CMOS IN 2003/2004 AND ITS FUTURE

1. THE AIM OF CMOS

CMOS has a distinguished history. It began modestly in 1939 when a group of meteorologists obtained a charter from the Royal Meteorological Society to establish a Canadian Branch. By 1967, it had grown in size to the point when its members agreed to form a uniquely Canadian organization, the Canadian Meteorological Society. Ten years later, in 1977, the oceanography community joined the organization and it became known as the Canadian Meteorological and Oceanographic Society. CMOS has been a major unifying force in bringing meteorologists and oceanographers together ever since.

CMOS was conceived in an era dominated by government and academia and developed through a strong focus on the physical atmosphere-ocean system. It has greatly expanded this focus over the years to include most aspects of meteorology, hydrology and oceanography, including research, operations, services and a strong professional role related to private sector applications.

CMOS exists for the advancement of meteorology, hydrology and oceanography for the benefit of Canada.

CMOS covers most issues of concern to government, academic and private sector interests, including but not restricted to:

- Atmospheric sciences, including air quality and chemistry.
- Physical, chemical and biological oceanography.
- Limnology and hydrological sciences.
- Cryospheric sciences related to meteorology and oceanography.
- Operational meteorology and oceanography, nowcasting, forecasting and hindcasting.
- Interactions at boundaries, from a meteorology, hydrological and oceanographic perspective, including air/sea interactions, land surface interactions (atmosphere/land, soil moisture and runoff, coastal oceanography, and ocean/sediments), atmosphere/health interactions, and oceanic influences on marine life.

While CMOS has entrained most aspects of the ocean, it has not concerned itself with sea life *per se* (e.g. fisheries) except insofar as studying ocean processes that directly effect marine life.

CMOS is also concerned with sister studies in hydrology, limnology and paleoclimate. Hydrology is the scientific study of the waters of the Earth, especially in relation to the cycle of water in the atmosphere, streams, lakes, oceans, and on and below the land surface. Limnology is the study of fresh water bodies. Paleo interests examine records

(ice, sediment, tree rings, etc.) aimed at reconstructing past climates in order to understand, model and predict the climate system.

It is also clear that CMOS is more than a "learned society", with a focus not only on its relevant sciences but also on its professional activities.

- There is a strong applications component to our field, beyond historic operational forecasting and research interests.
- There is now a significant private sector associated with meteorology and oceanography.
- There are strong associations with fields such as computing, engineering and communication.
- There is a large body of weathercasters now endorsed by the Society.

Over the last 10 years there has been a considerable expansion of the Society and its activities, including interactions with others. These developments have evolved in concert with the evolution of the Society towards more professional management. To move ahead, it is crucial that CMOS maintain its strong roots while broadening its scope.

As a Canadian Society with this vision, it is also critical that CMOS

- be recognized as a strong voice in meteorology and oceanography in Canada, and
- be seen in this light internationally.

CMOS is already achieving the above two functions to a considerable degree. For example, nationally, CMOS has strongly supported research and operations. It has and still is supporting the private sector, and it was instrumental in developing and maintaining the Canadian Foundation for Climate and Atmospheric Sciences. Internationally for example, its refereed journal (Atmosphere-Ocean) has been ranked 10th of the 42 oceanographic journals throughout the world. However, much more can and should be done.

It is important to realize that many members of CMOS are also members of other societies in other countries such as the American Meteorological Society, the American Geophysical Union, and the Royal Meteorological Society of the United Kingdom. These societies are much larger than CMOS and have far greater resources. Nonetheless, CMOS is the only one that focuses on Canadian issues. The effectiveness of CMOS is strengthened through its members who belong to such bodies and can apply their international experiences and activities to the Canadian scene.

To be able to achieve and maintain its aim, CMOS must continue to attract a substantial fraction of the community engaged in meteorological and oceanographic affairs in Canada.

2. CMOS ACTIVITIES

To achieve its aim, CMOS has purposely established itself as the representative body of the oceanographic and meteorological communities in Canada. It has done this through numerous communication, co-ordination, education and advocacy activities.

