MEMORANDUM

May 2, 2005

To: USGS Water Science Center Directors

CC: Members of the Bureau Program Council

From: Robert M. Hirsch ***(Signed)***
Associate Director, Water

Subject: NAWQA Ad Hoc Advisory Committee on Management, Final Report

Substantial changes in the design of the technical components of the NAWQA Program in Cycle II necessitated changes in organizational and operational details, including mechanisms for the distribution of funding to Water Science Centers. Unfortunately, how these management and funding changes were going to be implemented was not uniformly communicated to the Water Science Centers. As a result, a number of Water Science Center Directors and Regional Water Executives expressed their concerns to Water Senior Staff. In response in April 2004, Water Senior Staff commissioned the NAWQA Ad Hoc Committee on Management to review the management model, project activities, and likely funding scenarios associated with Cycle II, and to make subsequent recommendations for adjustments to the Associate Director for Water. The attached final report is the culmination of work completed by the Ad Hoc Committee and their resulting recommendations.

The major findings and recommendations of the Ad Hoc Committee are presented in the report in three primary sections: (1) People and Roles, (2) Planning and Operations, and (3) Communications. The comments and concerns initially raised by Water Science Center Directors, and the Ad Hoc Committee's charter are provided as appended material at the back of the report. **Perhaps most importantly, tables for projected funding out through fiscal year 2009 are included in the appendix**. These projected annual budgets will be posted to the web and updated annually.

Although the Ad Hoc Committee made a number of recommendations in their full report, the following bulleted items briefly highlight a few of the major findings and recommendations:

- **People and Roles**: The Ad Hoc Committee found that the selection process used by the NAWQA Program to fill the science roles required by the various technical program components in Cycle II was not readily understood by the Water Science Center management. The Ad Hoc Committee recommends that NAWQA engage the Water Science Centers directly to ensure full comprehension of the selection process. Furthermore, the Ad Hoc Committee believes that the greater the commitment that NAWQA can make in retaining key Water Science Center personnel as full-time or near-full time technical support, the greater the chance of achieving success in Cycle II.

Planning and Operations: The substantial changes to the planning model for Cycle II over Cycle I has necessitated changes to the previous funding model used in Cycle I to support study units. In general, funding during the high-intensity phase in Cycle II is less and more varied, and decisions regarding funding and the scope of work in Cycle II are less centralized than in Cycle I, thus requiring greater involvement on the part of study-unit staffs in the Water Science Centers. As a result, the Ad Hoc Committee recommends that NAWQA create and update annually on the NAWQA web site, a financial spreadsheet that provides budget estimates for all components of the Program, including study units in 3- to 5-year periods for planning purposes.

Contained within the final report is a summary table for the actual budget for fiscal year 2005 (Table 2), and estimated budgets for fiscal years 2006-2009 (Appendix 3).

Communications: The Ad Hoc Committee found that communications continue to be a critical function in the NAWQA Program, not only to announce important new programmatic changes as well as technical findings, but also to disseminate a consistent message to all study-unit personnel and Water Science Center Directors. As a result, the Ad Hoc Committee recommends that the Assistant Regional Hydrologists for NAWQA continue to be active participants in all NAWQA components and serve as the primary conduits for all internal communications of NAWQA activities within their respective Regions.

The deliberations and recommendations of the Ad Hoc Committee have been discussed at the last few Senior Staff meetings and implementation is already underway for many of them. Based on the input I have received from the Senior Staff I strongly endorse the recommendations of the Committee. I encourage each of you to review the entire attached document. The Ad Hoc Committee has made a number of recommendations to resolve many of the concerns raised by the Water Science Centers, and to ultimately increase the effectiveness of the NAWQA Program. This report will be posted on the NAWQA web site.

I would like to note that simultaneous with the work of the Ad Hoc Committee, we have been working on similar issues of program planning at the bureau level through the Bureau Program Council. One of the important concepts that the BPC is promoting is better communication of outyear funding plans for all programs. This sharing of plans is needed to help managers at all levels in the bureau to make appropriate staffing plans and to identify potential program opportunities. The outyear budget projections developed and presented in this report are precisely the kind of planning data that the BPC envisions becoming available for all bureau programs. Developing and sharing such information is crucial to effective management in these times of very constrained budgets.

I want to thank the members of the Ad Hoc team for their dedication and constructive engagement in this process. I particularly want to thank the Chair, Jess Weaver, and the NAWQA Chief, Donna Myers, for setting the right tone for these deliberations and making it a success.

NAWQA Ad Hoc Advisory Committee on Management

Final Report

April 22, 2005

Contents

Selected abbreviations used in report

ARHN	Assistant Regional Hydrologist for NAWQA
GW S&T	Ground Water Status and Trends
MRB	Major River Basins
NLT	NAWQA Leadership Team
NST	National Synthesis Teams
PA	Principal Aquifers
SWQA	Source Water Quality Assessment
SU	Study Unit
SW S&T	Surface Water Status and Trends
TT	Topical Teams
WSC Director	Water Science Center Director

Introduction

In 2001, NAWQA began a transition from Cycle I into Cycle II. The major difference was that in Cycle II, the "trend" and "understanding" components of the NAWQA design were emphasized over the "status" component. Although the technical design for Cycle II activities was laid out in the National Implementation Team plan, personnel, management, organizational, and operational details were not.

In Cycle II, changes in the NAWQA structure in the face of flat appropriations since 1996 and inflation caused reductions in funding to study units. In Cycle II, the NAWQA Leadership Team adopted a topical and regional approach to analysis, synthesis, modeling, and reporting with the formation of Topical teams and Major River Basin and Principal Aquifer teams. This change in approach necessitated a change in how funds are distributed to Water Science Centers. Funding is no longer tied solely to work within a study unit, but now includes distributions for topical and regional assessments. Unfortunately, implementation of these funding changes was not uniformly communicated to the Water Science Centers.

These facts led to a number of concerns expressed by the Water Science Center Directors (WSC Director) and Regional Executives in each of the four WRD Regions (Appendix 1). In response to these concerns, the WRD Senior Staff recommended the creation of the NAWQA Ad Hoc Committee on Management (Committee) at the April 24, 2004, Senior Staff meeting. A charter for the Committee was developed (Appendix 2). Based on the need to incorporate views from inside and outside of the NAWQA Program, the following membership was established:

Committee Chair:	Jess Weaver, (WRD Regional Executive in the Southeast)
NAWQA Leadership Team:	Donna Myers, (NAWQA Chief) Bill Wilber, (Assistant NAWQA Chief-National Synthesis) Gary Rowe, (Assistant Regional Hydrologist-NAWQA, Central Region)
WSC Directors:	Scott Gain (Tennessee WSC Director) Mark Ayers (Kentucky WSC Director) Jeff Stoner (Minnesota WSC Director) Pat Lambert, (Utah WSC Director)
Study Unit Chiefs, Major River Basin and Principal Aquifer Leaders:	Mike Woodside, Tennessee River Basin Study Unit Chief and Major River Basin Team Leader for the South Atlantic, Gulf, and Tennessee River Basins, Tennessee Water Science Center Marian Berndt, Georgia-Florida Study Unit Chief and Principal Aquifer Team Leader for the Floridan Aquifer, Florida Integrated Science Center
Topical Team Leader:	Mark Munn, Topical Team Leader, Effects of Nutrient Enrichment Topical Team, Washington Water Science Center

The Committee was responsible for reviewing the current NAWQA program management model, projected activities, and likely funding scenarios, and for making recommended adjustments to the Associate Director for Water. This report reflects those recommendations including near-term (1-3

year) management adjustments as well as longer-term (5-10 year) management strategies to position the NAWQA Program to meet future needs in consideration of anticipated resources.

Purpose

The purpose of this report is to summarize the recommendations of the Committee that was charged with addressing concerns related to the organization, management, and funding of project activities in the NAWQA Program during Cycle II. These recommendations, which address the concerns of the Water Science Centers, are provided to the Associate Director for Water. The report is organized into three major sections containing the findings and recommendations on "People and Roles," "Planning and Operations," and "Communications." The report contains tables and figures developed to support these recommendations, as well as materials and reference documents used by the Committee (see Appendices 1 and 2).

Brief Synopsis of Cycle II NAWQA

Starting in 2001, NAWQA transitioned into Cycle II, the second decade of investigations to assess the quality of the Nation's streams and ground-water resources. The three primary goals upon which the Program was initiated in 1991 remain the foundation of the national assessment: status, trends, and understanding factors and processes that effect water quality. In Cycle II, the emphasis is on trends and understanding processes, whereas assessing the status of water quality was the primary focus of Cycle I. Figure 1 shows the leadership for NAWQA, major technical components, fiscal year 2004 budget components, and the interactions and linkages among these components with Water Science Centers. Figure 2 shows the distribution of total NAWQA funding in fiscal year 2004 for the various Program components

The major technical program elements for NAWQA in Cycle II are National Synthesis, Status and Trends, and Topical Studies. National assessments in 42 Study Units of pesticides, nutrients and trace elements, and ecology remain an integral part of the NAWQA Program in Cycle II. These national assessments provide nationally consistent descriptions of the Nation's water quality**.** The primary emphasis of Cycle II is to assess long-term trends in water quality and to improve our understanding of the factors and processes that govern water quality. A second priority is to fill remaining critical gaps in the status assessment.

Early in Cycle II, the NAWQA Leadership Team recognized that a more regional approach to analysis, synthesis, modeling, and reporting was needed to determine the efficacy of assessing trends and new status at the regional scale. As a result, two new geographic units were created at the regional scale: 16 Principal Aquifers and 8 Major River Basins (Figure 3). Trends and new status assessments will be made at these regional scales in Cycle II rather than at the study-unit scale, as was done in Cycle I. Five topical studies were created in Cycle II to focus on understanding the factors that effect water quality and establishing links between sources, transport, and fate of contaminants that degrade water quality and aquatic biota. Five topical studies were started in 2001:

- Effects of nutrient enrichment on streams (NEET)
- Sources, transport, and fate of agricultural chemicals (ACT)
- Transport of contaminants to water supply wells (TANC)
- Effects of urbanization on stream ecosystems (EUSE)
- Bioaccumulation of mercury in aquatic systems (Hg)

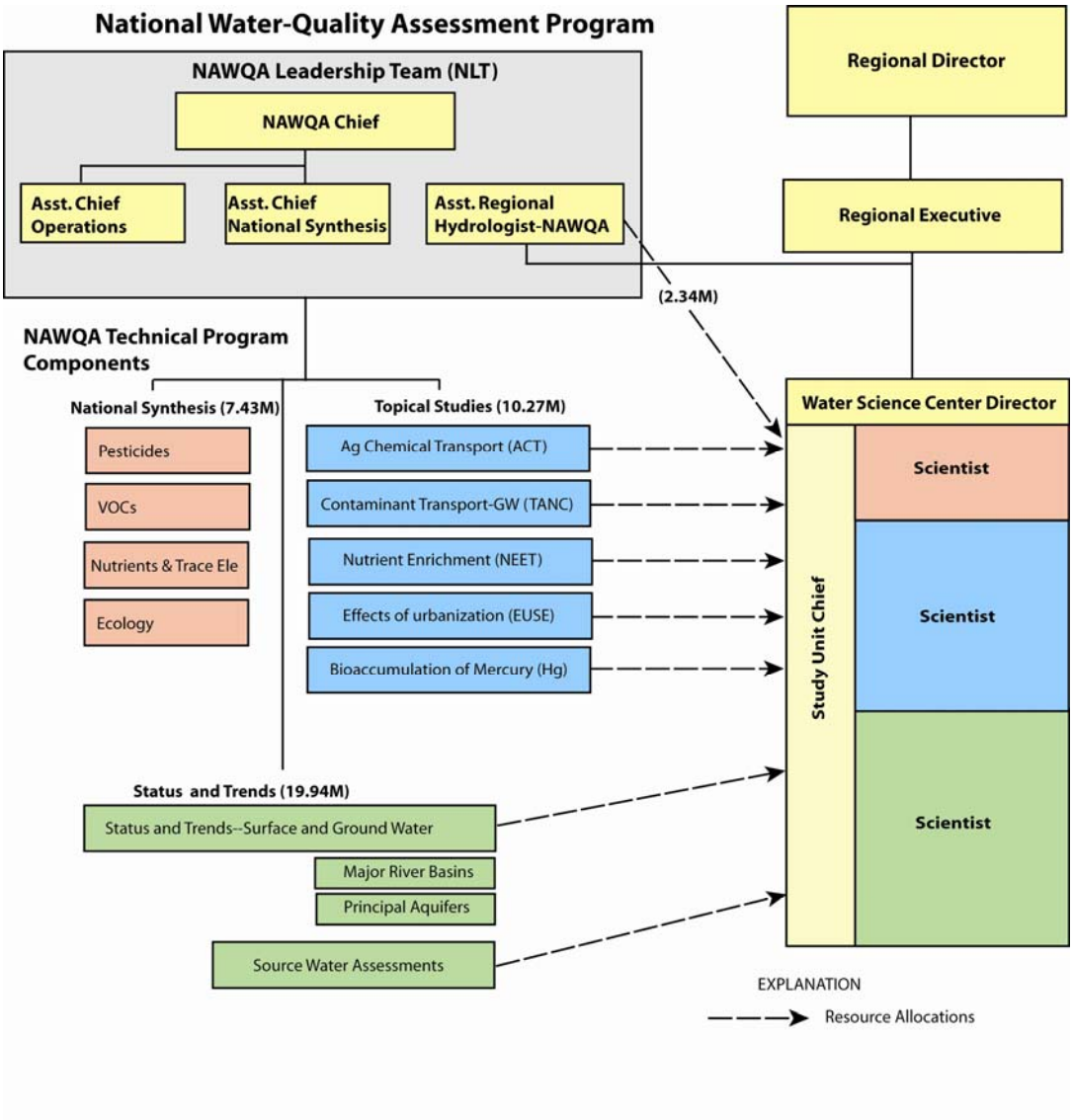


Figure 1.—National leadership and technical components of the NAWQA Program for Cycle II with fiscal year 2004 funding distributions, in millions of dollars, for each component.

