li> <li>– AAMDC &amp; AUMA newsletters</li> <li>– OMT Stakeholder distribution of information</li> </ul>
<b>Presentations</b>	
<p>These informative sessions provides stakeholders with the knowledge of the GPG and how it can be utilized within their organizations.</p> <ul style="list-style-type: none"> <li>– Have standard presentation that can use</li> <li>– Will need to tailor material (likely need two sets for more experienced and less experienced)</li> </ul>	<ul style="list-style-type: none"> <li>– ‘Speaker bureau’: make open offer to all groups to come out and talk to them about the GPG</li> <li>– General conferences with odour topics.</li> <li>– Different levels:                             <ul style="list-style-type: none"> <li>○ High level (ex. CAPP, AFPA)</li> <li>○ Company-level: not sure how to access?</li> </ul> </li> <li>– AEN</li> <li>– Synergy Groups</li> <li>– CEMA AWG</li> </ul>

<b>Individual Consultation &amp; Training</b>	
<p>These case studies or real life simulations are individual (in person) exercises that would demonstrate organizational capacity to manage odour complaints and response. As an educational component of the GPG, audits can be supplemented with workshops or presentations as seen fit or requested.</p>	<ul style="list-style-type: none"> <li>- Individual meetings/training (Calls)                             <ul style="list-style-type: none"> <li>o Real life simulations, "mock calls"</li> </ul> </li> <li>- Go through AAC as Executive Directors and program managers primarily take calls</li> </ul>
<b>Webinars</b>	
<p>With content and material nearly identical to normal presentations; webinars are able to reach wider audiences in potentially remote areas, or areas where resources are not available to bring stakeholders together in one location.</p>	<ul style="list-style-type: none"> <li>- Will need to tailor material (likely need two sets for more experienced and less experienced)</li> </ul>
<b>Workshops</b>	
<p>Serves a dual purpose in raising awareness of the best practices for odour management, and providing training on the specific details of the GPG.</p>	<ul style="list-style-type: none"> <li>- Science symposium on odour and GPG (would bring range of stakeholders together)</li> <li>- Workshops that focus on all components of the GPG at different locations across province</li> <li>- Will need to tailor material (likely need two sets for more experienced and less experienced)</li> <li>- In-person presentation or workshop</li> <li>- Community education role?</li> </ul>

**Table 2: Further Definition for OMT Communications Strategies**

<b>Tactic</b>	<b>Roll-out (What is required)</b>	<b>Timing (When)</b>	<b>Budget (Estimated costs)</b>	<b>Lead (OMT)</b>	<b>Target Audience</b>	<b>Priority</b>
<b>Online Content &amp; Exposure</b>	<ul style="list-style-type: none"> <li>- develop a short description &amp; icon to link to</li> <li>- create a 'logo' for orgs that link to CASA website/info "proud to be a member of CASA's OMT"...</li> <li>- other orgs to include link</li> <li>- develop list of target stakeholders email contacts</li> <li>- email (template) to all stakeholders with encouragement to put on websites</li> <li>- require analytics (tracking) shows how the links work</li> <li>- short survey when you go to website</li> </ul>	<p>Initial blast after approval</p> <p>Annually on anniversary</p>	<p>Initial development by (consultant)?</p> <p>Online advertising (mostly free may be some subscription fees to some sites)</p> <p>- Social media</p>	<p>OMT to develop plan.</p> <p>CASA and OMT as required, could implement.</p>	<p>Government departments (Health/Environment)</p> <p>Airsheds</p> <p>AAMDC</p> <p>AUMA</p> <p>Industry Associations</p>	<p>Top Priority (13 Votes)</p>
<b>Newsletter</b>	<ul style="list-style-type: none"> <li>- 'news story' on scope and process of project – standardized</li> <li>- high level GPG highlights</li> <li>- short 400-500 word</li> <li>- meant for organization newsletters</li> </ul>	<p>In time for the GPG is ready for release "post board approval"</p>	<ul style="list-style-type: none"> <li>- editor/graphic designer to create</li> <li>- in-house?</li> </ul>	<p>Person who writes the final report or external comm's person</p>	<p>Industry associations</p> <p>Government newsletters</p> <p>CASA Stakeholder list</p> <p>Airsheds</p> <p>AEN</p>	<p>2<sup>nd</sup> Priority (9 Votes)</p>
<b>GPG Highlight Sheet</b>	<ul style="list-style-type: none"> <li>- 2 page maximum</li> <li>- standardized on the GPG on what it contains (tools/main points of the 7 topics)</li> <li>- an easier to read 2 page summary of respective sections that could be posted on the website.</li> </ul>	<p>In time for the GPG is ready for release "post board approval"</p>	<ul style="list-style-type: none"> <li>- editor/graphic designer to create</li> <li>- in-house?</li> </ul>	<p>Person who edits the GPG or external comm's person</p>	<p>Everyone - on website/link in newsletter.</p> <p>Handout at presentations/ Muni offices.</p>	<p>2<sup>nd</sup> Priority (9 Votes)</p>
<b>Media Coverage</b>	<ul style="list-style-type: none"> <li>- develop PSA for media outlets (weeklies/ comm's newsletters) with key messages</li> <li>- Distribution: cable tv talk shows</li> <li>- radio (call of the land (Ag))</li> <li>- joint press releases with CASA stakeholders</li> </ul>	<p>Initial blast after approval</p> <p>((Joint info/release with GoA))</p>	<p>Development costs.</p> <p>In-kind support by OMT/CASA.</p>	<p>CASA (all media should go through to ensure consistency)</p>	<p>Social media</p> <p>All papers-press release</p> <p>TV</p>	<p>3<sup>rd</sup> Priority (7 Votes)</p>

