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Requirements for Effective Use of the Water Resources Scientific Information Center (WRSIC) – Determined by Field Evaluation

J.B. Herbich
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J.D. Benson

Texas Water Resources Institute

Texas A&M University

RESEARCH PROJECT COMPLETION REPORT

Volume II

Project Number W-103

May 1968 -- November 1969

Agreement Number
14-01-0001-1609

REQUIREMENTS FOR EFFECTIVE USE OF THE WATER RESOURCES SCIENTIFIC INFORMATION CENTER (WRSIC) - DETERMINED BY FIELD EVALUATION

Prepared by

Eugene B. Smith, John B. Herbich and Jimmie D. Benson

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Technical Report No. 23
Water Resources Institute
Texas A&M University

November 15, 1969

REQUIREMENTS FOR EFFECTIVE USE OF THE
WATER RESOURCES SCIENTIFIC INFORMATION CENTER (WRSIC)-

E. B. Smith, J. B. Herbich, J. D. Benson

ABSTRACT

Supplementary information and supporting data for the main report (Volume I) is presented in this second volume. All questionnaire forms and related material, as well as a complete report of the case study phase are included in Appendix I. Other appendices contain detailed listings of the narrative responses received for questions on the questionnaires. Tables which present a variety of statistical data pertinent to the study are also included.

PREFACE

This report presents the results of research supported under the provisions of the Water Resources Research Act of 1964 (P.L. 88-379).

Agreement No. 14-01-0001-1609, between Texas A&M University and the Office of Water Resources Research, U. S. Department of Interior provided for a comprehensive study of requirements for effective use of the Water Resources Scientific Information Center (WRSIC). The specific objective of the study was to conduct a meaningful field evaluation and analysis of the user requirements for water resources information. The project was divided into several components:

(a) field analysis through mail Questionnaires and personal interviews of potential users classified by their participation in various aspects of water resources.

(b) determination of WRSIC user needs according to the type of user.

(c) determination of the cost users may pay for services and quality of service demanded.

(d) kinds of information that should be included in WRSIC.

(e) type of service requirements of potential users.

(f) potential input to WRSIC by users.

The original Agreement No. 14-01-0001-1609 was amended in February 1969 to include a second, separate study which would assess the monetary value and acceptability to users, of selected services which are offered by WRSIC.

The services selected for study were

(a) the Selected Water Resources Abstracts (SWRA) publication, and

(b) the Selected Dissemination of Information (SDI) system.

The present project report describing studies performed, is intended to provide a summary of results obtained in the main part of the study as well as in the second part of the project. Because of rather a large volume of material accumulated and to be reported and because the second study was not closely related to the main part of the project, the final project report consists of three volumes:

(a) Volume I - Report on the main part of the project.

(b) Volume II - Appendices to the main part of the report.

(c) Volume III - Report on "A Study to Assess the Cost Effectiveness of WRSIC Services."

The project was initially under the direction of Dr. Ernest T. Smerdon, former Director of the Water Resources Institute at Texas A&M. Mr. Eugene B. Smith assumed the directorship of the project on October 1, 1968, and Dr. John B Herbich, Head of the Hydraulic Engineering and Fluid Mechanics Division, has been an Associate Project Director. They were assisted by Mr. Jimmie D. Benson and Mr. Robert A. Miears, Graduate Research Assistants. Volume I of the Report was written by Dr. Herbich and Volumes II and III of the Report by Mr. Smith. Manuscript preparation was performed by Mrs. Brenda K. Gill.

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Appendix I

Questionnaire Forms and Related Materials

Case Study of Industry

A SURVEY OF USER REQUIREMENTS
FOR WATER RESOURCES SCIENTIFIC INFORMATION

_____Accession Number Date_____ (Month / Day / Year)

_____Interviewer's Number Interview Began_____ (Time)

_____Length of Interview (min.) Interview Ended_____ (Time)

Name of person completing this form_____

Title of person completing this form_____

Name of organization_____

Address of organization_____

_____

_____

Part I: The Organization

1. Describe your duties in your present position by checking the appropriate spaces.

   1) _____ Administravtive management

   2) _____Technical management

   3) _____Both administrative and technical management

   4) _____Scientific and engineering (non-management)

   5) _____Technical evaluation

   6) _____Library services or information

   7) _____Other (specify) _____

_____

2. What is the primary purpose of the organization in relation to water resources? List up to five purposes in order of priority.

