A range of cross-cutting and corporate activities is undertaken aimed at providing efficient, responsive internal management services and overall internal and external program coordination and communication to support the good management and effective operation of the various output-oriented activities of the Bureau.

Cross-cutting and corporate activities include five components. The largest is Management Services, which provides Bureau-specific management services (personnel, finance, supply, property and works, industrial, legal, health and safety) via units located in the Head Office and each of the Regional Offices. Executive Management includes the activities of the Bureau Executive and Regional Directors and their immediate support staff along with the Bureau’s corporate planning and coordination functions. A small Public Education program supports the various output activities through development of public information and educational material on the role of the Bureau and on the effective application of meteorological services. The Bureau of Meteorology Training Centre (BMTC), which includes the National Meteorological Library, is responsible for the Bureau’s internal training activities. It meets the specialist in-house training and staff development needs of the Bureau in collaboration with relevant tertiary education institutions and provides operational meteorological training to Defence, aviation and other external personnel, including approved overseas students under the auspices of relevant international programs. Supporting research and development activities include that component of the Bureau’s overall research and development effort carried out in conjunction with ongoing operations as a direct support for their continuing scientific development.

The Public Education, Training and Executive Management activities are coordinated by the Bureau’s Executive and International Affairs Branch, and Management Services are coordinated by the Management Branch. Supporting research and development is carried out as an integral part of most of the scientific and technical activities of the Bureau in both Head Office and the Regions.

Supporting Research and Development

The supporting research and development activities of the Bureau fall into two groups: those initiated, managed and carried out within the various operational Branches and Regions; and those carried out as part of a special schedule of high priority technique development projects. This latter group gives special emphasis to a small number of projects of limited duration which are expected to have particular impact on improved service delivery.

Research and development activities conducted by Regional staff, sometimes in collaboration with the Bureau of Meteorology Research Centre or with local universities or State agencies, focused mainly on specific regional forecasting issues. A selection of the activities conducted during 2001-02 include:

- collaborative studies with New Zealand’s National Institute of Water and Atmospheric Research, which led to the development of a new method for studying the patterns of interannual...
variability of the potentially predictable and ‘weather-noise’ components present in seasonal averages of meteorological measurements;

• a joint investigative study with the University of Melbourne on the water cycle over the Murray-Darling basin. The work is part of the Continental Scale Global Energy and Water Cycle Experiment (GEWEX);
• investigations into the use of radar-based techniques for rainfall estimation. These studies, which can lead to improvements in hydrological and short-term forecasting, were done in conjunction with the US National Severe Storms Laboratory;
• a project to develop a national smoke management advice system for Australia. The project is sponsored by the Australasian Fire Authorities Council.

As part of the Bureau’s Forecast Streamlining and Enhancement Project, aspects of the end-to-end weather forecast process were investigated to determine information flows and requirements for forecast support system development. This work advanced the development of statistical and model output based forecast guidance techniques. In addition, the Bureau commenced testing intelligent alerting techniques based on ‘agent’ technology. It is anticipated that these systems will be used for automated monitoring of Bureau systems and products.

Studies aimed at enhancing the forecasting capability of fog continued in 2001-02. Numerical weather prediction (NWP) systems were evaluated and new products showing mesoscale features predicted by these NWP schemes were generated. The skill of current operational fog forecasting for Sydney and Perth was investigated, and an interferometer for monitoring low-level temperature and moisture in fog-prone areas commenced evaluation.

Public Education

Public Education activities aim to:

• foster increased public understanding of weather and climate processes and to assist the community in using that understanding in their own, and the national interest;
• inform the public and specific user groups about the Bureau’s role and services to assist in more effective use of these services; and
• contribute to the morale and overall operation of the Bureau through internal communication and dissemination of information of interest to staff and their families.

The effectiveness of Public Education activities was assessed in terms of formal visit requests and attendances at the Bureau’s Head Office exhibition centre, attendance at external exhibitions and displays, the demand, availability and distribution of a wide range of publications, and public feedback via telephone, e-mail, mail, Internet access, media direct responses and visitor comments.

While staff throughout the Bureau contribute to the advancement of public education objectives, overall coordination is provided by the Public Affairs Unit, which is located within the Bureau’s Head Office.

Raising Community Awareness

During 2001-02, a wide range of initiatives was undertaken to raise community awareness of weather and climate issues and the role of the Bureau, including the provision of printed information, images and advice to the mass media (radio, television and print), publishers, government agencies, commercial organisations, the general public and Bureau staff.

Direct media inquiries, typically two to
three a week, were handled by the Public Affairs Section in Head Office and the media also contacted Regional Offices and Field Offices directly, resulting in extensive national media coverage of meteorological issues.

Media releases were used to draw attention to a range of issues and events of wide public interest, with about 150 issued during the year on matters such as:

- the Sydney bushfires and the Christmas heatwave in Brisbane;
- new services including PremiumWeather™ and UV forecasts;
- new equipment installations such as weather radar at Kurnell and Yarrawonga;
- monthly, seasonal and annual climate summaries for Australia and individual States;
- monthly climate outlooks;
- conferences and workshops such as the 2002 Asia-Pacific Satellite Applications Training Seminar; and
- Australia Day awards to Bureau staff.

The Bureau’s main media event, World Meteorological Day, was held on 15 March. The theme was ‘Reducing Vulnerability to Climate and Weather Extremes’ and community awareness was raised through the distribution of posters, booklets and related display information. The World Meteorological Day address, *From the Stratosphere to the Ice Shelves: Climate Change in the Southern Hemisphere*, was presented by Dr Susan Solomon, Program Leader Chemistry & Climate Processes, of the Aeronomy Laboratory, at the National Oceanic and Atmospheric Administration of the United States.