Current activities that are offered by CMOS to the atmospheric and oceanographic communities are:

- An Annual Congress (where some 450 papers/posters are presented).
- A referred journal (Atmosphere-Ocean is published 4 times/year).
- A professional hard copy Bulletin, mailed to all Members 6 times/year.
- A comprehensive web site, at www.cmos.ca.
- An Annual General Meeting (AGM) open to all Members and other interested individuals.
- Outreach educational material such as Project Atmosphere, and a major Teachers Day at Congresses.
- Organizing and supporting a national Tour Speaker program.
- "Lobbying" of government and funding agencies.
- Sponsorship of conferences.
- Provision of scholarships and awards.
- Student travel bursaries.
- Supporting regional youth science fairs.
- Position statements regarding critical scientific issues.
- 'CMOS initiated' documents.
- Organization of working groups and reports on behalf of other organizations.
- Documents initiated by others but produced in part through CMOS sponsorship.
- Management of Canadian National Committees (CNCs) for oceanographic research programs (SCOR) and ocean engineering (ECOR), and for some programs of the Intergovernmental Oceanographic Commission (IOC) of UNESCO.
- Provision of display opportunities for "exhibitors".
- Developing and administering standards of professionalism.
- Accreditation of consultants.
- Endorsement of weathercasters.
- Provision of "symbols" of CMOS history and continuity.

In addressing the above activities - all need to be maintained, some need to be strengthened, and additional proactive initiatives need to be developed. Future actions that will be taken include:

- Consideration of associate and/or *ex-officio* affiliations with other organizations that have similar interests as CMOS.
- Encouragement to CMOS Centres for the planning and organization of regional workshops by offering financial assistance as is the case for CMOS Congresses.
- Consideration of joint conferences with other Societies, bearing in mind cost sharing of profit and losses.

- Enhancement of our role in the area of professional standards.
- Improvement to our communication and public outreach initiatives.
- Hosting national and international working and study groups.

In general, CMOS has been relatively 'passive' in respect to the organization of regional and/or focused workshops. It has normally sponsored a few of these per year but it has not done so in a proactive manner. Undertakings of this nature will be aggressively pursued to become a normal function of CMOS Centres.

To broaden the scope of CMOS, it will work with other groups that can offer some special services or interests within our area of interest. This will take the form of some unique new advance in technology, modeling or advancement in associated sciences. In return CMOS will offer its well-recognized experience in the development and application of standards as the case for the CMOS consulting and broadcast fields.

3. THE ORGANIZATIONAL STRUCTURE OF CMOS

The CMOS Executive and Council represent the core structure of the Society.

- The Executive Committee consists of the President, Past-President, Vice-President, Treasurer, Corresponding Secretary and Recording Secretary. The CMOS Executive Director and the Director of CMOS Publications are *ex-officio* members of the Executive Committee.
- The Council consists of the Executive, Chairpersons of Centres/Chapters and Committees, as well as elected Councillors-at-Large (normally three, but it is proposed that they could number up to five in any one year). Councillors-at-Large have not been members of the Executive Committee to date, but they will be made so in order to expand the role of the Executive in preparing reports, studies, analyses for Council and the Society.
- Executive Director's Office.
- Centres are: Vancouver Island, BC Lower Mainland, Southern BC Interior Chapter (Kelowna), Alberta (Edmonton), Saskatchewan, Winnipeg, Toronto, Ottawa, Montreal, Quebec City, Rimouski, Fredericton, Halifax and St. John's.
- The Annual General Meeting (AGM) is the vehicle to report progress, raise possible new initiatives, review the CMOS budget and audit of CMOS finances, elect officers, and propose changes to the CMOS Constitution and By-Laws as appropriate.

The Objectives of CMOS are advanced through the activities of its members and its committees (see Attachment I):

• To present current information in meteorology, atmospheric science, hydrology, limnology and oceanography to students and the public, and to other scientific organizations.	School and Public Education Committee, External Relations Committee

• To encourage and facilitate dialogue in the scientific community.	Scientific Committee, Publications Co-ordinating Committee, Private Sector Committee, Prizes and Awards Committee
• To provide opportunities for continuing education for members.	University and Professional Education Committee, Private Sector Committee
• To establish standards of accreditation and endorsement for its members and the protection of the public.	Weathercaster Endorsement Committee, Consultant Accreditation Committee

The present organizational structure has served CMOS rather well but changes have been suggested. Several of the larger Centres such as Vancouver, Toronto, and Montreal could be sub-divided to facilitate some meetings. The observation that has been made in these locales is one of little interest in organizing yet another seminar. Thus a smaller unit, such as a single university or establishment could deal with special topics or activities of their interest under a CMOS banner.

