

Mid-Term Review of the American Meteorological Society 10-Year Vision

1. Introduction

The American Meteorological Society in 2010: A Vision for the 1st Decade of the 21st Century was adopted by the Council of the American Meteorological Society (AMS) on 10 January 1999 (<http://www.ametsoc.org/EXEC/TenYear/>). The Council has directed that a mid-term review of progress toward implementing the Vision be conducted, and created an ad-hoc Mid-Term Review Committee, chaired by Mary Glackin and Phil Arkin with Charles Hosler as senior advisor, to carry out the review. This report summarizes our findings and recommendations.

1.1 Committee Charge

To conduct a review of the Society's progress in implementing the 10-Year Vision Study and suggest any needed actions the Society should take to better position the Society to achieve this Vision.

1.2 The Context

The Vision resulted from a study undertaken to “consider external changes and what they imply for the Society”. It confirms the objectives of the Society as documented in the Constitution as “the development and dissemination of knowledge of the atmospheric and related oceanic and hydrologic sciences and the advancement of their professional applications”. The Vision states “that the pace of change in our fields and our environment has increased and the AMS will serve its members and society well only if it is sensitive and responsive to these changes.” It identifies and makes recommendation in five areas: Multidisciplinarity, Inclusiveness, Outreach, Computers and Communication Technology, and Finances. Thus, the Vision provides strong strategic direction for the Society but not a comprehensive strategic plan. Accordingly, this Review did not conduct a review of all the Society's activities but focused on those activities responding to the Vision and an examination of major external changes. This latter category includes the significant economic downturn in the U.S. economy beginning in the late 1990s and the war on terrorism which is dominating public policy agendas. It should be noted that the Society took on other major activities not in response to the Vision in this time period, including the refurbishment of the AMS headquarters in Boston and a study aimed at addressing the recommendations of the NRC report “Fair Weather: Effective Partnerships in Weather & Climate Services.”

1.3 Approach

This Review was conducted by a committee comprising 5 subcommittees aligned to the five areas of the Vision. Subcommittee Chairs and members were recruited and an AMS staff member was identified to provide support to each subcommittee. Membership of the subcommittees is shown in Appendix 1. An initial meeting of the full committee was held at the AMS Annual Meeting in Long Beach, CA, in February 2003, and several conference calls were held during 2003 to review progress and to insure appropriate

communication among the subcommittees. A draft report was presented to both the AMS Council and the membership of the Society at a Town Hall Meeting held in conjunction with the Annual Meeting in Seattle, WA in January 2004. A second draft incorporating feedback from those groups was completed and reviewed by the Executive Committee and Council during Spring and Summer 2004, and the current version reflects additional changes in response to their comments. Comments received during the period of posting will be addressed in the final document, which will be presented to the Council and the membership at the Annual Meeting in San Diego in January 2005.

2. Principal Findings

2.1 Multidisciplinarity

The AMS Ten-Year Vision includes a specific chapter on “Multidisciplinarity.” This chapter states that many atmospheric processes cannot be analyzed, understood and predicted if not considered a part of the Earth System. In addition, our understanding of this integrated system has its greatest value, to the widest possible audience, if it is placed in the context of social, economic, and environmental benefits and public affairs. The Vision calls for an effort to enhance the role of the AMS in topics that have strong links to the atmospheric sciences and which reflect areas of common interest and goals, common requirements for education, observations and technology, or common needs for public and political support.

The Scientific and Technical Activities Commission (STAC) is one of the principal operating bodies of the Society and has a primary charter to coordinate opinion and stimulate activity in any scientific or technological subject of interest to the Society. Thus much of the Society’s effort to enhance linkages across diverse and growing disciplines originate from within this Commission. There are currently two boards and thirty committees organized under the STAC. A few of these address interdisciplinary topics that are described in the Ten-Year Vision: e.g., the Vision statement includes air-sea interaction, and STAC has an existing committee entitled Interaction of the Sea and Atmosphere. However, the major topics identified in the Ten-Year Vision, including coupled land-ocean-atmosphere interactions, biogeochemical cycles, integrated observing systems, and human dimensions of weather and climate, are not represented explicitly in the STAC committee structure.