As indicated in Figure 1, the national leadership of the NAWQA Program in Cycle II is similar to Cycle I, with a NAWQA Chief, an Assistant Chief of National Synthesis, an Assistant Chief of Operations, and four Assistant Regional Hydrologists for NAWQA. National Synthesis Teams, focused on describing findings on selected water-quality topics of national importance, remain an important component of Cycle II. Five new topical studies were added in Cycle II to focus on understanding factors that effect water quality and establishing links between sources, transport, and fate of contaminants that degrade ground-water and streamwater quality and aquatic biota. Trends and new status assessments will be evaluated at the major river basin and principal aquifer scale in Cycle II. A total of 16 Principal Aquifer and 8 Major River Basin teams, staffed mostly by Study-Unit scientists, were created to analyze and report on regional water-quality conditions and trends. The 42 Study Units active in Cycle II are located in the areas bounded by the 16 principle aquifers and the 8 major river basins. Topical studies and status and trends work also are being conducted within the 42 Study Units.

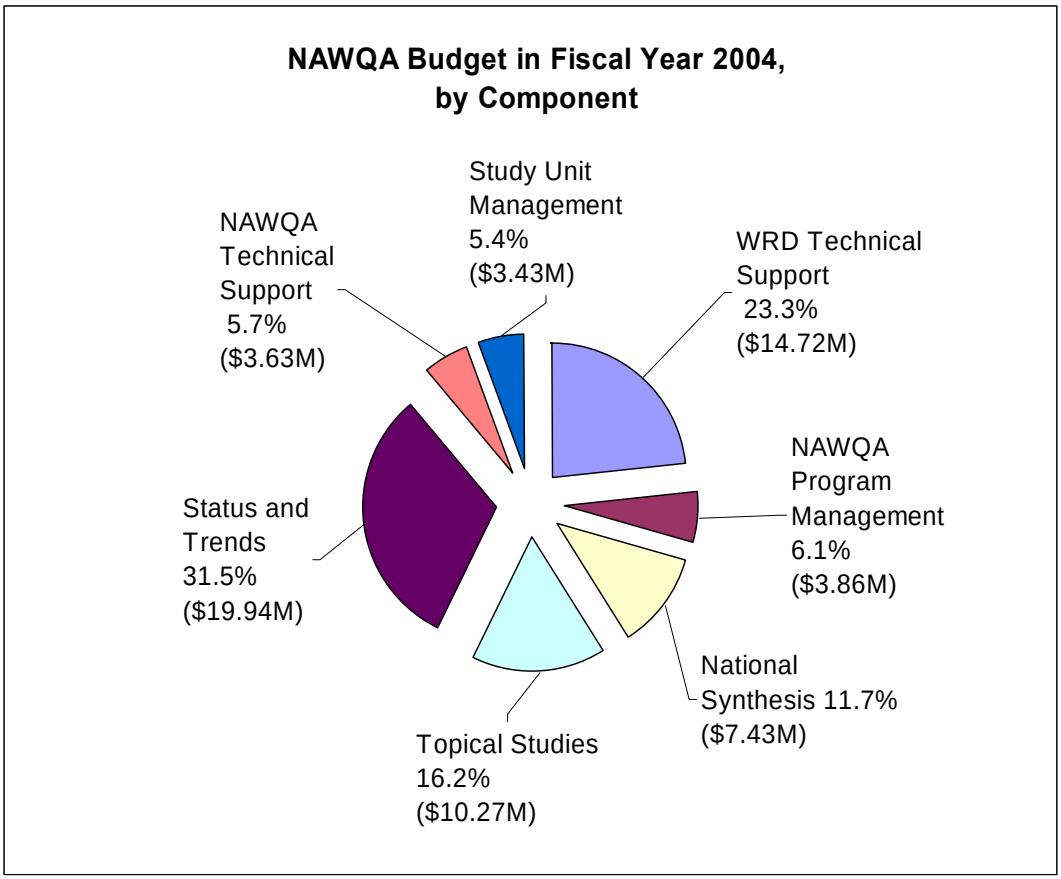
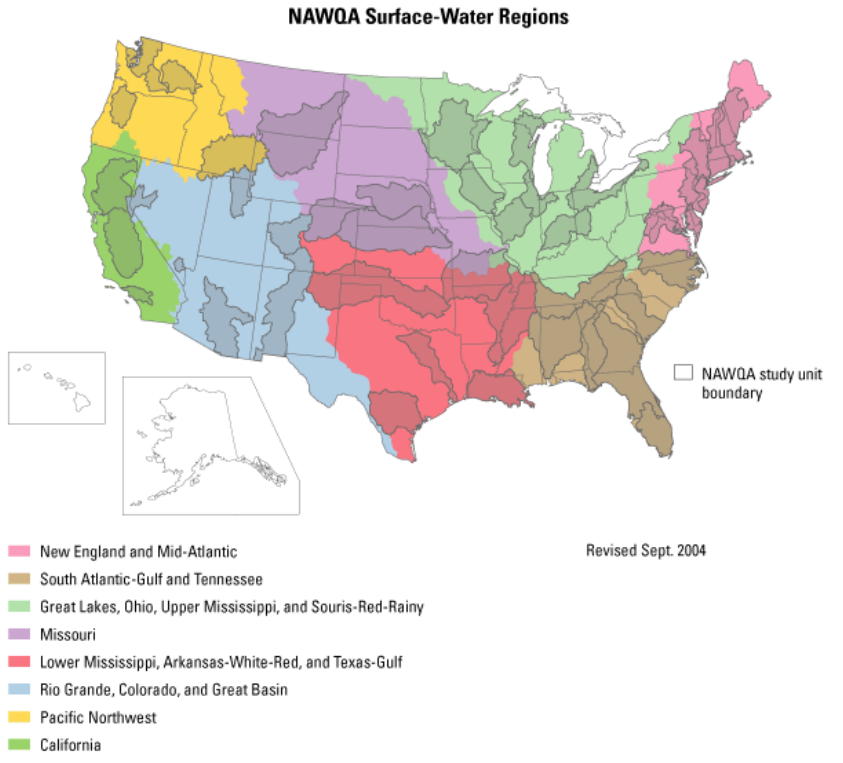


Figure 2.—Distribution of total resources allocated to the technical and management components of the NAWQA Program.

Total Program funding in fiscal year 2004 was $63.28 million (Figure 2). From this amount, $14.72 million (23.3 percent) was provided for WRD technical support. The remaining budget, $48.56 million (76.7 percent), went directly for NAWQA activities in fiscal year 2004. The remaining NAWQA budget included $2.34 million (3.7 percent) for the NAWQA Leadership Team including the Assistant Regional Hydrologists for NAWQA and Regional Biologists; $1.52 million (2.4 percent) was kept in reserve for funding Program needs such as change of headquarters. National Synthesis received $7.43 million (11.7 percent) for pesticides, nutrients, trace elements, VOCs, and aquatic ecology; included in this total were the salaries of the Topical Team leaders. In fiscal year 2004, a total of $10.27 million (16.2 percent) was provided to support topical studies. About $9.97 million each (15.8 percent each or a total of 31.5 percent) was provided for status and trends work in the major river basins and the principal aquifers. Project management for each of 42 Study Units was provided at a level of $3.43 million (5.4 percent) in fiscal year 2004. Other allocations included $3.63 million (5.7 percent) to support the NAWQA Hydrologic Systems Team (including SPARROW), additional NWIS and Phoenix activities, and the NAWQA Data Warehouse. These activities directly support NAWQA study units through technical assistance for water-quality modeling and data management. The vast majority of these teams, including National Synthesis teams, are located in Water Science Offices. Percentages of the total appropriation provided to various components of the program for fiscal year 2004 are likely to be typical of the percentages provided to these components over the next 5 to 7 years.



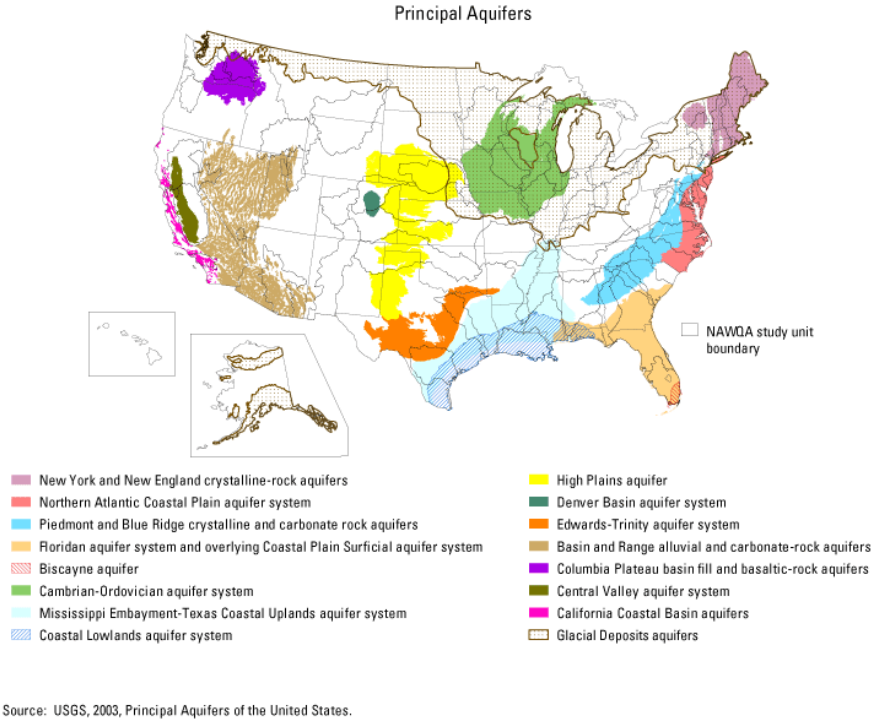


Figure 3.—In Cycle II, the planning, organization, analysis, and reporting of status and trends in NAWQA are moving to a larger scale than the status assessments conducted in Cycle I. These large-scale assessments are divided into 8 major river basins and 16 principal aquifers.

People and Roles

Findings:

An emphasis in Cycle II towards trend and topical assessments combined with flat funding and inflation resulted in changes in NAWQA staffing at the national, regional, and study-unit scales. Study-unit teams are now more distributed, fewer staff are fully funded, and the most intensive data-collection activities are often restricted to new types of NAWQA studies conducted within the Status and Trends and Topical Studies components of Cycle II. Status and trend reports are prepared by distributed teams that include scientists from Water Science Centers, the NRP, and National Synthesis Teams.

The role of the Assistant Regional Hydrologists-NAWQA (ARHNs) has not diminished in Cycle II. Coordination and oversight by the ARHNs is even more important in Cycle II because of the added communication challenges across the Program components and Water Science Centers.

The NAWQA Leadership Team has proposed to add planning and organization of status and trends activities to the duties of the Major River Basin and Principal Aquifer Team Lead Scientists. These additional duties would be done in collaboration with the Study Unit Chiefs, national-level Surface-Water and Ground-Water Status and Trend Coordinators, and the appropriate ARHNs. In addition to their primary duties of analyzing and reporting on status and trends, the Lead Scientists would be responsible for: (1) providing technical and liaison direction of status and trend activities in principal aquifer or major river basin studies; and (2) coordinating a regional team of study-unit and other Water Science Center scientists in the synthesis of water-quality information (Table 1). Major River Basin and Principal Aquifer study areas defined for Cycle II regional synthesis are shown in Figure 3.