The 2002 Australian Weather Calendar was again well received by the community and about 30 000 copies were distributed and sold throughout Australia.

Requests for access to the Bureau’s photographic collection were met, with about 500 images distributed to the media, staff, publishers, other government agencies, Ex-Ministers responsible for the Bureau, (from left to right) the Hon. Dr Barry O Jones, AO, the Hon. Jim Webster and the Hon. Peter Nixon, AO, with Director of Meteorology Dr John Zillman, AO, during World Meteorological Day celebrations in Melbourne on 15 March.

Dr Susan Solomon, Program Leader Chemistry & Climate Processes at the US National Oceanic and Atmospheric Administration presented the World Meteorological Day address at the Bureau’s Head Office in Melbourne on 15 March.
commercial organisations and the general public. The digital library of images was further developed and catalogued on the Bureau’s internal website.

**Visits and displays**

The Head Office exhibition area provides an effective focus for visitors interested in learning about the Bureau. About 5000 participants, ranging from primary school students to people from senior citizens' clubs, benefited from tours of the exhibition area throughout the year. It was also used by Bureau staff to host Council of Adult Education classes, Rotary Club-sponsored students, work experience students and rural/agricultural groups.

An interactive software application on weather, climate and the role of the Bureau, which is accessible through touch-screen kiosks in the Bureau’s Head Office and Regional Offices, was made available on CD-ROM to facilitate greater portability, such as for use at field days and community exhibitions.

Contributions to improving the quality of school education in meteorology were made through:
- assistance to the Victorian Department of Education, Employment and Training (DEET) with the provision of professional development sessions for teachers; and
- distribution of the Bureau-designed Weather Kit, which contains meteorological instruments and related explanatory information.

The Bureau continued to participate in the organisation of the Australian Science Festival in Canberra - the Amazing World of Science. Staff involvement was significant and included the presentation of an interactive display over four days.

**Internal communication**

Staff awareness of the importance of communicating weather and climate issues effectively, was advanced by a range of initiatives, including staff training on communication techniques at workshops and training sessions, and through feedback on media releases. Workshops were conducted for staff at the Bureau of Meteorology Training Centre, the Bureau of Meteorology Research Centre, and Climate and Consultancy and Officer-in-Charge conferences in Melbourne.

Staff were kept informed on a range of issues of broad interest to the Bureau and its operation through the routine circulation of press clippings from major newspapers and items from the Internet.

The Bureau’s in-house journal, *Weather News*, continued to contribute to internal communication among staff, including those in the most remote areas, with information on Bureau people and events, services issues and developments across Australia. Three issues (800 copies each) were produced and distributed during the year.

**Training**

The Bureau of Meteorology Training Centre (BMTC) provides the focus for most inter-
nal training and staff development within the Bureau and ensures that training activities are efficient, well planned, appropriately and effectively delivered and continually evaluated. The BMTC contributed directly or indirectly to the activities of each of the Bureau’s major outputs, through the initial training programs and in-service training of staff involved in the associated output activities. The BMTC also contributed directly to Bureau international activities through the training of personnel from overseas National Meteorological and Hydrological Services (NMHSs) and participation in WMO and other international committees.

The primary objective of the training program is to meet the current and emerging needs of the Bureau for staff with appropriate management skills and specialised technical and professional skills. A secondary, but importantly complementary objective is to provide specialised meteorological training to Australian Defence Force personnel and to the staff of overseas NMHSs.

To meet these objectives, the BMTC was involved in:
- specialised postgraduate meteorological training in operational forecasting for new professional staff of the Bureau and for qualified staff from the Royal Australian Navy (RAN) and overseas NMHSs;
- technical and general training in specialised meteorological support duties and systems for new Bureau technical staff, trainees from overseas, Defence Force personnel and approved external participants;
- in-service training to maintain professional and technical meteorology-related skills as well as management and development training for all categories of Bureau staff;
- curriculum development and the development and delivery of new courses for all training activities, including Computer Aided Learning (CAL) and web-based modules;
- consultative services on the education and training aspects of major new Bureau projects; and
- operation of the National Meteorological Library.

Courses are presented in modular format to allow for:
- Recognition of Prior Learning (RPL);
- flexibility of entry and exit points; and
- a greater level of tailoring, to increase the relevance of the training information to all staff, including special needs groups.

Training continued to be a high priority corporate function during 2001-02. Large initial training courses were again conducted for both Professional Officers (Meteorologist) and Technical Officers (Observer) to compensate for the increased retirement rate within the Bureau over the last few years. Course Advisory Committee meetings were held twice yearly for all initial courses. Specific training needs were determined by ongoing liaison with Bureau managers and stakeholders.

The BMTC Educational Outcomes working group continued to develop and maintain policies, procedures and practices in areas such as evaluation and development of courses, the assessment of students and the overall educational approach to training activities. The educational approaches applied by the BMTC include competency-based training, student centred learning and RPL or RCL (Recognition of Current Learning). These practices improve training activities and allow increased flexibility and efficiency in the use of training resources.

**Training programs**

Initial training courses are conducted on a calendar year basis, and in 2001 and 2002 there were 59 and 46 trainees respectively. Of these, 60 were studying the 40-week Graduate Diploma in Meteorology course
(including six from the Navy and thirteen from overseas) and 45 were undertaking either the 33-week Technical Officer (Observer) or the Technical Officer (Engineering) course.