The Commission, on the basis of extensive and continuing discussions, has approached the goals of the Ten-Year Vision on multidisciplinarity along several paths:

1. Establishing cross-cutting boards that draw at least some membership from the established committee structure. Following several years of preliminary efforts, in 2003 the *ad hoc* Board on the Urban Environment was established as the first permanent board within the STAC as an initial step to better serve cross-discipline efforts. Recently (Fall 2004) a second permanent board was established within STAC, namely, the Board on Societal Impacts. Based upon these early successes, STAC intends to continue exploring other opportunities for Board development in cross-discipline areas that are relatively large in scope, have significant development, and are likely to remain highly visible for many years.

2. Actively participate in identifying and promoting over-arching themes for the Society's annual meeting.
3. Identify potential cross-discipline collaborations and encourage co-convening their specialty conferences at a common venue.
4. Increase interaction within the Commission and proactively seek additional opportunities for multi-disciplinary activities.
5. Regularly evaluate committee structure, and committees' terms of reference, in light of the focus on multidisciplinary and identify and execute minor modifications or changes as appropriate.

The American Meteorological Society has a long history of promoting interdisciplinary and multidisciplinary meetings and symposia. Organized symposia on Global Change Studies have occurred every year since 1990, and Conferences on Climate Variations, which frequently include topics that are interdisciplinary, have occurred eight times since 1981. A significant component of the restructuring of the Annual Meeting inspired by the Vision was increasing the number of interdisciplinary and multidisciplinary sessions held there. Since 1999, each annual meeting has included two special themed multidisciplinary symposia in addition to the regular interdisciplinary components (such as the Global Change Symposium, the Education Symposium, IIPS, and others). These themed symposia have included specific efforts to involve the education, social sciences, hydrology, health, information technology, and observation systems communities in an interdisciplinary mode. The number of symposia and their content suggests good progress toward the Ten-Year Vision, although we are still far from including all of the topics indicated in the strategic plan. Further, many topics that have strong linkages to the atmospheric sciences could be strengthened by having semi-regular symposia –links to the social sciences through weather and climate impacts, information and technology assessment and use, and links to hydrology are key examples.

Earth Interactions, especially with the appointment of an editor whose own research is highly interdisciplinary, is a major publication avenue that supports multidisciplinary and interdisciplinary research. The new format of the Bulletin and the efforts to promote greater communication across the discipline also brings a strong element of interdisciplinary communication and publication.

The Ten-Year Vision calls for a reevaluation of what constitutes a Member, and how related sciences should be reflected on the Council and the Boards of the AMS. The statement on membership and governance has not changed as a result of the Ten-Year Vision with regard to multidisciplinary areas, although there is strong evidence that AMS is welcoming to members from disciplines that are related to the atmospheric sciences.

AMS provides a significant number of awards and scholarships, most of which focus on disciplines, for members and for students. Two awards, the Robert E. Horton Lecturer in Hydrology and the Walter Orr Roberts Lecturer in Interdisciplinary Studies, have a true interdisciplinary nature. Both awards existed prior to the Ten-Year Vision. Since the Vision statement, new awards include the Charles E. Anderson Award for outreach, particularly in the area of diversity, and awards that recognize Teaching Excellence, Outstanding Local Chapter, and Outstanding Student Local Chapter. However, even in

areas of strong intersection with the Society, such as hydrology, there is still not enough recognition through awards. Implementation of the Vision recommendation for the Society to consider new awards, reevaluating criteria for selecting current awardees or for adding multidisciplinary criteria to awards is not evident from the list of AMS awards for either members or students. A much stronger statement by the Society would result from establishing an interdisciplinary award with the stature of the Rossby, Charney, Suomi or Sverdrup Medals and Awards that specifically focus on creating stronger scientific linkages between atmospheric sciences and other disciplines in particular physical, ecological and social sciences.

The Ten-Year Vision calls for a broadened outreach to foreign and university communities involved in non-meteorological sub-specialties. The importance of international linkages is specifically outlined in the Vision. The AMS has specifically sought international members and councilors, but there does not appear to have been a focus on multidisciplinary in this effort.