Roles of NAWQA personnel involved in technical or administrative management of NAWQA Cycle II were discussed by the Committee. Agreed-upon duties and responsibilities in the areas of scientific leadership, study-unit work plan and budgeting, personnel and staffing, communications, program development, and data analysis and report preparation are outlined in Table 1.

The role of the Study Unit Chief has changed in Cycle II. In Cycle I, the Study Unit Chief generally was full time and their role(s) involved both science leadership and project management. In Cycle II, the amount of time spent on NAWQA activities depends on the level of study-unit activity and the individual's role(s) on status and trend, topical study, and/or national synthesis activities. The management responsibilities of the Study Unit Chief in Cycle II include providing scientific leadership, developing study-unit work plans and budgets, managing personnel and staffing needs, performing liaison and outreach activities (now communications), developing program, conducting data analysis, and preparing reports (Table 1). A census of Study Unit Chiefs taken during the fall of 2004 shows that support for the Study Unit Chief's time in Cycle II ranges from less than 10 percent to 100 percent. Higher levels of NAWQA support for Study Unit Chiefs in Cycle II are contingent on the Study Unit Chief assuming a technical role on a major river basin, principal aquifer, topical study, or national synthesis activity.

Recommendations:

- NAWQA should engage Water Science Center management directly to ensure Water Science Center comprehension of the selection process used by NAWQA to fill the science roles required by the NAWQA technical program components. The Committee believes that the selection process has not been readily understood by Water Science Center management. One suggested mechanism to accomplish this is to routinely evaluate best matches between demonstrated talents within the Water Science Centers and NAWQA programmatic needs, and to provide feedback to Water Science Centers on the decisions made. ARHNs are an essential component in this process, and should work extensively with WSC Directors and Regional Executives to identify candidates for these key roles.

  The Committee believes that where possible, the greater the commitment that NAWQA can make to retaining key Water Science Center personnel as full-time or near-full time technical support, the greater the chances of having an efficient and successful Program.

- NAWQA should empower the Major River Basin and Principal Aquifer Lead Scientists to coordinate and manage, in consultation with their respective ARHNs, regional data-collection networks and to make recommendations to the Status and Trends Coordinator and NAWQA Leadership Team on status and trend budgets in their regional areas.

- The NAWQA WRD Regional Biologist positions should continue to be located within the Regions. Supervision of this position should be the responsibility of the Ecological National Synthesis Chief. ARHNs should work with the Ecological National Synthesis Chief to ensure that ecological support continues at the 15-percent level of support, similar to Cycle I.

- NAWQA should request that the BRD Contaminant Biology Program Coordinator serve on and be a liaison to the NAWQA Ecological Leadership Team to ensure efficient planning, communication, and coordination of BRD/NAWQA activities. The BRD/NAWQA Biologist should serve an active liaison role to DOI.

- NAWQA should consolidate national synthesis teams and focus scientific efforts on cross-topic, policy-relevant issues of national interest and importance as Cycle I synthesis reports are completed.

Table 1: Roles and Responsibilities of Selected Personnel in Cycle II of NAWQA [MRB, Major River Basin; PA, Principal Aquifer; ARHN, Assistant Regional Hydrologist for NAWQA; TT, Topical Team; GW S&T, Ground Water Status and Trends; SW S&T, Surface Water Status and Trends; SU, Study Unit; NST, National Synthesis Team; NLT, NAWQA Leadership Team; NGO, nongovernmental organization]

SU Chief	Principal Aquifer Lead Scientist	Major River Basin Lead Scientist	Topical Team Leader	NLT	National Synthesis Leader
Scientific Leaders					
Serves as lead scientist and/ or manager on all activities within the SU. As appropriate, participates in data analysis and interpretation. Participates in writing reports at SU level and contributes to PA, MRB, TT, and NST report groups.	Provides technical and programmatic leadership for the synthesis of water-quality information for the PA study. Coordinates a regional team of scientists to produce synthesis of water-quality information at PA scale. Participates in writing reports on PA. Responsible for developing report plans for PA, in collaboration with ARHNs, GW S&T Coordinator, and SU Chiefs.	Provides technical and programmatic leadership for the synthesis of water-quality information for the MRB study. Coordinates a regional team of scientists to produce synthesis of water-quality information at MRB scale. Participates in writing reports for MRB. Responsible for developing report plans for MRB, in collaboration with ARHNs, SW S&T Coordinator, Regional Biologist, and SU Chiefs.	Provides programmatic and technical leadership to TT. Develops multi-year work plans for the TT, integrating SU, and including budgets and identifying lead authors. Prepares comprehensive TT report plans. Participates in writing reports for TT.	Provides programmatic leadership for NAWQA. Sets program goals and priorities. Reviews and approves work plans and budgets from the science teams (PA, MRB, TT, NST) and SUs.	Provides technical and programmatic leadership for NST topics. Provides input to NLT, as requested, on developing program goals and priorities. Develops and implements report plans for NST topics. Responsible for developing technical guidance for data collection, analysis and interpretation related to NST topics. Provides technical and managerial oversight to science teams (TT, PA, and MRB).
Study-Unit Work Plan and Budgeting					
Prepares annual and multi-year work plans to meet budget and technical guidance provided by Lead Scientists (PA, MRB, TT, NST, and ARHNs).	In collaboration with ARHNs, GW S&T Coordinator, and SU Chiefs, develops annual budget targets and timelines for PA reports, reviews SU work plans, and coordinates efficient data collection within the PA.	In collaboration with ARHNs, SW S&T Coordinator, Regional Biologist, and SU Chiefs, develops annual budget targets and timelines for MRB reports, reviews SU work plans, and coordinates efficient data collection within	Provides SU Chiefs with technical and programmatic guidance including reports, timelines and budgets. In collaboration with ARHNs, reviews SU work	Sets annual and multi-year budget targets for all program components. Reviews and approves annual and multi-year SU work	Provides input to NLT on pertinent sections of PA, MRB, TT and SU work plans.

		the MRB.	plans involved with topical study.	plans and budgets. Ensures programmatic guidance is followed and budget targets are met.	
Personnel and Staffing					
Supervises Water Science Center scientists and technicians involved with status, trends, and topical studies. Consults with PA and MRB Lead Scientists and ARHN to develop and implement work force plans to meet multi-year objectives for the SU. Identifies SU training needs and works with regional and national teams to ensure training needs are met. .	Consults with SU Chief(s), GW S&T Coordinator, and ARHN to develop work force plans to meet multi-year GW S&T objectives throughout the PA. Coordinates ground-water training efforts to address needs identified by SU Chiefs, GW S&T Coordinator, and ARHN.	Consults with SU Chief(s), SW S&T Coordinator, and ARHN to develop work force plans to meet multi-year SW S&T objectives throughout the MRB. Coordinates surface-water training efforts to address needs identified by SU Chiefs, Regional Biologists, SW S&T Coordinator and ARHN.	Consults with SU Chief(s), ARHNs, and Regional Biologists on staffing needs, expectations, and performance of SU and other Water Science Center staff working on topical study. Develops training related to topical study to address needs identified by SU Chiefs, Regional Biologists, and ARHNs.	Consults with Water Science Center and Regional management and PA and MRB Lead Scientists on staffing needs, expectations, and performance of Water Science Center staff working on NAWQA elements.	Develops training to meet needs identified by SU Chiefs and Lead Scientists.
Communications					
Responsible for liaison and outreach activities within the SU area and assists with outreach activities	Develops liaison and outreach activities within the area of the PA including: communicating ongoing plans, activities and findings; and identifying opportunities for collaboration and	Develops liaison and outreach activities within the area of the MRB including: communicating ongoing plans, activities and findings; and identifying opportunities for collaboration and cooperation.	Develops national-level liaison and outreach activities appropriate to topical study including: communicating ongoing activities and findings; and identifying opportunities	Responsible for liaison at the national level. Individual ARHNs are responsible for regional liaison and	Responsible for liaison on topical issues at the national level. Identifies liaison and partnership opportunities with bureau-wide programs, NGOs, and other Federal agencies.

	cooperation. Coordinates with SU Chiefs, GW S&T Coordinator, and ARHN on regional outreach and liaison activities. Provides support and guidance for SU liaison and outreach activities.	Coordinates with SU Chiefs, SW S&T Coordinator, and ARHN on regional outreach and liaison activities. Provides support and guidance for SU liaison and outreach activities.	for collaboration and cooperation. Coordinates with ARHNs on regional outreach and liaison. Provides support and guidance for SU liaison and outreach activities.	outreach with focus on Federal programs, NGOs, and multi-state partnerships within the Region. When requested, participates in SU, MRB, PA, TT, and NST liaison activities.	Links scientific findings from NAWQA activities to regional and national issues.
Program Development					
Develops opportunities for collaboration and cooperation on S&T, TT, and NST activities with other agencies and organizations at the SU level.	Assists SU Chiefs, as needed, with development of collaborative and/or cooperatively funded activities associated with S&T activities within PA area. Assists NLT with program development.	Assists SU Chiefs, as needed, with development of collaborative and/or cooperatively funded activities associated with S&T activities within MRB area.	Assists SU Chiefs with development of collaborative and/or cooperatively funded activities associated with topical studies.	Focuses on program development at the national and regional scales with particular focus on outside agencies and NGOs.	Identifies and develops opportunities for cooperation and collaboration with national and regional NAWQA activities.
Data Analysis and Report Preparation					
As appropriate, actively participates in data analysis and preparation of reports that are local, regional and national in scale. Ensures that SU reports are relevant, technically accurate, and produced in a timely manner.	Oversees production of reports that are technically accurate, within budget targets, and relevant at a regional or national scale. Actively participates in data analysis and report preparation of one or more reports, and provides guidance to PA team members in areas of expertise, as appropriate.	Oversees production of reports that are technically accurate, within budget targets, and relevant at a regional or national scale. Actively participates in data analysis and report preparation of one or more reports, and provides guidance to MRB team members in areas of expertise, as appropriate.	Prepares comprehensive report plans that document TT findings. Ensures reports at all levels are technically accurate, within budget targets, and relevant at a local, regional and national scale. Actively participates in data analysis and report preparation of one or more reports.	Leads the planning of reports at a national, regional and local scale to address policy-relevant issues in a timely manner.	Produces reports on NST topics as approved by the NLT.

Planning and Operations

Findings:

The NAWQA planning model has undergone substantial change in Cycle II. Where overall funding for study units was relatively predictable in the past and based on one of several general funding (scoping) models, the current planning process focuses on a number of regional issues and topical science questions that uniquely determine study-unit activities and funding. As a result, funding decisions involve a greater number of Water Science Center and national scientific staff, and so, require somewhat more time and are somewhat less predictable than they have been in the past.

Specifically during Cycle I, the Program focused on determining the status of water-quality conditions. The scope of work was similar among study units, and annual funding among study units was fairly uniform. In Cycle II, the Program focuses on trends and understanding processes in addition to filling critical gaps in the status assessment. With the added complexity of studies and funding constraints, annual funding of study units is directly related to the role(s) and scope of work associated with planned status and trend activities and topical studies. As a result, funding levels among study units and over time is more variable.

As NAWQA changes, the Water Science Centers should be prepared for four important changes at the operational level.

1. High-intensity phase funding in Cycle II generally is less and more varied over the period of study than what had come to be expected from Cycle I.

2. The people who influence decisions about funding and scope, and the ways in which Water Science Centers participate in those decisions, are less centralized, and so, require greater attention and involvement on the part of Water Science Center study-unit staff.

3. Static budgets and increases in uncontrollable costs may require additional changes in the timing and scope of national program elements and Water Science Center funding.

4. The increasingly regional focus inherent in the new major river basin and principal aquifer studies reflects an overall need for increased regional cooperation and coordination.

The movement toward topical studies and more highly focused investigations has required tighter timelines and coordination among various study-unit activities to address national program goals and to balance work loads on the National Water Quality Laboratory and other national capabilities. Although NAWQA Program activities and funding have always been cyclic in nature, the size and rapidity of ramping up and down in funding generally were well defined in advance so that most Water Science Centers could adjust to project staffing needs internally and independently. In Cycle II, however, no similar funding projection was uniformly made available to Water Science Center management, which led to a perception of more volatility in funding from year to year. A spreadsheet of projected funding levels for the next 5 years is needed to promote efficient management of Cycle II programs within the Water Science Centers. Knowledge of the funding commitments of NAWQA to Water Science Centers will ensure that Water Science Center management can adjust staffing needs to most appropriately meet short-term as well as long-term NAWQA technical program goals in the most efficient manner.