More than 270 staff received specialised technical or professional in-service training. The courses included:

- First-in Maintenance;
- Meteorological Information Office Services;
- Station Management and Climate and Consultancy courses for Technical Officers (Observer); and
- New Equipment, Hazardous area and AUSTEL License training for Technical Officers (Engineering).

Professional in-service training undertaken by meteorologists included general AIFS (Australian Integrated Forecast System) and Satellite Applications training courses as well as competency training for the forecasting of severe thunderstorms, tropical cyclones and fire weather. To give the Bureau’s non-meteorological staff a greater understanding of the Bureau’s operations and services, a ten-day Introductory Meteorology course was conducted.

Over 660 staff undertook short, in-service management development training courses, ranging in length from one day to one week. These courses covered such areas as project management, change or time management, client service, policy development, and presentation and communication skills. In addition, seminars were provided on the APS Values and the APS Code of Conduct.

A Bureau specific Management Education Program (MEP) was conducted in conjunction with the Association of Professional Engineers, Scientists and Managers, Australia (APESMA). The MEP provides formal qualifications at the Certificate and Graduate Certificate levels. In 2002, 27 staff were enrolled in the MEP, and 112 staff took advantage of the Bureau’s Study Bank scheme and enrolled as part-time students. Three staff were awarded scholarships to further their tertiary studies on a full-time basis, and one was enrolled in the CSIRO Project Leaders Program.

Bureau staff at Pearce (Western Australia) and East Sale (Victoria) RAAF training bases provided meteorological training for the RAAF. More than 240 RAAF pilots, air traffic controllers, navigators and flying instructors received meteorological training in 2001-02.

In support of the Bureau’s corporate strategic objective of commitment to university education in meteorology and related fields, the BMTC maintained strong links with several tertiary education institutions, in particular, Monash University and the Royal Melbourne Institute of Technology (RMIT). Regular interactions also occurred with Latrobe University and the University of Melbourne, and the BMTC continued to provide reciprocal lecturing arrangements on specialised graduate level meteorology courses with Monash University.

A one-week Synoptic Laboratory seminar focussing on operational forecasting procedures was conducted for 12 Honours and Post-graduate students from Melbourne and Monash universities. In addition, 50 undergraduate science students from Latrobe University received basic training in operational meteorology.

As part of their training, Technical Officer staff attended a fire-fighting course run by the CFA (Country Fire Authority) in Fiskville, Victoria.
International training activities

In support of the Bureau’s international activities, BMTC and the Bureau’s Space Based Observations section organised and conducted the Asia-Pacific Satellite Applications Training Seminar (APSATS-2002), which was co-sponsored by the WMO, the Japan Meteorological Agency and the Bureau. APSATS-2002 was the first international satellite training event the BMTC has run since becoming one of the six WMO designated Centres of Excellence for Satellite Education and Training. APSATS-2002 included 21 participants from countries in the Asia Pacific region as well as 19 meteorologists from Bureau offices around Australia.

A joint project with the Cooperative Program for Meteorological Education and Training (COMET), centred in Boulder, Colorado, continued in 2001-02. The project places emphasis on the development of computer based interactive training modules for competency based Southern Hemisphere severe thunderstorm forecasting.

BMTC staff participated in the WMO sponsored Coordinating Committee of the Standing Conference of Heads of Training Institutions (SCHOTI), and the Commission for Basic Systems (CBS) Expert Team on Improving Satellite Systems Utilisation and Products.

Library

The National Meteorological Library is the national archive for all meteorological books and reports published in Australia, and maintains a pre-eminent collection of key meteorological books and journals published in the English language. As well as the purchase of books in accordance with the collection development policy, the Library continued to coordinate the collection of reports and journals from other National Meteorological Services and related organisations. More than 1,200 books and reports were added to the Library collection and 300 current journal titles were received.

Professional Library staff provided high quality information services to staff throughout the organisation, by assisting with research enquiries and by offering easy access to library resources. The Bureau’s Library website page, which was available to all Bureau staff as well as the wider community, provided access to the library catalogue, other library databases and meteorological resources. The availability of more than 240 electronic journals was of particular value to staff in remote locations.

Electronic alerting services for the contents of a range of core journals increased in 2001-02. In response to the increased electronic services provided by the Bureau’s Library, training programs were developed to alert staff to new services and to assist staff in gaining the benefits from improved features.

The library management system and user services were improved through the introduction of a Loans Module. Document
delivery services between the National Meteorological Library and other library and research centres, both nationally and internationally, continued to increase with the use of electronic document delivery technology. The Library strengthened its role in archival of historical material through the ongoing acquisition and maintenance of the Preservation Collection. Library Staff were also involved in developing the Bureau’s internal website.

Cataloguing of all library acquisitions was done on Australia’s national database, through the Kinetica service, ensuring that the Australian library community was kept informed of the National Meteorological Library’s holdings, particularly meteorological books and reports published in Australia. Borrowing arrangements with Australian libraries were maintained.

Executive Management

Executive Management embraces those activities aimed specifically at providing efficient and effective overall corporate planning and management of the Bureau in support of the discharge of its responsibilities under the Meteorology Act. It is concerned with the corporate philosophy and policy, strategy and planning for the Bureau as a whole, and its internal organisation and coordination including staffing and resource allocation to Bureau outputs. It includes the activities of the Bureau Executive (the Director, the Deputy Directors, and the Chief Scientist), the seven Regional Directors and two of the four sections of the Executive and International Affairs Branch within the Bureau Head Office. Routine outputs from the Executive Management function include the Bureau’s five-year rolling Forward Program; its annual Budget and Program document; input to the Portfolio Budget Statements that accompany the Budget Papers and the Bureau’s Annual Report.