The development and implementation of the Global Earth Observing System of Systems (GEOSS), aimed at ensuring that comprehensive observations of the Earth System are organized and coordinated such that human society benefits optimally, pose major challenges to the communities represented by the Society. These challenges are inherently multi-disciplinary in nature and have substantial human dimensions. The development of well-founded plans for and the implementation of GEOSS will require substantial technical, scientific, and societal debates, and the AMS can play a valuable role in this process by providing opportunities for the necessary multi-disciplinary debates and discussions.

Three actions would considerably enhance the achievement of the Society's Ten Year Vision with regards to multidisciplinary:

- STAC should continue to actively seek to develop entities that would promote interdisciplinary research topics. Biogeochemical cycles and the human dimensions of weather and climate are key areas where AMS could have an immediate impact.
- Many topics that have strong linkages to the atmospheric sciences could be strengthened through regular symposia at the Society's Annual Meeting or other relevant Conferences. The Symposium on Global Change and Climate Variations, which has been held annually since 1990, is an excellent example of how productive such gatherings can be. We recommend that the AMS identify opportunities for similar series of symposia devoted to high priority topics. Possible candidates might be taken from the set of topics used for the Interdisciplinary Symposia at the Annual Meeting since 2000, such as: weather and climate impacts and policy, water in the Earth System, and others.
- AMS should establish an interdisciplinary award with the stature of the Rossby, Charney, Suomi or Sverdrup Medals and Awards that specifically focuses on recognizing and rewarding strong scientific linkages between atmospheric sciences and other disciplines.

2.2 Inclusiveness

The 10-year vision study identified “inclusiveness” as one of the long-range goals of the Society. The executive summary begins with the simple statement: “The AMS must be a more “inclusive” society”, which is further clarified as “The AMS should provide services and support to those who generate, apply, disseminate and use our products, as well as to our scientific base.” The Vision includes four specific recommendations aimed at making the AMS a more inclusive society regarding local chapters, association with professional societies in other nations, gearing distance learning and special talks to private sector interests, and improving the annual meeting. Here we focus on particular groups cited in the Vision: students, faculty, private and government sector practitioners, nonscientists interested in weather, scientists and engineers from related fields, scientists from other countries, decision makers, and underrepresented groups (i.e., women and minorities).

Enhancement of the role of local chapters and their important link to the national AMS and community they serve is a critical initiative of the AMS. Documentation and publication of “best practices” from local chapters that have been most successful in enhancing general awareness of scientific activities, positively impacting their communities and contributing to the vision and goals of the national AMS, will encourage and assist other chapters to improve their performance. In addition, efforts to give local chapters more exposure and make chapter news more appealing to the broad readership of the *Bulletin of the AMS (BAMS)* should continue and be expanded.

AMS has taken effective actions to foster close association with professional societies in other countries. For example, in September 2002, the AMS and the European Meteorological Society (EMS) signed a formal agreement for increased and mutually beneficial interaction, including non-conflicting meeting dates; representation by each society at the others Annual Meeting; co-sponsorship and promotion of each others meetings; and cross-promotion of each others books and journals through publications and web sites. In addition to this formal society-to-society agreement, AMS cosponsors and / or participates in some fashion in a variety of international meeting. These activities should continue and expand.

The AMS must attract and retain enhanced private sector membership in order to facilitate better cooperation among the public, academic and private sector and to emphasize the wealth of knowledge and perspective that each sector contributes to the Society. A number of specific activities intended to involve and interest this sector have been initiated. The Annual Users Conference and continuing education and distance learning aimed at the private sector have been established to allow private industry to communicate their research or research needs as well as learn what is being done in other sectors. In addition, recent Annual Meetings have included several programs specifically intended to attract private sector participants. Finally, changes to the Bulletin, such as “NOWCAST”, which welcomes short contributions of general interest, have enhanced the Society’s interaction with its private sector members.

The Annual Meeting of the AMS was redesigned in response to the 10-year vision study and survey data shows positive response to the changes. The meetings hosts the largest exhibit anywhere of products and services in the atmospheric and related sciences, and with an attendance of nearly 2500 stands as the largest gathering of those participating and interested in the atmospheric sciences and related fields. Multidisciplinary sessions,

the recently established Users Conference and associated international sessions in the week preceding the AMS annual meeting as well have improved the breadth of appeal of the Society's flagship event. Various short course offerings add to the impact of the Annual Meeting itself, as does extensive media coverage. Overall, the programs of recent Annual Meetings show a clear intent on the part of AMS to broaden participation. Future Annual Meeting organizers and conference chairs should continue this focus, which is also relevant to regional and local AMS meetings.