1) _____
2) _____
3) _____
4) _____
5) _____

A. Regulatory
B. Research
C. Planning
D. Data collection and record maintenance
E. Education
F. Water resource user
G. Water conservation and natural resources
H. Design
I. Construction
J. Other (specify) _____

3. Approximate number of employees in the organization.

1) _____ Supervisory or administrative

2) _____ Professional (such as engineers)

3) _____ Sub-professional (technicians)

4. What is the approximate number of employees who, in the normal course of their work, must have access to recently published technical information on water resources?

1) _____ Supervisory or administrative

2) _____ Professionals (such as engineers)

3) _____ Sub-professional (technicians)

5. Of these employees, what percentage of their time is devoted to the search for technical water resources information? (Choose answer from the column at the right)

1) _____ Supervisory or administrative

2) _____ Professionals (such as engineers)

3) _____ Sub-professional (technicians)

6. In your opinion, what percentage of their time should be devoted to this search of the literature if they are to adequately cover material which is available in the field? (Note: In most cases, a limited search of local resources may not provide a true indication of the information which is available.) (Choose answer from the column at right)

1) _____ Supervisory or administrative

2) _____ Professionals (such as engineers)

3) _____ Sub-professional (technicians)

A. None(0%)
B. Less than 5%
C. 5 to 10%
D. 10 to 25%
E. 25 to 50%
F. 50 to 75%
G. More than 75%

Part II. Current Sources of Information

Would you now evaluate the information resources 7 through 14 in light of their usefulness to your organization? (Indicate by placing the appropriate letter in the space provided)

A) A very significant source (available and almost always used)

B) A significant source (available and usually used)

C) A source of limited significance (available but seldom used)

D) An insignificant source (available but not used)

E) Not available

7. _____ Personal reference libraries.

8. _____ An internal reference library maintained by your organization for use by its employees.

9. _____ A research person (or staff) whose primary duty is to provide assistance in literature searches.

10. _____ A public, private, or academic library which is readily accessible to members of your organization.

11. _____ A specialized information service external to your organization? If available, please specify _____

_____

_____

12. _____ Document centers or external library research services available to your organization? If available, please specify _____

_____

13. _____ Information supplied by vendors, manufacturers, or suppliers.

14. _____ Significant sources of information for your organization other than those mentioned in questions 7-13. Please specify _____

_____

_____

_____

_____

15. Does your organization have a library?

Yes _____ No _____

If Yes a. Approximately how many separate identifiable documents are received each year? _____

b. Approximately how many periodical titles are received each year? _____

c. List major water resource areas covered.

_____

_____

_____

16. Yes _____ No _____ Do you regularly receive (without individually requesting) various state and federal reports dealing with some area of water resources?

17. Yes _____ No _____ a. Do you receive newsletters which contain water resources information?
If yes, please specify _____

_____

Yes _____ No _____ b. Are these a useful source of information for current-awareness?

18. _____ Which of the following best describes your utilization of journals and other publications? Do you:

A) Read the articles of interest as the material is received and then file it for later reference.

--or--

B) File the material as it is received. When a problem is presented, perform a search and read those articles which are relevant to the particular problem at hand.

19. _____ hours How much time do you use each week engaged in current-awareness activities? (Average number of hours)

20. List any programs or special services that the organization has to keep personnel current in terms of recent published material on technical aspects of water resources.

_____

_____

_____

_____

Questions 21 through 31 are concerned with the sources of water resources information (i.e. printed literature) utilized by your organization and their value. Please evaluate each by choosing the appropriate response from the column at the right.

21. _____ Trade Journals

22. _____ Trade Magazines

23. _____ Handbooks

24. _____ Reference Books

25. _____ Project Reports

26. _____ Newsletters

27. _____ Printed Advertising

28. _____ Catalogues

29. _____ Abstract or Citation Bulletins

30. _____ Monographs

31. _____ Other (please specify)

_____

A. A very useful source

B. A useful source

C. A source of limited significance

D. Seldom, or never used

E. None applicable

32. Please list the titles of five of the most useful sources of information to your organization.

_____ _____

_____ _____

_____

33. Yes _____ No _____ Does your organization publish information which would be worthwhile and available for addition to WRSIC's data base? If yes, please specify (also charges, if any)

_____

_____

_____

Part III. Information Services

Two types of information services which may possibly be offered by WRSIC in the foreseeable future include current awareness and retrospective search procedures. A description of some possible variations of these services is given below:

A. Current Awareness - Current awareness services are designed to make the user aware of the existance of current literature which is available in his field. Possible services include:

1. Citation Journal - based on titles of publications, it would probably make use of permuted keyword indexes. For example, a keyword-in-context index to literature normally consists of three main sections: A keyword index, a bibliography, and an author index.

a. Keyword Index - Keywords in the title of a publication are arranged alphabetically down the center of each column. Within the limits of the column each title is shifted one word to the right, one keyword at a time, and placed in alphabetic order with all other key-words. Words which are not considered of interest are excluded from the keyword list. Associated with each title is a coded reference to more complete information which may be found in the bibliography.

b. Bibliography - The bibliography would contain, in reference number order, the author, title, publication reference, source of hard copy and/or microfiche copy, and cost of the copies.

c. Author Index - The Author Index would list the authors in alphabetic order and the associated coded references to each of his publication entries.