The performance of the Executive Management function is measured in terms of the level of awareness of Bureau plans by staff and major user groups; increases in efficiency and effectiveness achieved through regular reviews of different output elements; the timeliness and accuracy of management information; and the extent of cooperative arrangements in meteorology with Australian universities.

In addition to the routine internal and external policy and management issues which consume the bulk of Executive Management resources, there was a special focus during 2001-02 on seven major areas:

- Evaluations and Reviews;
- Management Information System;
- Planning;
- Resources Strategy;
- Environment-Related Activities;
- Climate Policy Activities; and
- Special Services Unit.

Evaluations and reviews

A minor internal evaluation of the Bureau’s public information activities was scheduled to commence in 2001-02. Unfortunately, resource constraints made the exercise impracticable, and it was held over to 2002-03 or later.

Follow up to the Strategic Assessment

Following a strategic assessment of the Bureau by the Allen Consulting Group Pty Ltd and World Competitive Practices Pty Ltd (the consultants) in 2000-01, the Bureau sought to respond to the recommendations of the assessment throughout 2001-02. A summary of the status of action on each recommendation is provided below.
Recommendation 1. Advisory Board
On the recommendation of the Parliamentary Secretary, the Prime Minister formally approved the establishment of the proposed Bureau of Meteorology Advisory Board on an interim basis as a non-statutory advisory board in June with a view to its commencing operation in the first half of 2002-03 (refer to Major Issues, pg 31).

Consideration of legislative amendment to the Meteorology Act, to establish the Advisory Board as a Statutory Board and the Bureau as a Statutory Authority, has been held over pending a review of the experience of the Bureau as an Executive Agency.

Recommendation 2. Board role in monitoring basic product and service provision
The Terms of Reference for the Advisory Board charge the Board with this function. The establishment of a sub-committee to review and monitor a range of relevant issues will be addressed by the Advisory Board in due course.

Recommendation 3. Communications on services
The Bureau commenced the development of a plan for the promotion to stakeholders of the Bureau’s services generally and cost recovery activities in particular. This will be submitted to the Advisory Board for consideration.

Recommendation 4. Regulatory framework for aviation weather services
The regulatory framework for aviation weather services continued to evolve on a number of fronts.

The Civil Aviation Safety Authority (CASA) continued its wide-ranging review of safety regulations pertaining to civil aviation in Australia. Two draft Civil Aviation Safety Regulations (CASRs) relate to meteorological services: one is intended to regulate who may provide the service and the other the standards that the provider or providers must meet.

Outside the CASA review process, but potentially impacting on its outcome, a complaint was lodged with the Commonwealth Competitive Neutrality Complaints Office (CCNCO) arguing that the Bureau should not be the sole provider of aviation weather services in Australia. In response to the complaint, the CCNCO recommended that Government should complete, as soon as possible, its consideration of the introduction of competition in the provision of aviation meteorological services. It further recommended that there is potentially a market for the competitive provision of value-added services, provided that no other model is likely to deliver greater net benefits to the community. It did not, however, define those ‘value-added services’.

The Bureau engaged in discussions with the Department of Transport and Regional Services and CASA aimed at clarifying the regulatory framework and developing a suitable model for the provision of aviation weather services to submit to Government. The Bureau-proposed model would see the Bureau providing a defined ‘core’ meteorological service, based on Annex 3 to the Convention on International Civil Aviation (International Civil Aviation Organization), covering both international and domestic operations, and would allow for competition in specialised value-added services.

Recommendations 5 and 6. Regional structure, function and resourcing
Agreement in principle with Recommendation 5 was subject to an evaluation of the extent to which implementation of the proposal would yield savings that could be directed to the aims of Recommendation 6. Accordingly, a comprehensive study of a ‘fit for purpose’ reorganisation of the Bureau’s Observations and Engineering programs was conducted, based on the model proposed by the consultants and addressing the full scope of activities involved, comparative resource analysis
and a risk assessment.

The conclusion identified a possible resource saving, but only about a quarter of the $0.5m suggested by the consultants, with a one off implementation cost of up to $2.5m. Although the risk assessment identified a number of risks at ‘significant level’, it was considered these would not fatally flaw the model but that the effectiveness of the programs would be reduced. The conclusion was that: ‘in view of the high implementation costs, marginal and uncertain savings offered and potential risks and reduced effectiveness of the consultant’s model, the Bureau would be wise to give very serious consideration as to whether it should proceed further’. On this basis, the Parliamentary Secretary accepted the advice of the Director of Meteorology not to change the existing arrangements of the program, and to retain both ‘Services’ and ‘Systems’ roles within regional offices.

The recommendation on severe weather forecasting was followed up with a study on improving the Bureau’s severe weather forecasting capacities through additional resources (found through reprioritising current funding). As part of the follow-up to this study, activities aimed at enhancing severe weather through the FSEP initiative commenced in 2001-02 and will continue in 2002-03.

Suggested changes to the central high seas forecast and warning program are being implemented. Changes to provision of aviation services have not been followed up pending significant Government decisions on provision of all services to the aviation industry in general.

Recommendations 7 and 9. Planning and management

The Bureau continued improving its financial systems following the introduction of the SAP financial management system. During 2001-02, the focus was primarily on statutory reporting and mandatory processes. During 2002-03, the aim will be to ensure reports and monitoring are better aligned to the Bureau’s outputs and outcomes.