Overall, it is clear that AMS as an institution is broadly committed to becoming a more inclusive society. The Society has taken action to create an environment that attracts professionals from across the atmospheric, oceanic, and hydrologic sciences, both in the United States and abroad, as well as nonscientists and the public at large. Student membership in the AMS has recently increased dramatically in response to specific targeted actions by the Society. AMS leadership has attempted to assure a more balanced representation of Government, Academic, and Private Sector members on the Council and other Committees within AMS. The AMS, through the Board on Women and Minorities (BWM), has taken on the challenge of reaching and attracting people from underrepresented groups, and has developed a number of opportunities for individuals in those groups to interact with one another and with the broader membership of the Society. Finally, the AMS has reached out to nonscientists and the public through successful activities such as the Weatherfest, regional and local meetings, creation of an inexpensive Associate Member designation, and development of pre-college local chapters. All of these efforts are consistent with and promote a more inclusive organization.

The following recommendations are considered both doable and capable of impacting several of the groups that are discussed in this report.

- Further expand AMS student travel grants to encourage student participation and to show students the commitment of the AMS to its student members. Aggressively market the effort to ensure all AMS members know to apply and secure approval.
- Follow-up and support efforts by the AMS Local Chapter Affairs Committee and Board on Pre-College Education who have teamed to publicize formation of new Pre-College (K-12) Local Chapters to encourage the interest of young men and women in the atmospheric and related sciences.
- Find ways to encourage more faculty membership in the AMS since faculty have a significant impact on student participation in AMS. This must include identifying ways to increase relevance of the AMS to faculty members.
- Pursue Private Sector members in key positions of AMS leadership and as committee members. Identify and promote specific benefits of AMS membership to Private Sector members and organizations.
- Investigate the findings from the "Fair Weather: Effective Partnerships in Weather & Climate Services" NRC report, and track implement the relevant recommendations.
- Develop a strategic plan to garner more operational government meteorologist involvement in AMS activities. Maintain focus on operational articles in *BAMS* to demonstrate commitment to operational meteorologists and forecasters

- Identify and promote specific benefits of AMS membership to operational government (NOAA and Department of Defense) members and organizations
- Support the initiative to develop an integrated, multidisciplinary approach to hydrometeorological education.
- Continue aggressive efforts to attract people from underrepresented groups, to include strong support for the Board for Women and Minorities. Consider leveraging on successful program already established, e.g., NOAA’s efforts to support Minority Serving Institutions, as one means of increasing participation of women and minorities in AMS.
- Identify those local chapters which have been most successful in offering programs which increase the diversity of participation and try to pass “best practices” from these chapters to others.
- Create a link or highly visible section (non-technical) on the AMS homepage geared towards weather enthusiasts to capture their interest and make them return to the page for updates or new information.

2.3 Outreach

The Ten-Year Vision Study stated “The AMS must place greater emphasis upon reaching out to the broad spectrum of our public. We must pay great attention to having a positive impact on public policy.” Specific areas of focus for outreach were identified as increasing the effectiveness of input to federal policy; building capacity through education and curriculum development; broadening efforts in public information toward youth, weather enthusiasts, and the public at large; and broadening and increasing of the effectiveness of partnerships between the public and private sectors.

The Society influences public policy through issuing policy statements, working to support a variety of relevant Federal programs, and dealing with opportunities to influence public policy related to its area of interest. All of these operate principally through the efforts of AMS Council and staff, and sometimes require agility and quick response. The AMS should consider creating a periodic “Report Card for the Atmospheric, Oceanic and Hydrospheric Sciences” that would consolidate and publicize the current public information and positions of the Society. The AMS has been very active on the Hill in supporting the allocation of Federal funds to support critical research and operational needs, and has a unique position and responsibility to speak for its members on the use of public funds and public policy issues affecting the atmospheric and hydrologic sciences. A careful strategy on which priorities are established and resources allocated for such activities should be developed. In addition, the Society may find it useful to assist associations that represent industries whose activities are sensitive to weather and climate in their efforts to enhance programs in the atmospheric and related sciences and the application of these sciences to their needs.