As the decision processes concerning NAWQA funding and scoping have become less centralized with Cycle II, some Water Science Centers have experienced frustration and have found it more difficult to understand how to represent their local interests and needs. In fact, the overall interests of Water Science Centers are reasonably well represented in the decision process because most of the staffs involved in funding recommendations are working in Water Science Centers across the country. The numbers, however, and the types of funding decisions and groups to which each Water Science Center must relate in this process have increased significantly (as indicated by the dashed lines in Figure 1). In Cycle II, Water Science Centers should routinely plan to work in parallel with multiple groups involved in science planning for each of NAWQA's major Program components (i.e., Status and Trends, Major River Basins, Principal Aquifers, and Topical Studies). NAWQA can facilitate this process through improved communication, but it will remain incumbent upon the Water Science Centers to embrace this new planning model and engage the various NAWQA planning teams on a continuing basis.

The NAWQA budget is fully allocated to program activities except for a small part of funding (1 to 2 percent) that is retained each year to cover expenses—such as change of headquarters. To the present, budget cuts generally have not been applied equally to all parts of NAWQA, and study units have borne large reductions in terms of both numbers and data-collection intensity. It is unreasonable to expect that NAWQA can deal with the same funding limitations in the future by making additional cuts to the overall scope of the Program without jeopardizing the goals of the Program as a national assessment. An alternative to further reductions in scope may be to extend some project activities over time. In this case, the Water Science Centers would likely see an elongation of high-intensity and low-intensity phases (HIPs and LIPs, as they have come to be known) and additional uncertainty in the dates for new starts. In fact, the Program has already extended some phases from the original study concept, which has been reflected, in part, as a change in the naming convention used for new starts—for example, dropping names based on years in favor of more general names such as "groups" (Group I, II, III, etc.), which do not imply specific timetables for funding.

As new elements in Cycle II, the Major River Basin and Principal Aquifer teams and coordinators represent a fundamental shift toward broader regional planning, cooperation, and analysis in NAWQA. Although our established, geographical study units remain the core planning construct for NAWQA science, specific project activities may be increasingly distributed across multiple Water Science Centers. Regional teams built around the major river basin and principal aquifer studies will be increasingly required to provide a high level of oversight coordination in project planning and management to ensure that NAWQA goals can be accomplished while keeping stress on staffing and operations in the Water Science Centers to a minimum.

Recommendations:

The ideas presented above are reflected in four basic recommendations that the Committee feels could better support the Water Science Centers and the national Program goals as we continue into Cycle II.

- NAWQA should create and update annually on the NAWQA Web site a spreadsheet that provides budget estimates for all components of the Program, including study units in 3- to 5-year periods for planning purposes (Table 2).

  A summary of the actual budget for fiscal year 2005 and estimated budgets for fiscal years 2006—2009 is presented in Table 2. The reader is referred to Appendix 3 for detailed budgetary information for each fiscal year from 2005—2009.

- NAWQA should maintain the current funding balance between Water Science Centers and national capabilities of the Program. If cuts are necessary, then they should be distributed proportionately between these components.

- NAWQA should lengthen the period of study-unit activities, rather than eliminating study units, to accommodate flat or declining budgets.

- NAWQA Lead Scientists for Major River Basins and Principal Aquifers should work with state and regional agencies to develop regionally based collaborative and reimbursable projects.

Table 2: Budget estimates for NAWQA Program components through fiscal year 2009 [SU, Study Unit; PA, Principal Aquifer; MRB, Major River Basin; FY, fiscal year; SW, surface water; GW, ground water; PM, project management; SWQA, source water quality assessment]

SU, PA, and MRB	REGION /GROUP	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Comments
CONN	N/01	$1,272,000	$219,000	$267,000	$198,000	$356,000	FY05 actual includes MRB report and excludes SW and GW SWQA; FY06-09 includes average PM, excludes SWQA, MRB and PA report
PODL	N/01	$1,456,000	$726,000	$548,000	$215,000	$478,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
WHMI	N/01	$1,123,000	$680,000	$499,000	$175,000	$431,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
WMIC	N/01	$1,014,000	$889,000	$477,000	$134,000	$253,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
HDSN	N/04	$484,000	$564,000	$386,000	$345,000	$350,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
LERI	N/04	$506,000	$468,000	$798,000	$337,000	$598,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
LINJ	N/04	$340,000	$734,000	$605,000	$397,000	$988,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
LIRB	N/04	$762,000	$304,000	$389,000	$301,000	$877,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
DELR	N/07	$284,000	$103,000	$137,000	$95,000	$150,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
NECB	N/07	$298,900	$119,000	$195,000	$105,000	$417,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
UIRB	N/07	$163,000	$148,000	$231,000	$148,000	$280,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
ACFB	S/01	$841,000	$534,000	$451,000	$225,000	$343,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
ALBE	S/01	$1,286,000	$525,000	$418,000	$194,000	$317,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
GAFL	S/01	$1,249,000	$611,000	$371,000	$157,000	$296,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
MISE	S/04	$549,000	$594,000	$1,150,000	$986,000	$974,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
SANT	S/04	$459,000	$466,000	$1,119,000	$408,000	$567,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
MOBL	S/07	$139,000	$146,000	$190,000	$144,000	$305,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
SOFL	S/07	$210,000	$251,000	$382,000	$295,000	$655,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
TENN	S/07	$347,000	$196,000	$249,000	$195,000	$268,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report

SU, PA, and MRB	REGION /GROUP	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Comments
HPGW	C/01	$1,480,000	$390,000	$158,000	$69,000	$69,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
CNBR	C/01	$1,017,000	$680,000	$368,000	$189,000	$242,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
SPLT	C/01	$780,000	$604,000	$471,000	$515,000	$362,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
TRIN	C/01	$698,000	$442,000	$391,000	$237,000	$520,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
EIWA	C/04	$351,000	$646,000	$1,404,000	$998,000	$1,078,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
OZRK	C/04	$308,000	$425,000	$853,000	$600,000	$743,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
RIOG	C/04	$617,000	$1,018,000	$822,000	$1,219,000	$665,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
SCTX	C/04	$686,000	$1,059,000	$736,000	$800,000	$801,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
UMIS	C/04	$635,000	$625,000	$1,419,000	$639,000	$1,064,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
ACAD	C/07	$457,000	$227,000	$228,000	$149,000	$391,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
UCOL	C/07	$178,000	$192,000	$145,000	$331,000	$151,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
YELL	C/07	$218,000	$210,000	$124,000	$128,000	$123,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
CCYK	W/01	$925,000	$764,000	$308,000	$562,000	$174,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
NVBR	W/01	$608,000	$172,000	$170,000	$299,000	$177,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
SANJ	W/01	$1,670,000	$1,134,000	$460,000	$596,000	$281,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
WILL	W/01	$1,055,000	$627,000	$382,000	$427,000	$259,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
PUGT	W/04	$475,000	$923,000	$622,000	$1,173,000	$698,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
SACR	W/04	$465,000	$785,000	$638,000	$1,265,000	$828,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
USNK	W/04	$297,000	$778,000	$732,000	$977,000	$641,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
CAZB	W/07	$253,000	$254,000	$275,000	$317,000	$268,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
GRSL	W/07	$334,000	$237,000	$149,000	$291,000	$158,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report

SU, PA, and MRB	REGION /GROUP	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Comments
SOCA	W/07	$184,000	$276,000	$188,000	$305,000	$134,000	FY05 actual; FY06-09 includes average PM, excludes SWQA, MRB and PA report
Major River Basin Reports			$3,325,000	$3,671,000			
Principal Aquifer Reports			$4,615,000	$4,513,000			
SU Support Total		$6,665,000	$602,000	**$602,000**			
Residual		$184,000	$2,337,000	$2,696,000			
SU Totals		**$33,320,000**	**$32,040,000**	**$31,800,000**	**$602,000**	**$602,000**	FY 06-09 totals include one SWQA, MRB and PA report
National Synthesis Total		**$7,204,000**	**$7,430,000**	**$7,430,000**			
Program Support Total		**$3,658,000**	**$3,690,000**	**$3,690,000**			
Program Mgmt Total		**$2,698,000**	**$2,910,000**	**$3,000,000**			
WRD Taxes Total		**$15,446,000**	**$15,570,000**	**$15,730,000**			
TOTAL		**$62,326,000**	**$61,640,000**	**$61,650,000**			

Communications

Findings:

Communication mechanisms within the NAWQA Program have ranged from all-encompassing national meetings to program-specific conference calls at the study-unit level. NAWQA continues to rely heavily upon the annual work plan guidance (released in March) to communicate specific program elements (data collection and analysis and report writing) within each study unit for the following fiscal year. The ARHN provides the critical, internal communication link between NAWQA leadership and WSC Directors, Study Units, Major River Basins, Principal Aquifers, and Topical Study Teams. The ARHN's active participation in developing the annual work plan guidance and routine communication with WSC Directors and with technical component leaders (Study Units, Major River Basins, Principal Aquifers, and Topical Study Teams) of the NAWQA Program is vital to ensure adequate representation of Water Science Center and NAWQA capabilities and opportunities.

National meetings typically have provided NAWQA a chance to rollout important new changes, announce national, regional, and local findings, or express concerns about the Program to a large internal audience. Past national meetings provided an effective forum to disseminate a consistent message to all study-unit personnel and WSC Directors, regardless of the current study-unit phase. The scope, timing, and complexity of the Program in Cycle II present new challenges and opportunities that need to be communicated in a consistent manner throughout USGS.

In Cycle I, liaison committee meetings and/or communications were an effective method to publicize NAWQA findings, and often increased local awareness of USGS capabilities. The liaison process provided immediate feedback and direction to ensure that we were addressing policy-relevant issues in a timely manner. Formal liaison committee meetings at the study-unit level are not currently required as part of Cycle II; however, the need to communicate upcoming NAWQA activities and local, regional, and national findings remain critical. Although a formal liaison process currently is not required, there still exists the need to formally develop a communication plan for all technical components of the NAWQA Program.

Recommendations:

- ARHNs should be active participants in all NAWQA components and serve as the primary conduit for all internal communication of NAWQA activities within their respective Regional areas. ARHNs should coordinate the internal communication of NAWQA Program components and activities, both nationally and regionally. ARHNs should keep Regional and Water Science Center staffs aware of personnel opportunities, national and regional findings, and NAWQA sampling activities within their respective Regions. ARHNs should distribute Program information to all Water Science Center and Regional offices along with a copy of this Committee's final report.

- NAWQA should hold a national meeting at the beginning of the high-intensity phase of activities within a group of studies to communicate Program components, funding expectations, and timelines of major study-unit starts. All study units should have representative(s) at these meetings, even those study units in the low-intensity phase.

- NAWQA should require all technical program components (Major River Basins, Principal Aquifers, Topical Study Teams, National Synthesis Teams, and Study Units) to develop a communications plan as part of the annual work plan that outlines how the studies will interact with local, state, and Federal stakeholders.

Appendix 1—Comments from District Chiefs

Comments from Western Region District Chiefs:

The Owls have discussed the new NAWQA "model" and have some issues we would like the NLT to consider. We realize that the plan is essentially in place at this time but feel it is important to share our thoughts with you regardless.

Consider trimming management structure

Given the continuing reductions in funding and study units, we believe that it is time to look at the overall management structure in the NAWQA program and consider reducing the number of management positions to reduce costs. Less oversight should be needed if the data collection component increases.

Water quality trends analysis to support local interests

We would like to see a commitment on the original promises made by the program to external constituents to analyze and describe water quality trends in each study unit. Each study unit must produce a trends report during the second round. This is the minimum necessary to meet the promises made to our liaison units.

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Flexibility on reports production in Districts

There should be an opportunity for authorship and reports from each of the Districts that have a study unit. Avoid having all of the reports coming from only the District that houses the topical team leader.

Selection of topical team locations and leaders should be an open process

Solicit proposals from all districts to become topical study units and don't bias selection based on past performance or present staffing.

Topical teams should distribute their work to as many SU's as possible

Topical team leaders should be required to distribute team tasks to as many study units as feasible to assure broad representation across the country.

Review NAWQA funds diverted to tech support.

We're concerned that the trend to fund more and more technical support using NAWQA funds will continue to erode the base program over time, which will damage the scientific and technical goals of the program.