People management systems and continuous improvement initiatives were advanced in 2001-02. Emphasis was given to developing formal arrangements for succession planning, mentoring programs, exit interviews and adjustments to existing arrangements for general management training. An improved and simplified Performance Management Scheme, including a requirement for Individual Development Plans for all staff, was nearly completed and will be finalised in 2002-03.

Recommendation 8. Executive Agency

In June, the Prime Minister approved the establishment of the Bureau as an Executive Agency under the Public Service Act 1999 and the Minister for Finance and Administration agreed to its prescription for the purpose of the Financial Management and Accountability Act 1997. The Bureau was formally established as an Executive Agency by decision of the Federal Executive Council on 26 June 2002 to take effect from 1 July 2002. The Bureau remains a statutory body under the Meteorology Act 1955 and its statutory purpose, functions and powers under the Meteorology Act remain unchanged. (Refer Major Issues, pg 31)

Recommendation 10. Location of Head Office

The Bureau’s Head Office/Victorian Regional Office accommodation lease expires in April 2004. During 2001-02, the Bureau engaged in a comprehensive process, with the assistance of external consultants, to evaluate the options for alternative accommodation. After thorough consideration of the proposals and tenders offered, it was decided that the Bureau’s Head Office and the Victorian Regional Office should relocate to new premises at 700 Collins Street, Melbourne, to be constructed by Folkestone/Leighton
JV Pty Ltd. The Bureau’s computer facilities will also be relocated to the new premises. (Refer Major Issues, pg 32)

**Recommendation 11. Training**

The Bureau investigated the potential for increasing its collaboration with universities in the delivery of its training programs. During 2001-02, the Bureau initiated discussions with the University of Melbourne and Monash University, and completed a draft paper on the benefits and costs of a number of training scenarios, including the Bureau’s participation in cooperative training programs. During 2002-03, the Bureau will be involved in follow up activities to refine possible cooperative arrangements.

**Management Information System**

The Management Information System (MIS) supports all levels of management in the Bureau through the provision of financial and other information drawn from a number of transaction and specialist information systems. Although the MIS continued to provide historical financial information and human resource data during 2001-02, resources were directed towards the establishment of the Bureau’s new Financial Management System (FMS).

The increased demands for output/outcome based accountability and accrual format accounting in public administration have resulted in changed information needs and the demand for more sophisticated financial decision support systems. Initial steps were taken towards a major initiative, planned for 2002-03, involving the redevelopment of the MIS to ensure managers are provided with relevant information that is up to date, accurate, accessible and integrated. Information from this system is expected to be available progressively during 2002-03.

**Planning**

In line with the Bureau’s annual planning framework, preliminary 2001-02 regional and program plans were presented at a Regional Directors’ Conference held on 19-20 February 2001. These were later reviewed and revised at a Budget and Program Workshop held on 17-18 May 2001 and fine-tuned in the light of the 22 May 2001 Budget outcome. While the essential internal staffing and resource strategies were in place early in the 2001-02 financial year, unfolding uncertainty about the impacts on resource and staffing levels of the industrial agreements under negotiation, delayed finalisation of staffing and resource allocations until late in 2001. The Bureau’s *Budget and Program 2001-02* document, containing the Corporate Strategy 2001-06, the Bureau’s management strategy and corporate priorities for the year, internal resource allocations and detailed regional and program plans, was published in December.

The Bureau’s five-year *Forward Program 2002-07*, developed through the Forward Program Workshop held on 12-13 November, was published in January. This document is the first complete edition since the 1995-2000 Forward Program issued in June 1995 and provides an integrated strategic planning framework for the development of more detailed annual budgets and plans. In the intervening years, the Bureau’s rolling five-year plans were published annually in summary form as the five-year corporate strategy.

**Resources strategy**

The Bureau’s 2001-02 budget was based, in part, on the outcome of the Bureau’s 2000-01 Output Pricing Review (OPR), which found that the price of outputs provided by the Bureau to the Government was reasonable and should therefore serve as the basis for planning over the next few years.
Accordingly, the Government re-affirmed, through the 2001-02 Budget, its commitment to partial funding of the key recommendations arising from the Slatyer I report and continued under the 1999-2000 Budget initiative on Providing World Class Weather Forecasting. An additional $7.194m was appropriated to the Bureau under this initiative in 2001-02 and was used to:

- fully offset the two percent across the board cut to running costs imposed through the 1996-97 Budget to prevent further closures in the observing network;
- continue full funding of those initiatives commenced under the 1995-96 Climate Monitoring and Prediction Upgrade;
- contribute to the restoration of basic networks; and
- contribute to enhanced operations and services.

Under the accrual budget framework, the Bureau received approval from the Minister for Finance to register a $2.5m loss in 2001-02. The approved loss related to the 2000-01 Budget decision to extract $2.931m from the Bureau’s operating funds in expectation of long-term savings through the removal of embedded Wholesale Sales Tax (WST) as an integral element in the introduction of A New Tax System (ANTS). As most of the Bureau’s projected savings were expected in reduced asset replacement costs, approval was given for the Bureau to incur a $2.5m loss by expensing asset replacement funding to replicate the expected pattern of savings, pending an asset revaluation.

The impact of unresolved resource issues arising from the transition to the accrual framework in 1999-2000 continued to be a concern in 2001-02. In particular, because the Bureau was significantly under-funded for accrued staff entitlements, unfunded separation payments in 2001-02 were met from the Bureau’s limited cash holdings. The Bureau’s budget was also modified in 1999-2000 by the removal of those cash items used for asset purchases and the introduction of depreciation expense as the basis for funding asset replacement. Unfortunately, the funds removed extended beyond those used for asset purchases and included approximately $2m pa used to purchase items such as spare parts, tools and workshop and laboratory equipment and fittings.