The society has been highly successful in developing instructional materials on the earth-atmosphere system, teacher training, and resource networks of teachers for scholastic systems throughout the United States. This increases the scientific literacy of the general student population and introduces broader career and educational opportunities to qualified students. New horizons have opened for continuing education of professionals

using the Internet and course materials available at Web sites. The AMS, working with universities, UCAR, and federal agencies, broadcast meteorologists, and the WMO, should identify the need for instructional materials, identify the entity who has or will develop them, and either serve as broker or originator to facilitate their availability to its members. Making such materials available to developing countries will also benefit the broad community. The AMS has been highly successful in developing institutional and individual support for undergraduate scholarship and graduate fellowship programs aimed at introducing highly qualified students to the atmospheric and related sciences. The Society must plan to continue this successful program and maximize its effectiveness in attracting and retaining key future leaders in our field.

Future support for the atmospheric and environmental sciences, and future growth of understanding of the need for natural resource protection, depends upon increasing levels of scientific literacy in the student and general populations — in particular among leadership groups. Ten-year planning issues for the AMS include the evaluation of appropriate public information and education programs the Society might undertake, analysis of the effectiveness of existing AMS education programs in enhancing scientific literacy in the broader population, and consideration of possible collaboration between AMS and other scientific (and similar) organizations in pursuing public information activities. The Society should capitalize on opportunities afforded by broadcast meteorologists, science writers and public information vehicles such as National Public Radio and Nova to enhance outreach to the general public.

Many questions of public and private sector interaction on the development and use of atmospheric and other environmental information and data have arisen in recent years. Recognizing the diversity of the private sector, the Society can serve all of its members, as well as the national interest, by offering its resources to address aspects of these questions in the context of a nongovernmental professional organization. Planning questions to be addressed before undertaking such activities include 1) how the Society would serve all of its members in this role, 2) the specific issues to be addressed, and 3) the mechanisms for AMS involvement. In this context the AMS response to the “Fair Weather: Effective Partnerships in Weather & Climate Services” NRC report will be critical.

The Atmospheric Policy Program (APP), which sponsors post-doctoral and senior Fellows, a Summer Colloquium Series, curriculum development efforts, and regular Special Topic Study Series, has achieved a significant impact in its first several years of operation. It is now necessary for the Society to begin to develop methods of assessment that will inform the membership of the positive impacts and costs of the program. Consideration of the proper long-term role of the AMS in fostering the APP and similar efforts is needed.

In summary, the key recommendations the AMS should consider include:

- Continue to strengthen the public policy program through careful evaluation of program results and partnership building.
- Continue efforts to promote environmental literacy both through formal education programs and through outreach to the general public.

2.4 Computers and Communication Technology

The Ten Year Vision states AMS should take advantage of advances in electronic communications technology over the next 10 years. Advantages include greater two-way access to various communities of scientists and visualizations that remove the limitations of the printed page. Disadvantages include loss of "face to face" scientific interactions. The four CCT areas are Meetings, Publications, Membership Support and Servicing, and Support for Outreach to the Public.

Enhancement of AMS meeting support is continuing to improve as implementation of the recommendations of the Vision progresses. Online registrations and abstract submissions for meetings have been accepted since 1998, and close to 90% of registrations are now done online. A central server for all computer files associated with oral presentations at a meeting that could be accessed by satellite computers in any meeting room was implemented at the Orlando conference in November, 2003, and again used at the Seattle AMS Annual Meeting. Some electronic poster capability has been made available at Annual Meetings recently. The Society should continue to use and refine a central server for oral presentations at meetings, and provide for electronic submission of computer files associated with oral presentations via the Web. Efforts should be made to address and implement as many as possible of the recommendations of the Ad Hoc Committee on Meetings. They include: (1) "Hybrid-virtual meetings should be implemented in the future." (2) "Video conferencing capabilities should be enhanced both in real time and archiving to augment our outreach to other countries."