Comments from Southeastern Region District Chiefs:

Recommendations for Change in NAWQA Implementation for Cycle II
A consensus of the District Chiefs in the Southeastern Region
February 2004

THE CURRENT SITUATION

Over the last several years, the Districts have witnessed dramatic change in the structure and implementation of the NAWQA program. As study units across the Region begin new activities under Cycle II, we are experiencing new uncertainty and growing frustration in our relation to NAWQA and its place in the future of water science in our respective states. In general, our shared experience can be characterized by the following:

- NAWQA budget constraints in Cycle II have significantly reduced annual funding to support data collection and analysis at the study-unit level. Continued cuts to the scope of the program threaten its credibility as a National assessment.

- The responsiveness of NAWQA to local and regional environmental issues has been diminished, reducing the ability of districts to develop new program around NAWQA work.

- Study units are increasingly budgeted by the piece on a contracting model that reduces district participation and ownership in the outcome of the program.

- Planning and execution of NAWQA interpretive efforts is increasingly centralized. Confusion about roles and responsibilities is eroding trust between district staff and national program managers.

- Numerous changes in the approach of Cycle II have increased the complexity of planning and budgeting processes, resulting in unmanageable delays and late-term changes in funding at the district level.

- Uncertainty in NAWQA funding for district scientists is reducing the strength and continuity of district support for the program. It is essential that we keep our best people working as effectively as possible; we cannot afford to commit our strongest resources to efforts that may not be funded.

- A lack of professional commitment to senior scientists is eroding trust and dampening the spirit of a core group that has sustained the NAWQA Program throughout Cycle I. Many of these scientists have moved on to other district projects; some have opted to leave the Survey.

It is clear that the NAWQA program has changed in some necessary and fundamental ways with Cycle II. The shift in NAWQA toward increased emphasis on evaluations of trends and processes has tended to refocus interpretive efforts to a new organizational level (topical teams) that may alter, if not entirely supplant the role of basin-specific interpretive units in the Districts. This movement

toward topical teams without explicit adjustments elsewhere in the program (to synthesis teams and study-unit teams) may produce inefficiencies and lost opportunities across the organization.

The District Chiefs of the Southeast Region recognize that the NAWQA NLT and we share a common interest in the continued success of NAWQA. District programs have been enhanced by the science and scientists supported by NAWQA and we have come to rely on many resources and opportunities that could only be made available by a program of such national scope. Likewise, we believe that the study-unit teams in our districts provide energy, creativity, and a unique sense of purpose essential to the continued success of the program. Though all of us acknowledge the need for change in the interest of stronger science, we believe that any such change ought to be deliberate, and ought to reflect our broader commitment to water science in the public interest at both national and local levels.

RECOMMENDATIONS FOR CHANGE

The District Chiefs feel that the single most important change we could recommend for NAWQA implementation is a move toward regionally based teams to complete the work of multiple study units. This single change in staffing could go far to reduce uncertainty in funding to districts from year to year and also to provide stability and scientific opportunities to our best scientists. We hope that the NLT would agree that a renewed commitment to district scientists would improve the effectiveness of the program and enhance USGS science overall. We see the changing focus of NAWQA as an opportunity to provide stronger and longer-term support for key individuals in our districts who have demonstrated the skills and dedication necessary to lead water science in our region and our nation.

To this end, we believe that NAWQA NLT should adopt a staffing model that favors the support of full-time permanent interpretive staff and that places an emphasis on finding and retaining the very best scientists in the field. Stable salary support should be provided to as many of these scientists as possible to produce results that address both regional and national issues. We believe that NAWQA has already made the shift away from a strict study-unit staffing model in Cycle II and that a more regionalized staffing model will allow us to work more efficiently with the staff positions we now have.

Regional study teams should be comprised of senior scientists from existing study units who are funded at least 75% of their time on NAWQA and work under the direction of a lead scientist—similar perhaps to what has been initiated with the Major River Basin and Principal Aquifer studies within each region. The major departure from the past is that district scientists on regional teams should go into each year knowing what support they have and from where it is coming. These teams should have greater say in decisions concerning funding priorities, project activities, and district-level support activities for NAWQA and can open new lines of communication among national and local programs.

Inherent in a more regionalized NAWQA staffing model are a number of implicit recommendations (or ramifications) that we have recognized:

1. A regional team distributed among the Districts will involve fewer people but for more of their time. A preference should be given to fully funding one person to support multiple

topical assessments rather than partially funding several persons who are otherwise difficult to support fully in a district setting.

2. We should cease to distribute funding by a rotating schedule of Water Science Centers, geographic units, and phases. The distribution of work should be determined by staffing and scientific objectives. All study units, even those previously dropped, should be considered potential subjects of study.

3. Regionalized study teams dispersed throughout the Districts should take on a greater coordinating role for NAWQA implementation. Study units representing collections of people rather than territory should be grouped and directed by topical interests; not Water Science Centers.

4. A greater concentration of permanent interpretive staff on a regional basis should create a center of excellence capable of more complex analyses and investigations. This core group will provide improved communication of science objectives and priorities across the bureau and should play a greater role in national synthesis and science planning at the discipline level.

5. National NAWQA planning efforts should concentrate on prioritizing objectives for work units rather than the piecemeal budgeting and distribution of funds. Regional study teams should work closely with the Districts to identify interpretive projects to address high priority study objectives, with funding, deliverables, and timelines defined within the framework of National guidance.

SUMMARY

The District Chiefs of the Southeast recognize that our collective response to Cycle II might require considerable change in the staffing and funding practices to which all of us have become accustomed. However, we are convinced that if change is necessary it is best for all concerned to recognize it now and deal with it. We are not proposing a new level of organization but rather to deal more creatively with those we already have. The Southeast Region is geographically well suited to a more regionalized staffing model and we believe this can be an effective way to serve both NAWQA and the Districts. We would ask that NAWQA NLT consider our recommendations for change and join us in a dialogue concerning what is best for NAWQA and water science programs in general at all levels of our organization.

Comments from Northeastern Region District Chiefs:

NORDIC's memo of 11/16/03 to Tim Miller

Tim:

Thank you for agreeing to talk with the Northeastern Region District Chiefs (NORDICS) this coming Thursday. The focus of the conference call will be the recent and future direction of the NAWQA program. We recognize that NAWQA exposes study-unit staff to some top-notch scientists in other areas of the country and that study-unit staff learn new state-of-the-art techniques related to Regional and National activities, which could lead to opportunities for program development after NAWQA. However, Districts continue to have concerns with NAWQA implementation. Some of the concerns are long-standing, while others relate to the new model of focusing more activities at the Regional or National level rather than at the study-unit level. I have compiled the issues from the NORDICS and list them here for your consideration.

1. NAWQA activities are more prescribed with strong central control. Study-unit and District staffs are becoming increasingly frustrated. Specific concerns on this issue are:

   It appears that NAWQA is moving toward having study units conduct data-collection activities only. Is this an intentional direction?

   There is little or no opportunity for study-unit staffs to delve into relevant issues particular to their areas. There are no discretionary resources available to follow up on important results that don't fit the prescribed Regional or National plan. As a result, liaison committees are being marginalized and are becoming a thing of the past, a result that will not be good for NAWQA in the long run.

   NAWQA chiefs often spend hours per month on conference calls with NAWQA leadership taking direction (including staffing assignments) at a very detailed level. This level of direction leads to Districts feeling increasingly disenfranchised from NAWQA.

   The use of 'National Synthesis Teams', 'Topical Teams' and more recently 'Regional Synthesis Teams' is consolidating NAWQA science with groups of individuals that are viewed as being 'hand picked' to do the analysis and report writing work. With the exception of the 'summary' report, study units are not permitted to work on any reports other than those required by topical teams and regional-synthesis teams. As a result, study-unit-specific issues do not get studied and published. The practice of using select teams of scientists to work on only National and Regional products has a deleterious affect on career-development for less experienced scientists and on District program development.

2. NAWQA resources are spread too thin, making it difficult for study units to complete their work well and on time. If anything goes differently than planned (weather, illness, underplanning, etc.), the study-unit staff can't recover, because extra funds to complete unfinished work are not available.

3. The practice of allocating more money to study units with top talent is sometimes leading to competition among study units instead of collaboration. Study units that do not have access to top scientists feel as if they are "losers" in this competition, even though the issues being addressed may be more important in their study units than in those study units having access to top talent.

4. The power in NAWQA is shifting to the leaders of the topical teams and the regional-synthesis teams. To an increasing extent, they are deciding what gets done and who does it. The role of the Assistant Regional Hydrologists for NAWQA is diminishing; they seem to be becoming more and more administrative and less and less involved with the scientific success of NAWQA.

5. This year, NAWQA is holding back a significant amount of funding until the second quarter when the distribution of topical-team and regional-synthesis-team authors is determined. As a result, NAWQA staff are partially undercommitted for the year, leading to difficult District decisions about their continued assignment to NAWQA study units. Some topical-team and regional-synthesis-team leaders are advising NAWQA staff to plan on full funding while others are cautioning against it, leading to confusion on the part of the study-unit chief and the District.

6. The concept of NAWQA imposing 'caps' on field office assessments is very disturbing and places Districts in a "no-win" position. Districts are required to have a common services rate capped at 25%, with the remainder of the overhead costs placed into a 'distributed direct' cost category. Having NAWQA take steps to impose a cap on 'distributed direct' places the District in the untenable position of having NAWQA-related costs that must be paid for by other programs and cooperators. Placing a cap on 'distributed direct' implies that District overheads are bigger than they should be and that National programs need to devise ways to get around them. The more this is permitted, the worse the situation becomes.

7. A continuing concern is the cyclic design of the program. Although there may be scientific advantages to such a design, it creates a wide range of fiscal, management, and personnel problems at the District level. Dealing with the NAWQA 'rampdown', especially during times when all other programs are remaining static, causes serious fiscal and morale problems. Why do we impose this 'boom and bust' environment on ourselves? This is a big contributor to DC 'burnout'.

In addition to the concerns listed above, If there is time on the agenda I believe the NORDICS would be interested in your thoughts on the issues outlined by the Western Region District-Chief Association (OWLS), which I've included below.

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The Owls have discussed the new NAWQA "model" and have some issues we would like the NLT to consider. We realize that the plan is essentially in place at this time but feel it is important to share our thoughts with you regardless.

Consider trimming management structure

Given the continuing reductions in funding and study units, we believe that it is time to look at the overall management structure in the NAWQA program and consider reducing the number of management positions to reduce costs. Less oversight should be needed if the data collection component increases.

Water quality trends analysis to support local interests

We would like to see a commitment on the original promises made by the program to external constituents to analyze and describe water quality trends in each study unit. Each study unit must produce a trends report during the second round. This is the minimum necessary to meet the promises made to our liaison units.

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Flexibility on reports production in districts

There should be an opportunity for authorship and reports from each of the Districts that have a study unit. Avoid having all of the reports coming from only the District that houses the topical team leader.

Selection of topical team locations and leaders should be an open process

Solicit proposals from all districts to become topical study units and don't bias selection based on past performance or present staffing.

Topical teams should distribute their work to as many SU's as possible

Topical team leaders should be required to distribute team tasks to as many study units as feasible to assure broad representation across the country.

Review NAWQA funds diverted to tech support.

We're concerned that the trend to fund more and more technical support using NAWQA funds will continue to erode the base program over time which will damage the scientific and technical goals of the program.

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Thanks again for taking the time to speak with us. We look forward to a productive discussion on Thursday. -Bill Werkheiser

Comments from Central Region District Chiefs:

Assorted Central Region District Chief's Comments
On
The "State" of NAWQA

- Districts with past or present "direct" experience with NAWQA tend to agree with opinions expressed by the other three Regions.
- In the face of fragmented District NAWQA staff time and funding, the idea of identifying a core group of capable district folks throughout the Region and providing them NAWQA funding for a fixed and consistent amount of time over a multi-year period is a more predictable and stable approach for the continuing NAWQA effort.
- There has always been a tension between the national leaders of the NAWQA program and the district players on various approaches and emphasis, but that has been a healthy relationship that generally improved rather than eroded the results. Lately, the trust between the national and district levels has eroded to a level of concerned as has been noted in the statements listed by other District Chiefs from the other WRD Regions.
- Liaison committees are being marginalized; a result that will not be good for NAWQA in the long run.
- NAWQA resources are spread too thin.
- NAWQA is holding back a significant amount of funding until the second quarter when the distribution of topical-team and regional-synthesis-team authors is determined. As a result, NAWQA personnel are partially under committed for the year, leading to difficult District decisions about their continued assignment to NAWQA study units.
- The concept of NAWQA imposing 'caps' on field office assessments is very disturbing.
- We would like to see a renewed commitment on the original promises made by the program to external constituents to analyze and describe water quality trends in each study unit.
- There is concern that the trend to fund more and more technical support using NAWQA funds will continue to erode the base program over time which will damage the scientific and technical goals of the program.
- Bob Hirsch has said, "The USGS has compassion (ownership) of the data it collects." This "compassion" is at some risk in situations where principle investigators can only direct data collection and (or) have limited time to analyze the results based on their on-the-ground understanding of those data. Whatever can be done to foster District scientist involvement in data analysis in as many of the studies as practical, the better off the National and the District NAWQA Programs will be.
- The time-trends objective of NAWQA is an important one to address. It is one that was used with Congress to "sell" NAWQA originally as a newly funded Program for USGS. Here is another opportunity to engage more minds (from the District scientists and their local connections with other organizations and other researchers) to build a body of knowledge about trends.
- Maybe it would be a good time to review the original NAWQA Implementation Plan for Cycle II and re-assess the priorities included in that stage of planning? The foresight of the original and current leaders of the Program has been significantly derailed by the loss of inflationary funding adjustment; the impact of which worsens over time.