<p><b>Webinars</b></p>	<ul style="list-style-type: none"> <li>- same as Presentations (pre-made/standard)</li> <li>- or could be specific modules created for more detail (in specific topics)</li> <li>- CASA drive this portion – arrange access to website at specific times</li> <li>- live/or pre-recorded</li> </ul>	<ul style="list-style-type: none"> <li>- Schedule after initial presentations and roll out</li> <li>- set dates</li> <li>- available on website as pre-recorded</li> </ul>	<ul style="list-style-type: none"> <li>- costs for setting up (developing material/recording/posting/maintenance online)</li> <li>- consultant to develop</li> </ul>	<p>CASA secretariat</p>	<p>GoA departments (Ag) Muni’s Regulatory enforcement and approval staff (in AER/AESRD)</p>	<p>4<sup>th</sup> Priority (5 Votes)</p>
<p><b>Presentations</b></p>	<ul style="list-style-type: none"> <li>- can target two main audiences (two templates), one for general audiences and the other can be information specific</li> <li>- focus on potential users</li> <li>- 20-30 minutes maximum</li> <li>- create a PowerPoint overview with copy of the GPG (for distribution)</li> </ul>	<ul style="list-style-type: none"> <li>- ASAP after publication</li> <li>- Coordination required with scheduled meetings/conferences</li> </ul>	<ul style="list-style-type: none"> <li>- develop presentation templates</li> <li>- have info on memory sticks</li> <li>- possible travel/accommodations for presenters</li> </ul>	<p>OMT members (in respective organizations/areas)</p>	<p>Industry associations AUMA AAMDC CPANS Airsheds (e.g. annual meeting)</p>	<p>5<sup>th</sup> Priority (4 Votes)</p>
<p><b>Workshops</b></p>	<ul style="list-style-type: none"> <li>- require the presentation(s) and host/presenters</li> <li>- Upon request <i>(how do you determine?)</i></li> <li>- AER/Airsheds/ESRD/Alberta Health</li> </ul>	<p>As required.</p>	<ul style="list-style-type: none"> <li>- no cost to CASA</li> <li>- Gov’t groups to absorb costs to host</li> </ul>	<p>OMT reps Others?</p>	<p>Industry (deal with odour complaints) Government departments (that deal with odour complaints) Front line personnel (inc. muni’s/gov/health)</p>	<p>6<sup>th</sup> Priority (1 Vote)</p>
<p><b>Individual Consultation &amp; Training</b></p>	<ul style="list-style-type: none"> <li>- This would be/could be part of ‘workshops’ as they would be individual per request basis as resources allow</li> </ul>	<ul style="list-style-type: none"> <li>- On Request</li> <li>- Environ. Info Center/Call Centres/municipalities &amp; districts</li> </ul>	<ul style="list-style-type: none"> <li>- per request</li> </ul>	<p>- OMT leads</p>	<p>On request (workshops)</p>	<p>7<sup>th</sup> Priority (0 Votes)</p>

**Table 3: OMT Implementation Approach Table**

After several thorough discussions, the OMT strategized and recommend the following communications strategies are applied for the distribution and roll-out.