The Ten-Year Vision emphasized the need for increasing efficiency in scientific communication. The Society has improved the online aspect of the publication process enormously, by making journal articles available online in a variety of forms, searchable in many cases, by permitting the posting of abstracts with links to complete text once a paper is accepted, and by making the electronic version of articles the official and archival version. As computing technology continues to advance, further improvements are possible. The AMS should continue to enhance the content and usability of its web site, investigate the establishment of Metajournals that could be tailored to individual subscribers, and continue to monitor issues associated with open access to online journals.

Advances in computing technology have continued to make possible enhancements in member services in the face of constant or declining resources. The database, web and email servers have all been upgraded, and the Information Services (IS) department of AMS Headquarters has expanded the automation of credit card processing and implemented cost savings by collecting complete billing addresses of those using the online renewal and other web services. Web-based membership services have continually increased, with capabilities for the maintenance of membership information and the online renewal of dues and subscriptions. IS also developed tools so that chapter officers and CCM holders could update their contact information on the web with real time updates, and began to host local chapter and STAC committee web pages on the AMS Web server. Continued upgrades to the IS hardware and software will be needed, and upgrades to member services should be implemented as they become possible. Some possible examples include: online membership application; an online bookstore; a web-

based Curricula in the Atmospheric, Oceanic, Hydrologic, and Related Sciences; and a web-based facility for members to submit their CVs or resume.

The Vision noted that the AMS must promote our science and its applications to the broadest reaches of the public and educational outreach through all forms of media. The format and content of the Bulletin was changed significantly, and the option of on-line subscription, article submissions, and perusing previous editions was made available. Significant improvements in distance learning and online coursework have been implemented. The NSF-funded DataStreme Atmosphere Distance-learning Course has trained over 6,000 teachers nationwide, and there are 140 undergraduate institutions now licensed for the AMS Online Weather Studies. Video conferencing capabilities are being used for some AMS meetings, and the Society's web site provides a myriad of information and links, including search engine capability. AMS recently used webcast technology (through a commercial vendor) to encourage wider and more timely participation at lower costs on a matter of broad community interest. To continue this progress, the AMS should consider establishing a staff position dedicated to advancing future developments in this area. In addition, the AMS should continually review advances in technology as they evolve, and implement enhancements as they mature.

The most critical recommendations for the future of the AMS in computing and communications technology are summarized below:

- Significant progress has been made in all four areas that comprise CCT. This significant progress is due to the superb collective efforts of the AMS, its staff and volunteers. We made recommendations in all four areas, each of which requires further study to determine its overall priority within AMS, implementation details and costs, and an appropriate schedule. The AMS should consider instituting an Advisory Board on Technology to guide the implementation of new technologies into the business of the Society.
- We applaud the AMS Executive Directive, Council and staff for publishing the AMS Annual Report 2002. It is the first such annual report. We note the absence of annual reports for years prior to 2002 has made research for the midterm review more challenging. We strongly recommend that these annual reports continue.
- We commend AMS for chartering the Ten Year Vision and for initiating the Midterm Review. We recommend AMS consider developing a strategic plan that would outline how the AMS Vision will be implemented. Suggest consideration of a 5-year strategic plan as the initial version. The 5-Year AMS Strategic Plan could then serve as the starting point for AMS annual planning. The AMS Strategic Plan could also serve as the benchmark to measure progress in achieving the goals of the 10-Year Vision as well as the Strategic Plan's goals.

2.5 Finance

The Ten-Year Vision Statement, completed in a time of financial optimism, made only two specific recommendations with regard to finance: that a dedication development office be established, and that dues be raised commensurate with past inflation and increased thereafter consistent with future inflation. Since finance is an enabler for all of

the other areas of the Vision Statement, broader financial issues affecting the Society will be addressed here as well.

At the time of the original Ten-Year Vision Statement (Fall 1998), the financial situation of the AMS and the economy of the United States was very different from today. Some of the many initiatives offered in the Vision were to be supported by income from the AMS Unrestricted Net Assets, under the implicit assumption that economic conditions would continue to be relatively favorable. However, the past three years have seen a significant decline in the AMS total assets from the level at the time of the Vision Statement. To provide perspective on the numbers that follow, the AMS total income for 2002 was approximately \$11.9M with expenses of \$13.3M. This led to a net income deficit, including all accounts, of -\$1.4M. For comparison, the net deficit for 2001 was -\$0.88 M and that for 2003 was \$0.16M. While 2003 was an improvement over the previous years, showing the efforts of the AMS management, a substantial operating deficit remains that must be covered by the investment reserves.