- It appears that NAWQA is moving toward having some study units conduct data-collection activities only-- these study units may not have any program other than data collection. At that point the Districts would lose significant ownership. Also of concern is the time and resources that have been spent on proposals for work that are competitive among the study units. For example: topical studies, the new urban topic, river basin team proposals, principal aquifer team proposals--all of these have involved meetings, calls, proposals and time since late summer, with few decisions made at this point. This is frustrating and good people will lose interest in the programs as a result.
- Even Districts with no NAWQA “connection” fear that continually increasing central command and control erodes the National NAWQA Program relationship with hardworking and dedicated District staff that have, since NAWA inception, contributed greatly to NAWQA integrity and relevance on the “local front” and, reduces District “co-ownership” of the program.
- There is concern regarding the long delays in allocating funds for all USGS programs (including NAWQA); if USGS was an outside customer we would have to put a "stop work order" on all of our programs as we consistently work on projects with no "signed agreement" for months into the fiscal year. If we want our partners to commit funds up front then we should at least do the same internally.
- We’re pleased to hear of the willingness of Tim Miller and Donna Myer to visit with us at the WRD breakout during the national managers meeting.

Appendix 2—Charter for Ad Hoc Advisory Committee

Establishment

It is the goal of the USGS to provide long-term, nationally consistent data and interpretive information on water quality through the National Water-Quality Assessment Program (NAWQA). In support of this goal, this document establishes a NAWQA Ad Hoc Advisory Committee on Management (called the Advisory Committee) and sets forth the purpose, scope, process, composition, and tenure for this committee.

Introduction

The National Water-Quality Assessment Program (NAWQA) began as a pilot program in 1986, transitioned to full implementation and will complete Cycle I activities and products by 2006, and now is in implementation of Cycle II. Cycle II plans are a result of the work of an internal planning committee, and an implementation team, and with an external review by a National Academy of Science select team. Cycle II differs from Cycle I primarily in that more emphasis is being placed on water-quality trend detection and in providing a greater understanding of the causes of water-quality conditions and trends. Two significant issues have led to the need for this committee: 1) the operational model developed and adopted for Cycle I has been initially retained for use in Cycle II even though the objectives and types of products have changed significantly, and 2) the resources allocated and available for NAWQA have shrunk and continue to shrink because of compounded inflationary pressures to the program budget. There is a need for an evaluation of the management model supporting Cycle II activities and for recommendation of management changes to enhance the science produced and to capture more efficiency.

Purpose

The Advisory Committee will be responsible for review of the current NAWQA program management model and projected activities and likely funding scenarios and to recommend adjustments to the Associate Director for Water.

Scope

The Advisory Committee will be responsible for reviewing NAWQA program management strategy and related field execution, and for recommending adjustments to NAWQA. The Committee's products should be strategic and address three major objectives: (a) review and evaluate the Program's management structure and procedures to effectively implement and execute the program design; (b) recommend near-term (1-3 year) management adjustments to improve program effectiveness and enhance efficiency; and (c) strategize longer-term (5-10 year) management adjustments to NAWQA that will position the program well to meet future programmatic needs in consideration of anticipated resources.

Topics of interest for the Advisory Committee to address cover a broad range of NAWQA management concerns. Issues to consider include:

Who is the local-level person in charge of the NAWQA Study? Study Unit Chief?
Who decides funding levels, staffing, and allocations, and timing of these decisions?
Who manages what in NAWQA? Create a responsibility matrix to show the roles of all involved, from study units through Program national management.

NAWQA has experienced and expects continued inflationary pressures. How can an equitable adjustment be made to all Program activities? What do adjustments mean for the local, regional and national elements of the Program? Develop a strategic statement to ensure reductions are implemented across all elements of NAWQA activities while maintaining the overall Program objectives.

What is the future role and structure for the NLT and ARHN positions?
What is the future role for the NAWQA Regional Biologist positions?
What is the future of Liaison Committees at the Study Unit level?
How much, and at what level, and what type of management is optimum?

Process

There are four elements to this committee advisory process; (1) structure of the process is guided by the Advisory Committee itself; (2) timing for the review; (3) authority of the Advisory Committee and its relation to the Associate Director for Water; and (4) products from the process.

Structure

To accomplish a review of the NAWQA program's management model, this Charter establishes the Advisory Committee, which will have about 12 members from inside and outside the NAWQA program. For connection to ongoing NAWQA management, the Advisory Committee will have 3 members from the NAWQA NLT. These NLT members will work with the Advisory Committee to ensure that recommendations can be accommodated within the NAWQA Program budget and other constraints.

Timing

Beginning in June 2004, the Advisory Committee will convene to initiate the review process at the call of the Committee Chair. Based on the scope of work, it is anticipated that the review process will require about three months and one or more face-to-face meetings and several conference calls to complete. Adopted Program adjustments (implementations of recommendations) would be introduced as soon as possible, with full implementation by FY2006.

Authority

This operational review process is crucial to the continuing and future success of the NAWQA Program. As a result, the Advisory Committee has authority to review and recommend changes to the Associate Director for Water, who working through the Office of Water Quality and the NAWQA Program ensures that the Program's goals and objectives are met.

Products

The Advisory Committee will produce various products including committee minutes. The principal product, however, of the Advisory Committee will be a written report that documents the results of the committee's review and outlines their recommendations. The Committee's written report will be widely circulated within WRD for comment, prior to final submission to the Associate Director for Water.

Composition

To accomplish a review of the NAWQA program's management model, this Charter establishes the Advisory Committee, which will have about 12 members from inside and outside the NAWQA program.

Committee Chair:	**Jess Weaver**, SR (Regional Hydrologist)
NAWQA NLT:	**Donna Myers**, HQ (NAWQA Chief) **Bill Wilber**, HQ (National Synthesis Chief) **Gary Rowe**, CR (ARHN)
NAWQA Topical Teams:	**Mark Munn**, WR (WA) (NEET Team Leader)
District Chiefs:	**Scott Gain**, SR (DC, TN) **Mark Ayers**, NR (DC, KY) **Jeff Stoner**, CR (DC, MN) **Patrick Lambert,** WR (DC, UT)
Study Unit Chiefs:	**Mike Woodside**, SR (TN) (MRB Team Leader) **Marian Berndt**, SR (FL) (PA Team Leader)

Tenure

The Advisory Committee is established and the members serve at the discretion of the Committee Chair and the Associate Director for Water. The tenure of the Committee is expected to be about three months.

Appendix 3—Actual FY2005 and Estimated FY2006—2009 NAWQA Budgets

Fiscal Year 2005 — Actual Budgets

Last Update 01/15/2005		FY 2005 Study-Unit Component Sub-Target (Mgmt, GIS/DBM, Archives, Data Collection, Data Analysis, & Reports)									
Program Component (Cost Center)	Region /Group /District	SU Totals	Adjust-ments	Total SW S&T QW, Eco, SWQA Data Collection & Reports	Total GW S&T, SWQA Data Collection & Reports	ACT Data Collection Only	HG Synoptic & Topical Data Collection Only	EUSE Data Collection Only	NEET Data Collection Only	TANC Data Collection Only	Project-Wide Mgmt/GIS DBM/ Archives
CONN (CT)	N/Gp1	$1,272,000		$297,000	$362,000					$530,000	$83,000
PODL (MD VA)	N/Gp1	1,456,000		247,000	429,000	$439,000			$234,000		107,000
WHMI (IN OH)	N/Gp1	1,123,000		159,000	212,000	435,000			213,000		104,000
WMIC (WI IL)	N/Gp1	1,014,000	$8,500	277,000	221,000		$168,000	$179,000	50,000		111,000
HDSN (NY)	N/Gp2	484,000		345,000	63,000		30,000				46,000
LERI (OH MI)	N/Gp2	506,000	-1,100	232,000	212,000		17,000				44,000
LINJ (NJ NY)	N/Gp2	340,000		180,000	86,000		24,000				50,000
LIRB (IL)	N/Gp2	762,000		164,000	552,000						46,000
DELR (NJ PA NY)	N/Gp2	284,000		97,000	164,000						23,000
NECB (NH CT MA)	N/Gp2	298,900	9,100	63,000	216,000						29,000
UIRB (IL)	N/Gp2	163,000		90,000	53,000						20,000
ACFB (GA)	S/Gp1	841,000		215,000	268,000			112,000	184,000		62,000
ALBE (NC)	S/Gp1	1,286,000	1,200	547,000	312,000			258,000	80,000		90,000
GAFL (FL)	S/Gp1	1,249,000	1,400	82,000	420,000		162,000			524,000	62,000
MISE (MS)	S/Gp2	549,000		232,000	163,000	133,000					21,000
SANT (SC))	S/Gp2	459,000		208,000	185,000		25,000				41,000
MOBL (AL)	S/Gp3	139,000		93,000	14,000						32,000
SOFL (FL)	S/Gp3	210,000		46,000	126,000		16,000				23,000
TENN (TN)	S/Gp3	347,000		277,000	39,000						31,000
HPGW (CO NE TX AR)	C/Gp1	1,480,000		0	870,000					545,000	65,000
CNBR (NE)	C/Gp1	1,017,000		186,000	99,000	440,000			178,000		114,000
SPLT (CO)	C/Gp1	780,000		267,000	246,000		11,000	187,000			69,000
TRIN (TX)	C/Gp1	698,000		304,000	219,000			131,000			44,000
EIWA (IA)	C/Gp2	351,000		143,000	48,000	128,000					32,000
OZRK (AR MO)	C/Gp2	308,000		144,000	33,000				98,000		33,000
RIOG (NM)	C/Gp2	617,000		158,000	211,000		1,000			197,000	50,000

Last Update 01/15/2005		FY 2005 Study-Unit Component Sub-Target (Mgmt, GIS/DBM, Archives, Data Collection, Data Analysis, & Reports)									
Program Component (Cost Center)	Region /Group /District	SU Totals	Adjust-ments	Total SW S&T QW, Eco, SWQA Data Collection & Reports	Total GW S&T, SWQA Data Collection & Reports	ACT Data Collection Only	HG Synoptic & Topical Data Collection Only	EUSE Data Collection Only	NEET Data Collection Only	TANC Data Collection Only	Project-Wide Mgmt/GIS DBM/ Archives
SCTX (TX)	C/Gp2	686,000		85,000	371,000					195,000	35,000
UMIS (MN)	C/Gp2	635,000		290,000	238,000		3,000		42,000		62,000
ACAD (LA)	C/Gp3	457,000		135,000	274,000		10,000				38,000
UCOL (CO)	C/Gp3	178,000		127,000	3,000						48,000
YELL (WY)	C/Gp3	218,000		0	180,000						38,000
CCYK (WA)	W/0Gp1	925,000		143,000	139,000	426,000			166,000		51,000
NVBR (NV)	W/0Gp1	608,000		140,000	431,000						37,000
SANJ (CA)	W/0Gp1	1,670,000		395,000	144,000	453,000				549,000	127,000
WILL (OR)	W/0Gp1	1,055,000		491,000	57,000		180,000	236,000			91,000
PUGT (WA)	W/Gp2	475,000		175,000	119,000		47,000	88,000			46,000
SACR (CA)	W/Gp2	465,000		233,000	63,000		24,000	68,000			77,000
USNK (ID)	W/Gp2	297,000	38,800	205,000	54,000				40,000		37,000
CAZB (AZ)	W/Gp3	253,000		88,000	113,000		27,000				25,000
GRSL (UT)	W/Gp3	334,000		197,000	97,000						40,000
SOCA (CA)	W/Gp3	241,000		142,000	57,000						42,000
Residual		184,000									
SU Totals		**$26,715,000**		**$7,899,000**	**$8,163,000**	**$2,454,000**	**$745,000**	**$1,259,000**	**$1,285,000**	**$2,540,000**	**$2,226,000**
SU Support	HQ	1,942,000									
SU Support	WR NRP	100,000									
SU Support	CR NRP	29,000									
SU Support	NE	35,000									
SU Support	NC	35,000									
SU Support	BRD WI	15,000									
SU Support	WA	6,000									
SU Support	OH	22,000									
SU Support	OR	41,000									
SU Support	PA	77,000									
SU Support	HI	69,000									
SU Support	NR MA/RI	120,000									
SU Support	ID	133,000									