The responsibilities of the current Executive Members and Executive Office are reasonably shared. However, with the expanding growth in CMOS, the President and Executive Director are shouldering more responsibilities than ever before. It is now common for a 100 or more e-mails a week to be sent to the Executive Director alone; the President now has additional responsibilities in regard to the Canadian Foundation for Climate and Atmospheric Sciences. As well, 'life' has changed and there is intense competition for our members' time, which means that less volunteer time is available.

Now with the Executive Director's office assuming total responsibility for all CMOS business affairs, some of which were previously contracted out, CMOS has engaged a business manager to run the financial affairs of the Society. The purchase of new database software also gives this office more capability in maintaining up-to-date records of memberships, subscription and representation on committees, etc. The direction and policy of CMOS still remain as functions of the CMOS Council and Executive, and ultimately the AGM.

There is an urgent need to strengthen the Executive Committee with members that have no specifically assigned responsibilities but who can undertake investigative tasks as assigned to them by the Executive. The CMOS Councillors-at-Large will take on this role in the future. At the present time Councillors-at-Large have no role, except to provide wise council and ensure a wider representation of the community at Council meetings. There is already a very large Council, around 30 or so, so it is hard to justify the position of Councillor-at-Large merely on the basis of wider representation on Council. Councillors-at-Large will be mandated with specific short-term duties and be required to report on progress regularly at Executive and/or Council meetings. Envisioned roles include such issues as to represent and provide continuity for Annual Congresses, prepare guidelines for the preparation of regional workshops, assess the pros

and cons of conference partnerships and conduct in-depth studies and reviews on issues of concern to the Society. (Attachment II provides a discussion of these possibilities)

The lack of involvement of the Operational Meteorological community within CMOS has been an ongoing issue. Despite the fact CMOS has debated this issue for years there has been no progress in drawing these potential members into the Society. Members of that group will be invited to identify their specific interests and activities they would want to see from CMOS.

At one time "Special Interest Groups" were quite active in CMOS, their life depended on the enthusiasm of the organizing chairperson. Once he or she departed from the scene the follow-up failed to carry the Group forward. Since no new Special Interest Group has emerged in the past ten years their continued representation in the By-laws will be deleted.

In addition, CMOS will consider whether it can do more to address student needs. An *ad hoc* group will be formed to address this issue and to recommend what, if any, activity beyond those currently being done is worthy of consideration. Organizers of Congresses will be encouraged to add an informal student session at an Annual Congress to discuss issues such as job opportunities, stipends and tuition, and provide a venue for students to meet and greet potential employers in government, business and universities.

4. CMOS HUMAN AND FINANCIAL RESOURCES

CMOS has been reasonably successful in finding volunteers to serve as chairpersons of Centres but not quite as well in selecting committee chairpersons. For the latter the committees themselves have been asked to name their respective chair replacements. In reality this policy is sound but not very effective, all too often committees have carried on without a chair. Ultimately the Executive is obliged to find a chair and if not someone on the Executive should fill that vacancy. To say the least this does not answer the problem. A better solution is to mandate a Councillor-at-Large to track committee memberships and seek out potential replacements as suggested in Attachment II.

CMOS needs volunteers to take leadership roles within the Society and to step forward to help out with a myriad of tasks. CMOS can only function in this manner. To help achieve this, it is critical that:

- CMOS finds interesting, challenging and satisfying work for volunteers.
- CMOS find improved ways of 'thanking' its volunteers.

CMOS also needs funds to carry out its goals. Funds are needed for:

- Travel support.
- Telecommunications.
- Lobbying.
- Budget for Committees.

Specific funding increases above that currently being used include:

- Additional funds for supporting the CMOS Executive Director's Office.
- Funds for Committees for more telecommunications and meetings.
- More travel support for lobbying efforts.
- Contracts to underwrite working groups.
- Specialized meetings and workshops.

A Fund Raising Policy Paper and Implementation Plan is needed to provide guidance on how the Society could and should raise funds, whether it be for charitable purposes or for general revenue.

5. CONCLUDING REMARKS AND RECOMMENDATION

CMOS is the only society in Canada concerned with the atmosphere and ocean, including interactions with hydrology and fresh water bodies. CMOS has a long and proud history of success.