<b>Tactic</b>	<b>What is required?</b>	<b>Timing and Who?</b>	<b>Estimate Budget</b>
<b>Online Content &amp; Exposure</b>  *Developed specific workplan for implementation*	<ul style="list-style-type: none"> <li>- website development for unique separate page for CASA website to post the GPG and odour project documents/links</li> <li>- create a 'logo' for orgs that link to CASA website/info "proud to be a member of CASA's OMT" ...</li> <li>- develop list of target stakeholders email contacts</li> <li>- email (template) to all stakeholders with encouragement to put on websites</li> <li>- social media</li> <li>- Consultant for products?</li> </ul>	Initial blast after approval - Initial development (consultant) - CASA secretariat with website developer - Online advertising - <b>Prezi</b> is a cloud-based (SaaS) presentation software and storytelling tool	\$1000
	<ul style="list-style-type: none"> <li>- additional comments submission section/ feedback section</li> <li>- short survey when you go to website</li> <li>- website analytics (tracking)</li> <li>- opportunities to be top on search engines</li> </ul>	After board approval part of website designing to post all odour materials	\$1000
<b>Newsletter</b>	<ul style="list-style-type: none"> <li>- short 400-500 word</li> <li>- 1 page infographic</li> <li>- need editor/graphic designer (consultant)</li> </ul>	In time for the GPG is ready for release "post board approval"	~ \$250
	- email distribution to specific target audience	- in kind to distribute	
<b>GPG Highlight Sheet</b>	<ul style="list-style-type: none"> <li>- 2 page maximum double sided (4 pages total)</li> <li>- standardized on the GPG on what it contains (tools/main points of the 7 topics)</li> <li>- with graphic design</li> </ul>	In time for the GPG is ready for release "post board approval"	~ \$500
	- costs for printing	- Est. 1000 copies	\$500
<b>Media Coverage</b>  *Developed specific workplan for implementation*	<ul style="list-style-type: none"> <li>- PSA to media outlets (weeklies/ comm's newsletters)</li> <li>- Media release event (after CASA board approval, hold event (news conference and media kit))</li> <li>- joint press releases with CASA stakeholders/OMT</li> <li>- Attendance for cable tv talk shows/ radio (i.e. call of the land (Ag))</li> </ul>	Initial blast after approval. Specific date for media event (TBD). CASA OMT CASA Board	\$2500  In-kind attendance
	<ul style="list-style-type: none"> <li>- prepared advertorial/open article distributed widely via newswire</li> <li>- email/contact to selected newspapers/rural publications</li> <li>- public service announcements submitted to radio media and other outlets</li> </ul>	CASA Communications Writer OMT reps	



<b>Presentations</b>	- Development of Standard PowerPoint presentations (one general /one information specific (i.e. complaints)) - 20-30 minutes maximum	- Will be posted on the CASA website for review and use by any organization - Development by editor/graphic designer	~\$2250
	- have presentations preloaded on memory sticks (for distribution and for OMT members giving presentations)	- As requested, OMT will be asked to deliver presentations to stakeholder groups	

## 6. Timelines and Milestones

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The OMT developed this Plan in parallel with the development of the GPG but actions and strategies cannot be implemented until final presentation and acceptance occurs by the CASA Board. Once approved, the implementation and roll-out may occur.

### **TIMING** (Milestones)

Preparation and Development of Materials – July - September 2015

Release of OMT GPG/final report – Beginning October 2015

Presentations – Posted online by mid-October 2015

Media Release/Relations – November 2015

Annual collection/compilation of feedback/statistics – October 2016

### **TIMELINE**

This communications plan may commence in October 2015 and be completed by October 2016 (one year promotion/distribution of the GPG).

### **SPOKESPEOPLE**

**PRIMARY:** Odour Management Team (OMT) Co-chairs

**SECONDARY:** Other OMT members as appropriate - CASA Secretariat (PM/Comms) will coordinate depending on topic and availability.