The Bureau’s operating funds further declined in 2001-02 through the extraction of an additional $1.260m to meet the government’s efficiency dividend and $0.072m to reflect further expected savings in embedded WST. The most significant trend in the Bureau’s resources is a continuing decrease in operating funds, now substantially (>10%) lower in real terms than that of the mid 1990s that triggered the 1996 Slatyer I review (Figure 12).

The Bureau’s two year Certified Agreements (calendar years 2000-01 and 2002-03) on pay and conditions had a significant impact, in 2001-02, on the Bureau’s capacity to maintain its operations. Under current budgetary arrangements, the Bureau is provided with supplementation for price movements through the annual application of the Wage Cost Index (WCI) adjustment. Salary increases above this level must be funded internally. Faced with the need to offer salaries comparable with those for similar work elsewhere in the Australian Public Service, the Bureau was forced to fund the excess salary costs of these agreements through staff reductions and program cuts. The staffing strategy for 2001-02 was thus aimed at ensuring the best possible use of available staff numbers in the face of reducing overall Employee Expense funding, the reduced purchasing power of this funding, the lack of a replacement capability for many key retiring staff as a result of the low level of recruitment over the past fifteen or so years, the shortage of staff in key employment categories and the shortage of lower level staff in most categories. In particular, and to ensure that the Bureau’s primary service operations
were maintained, the size of the annual recruitment intakes of key specialist groups (Meteorologists, Observers and Technical Officers (Engineering)) was maintained to the extent possible whilst allowing limited recruitment of staff in other categories.

Environment Related Activities

During 2001-02, the Bureau contributed to a range of environmental activities, often in collaboration with other agencies and divisions of the Environment and Heritage Portfolio. These activities included:

- provision of briefing material and scientific advice on climate and related issues relevant to a number of international meetings such as the 56th Session of the United Nations General Assembly;
- coordination of departmental input to the Prime Minister’s Science, Engineering and Innovation Council meetings and the Coordinating Committee on Science and Technology;
- provision of meteorological information to the State of the Antarctic Environment Report;
- support for the National Oceans Policy through development of the Argo float program; and
- provision of scientific support for the implementation of the Ambient Air Quality National Environmental Protection Measure.

The Bureau, in collaboration with CSIRO and relevant state agencies, commenced the Air Quality Monitoring and Forecasting Service (AAQFS) for the Melbourne and Sydney metropolitan areas. The AAQFS was funded by the ‘Air Pollution in Major Cities Project’ and sponsored by Environment Australia.

The Bureau continued development of a smoke management advice system to assist fire and emergency agencies responsible for burns, wildfires and hazardous incidents. The project is funded by the Australasian Fire Authorities Council.

Through operation of an ozone monitoring network, a precipitation chemistry network and the Baseline Air Pollution Station at Cape Grim, Australia contributed to the WMO Global Atmosphere Watch (GAW).

In 2001-02, on-line access to information about Australia’s environmental monitoring networks was extended with the release of Rain Gauge Information, Australia. This web-based searchable database of rainfall stations operated by the Bureau and State and Territory water agencies, complements Stream Gauging Information, Australia (released in 2000-01).

Climate policy activities

The Bureau contributed to effective Australian participation in the work of the Intergovernmental Panel on Climate Change (IPCC) through coordination of Australian activities in respect of Working Group I (Science), participation in the drafting of IPCC reports, input to reviews of IPCC documents and to briefing material, and representation at sessions of the IPCC and its Bureau.

The final element of the IPCC’s Third Assessment Report (TAR), its Synthesis Report, was finalised during the year, with two Bureau officers serving as Review Editors. The Synthesis Report was approved (Summary for Policymakers) and adopted (underlying full report) at the Eighteenth Session of the IPCC in Wembley during September. The Australian Delegation to that session was lead by the Director of Meteorology, in his capacity as Australia’s Principal Delegate to the IPCC as well as the Working Group I Vice-chairman representing the WMO Region V (South-West Pacific) on the IPCC Bureau. Key decisions were taken at the Eighteenth Session to prepare for the election of a new
IPCC Bureau at the Nineteenth Session of the IPCC, which was held in Geneva during April. The Director of Meteorology again lead the Australian Delegation and was re-elected to Bureau membership as a representative of the WMO Region V (South-West Pacific), but on this occasion as Vice-chairman of Working Group II. The election process for the Chairman of the IPCC was decided for the first time through voting, with Dr Rajendra Pachauri of India successful. In June, Dr Geoff Love, formerly the Bureau’s Deputy Director (Services), took up a two-year appointment as Secretary to the IPCC.

On 4 April, the Bureau hosted an Australian Academy of Technological Sciences and Engineering (ATSE) sponsored Workshop on Climate Change Science. The workshop took stock of recent changes in understanding of climate change science, in light of the completion of the IPCC Third Assessment Report, since the preparation in 1995 of the Academy report *Climate Change Science: Current Understanding and Uncertainties*. Participants in the workshop included most of those who had been involved in the 1995 report, who had been drawn from the broad range of constituencies interested in climate change issues, as well as many of the Australian TAR lead authors.

The Bureau contributed scientific input on climate change issues relevant to Australia’s negotiations under the UN Framework Convention on Climate Change (FCCC) and participated, as part of the Australian delegation, at sessions of the Convention’s subsidiary bodies and at the Seventh Session of the Conference of the Parties (COP7) to the FCCC in Marrakech, Morocco, from 29 October to 9 November. The Bureau continued to take a lead role in negotiations on issues relating to research and systematic observations of the climate system.