To move ahead in these challenging and exciting times, CMOS must improve and discuss its future, in the context this document. The CMOS Executive and the CMOS Councillors-at-Large will finalize this document with the help of others and once approved by the Executive and Council present it to the AGM for adoption along with any necessary changes to the CMOS Constitution and By-Laws. In the meantime many of the issues and principles that are outlined in this vision paper will be acted upon in the short-term insofar as is feasible, to meet some of the identified needs.

September 7, 2004

ATTACHMENT 1: CMOS COMMITTEES

The following committees are listed according to their main core activity:

I. INCOMING MEMBERS

Membership Committee:
1. To encourage potential members to join CMOS.
2. To support the CMOS Executive and Council on membership matters as required.

II. EDUCATION

School and Public Education Committee:
1. To enhance and promote school and public education in Canada.
2. To support the CMOS Executive and Council on school and public education matters.

University and Professional Education Committee:
1. To enhance and promote university and professional education in Canada.
2. To support the CMOS Executive and Council on university and professional education.

Publications Co-ordinating Committee:
1. To set policies on the content, style, format and related matters pertaining to CMOS publications.
2. To support the CMOS Executive and Council on publication matters as required.

III. SPECIAL INTEREST COMMITTEES

Scientific Committee:
1. To serve as the focus for scientific issues of importance to the Society.
2. To identify and promote research issues of importance to the Canadian research community in meteorology and oceanography.
3. To work with the other CMOS committees as appropriate to present scientific issues to government and public.
4. To adjudicate the CMOS/Weather Research House Scholarship applicants for the award of this scholarship.
5. To support the CMOS Executive and Council on scientific matters as required.

The Private Sector Committee:
1. To serve as the focus for private sector issues of importance to the Society.
2. To advocate, as necessary, for and on behalf of the private sector in meteorology and oceanography, in the context of societal activities and initiatives.
3. To support the CMOS Executive and Council on private sector matters as required.

IV. SELECTIONS

Nominating Committee:
1. To nominate the upcoming year's slate of Executive members.
2. To support the CMOS Executive and Council on executive matters as required.

Prizes and Awards Committee:
1. To select candidates for prizes and awards for presentation at the annual CMOS Congress.
2. To support the CMOS Executive and Council on matters of prizes and awards as required.

Fellows Committee:
1. To select new Fellows for CMOS to be announced at the annual CMOS Congress.
2. To support the CMOS Executive and Council on matters dealing with Fellows as required.

V. STANDARDS

Weathercaster Endorsement Committee:
1. To ensure that the qualifications of Canadian weathercasters endorsed by the Society are credible.
2. To foster the establishment and maintenance of a high level of professional conduct in the presentation of weather to the public.
3. To support the CMOS Executive and Council on broadcast matters as required.

Accreditation Committee:
1. To ensure that a basic level of qualifications has been achieved and recognized in meteorology or oceanography for anyone engaged in meteorological/oceanographic consulting.
2. To foster the establishment and maintenance of a high level of professional competency and mature and ethical counsel in the field of consulting meteorology.
3. To support the CMOS Executive and Council on accreditation matters as required.

VI. ADVOCACY

External Relations Committee:
1. To represent the interests of CMOS and present such views to other groups or bodies.
2. To act as an advisory group to the Executive and Council on CMOS discussions with others on matters linked to Canadian meteorological and oceanographic research and science.
2. To support the CMOS Executive and Council on external relation matters as required.

ATTACHMENT II: POTENTIAL RESPONSIBILITIES OF COUNCILORS-AT-LARGE

The Executive Director and staff in the Executive Director's office are already undertaking many of the following suggestions to some degree. These suggestions are intended to spread the workload burden and to provide specific mandates for Councillors-at-Large. The following is a shopping list, outlining a wide range of possibilities. The following list of possibilities need not be implemented in any given year. The CMOS Executive will use its discretion to decide on the interest and priority to assign the following responsibilities to Councillors-at-Large on an annual basis.

1. Liaison outside of CMOS

A designated Councillor-at-Large would follow, liase and report on the interests of related organizations, such as CFCAS, Royal Society, CGU, PAGSE, ICSU and others. Emphasis would be on the undertaking of joint ventures, co-ordinated assessments and policies spanning related groups, and identification of outreach opportunities. Liaison with such bodies need not be assigned to just one Councillor-at-Large; there are sufficient differences amongst such bodies to justify the interest and attention of several individuals.