Last Update 01/15/2005		FY 2005 Study-Unit Component Sub-Target (Mgmt, GIS/DBM, Archives, Data Collection, Data Analysis, & Reports)									
Program Component (Cost Center)	Region /Group /District	SU Totals	Adjust-ments	Total SW S&T QW, Eco, SWQA Data Collection & Reports	Total GW S&T, SWQA Data Collection & Reports	ACT Data Collection Only	HG Synoptic & Topical Data Collection Only	EUSE Data Collection Only	NEET Data Collection Only	TANC Data Collection Only	Project-Wide Mgmt/GIS DBM/ Archives
SU Support	AK	28,000									
SU Support	SD	186,000									
SU Support	NJ	108,000									
SU Support	TN	68,000									
SU Support	MD	20,000									
SU Support	NR	159,000									
SU Support	SR	207,000									
SU Support	CR	195,000									
SU Support	WR NRP	86,000									
SU Support	NH	46,000									
SU Support	CA	100,000									
SU Support	NWQL	2,597,000									
SU Support	KS lab	133,000									
SU Support	NTN lab	45,000									
SU Support	BRD SC lab	5,000									
SU Support	ER GD lab	18,000									
SU Support	WR NRP lab	40,000									
SU Support Total		**$6,665,000**									
National Synthesis	HQ	1,841,000									
National Synthesis	CA	1,310,000									
National Synthesis	WA	368,000									
National Synthesis	NY	140,000									
National Synthesis	IN	361,000									
National Synthesis	IA	18,000									
National Synthesis	MD	95,000									
National Synthesis	CO	612,000									
National Synthesis	TX	409,000									

Last Update 01/15/2005		FY 2005 Study-Unit Component Sub-Target (Mgmt, GIS/DBM, Archives, Data Collection, Data Analysis, & Reports)									
Program Component (Cost Center)	Region /Group /District	SU Totals	Adjust-ments	Total SW S&T QW, Eco, SWQA Data Collection & Reports	Total GW S&T, SWQA Data Collection & Reports	ACT Data Collection Only	HG Synoptic & Topical Data Collection Only	EUSE Data Collection Only	NEET Data Collection Only	TANC Data Collection Only	Project-Wide Mgmt/GIS DBM/ Archives
National Synthesis	SD	1,260,000									
National Synthesis	NC	20,000									
National Synthesis	CT	10,000									
National Synthesis	ME	109,000									
National Synthesis	IL	63,000									
National Synthesis	MN	383,000									
National Synthesis	OH	205,000									
National Synthesis Total		**$7,204,000**									
Program Support	HQ	2,095,000									
Program Support	TN	13,000									
Program Support	CO	78,000									
Program Support	OK	179,000									
Program Support	WA	195,000									
Program Support	WI	307,000									
Program Support	OR	85,000									
Program Support	NM	119,000									
Program Support	CA	9,000									
Program Support	FL	5,000									
Program Support	OH	32,000									
Program Support	KS	228,000									
Program Support	NJ	151,000									
Program Support	NC	40,000									
Program Support	MD	65,000									
Program Support	CR NRP	57,000									

Last Update 01/15/2005		FY 2005 Study-Unit Component Sub-Target (Mgmt, GIS/DBM, Archives, Data Collection, Data Analysis, & Reports)									
Program Component (Cost Center)	Region /Group /District	SU Totals	Adjust-ments	Total SW S&T QW, Eco, SWQA Data Collection & Reports	Total GW S&T, SWQA Data Collection & Reports	ACT Data Collection Only	HG Synoptic & Topical Data Collection Only	EUSE Data Collection Only	NEET Data Collection Only	TANC Data Collection Only	Project-Wide Mgmt/GIS DBM/ Archives
Program Support Total		**$3,658,000**									
Program Mgmt	HQ	1,121,000									
Program Mgmt	GA	203,000									
Program Mgmt	VA	54,000									
Program Mgmt	NR	330,000									
Program Mgmt	SR	330,000									
Program Mgmt	CR	330,000									
Program Mgmt	WR	330,000									
Program Mgmt Total		**$2,698,000**									
WRD Taxes	NRP	5,915,000									
WRD Taxes	OI WICP	115,000									
WRD Taxes	OI NWIS	1,028,000									
WRD Taxes	OI ICOM	100,000									
WRD Taxes	HIF DG	356,000									
WRD Taxes	OWQ	1,562,000									
WRD Taxes	BQS	1,094,000									
WRD Taxes	NWQL	5,266,000									
WRD Taxes	Misc	10,000									
WRD Taxes Total		**$15,446,000**									
TOTAL		**$62,386,000**									

Fiscal Year 2006 — Estimated Budgets

Last Update 01/15/2005		FY 2006 Study-Unit Component Sub-Target (Mgmt, GIS/DBM, Archives, Data Collection, Data Analysis, & Reports)											
SU, PA, & MRB	Region/ Group	SU Totals	Total SW S&T QW & Eco Data Collection Only	SW SWQA Data Collection Only	Total GW S&T, Data Collection & SWQA	ACT Data Collection Only	HG Synoptic & Topical Data Collection Only	EUSE Data Collection Only	NEET Data Collection Only	TANC Data Collection Only	Project-Wide Mgmt/GIS/ DBM/ Archives	Major River Basin Reports	Principal Aquifer Reports
CONN	N/01	$219,000	$116,000		$33,000						$70,000		
PODL	N/01	726,000	135,000		37,000	$380,000			$104,000		70,000		
WHMI	N/01	680,000	95,000		31,000	380,000			104,000		70,000		
WMIC	N/01	889,000	61,000		10,000		$127,000	$197,000	104,000	$320,000	70,000		
HDSN	N/04	564,000	228,000		169,000		97,000				70,000		
LERI	N/04	468,000	290,000		11,000		97,000				70,000		
LINJ	N/04	734,000	80,000		487,000		97,000				70,000		
LIRB	N/04	304,000	227,000		7,000						70,000		
DELR	N/07	103,000	26,000		7,000						70,000		
NECB	N/07	119,000	32,000		17,000						70,000		
UIRB	N/07	148,000	71,000		7,000						70,000		
ACFB	S/01	534,000	153,000		10,000			197,000	104,000		70,000		
ALBE	S/01	525,000	121,000		33,000			197,000	104,000		70,000		
GAFL	S/01	611,000	84,000		10,000		127,000			320,000	70,000		
MISE	S/04	594,000	83,000		221,000	220,000					70,000		
SANT	S/04	466,000	285,000		14,000		97,000				70,000		
MOBL	S/07	146,000	72,000		4,000						70,000		
SOFL	S/07	251,000	70,000		14,000		97,000				70,000		
TENN	S/07	196,000	122,000		4,000						70,000		
HPGW	C/01	390,000			0					320,000	70,000		
CNBR	C/01	680,000	116,000		10,000	380,000			104,000		70,000		
SPLT	C/01	604,000	158,000		82,000		97,000	197,000			70,000		
TRIN	C/01	442,000	164,000		11,000			197,000			70,000		
EIWA	C/04	646,000	183,000		173,000	220,000					70,000		
OZRK	C/04	425,000	84,000		4,000				267,000		70,000		
RIOG	C/04	1,018,000	108,000		545,000					295,000	70,000		
SCTX	C/04	1,059,000	34,000		660,000					295,000	70,000		
UMIS	C/04	625,000	217,000		71,000				267,000		70,000		

Last Update 01/15/2005		FY 2006 Study-Unit Component Sub-Target (Mgmt, GIS/DBM, Archives, Data Collection, Data Analysis, & Reports)											
SU, PA, & MRB	Region/ Group	SU Totals	Total SW S&T QW & Eco Data Collection Only	SW SWQA Data Collection Only	Total GW S&T, Data Collection & SWQA	ACT Data Collection Only	HG Synoptic & Topical Data Collection Only	EUSE Data Collection Only	NEET Data Collection Only	TANC Data Collection Only	Project-Wide Mgmt/GIS/ DBM/ Archives	Major River Basin Reports	Principal Aquifer Reports
ACAD	C/07	227,000	76,000		81,000						70,000		
UCOL	C/07	192,000	80,000		42,000						70,000		
YELL	C/07	210,000	59,000		81,000						70,000		
CCYK	W/01	764,000	85,000		125,000	380,000			104,000		70,000		
NVBR	W/01	172,000	102,000		0						70,000		
SANJ	W/01	1,134,000	198,000		166,000	380,000				320,000	70,000		
WILL	W/01	627,000	191,000		42,000		127,000	197,000			70,000		
PUGT	W/04	923,000	89,000		367,000		97,000	300,000			70,000		
SACR	W/04	785,000	146,000		172,000		97,000	300,000			70,000		
USNK	W/04	778,000	136,000		305,000				267,000		70,000		
CAZB	W/07	254,000	46,000		41,000		97,000				70,000		
GRSL	W/07	237,000	84,000		83,000						70,000		
SOCA	W/07	276,000	124,000		82,000						70,000		
SU Support Total		602,000										**$3,325,000**	**$4,615,000**
Residual		(593,000)						1,480,000				880,000	570,000
SU Total		**$32,040,000**	**$4,831,000**	**$416,000**	**$4,269,000**	**$2,340,000**	**$1,254,000**	**$1,782,000**	**$1,529,000**	**$1,870,000**	**$2,880,000**	**$4,205,000**	**$5,185,000**
				340,000									
National Synthesis Total		**$7,430,000**											
Program Support Total		**$3,690,000**											
Program Mgmt Total		**$2,910,000**											
WRD Taxes Total		**$15,570,000**											
TOTAL		**$61,640,000**											

Fiscal Year 2007 — Estimated Budgets

Last Update 01/15/2005		FY 2007 Study-Unit Component Sub-Target (Mgmt, GIS/DBM, Archives, Data Collection, Data Analysis, & Reports)											
SU, PA, & MRB	Region/ Group	SU Totals	Total SW S&T QW & Eco Data Collection & Reports	SW SWQA Data Collection Only	Total GW S&T, Data Collection, Reports, & SWQA	ACT Data Collection Only	HG Synoptic & Topical Data Collection Only	EUSE Data Collection Only	NEET Data Collection Only	TANC Data Collection Only	Project-Wide Mgmt/GIS/ DBM/ Archives	Major River Basin Reports	Principal Aquifer Reports
CONN	N/01	$267,000	$153,000		$44,000						$70,000		
PODL	N/01	548,000	156,000		172,000	$110,000			$40,000		70,000		
WHMI	N/01	499,000	107,000		172,000	110,000			40,000		70,000		
WMIC	N/01	477,000	65,000		85,000		$37,000	$92,000	40,000	$88,000	70,000		
HDSN	N/04	386,000	159,000		0		157,000				70,000		
LERI	N/04	798,000	166,000		405,000		157,000				70,000		
LINJ	N/04	605,000	93,000		285,000		157,000				70,000		
LIRB	N/04	389,000	150,000		169,000						70,000		
DELR	N/07	137,000	26,000		41,000						70,000		
NECB	N/07	195,000	40,000		85,000						70,000		
UIRB	N/07	231,000	73,000		88,000						70,000		
ACFB	S/01	451,000	164,000		85,000			92,000	40,000		70,000		
ALBE	S/01	418,000	131,000		85,000			92,000	40,000		70,000		
GAFL	S/01	371,000	88,000		88,000		37,000			88,000	70,000		
MISE	S/04	1,150,000	57,000		213,000	810,000					70,000		
SANT	S/04	1,119,000	211,000		681,000		157,000				70,000		
MOBL	S/07	190,000	76,000		44,000						70,000		
SOFL	S/07	382,000	70,000		85,000		157,000				70,000		
TENN	S/07	249,000	135,000		44,000						70,000		
HPGW	C/01	158,000			0					88,000	70,000		
CNBR	C/01	368,000	104,000		44,000	110,000			40,000		70,000		
SPLT	C/01	471,000	144,000		8,000		157,000	92,000			70,000		
TRIN	C/01	391,000	144,000		85,000			92,000			70,000		
EIWA	C/04	1,404,000	112,000		412,000	810,000					70,000		
OZRK	C/04	853,000	74,000		166,000				543,000		70,000		
RIOG	C/04	822,000	73,000		129,000					550,000	70,000		
SCTX	C/04	736,000	31,000		85,000					550,000	70,000		
UMIS	C/04	1,419,000	129,000		677,000				543,000		70,000		