The Bureau contributed to implementation of the COP4 and COP5 decisions on research and systematic observations through:

- preparation of a detailed national report on Australia’s contribution to global observing systems for climate, for submission in conjunction with Australia’s Third National Communication to the UNFCCC. The detailed report was submitted to the UNFCCC in March, ahead of the completion of the Third National Communication;
- coordination of an informal international network of National GCOS (Global Climate Observing System) Coordinators, with meetings held, as opportunity permitted, in conjunction with other international fora; and
- participation, in collaboration with Pacific Island Countries and other developed countries in the region, in the development of the Pacific GCOS Action Plan and the Implementation Plan, as follow up to the Apia GCOS workshop held in August 2000.

**Special Services Unit**

The Special Services Unit (SSU) provides specialised meteorological and related services on a commercial basis to address the needs of both Australian and overseas markets. The SSU has operated since 1990 and now has a permanent staff of 38. A highlight this year was the opening of the SSU’s sixth office, in Adelaide, to add to those already established in Melbourne, Perth, Sydney, Brisbane and Darwin. The Adelaide office was established in November to service a new contract with Telstra Countrywide in support of the agriculturally focused Internet-based PremiumWeather™ service, and to take advantage of potential opportunities in South Australia generally.

Since July 1995, as a matter of Bureau policy, the SSU has operated strictly within the framework of Resolution 40 of the Twelfth World Meteorological Congress in respect of its commercial activities outside
Australia, which requires that all international activities be undertaken with the knowledge and concurrence of the National Meteorological Services of the countries concerned. In line with national competition policy, the SSU applies the principles of competitive neutrality rigorously in all aspects of its domestic operations.

The international activities of the SSU consist of a small number of major projects. During 2001-02, these projects contributed significantly to SSU revenue, more so than in 2000-01. In addition, domestic activities also increased in revenue terms bringing SSU back toward overall profitability, after a recorded operating loss of $0.296m in 2000-01.

To the extent that SSU activities contribute directly to relevant Bureau outputs, the performance of those activities is reported, against the relevant performance indicators and measures, in the Weather Services (Special Weather Services) and Consultative Services (Special Investigations) sections of this report.

Management Services

Management Services contribute to the effective and efficient operation of the Bureau through provision of efficient, timely, Bureau-focussed, human resource management, finance and supply, industrial relations, legal, building and property management, general office and administrative computing support services to assist the Executive and Branch and Regional management throughout the Bureau.

Delivery of the Management Services function is the responsibility of Management Branch in the Bureau’s Head Office in Melbourne in conjunction with the Regional Administrative Units in each of the state capital cities and Darwin.

The effectiveness with which Management Services are delivered is evaluated by periodic and ongoing evaluation of service elements. This includes consideration of the quality and effectiveness of human resource and financial management, the level of awareness and treatment of social justice issues (such as workplace diversity, disability or access matters, and equal employment opportunity) and occupational health and safety, and the extent of industrial democracy and disputation. Assessment also addresses the efficiency and effectiveness of administrative computing and the wide range of general office services, the quality and effectiveness of administrative computing and the wide range of general office services, the quality and effectiveness of legal advice, and the overall management of the substantial housing and workplace facilities utilised throughout the organisation.

During 2001-02, continuing progress was made towards the achievement of all functional objectives, as summarised below.

Human resource management issues

The provision of high quality human resource management support across the whole of the organisation in the face of diminishing staffing resources continued to be a major challenge for the Bureau during 2001-02. A continuing strong emphasis was placed on workforce planning and, to ensure that the Bureau’s key service operations were maintained, the recruitment intake of specialist staff groups (Meteorologists, Observers and Technicians) was maximised consistent with achieving a balanced recruitment outcome for the other categories of staff. The Bureau is in the process of finalising and implementing an annual individual development plan for all staff to help identify learning and development needs at the individual level.

During the year, and following extensive consultation with staff and union representatives, a salary rationalisation exer-
cise covering almost all the Bureau was completed. Introduction of the new salary arrangements simplified pay points, removed some anomalies, increased flexibility in job classification and simplified pay arrangements, albeit at significant overall cost to the Bureau Budget.

Management-initiated reviews of the Bureau’s Remote Locality Allowances arrangements and the Experiential Learning Program for junior level Meteorologists were completed during the year.

The Bureau’s National Occupational Health and Safety (OHS) Committee met regularly throughout the year, and the National OHS Coordinator visited all Regions, attended OHS committee meetings in the Regional Offices, investigated particular problems and discussed emergent issues. Successful testing of a safer hydrogen-generating system resulted in the appointment of a supplier to provide the new system commencing in 2002-03.

Comcare, the Government’s workplace safety, rehabilitation and compensation agency, completed occupational health and safety audits of Head Office, the New South Wales Regional Office and the Townsville Meteorological Office. A number of deficiencies in existing OHS practices as identified and these are being progressively reviewed and improved. In addition, participants in various Bureau training courses and conferences were addressed on OHS issues and Health and Safety Representative training continued. A number of OHS policies and procedures were drafted and await staff comments before implementation.

Health promotion activities were undertaken, with approximately 20 per cent of staff participating in an influenza vaccination program. Approximately 5 per cent of employees accessed the Bureau’s Employee Assistance Program during 2001-02, comparable with previous years. The Bureau had 51 accidents reported, of which one was reportable to Comcare under section 68 of the OHS (Commonwealth Employment) Act 1991. However the Bureau’s Workers’ Compensation premium rate for 2001-02 continued to be below the Commonwealth average.