The Ten-Year Vision recommended creating a Development Program that would raise funds for scholarships and fellowships. This has been done with notable success: in 2002, the Development Program raised \$242,500 in fellowships, \$148,886 in scholarships, and \$110,756 in contributions. All of the scholarship and fellowship funds were passed on to the recipients. However, expenses associated with the Development Program in 2002 were \$644,440, leaving a deficit of \$142,298. The AMS has tried to make donations attractive by a defacto policy of passing along 100% of the development funds to the various recipients. This, of course, requires that the costs of operating the Development Program be covered by other income sources. During the past four years, costs have exceeded the funds raised by more than \$750,000.

The Vision also recommended that dues increases should be tied to inflation after a transient adjustment to catch up with the long period of stable dues. Dues have been increased from \$30 to \$70 since that time, and current plans are for AMS dues to increase commensurate with inflation at five-year intervals. In addition, an Early Career Dues package was implemented in 2003, which appears to be showing benefits in both attracting and retaining student members of the AMS. To permit a periodic reassessment of this dues strategy, the AMS should obtain dues and financial information about comparable professional societies to determine whether AMS dues are similar to the dues of comparable societies. In addition, the AMS should seek more complete information about the demographics of the current membership and information about recent new members and membership cancellations to estimate the potential financial impact of a dues increase.

Specific recommendations related to financial aspects of the AMS as addressed in the Ten-Year Vision are as follows:

- The underlying concept of the AMS Development Program had been to cover all operating costs out of the AMS operating budget. The costs of the Development Program are significant and continuing. We recommend that the AMS reassess the current Development Program and develop an approach to make this program have a positive impact on the AMS finances through a combination of reduced costs and increased contributions.

- We found that there was an increase in annual dues from \$30 to \$70 and that there is a plan to increase dues every five years in an amount tied to inflation. The Finance Subcommittee recommends that the AMS obtain dues and financial information about comparable professional societies. Should this benchmarking data show that the AMS dues are lower than the dues of comparable societies, the AMS should reassess this dues strategy.
- In conclusion, we recognize the difficulties in the issues that the Society is facing and the many budget uncertainties in the upcoming years. We urge the AMS management to take further steps to increase the budget reserves in the annual budgets in order to reduce fiscal risks and to help restore the overall assets of the Society to the pre-2000 levels.

3. Recommendations

We commend the management and staff of the AMS for their impressive and successful efforts to implement the many wide-ranging recommendations of the Ten-Year Vision. While not every effort has succeeded quite as expected or hoped, the vast majority have done so, and taken together have made our Society a better instrument for advancing our common objectives. The various sections of this summary report have presented quite a few recommendations, along with thoughts on how they might be implemented, and the full version of the report (available online at the AMS website) offers a great deal of background information that may be of interest to some.

As a whole, the Committee wishes to highlight the following recommendations (more detail on these is the individual sections above):

1. **Address the issue of interdisciplinarity in a more aggressive manner while sustaining the traditional strong disciplinary support services provided by the Society.**
2. **Continue to strengthen the Local Chapters as a means to promote interest in atmospheric and related sciences and the AMS.**
3. **Strengthen the governance of the Society by striving for inclusiveness in scientific discipline, sector (e.g., private, public, etc.), race, and gender.**
4. **Increase efforts to attract members from underrepresented groups.**
5. **Implement the relevant recommendations from the “Fair Weather: Effective Partnerships in Weather & Climate Services” NRC report.**
6. **Continue efforts to leverage new computing and communications technology to improve the efficiency and efficacy of the Society’s operations.**
7. **Aggressively pursue efforts to rebuild the reserve fund and to ensure that the ongoing operations of the Society consistently exhibit a positive cash flow.**
8. **Develop a strategic plan to encompass all the goals and activities of the Society for a five year planning horizon. This plan should be integrated with the five year fiscal planning and would serve as the starting point for AMS annual**

planning and as well as the benchmark to measure. The annual reporting started for 2002 (AMS Annual Report 2002) should be continued.