Last Update 01/15/2005		FY 2007 Study-Unit Component Sub-Target (Mgmt, GIS/DBM, Archives, Data Collection, Data Analysis, & Reports)											
SU, PA, & MRB	Region/ Group	SU Totals	Total SW S&T QW & Eco Data Collection & Reports	SW SWQA Data Collection Only	Total GW S&T, Data Collection, Reports, & SWQA	ACT Data Collection Only	HG Synoptic & Topical Data Collection Only	EUSE Data Collection Only	NEET Data Collection Only	TANC Data Collection Only	Project-Wide Mgmt/GIS/ DBM/ Archives	Major River Basin Reports	Principal Aquifer Reports
ACAD	C/07	228,000	73,000		85,000						70,000		
UCOL	C/07	145,000	71,000		4,000						70,000		
YELL	C/07	124,000	54,000		0						70,000		
CCYK	W/01	308,000	80,000		8,000	110,000			40,000		70,000		
NVBR	W/01	170,000	96,000		4,000						70,000		
SANJ	W/01	460,000	184,000		8,000	110,000				88,000	70,000		
WILL	W/01	382,000	179,000		4,000		37,000	92,000			70,000		
PUGT	W/04	622,000	87,000		8,000		157,000	300,000			70,000		
SACR	W/04	638,000	103,000		8,000		157,000	300,000			70,000		
USNK	W/04	732,000	111,000		8,000				543,000		70,000		
CAZB	W/07	275,000	48,000		0		157,000				70,000		
GRSL	W/07	149,000	75,000		4,000						70,000		
SOCA	W/07	188,000	118,000		0						70,000		
SU Support		602,000										**$3,671,000**	**$4,513,000**
Residual		(614,000)						1,970,000				1,090,000	250,000
SU Total		**$31,800,000**	**$4,210,000**	**$413,000**	**$4,618,000**	**$2,170,000**	**$1,524,000**	**$1,152,000**	**$1,909,000**	**$1,452,000**	**$2,860,000**	**$4,761,000**	**$4,763,000**
				338,000							2.861684	3.670850	4,512,600
National Synthesis Total		**$7,430,000**											
Program Support Total		**$3,690,000**											
Program Mgmt Total		**$3,000,000**											
WRD Taxes Total		**$15,730,000**											
TOTAL		**$61,650,000**											

Fiscal Year 2008 — Estimated Budgets

Last Update 01/15/2005		FY 2008 Study-Unit Component Sub-Target (Mgmt, GIS/DBM, Archives, Data Collection, Data Analysis, & Reports)											
SU, PA, & MRB	Region/ Group	SU Totals	Total SW S&T QW & Eco Data Collection & Reports	SW SWQA Data Collection Only	Total GW S&T, Data Collection, Reports, & SWQA	ACT Data Collection Only	HG Synoptic & Topical Data Collection Only	EUSE Data Collection Only	NEET Data Collection Only	TANC Data Collection Only	Project-Wide Mgmt/GIS/ DBM/ Archives	Major River Basin Reports	Principal Aquifer Reports
CONN	N/01	$198,000	$125,000		$4,000						$69,000		
PODL	N/01	215,000	135,000		11,000	$0			$0		69,000		
WHMI	N/01	175,000	95,000		11,000	0			0		69,000		
WMIC	N/01	134,000	61,000		4,000		$0	$0	0	$0	69,000		
HDSN	N/04	345,000	124,000		0		152,000				69,000		
LERI	N/04	337,000	112,000		4,000		152,000				69,000		
LINJ	N/04	397,000	50,000		126,000		152,000				69,000		
LIRB	N/04	301,000	107,000		125,000						69,000		
DELR	N/07	95,000	26,000		0						69,000		
NECB	N/07	105,000	32,000		4,000						69,000		
UIRB	N/07	148,000	71,000		8,000						69,000		
ACFB	S/01	225,000	153,000		3,000			0	0		69,000		
ALBE	S/01	194,000	121,000		4,000			0	0		69,000		
GAFL	S/01	157,000	84,000		4,000		0			0	69,000		
MISE	S/04	986,000	63,000		4,000	850,000					69,000		
SANT	S/04	408,000	181,000		6,000		152,000				69,000		
MOBL	S/07	144,000	72,000		3,000						69,000		
SOFL	S/07	295,000	67,000		7,000		152,000				69,000		
TENN	S/07	195,000	122,000		4,000						69,000		
HPGW	C/01	69,000			0					0	69,000		
CNBR	C/01	189,000	116,000		4,000	0			0		69,000		
SPLT	C/01	515,000	158,000		136,000		152,000	0			69,000		
TRIN	C/01	237,000	164,000		4,000			0			69,000		
EIWA	C/04	998,000	75,000		4,000	850,000					69,000		
OZRK	C/04	600,000	84,000		4,000				443,000		69,000		
RIOG	C/04	1,219,000	62,000		398,000					690,000	69,000		
SCTX	C/04	800,000	34,000		7,000					690,000	69,000		
UMIS	C/04	639,000	119,000		8,000				443,000		69,000		

Last Update 01/15/2005		FY 2008 Study-Unit Component Sub-Target (Mgmt, GIS/DBM, Archives, Data Collection, Data Analysis, & Reports)											
SU, PA, & MRB	Region/ Group	SU Totals	Total SW S&T QW & Eco Data Collection & Reports	SW SWQA Data Collection Only	Total GW S&T, Data Collection, Reports, & SWQA	ACT Data Collection Only	HG Synoptic & Topical Data Collection Only	EUSE Data Collection Only	NEET Data Collection Only	TANC Data Collection Only	Project-Wide Mgmt/GIS/ DBM/ Archives	Major River Basin Reports	Principal Aquifer Reports
ACAD	C/07	149,000	76,000		4,000						69,000		
UCOL	C/07	331,000	80,000		182,000						69,000		
YELL	C/07	128,000	59,000		0						69,000		
CCYK	W/01	562,000	85,000		408,000	0			0		69,000		
NVBR	W/01	299,000	102,000		128,000						69,000		
SANJ	W/01	596,000	198,000		329,000	0				0	69,000		
WILL	W/01	427,000	191,000		167,000		0	0			69,000		
PUGT	W/04	1,173,000	89,000		183,000		152,000	680,000			69,000		
SACR	W/04	1,265,000	108,000		256,000		152,000	680,000			69,000		
USNK	W/04	977,000	117,000		348,000				443,000		69,000		
CAZB	W/07	317,000	46,000		50,000		152,000				69,000		
GRSL	W/07	291,000	84,000		138,000						69,000		
SOCA	W/07	305,000	124,000		112,000						69,000		
SU Support		602,000										**$3,444,000**	**$3,894,000**
Residual		(670,000)				3,040,000						1,480,000	2,210,000
SU Total		**$31,550,000**	**$3,972,000**	**$410,000**	**$3,202,000**	**$1,700,000**	**$1,368,000**	**$1,360,000**	**$1,329,000**	**$1,380,000**	**$2,840,000**	**$4,924,000**	**$6,104,000**
				335,000									
National Synthesis Total		**$7,430,000**											
Program Support Total		**$3,690,000**											
Program Mgmt Total		**$3,090,000**											
WRD Taxes Total		**$15,890,000**											
TOTAL		**$61,650,000**											

Fiscal Year 2009 — Estimated Budgets

Last Update 01/15/2005		FY 2009 Study-Unit Component Sub-Target (Mgmt, GIS/DBM, Archives, Data Collection, Data Analysis, & Reports)											
SU, PA, & MRB	Region/ Group	SU Totals	Total SW S&T QW & Eco Data Collection & Reports	SW SWQA Data Collection Only	Total GW S&T, Data Collection, Reports, & SWQA	ACT Data Collection Only	HG Synoptic & Topical Data Collection Only	EUSE Data Collection Only	NEET Data Collection Only	TANC Data Collection Only	Project-Wide Mgmt/GIS/ DBM/ Archives	Major River Basin Reports	Principal Aquifer Reports
CONN	N/01	$356,000	$153,000		$134,000						$69,000		
PODL	N/01	478,000	156,000		253,000	$0			$0		69,000		
WHMI	N/01	431,000	107,000		255,000	0			0		69,000		
WMIC	N/01	253,000	65,000		119,000		$0	$0	0	$0	69,000		
HDSN	N/04	350,000	137,000		0		144,000				69,000		
LERI	N/04	598,000	130,000		255,000		144,000				69,000		
LINJ	N/04	988,000	63,000		204,000		144,000			508,000	69,000		
LIRB	N/04	877,000	114,000		186,000					508,000	69,000		
DELR	N/07	150,000	26,000		55,000						69,000		
NECB	N/07	417,000	40,000		308,000						69,000		
UIRB	N/07	280,000	73,000		138,000						69,000		
ACFB	S/01	343,000	164,000		110,000			0	0		69,000		
ALBE	S/01	317,000	131,000		117,000			0	0		69,000		
GAFL	S/01	296,000	88,000		139,000		0			0	69,000		
MISE	S/04	974,000	57,000		228,000	620,000					69,000		
SANT	S/04	567,000	182,000		172,000		144,000				69,000		
MOBL	S/07	305,000	76,000		160,000						69,000		
SOFL	S/07	655,000	70,000		372,000		144,000				69,000		
TENN	S/07	268,000	135,000		64,000						69,000		
HPGW	C/01	69,000			0					0	69,000		
CNBR	C/01	242,000	104,000		69,000	0			0		69,000		
SPLT	C/01	362,000	141,000		8,000		144,000	0			69,000		
TRIN	C/01	520,000	144,000		307,000			0			69,000		
EIWA	C/04	1,078,000	85,000		304,000	620,000					69,000		
OZRK	C/04	743,000	74,000		163,000				437,000		69,000		
RIOG	C/04	665,000	73,000		15,000					508,000	69,000		
SCTX	C/04	801,000	31,000		193,000					508,000	69,000		

Last Update 01/15/2005		FY 2009 Study-Unit Component Sub-Target (Mgmt, GIS/DBM, Archives, Data Collection, Data Analysis, & Reports)											
SU, PA, & MRB	Region/ Group	SU Totals	Total SW S&T QW & Eco Data Collection & Reports	SW SWQA Data Collection Only	Total GW S&T, Data Collection, Reports, & SWQA	ACT Data Collection Only	HG Synoptic & Topical Data Collection Only	EUSE Data Collection Only	NEET Data Collection Only	TANC Data Collection Only	Project-Wide Mgmt/GIS/ DBM/ Archives	Major River Basin Reports	Principal Aquifer Reports
UMIS	C/04	1,064,000	129,000		429,000				437,000		69,000		
ACAD	C/07	391,000	73,000		249,000						69,000		
UCOL	C/07	151,000	71,000		11,000						69,000		
YELL	C/07	123,000	54,000		0						69,000		
CCYK	W/01	174,000	80,000		25,000	0			0		69,000		
NVBR	W/01	177,000	96,000		12,000						69,000		
SANJ	W/01	281,000	184,000		28,000	0				0	69,000		
WILL	W/01	259,000	179,000		11,000		0	0			69,000		
PUGT	W/04	698,000	87,000		23,000		144,000	375,000			69,000		
SACR	W/04	828,000	103,000		137,000		144,000	375,000			69,000		
USNK	W/04	641,000	111,000		24,000				437,000		69,000		
CAZB	W/07	268,000	48,000		7,000		144,000				69,000		
GRSL	W/07	158,000	75,000		14,000						69,000		
SOCA	W/07	134,000	118,000		16,000								
SU Support		602,000										**$2,850,000**	**$3,740,000**
Residual		(548,000)				3,390,000						1,950,000	180,000
SU Total		**$31,300,000**	**$4,027,000**	**$406,000**	**$5,314,000**	**$1,240,000**	**$1,296,000**	**$750,000**	**$1,311,000**	**$2,032,000**	**$2,820,000**	**$4,800,000**	**$3,920,000**
				332,000									
National Synthesis Total		**$7,430,000**											
Program Support Total		**$3,690,000**											
Program Mgmt Total		**$3,180,000**											
WRD Taxes Total		**$16,050,000**											
TOTAL		**$61,650,000**											