2. Liaison within CMOS

Many agencies have standing committees on administrative matters to review and recommend actions on an ongoing basis. At present CMOS relies on busy Council meetings and AGMs to have such issues discussed on a broad basis. Several standing committees, to mirror those of sister agencies, are possible in CMOS, such as a finance and investment, publications, communications, and possibly others.

2a. A Finance and Investment Committee, consisting of the CMOS Treasurer, the CMOS Business Manager and a Councillor-at-Large would: analyze revenue and expenditure trends, assess overheads and needed support costs, assess investments and liabilities, identify new initiatives that may require fund-raising activities, review bids from prospective CMOS auditors, etc.

2b. A Publications Committee already exists for CMOS, but it only meets annually. A Publications Committee, consisting of the CMOS Publications Director, the CMOS Webmaster, the CMOS Bulletin Editor, the A-O Editors, and a Councillor-at-Large would act as a sounding board for change/enhancement/review of all visible CMOS publication efforts, including possible new initiatives.

2c. A Communications Committee would be formed consisting of the CMOS Executive Director, the CMOS Publications Director and a Councillor-at-Large. Also included could be the Chair of the LAC for the Congress-of-the-year, and the Chair of the Scientific Committee. CMOS undertakes a number of high profile

activities that could be publicised through press releases and other outreach activities. We need to advertise, or we will never be become known, nor consulted. Press releases on CMOS policy statements, or reactions to government initiatives on program reductions or enhancements, major award winners, elected fellows, tour speaker events are all examples of what would be done to enhance the image of CMOS. The preparation of pamphlets on CMOS and its initiatives, posters, PR material, etc. would be considered by a Communications Committee.

3. Strategic Planning

Analysis and preparation of specific position papers (CMOS vision paper), review and amendment of bylaws, assessment of how local centres are prospering or not and how they might be helped, etc. could be subcontracted to one or more Councillors-at-Large, under the guidance of the Executive Director.

4. Congress Scientific Programs

Council traditionally has very little input to the scientific programs of Congresses. Council selects venues and approves LAC Chairs for Congresses. There tends to be some continuity from Congress to Congress in the way of theme sessions since there is obvious interest in having a successful program, often based on the immediate experiences of the most recent Congress. A Councillor-at-Large, mandated with a view to thinking 3-5 years in advance, would pave the way for future Congress sessions. Some sessions might go to other organizations if a proactive CMOS stance is not taken. There are many programs that have planning horizons in a 3-5 year range; most of the CFCAS and NSERC network grants for instance. If the seed is planted early by a Councillor-at-Large or some other appropriate CMOS mechanism, these major programs might be persuaded to have wind-up or interim sessions at CMOS Congress. Also, some continuity within Council is needed on important issues that have been started but need an advocate if they are to grow and prosper in future Congresses, such as teachers' day, women in meteorology and oceanography, etc. Council intervention and a long-range view is needed, and some proactive preliminary work undertaken, if CMOS is to maximise contributions and benefits. Local scientific program committees will be appreciative of any extra thinking and suggestions with respect to their specific programs.

5. Special Issues of A-O

Special issues of A-O on particular themes (Northwater, MAGS, etc.) are a boon to Canadian science. They synthesize research results in one place. They highlight accomplishments and provide a scientific accounting of efforts expended. They are flagship volumes for scientists and for CMOS. These special issues usually occur because of the interest of a particular scientific program leader, or A-O editor who has thought ahead – however these opportunities can, and often do, go elsewhere for publication of results. A Councillor-at-Large, or some other CMOS mechanism such as a specific mandate of a Publications Committee, could be planning ahead on a 3-5 year time horizon to encourage major Canadian programs or subsets of international programs,

to publish their results in special issues of A-O. As for the case of long-range planning for Congresses, CMOS should have a long-term view and proactive approach to ensuring a suite of special issues for future publications.

6. Representation on CMOS Committees.

A Councillor-at-Large could be charged to review, with the Chairs of all committees, the membership representation on all CMOS committees with the aim of having the adequacy of numbers, terms of office, rotation, etc. regularized. CMOS would then have a proactive mechanism that would ensure the necessary representation and chairmanships on all committees. Some CMOS committees already undertake this function rather well, while others do not. A Councillor-at-Large would see that all appointments are handled uniformly across all committees, and would ensure one non-committee member (a Councillor-at-Large) to be part of the membership selection process.