Several workplace diversity initiatives commenced during 2001-02. These included:

- cultural awareness training of Bureau employees;
- opportunities for students with a disability as well as able-bodied pupils to undertake Bureau work experience as well as Structured Workplace Learning;
- the availability of an online Workplace Discrimination and Sexual Harassment course;
- continuation of the National Indigenous Cadetship Project coordinated by the Department of Employment and Workplace Relations; and
- further development of the Workplace Diversity Program 2002-07.

Legal Issues

Operational and administrative areas of all branches and regions were provided with legal support in areas of Commercial, Trade Practices, Freedom of Information, Privacy, Property, Intellectual Property, Employment and Litigation Law. Work was carried out in support of dispute settlement, negotiation and agreement finalisation, legislation interpretation and in the provision of general legal advice. During 2001-02, the Bureau dealt with legal issues associated with a number of significant matters. These included:

- litigation arising from the 1998 Sydney-Hobart Yacht Race;
- finalisation of the Ocean Modelling Collaborative Agreement between the Navy, CSIRO and the Bureau;
- the UCAR (University Corporation for Atmospheric Research) and Bureau of Meteorology joint CP2 radar projects;
- leases for major airports;
- negotiation and drafting of the new con-
tract for the Human Resource Management Information System NOMAD;
• the Venezuela infrastructure sub-contract with the Bureau’s Special Services Unit; and
• MOU arrangements for the Fifth Session of the IOC Sub-Commission for the Western Pacific.

Agreement was reached on the lease terms to Telstra for its telecommunication tower at the sensitive and meteorologically significant Cape Grim Baseline Air Pollution Station.

The Bureau ensured that the legal framework for approaches to the market in respect of Head Office and Victorian Regional Office future accommodation arrangements was in place in time to meet the overall project timetable. This project required separate probity advice to ensure that the tender and evaluation processes were fairly and properly completed. The Bureau worked with external legal service providers for this advice and for the tender and contractual documentation.

Legal issues continued in respect of the application of the new Privacy legislation and Intellectual Property (IP) law covering areas such as Trademarks, Domain Name Registration, website compliance requirements and Copyright. Advice was also sought as part of the review of the Bureau IP and Charging Policy, particularly in relation to secondary distribution.

The terms for Work Experience arrangements in the Bureau were reviewed and standardised, ensuring that ANAO, Moral Rights and new Privacy requirements in contracts were incorporated in relevant precedents. The growing importance of risk assessment and proper management of contracts was emphasised, with support provided for Bureau staff involved in contractual issues.

Preliminary work was undertaken to prepare for the Bureau’s move to Executive Agency status, including assessment of the changes this would bring in respect of requirements, delegations and accountabilities under the Financial Management and Accountability (FMA) Act 1977, the Public Service (PS) Act 1999 and the overarching corporate governance framework.

Financial management issues

Systems and processes to support financial management in the Bureau were improved significantly in 2001-02. The implementation of a new financial system, which integrated many of the Bureau’s financial processes and functions, is beginning to result in better quality data, more consistent reporting and more transparent processing. The Bureau’s internal reporting systems will be further developed in 2002-03.

Corporate governance was an important consideration in consolidating the new financial environment. In particular, the Bureau’s financial control framework was reviewed and authorisations for financial processing revisited. Risk management, a key element of corporate governance, was strengthened with the preparation of a draft risk management plan. In addition, a high-level restructuring of the Bureau’s Finance and Supply Section resulted in improved coordination and management of financial operations and reporting.

Asset Management

The new financial management system has improved the Bureau’s asset management capability and offers potential for further improvements. The asset register is part of the new financial system, which allows the calculation of asset values and depreciation for financial reporting. The system was configured to conform to the requirements of the Bureau’s asset purchase program.

Asset management also incorporates the supply function, which provides for the
purchase and distribution of consumables and maintenance equipment used in the Bureau's observation and engineering operations. Supply functions were also integrated into the Bureau's financial system in 2001-02, providing a single point of access to users and linking the logistics of goods movement to financial reporting.

Activities in support of property resource and leasehold management continued in 2001-02. These involved civil works and fit-out programs required to provide adequate and energy-efficient operational environments, improvements to staff accommodation and security, ongoing rationalisation of national property assets and the continued refinement of property asset management and reporting systems. Achievements in this area included:

- the disposal of six properties in accordance with the Bureau's Housing Policy. Two new residences were constructed in Charleville, and contractual arrangements commenced for the construction of two new residences at Halls Creek (Western Australia) and Norfolk Island;
- the commencement of construction of a purpose-designed replacement observing/radar facility at Adelaide Airport (South Australia), and new meteorological radar facilities at Yarrawonga (Victoria) and Mt Cowangerong (New South Wales);
- the advancement to tender evaluation stage of the project for a replacement observing and radar facility at Norfolk Island;
- site negotiations and design work for future replacement observing/radar facilities at Williamtown (New South Wales) and Mackay (Queensland) and for a new weather watch radar facility at Bowen (Queensland);
- the partnering arrangement with Gutteridge Haskins & Davey (GHD) for the national and international provision of professional architectural, engineering and contract management services. This has proved to be effective with GHD adding value to the arrangement, particularly for environmental and energy management issues;
- the commencement of site sharing arrangements for multiple communications users at various locations around Australia;
- coordination of the Bureau input into the Commonwealth's responses to native title issues;
- refurbishment work within both Head Office and the Regions, which resulted in improved office accommodation for staff, and the co-location of the Forecasting and Observing functions of the Meteorological Office at Alice Springs Airport (Northern Territory); and
- the completion of site negotiations and design work for new weather watch radar facilities at Lemon Tree Passage (New South Wales).