## 7. Evaluation and Statistics

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Evaluation is meant to determine the effectiveness of how the GPG was communicated not the effectiveness or value of the GPG itself, which will be pursued through other methods. Various methods or statistics is listed below. The CASA secretariat will track the data and statistics.

**Quantitative:** Number of stakeholders receive information and the GPG (email and mail), presentations delivered, attendance at events, media monitoring statistics, feedback numbers received/comments received by CASA, CASA website statistics (analytics).

**Qualitative:** Feedback analysis, presentation evaluations analysis, Media Relations Rating Points – *monitoring the media that results from the release, evaluating the tone of the articles that appear, the spread of the articles, how many articles, etc.*

## Appendix E: Performance Indicator Additional Information

CASA's performance indicators are presented in *CASA's Performance Measures Strategy*. Project Teams are required to develop on specific metric to measure the success of the team 5 years in the future, as follows:

Objective	Performance Indicator	Calculation Instructions
Measure impact of completed project team work.	Each completed project team come up with one specific metric to measure success of team 5 years in the future.	When a project team is completing its final team report and is ready to disband, the team should create one performance indicator that can be used to assess the overall success of the project team five years in the future. The team should consider: "Five years from now, how will we know if our work has been successful?". The team should try to make their indicator as specific as possible, taking into consideration data availability. They should provide clear instructions for the PMC to follow-up on the indicator in the future.

The team was able to agree on the following three measures. This information will need to be submitted to the CASA Board in 5 years to assist them in determining the need and/or requirements for further work on odour management in Alberta.

The OMT advises:

- This work occur in 4 years, beginning in early 2019
- The Performance Measures Committee should consider trends in the data.

Objective	Performance Indicator	Calculation Instructions
Measure impact of completed project team work.	Survey results	<p>A survey will be developed to learn how the GPG is being used and what influence it has had on odour management in Alberta.</p> <p>The survey will be sent to a targeted audience. This will include all the member organizations of the OMT, and the following additional users:</p> <ul style="list-style-type: none"> <li>• Environmental consulting companies that do odour impact assessments, such as RWDI and Golder.</li> <li>• Additional users established through the reference check.</li> <li>• Users who provided feedback on the CASA website and gave their permission to be contacted.</li> </ul> <p>The questions for the survey should be developed by the Performance Measures Committee, with the following topics:</p> <p>Q1. <u>Guide Awareness</u>: are people aware of the existence of the GPG?</p> <p>Q2. <u>Guide Use</u>: do people use the GPG? If so, how is it used?</p> <p>Q3. <u>Value</u>: has the GPG be valuable in assessing and managing odour? What other benefits have resulted from use of the GPG?</p>

	<p>Q4. <u>Continuous Improvement</u>: how should the GPG be updated in the 5 year review?</p> <p>Q5. <u>Suggestions</u></p>
<p>Number of times the GPG is cited (I.e. quoted, named or mentioned).</p>	<p>1. The CASA secretariat will compile a list of:</p> <ul style="list-style-type: none"> <li>a) Number of times the GPG is referenced through an academic literature search.</li> <li>b) Number of times the GPG is cited in Environmental Impact Assessments (EIA's) and Regulations (accessible through an online search).</li> <li>c) Number of references of the GPG in a general web search (including outside Alberta).</li> </ul> <p>2. The Government of Alberta will compile a list of the number of references of the GPG in Approvals.</p>
<p>Number of visits to the GPG webpage</p> <p>Number of downloads of the GPG</p> <p>Number of return and unique visitors to GPG webpage.</p> <p>Etcetera.</p>	<p>CASA tracks detailed statistics about visitors to our website using Google Analytics (<a href="http://www.google.com/analytics/">http://www.google.com/analytics/</a>). CASA's Communications Coordinator maintains the user name and password in the Communications Folder.</p> <p>The CASA Secretariat will compile the statistics that will be relevant to the CASA Board in 5 years when they discuss the need and/or requirements for further work on odour management in Alberta.</p> <p>The program continuously tracks the data over an indeterminate amount of time, therefore data and reporting can be requested and generated cumulative and for any timeframe.</p>