Normal use would involve referencing the key word index or the author index and then locating complete information on the entry in the bibliography.

2. Abstract Bulletin - Current abstracts which are designed to indicate content or provide a summary of selected articles involving water resources information will be assembled into a booklet published twice monthly. Bibliographic information will be provided with each abstract to provide the user with information as to the cost and source of the desired documents.

This publication could have several indexes which would provide a ready reference to select subsets of the abstracts which are included. Such indexes could include those described above in the KWIC Index, as well as indexes according to subject categories. Other variations could include several abstract bulletins which contain selected subsets of the total abstracts available arranged by subject categories. (References - Selected Water Resources Abstracts)

3. Selective Dissemination of Information (SDI) - SDI systems provide notification of significant publications in the area of interest of a particular user or a particular category of users. Notification is in the form of abstracts. Interest profiles will be used in the selection of these abstracts.

Interest profiles may consist of up to 20 terms which describe an area of interest. WRSIC is considering two types of profiles for use with their SDI system. They are:

Standard Interest Profiles: A large number of standard interest profiles will be developed to cover a variety of interests based on either specific subject areas of specific categories of users. These standard profiles are useful primarily due to economy of operation. It is less expensive to prepare current awareness distribution material where one profile may serve many users.

Individual Interest Profiles: For those users who do not feel that the standard interest profile will adequately cover their information needs, the individual interest profile can be used. This profile is tailored to the specific interest areas of the user and can, in some cases, provide a better focus for the search procedures.

B. Retrospective Services - Retrospective searches are designed to provide a complete search of all abstracted articles which are contained in the historical data file to select those items which are of interest to a particular user.

1. Abstract Bulletin - A comprehensive abstract bulletin with subject and author issue indexes and yearly cumulative author and subject indexes, constitutes a retrospective service readily available to all users.

2. Machine Search - Automated Retrospective searches, based on specific areas of interest, result in the identification and availability of the abstracted information which meets the criteria outlined by the user. Sophisticated variations to search techniques can involve such things as the selection of items published after a certain date, the elimination of items which have a certain descriptor and the assignment of extra importance to certain descriptors or combinations of descriptors.

Based on an analysis of these abstracts the user can obtain copies of those documents which are of sufficient interest.

Answer the following questions based on the assumption that the WRSIC data base contains all important technical information which has been published about the water resources problems which confront your organization.

Cost of services: Assuming the only means available for WRSIC to offer a service is through a charge for services rendered, consider the following questions:

34. A) Would you subscribe to a Citation Journal using a KWIC index format (distributed twice monthly), if one subscription cost $15 to $20 per year?

1) _____ Yes

2) _____ No, but would consider the service at a charge of approximately $ _____ per year.

3) _____ No, at any charge (please comment) _____

_____

B) _____ What would be the probable total number of subscriptions within your organization?

35. A) Would you subscribe to an Abstract Bulletin (distributed twice monthly), if one subscription cost $30 to $40 per year?

1) _____ Yes

2) _____ No, but would consider the service at a charge of approximately $ _____ per year.

3) _____ No, at any charge (please comment) _____

_____

B) _____ What would be the probable total number of subscriptions within your organization?

36. A) Would you subscribe to an SDI Service using a Standard Interest Profile (distributed twice monthly), if one subscription cost $80 to $100 per year?

1) _____ Yes

2) _____ No, but would consider the service at a charge of approximately $ _____ per year.

3) _____ No, at any charge (please comment) _____

_____

B) _____ What would be the probable total number of subscriptions within your organization?

37. A) Would you subscribe to a SDI Service using an Individual Interest Profile (distributed twice monthly), if one subscription cost $250 to $300 per year?

1) _____ Yes

2) _____ No, but would consider the service at a charge of approximately $ _____ per year.

3) _____ No, at any charge (please comment) _____

_____

B) _____ What would be the probable total number of subscriptions within your organization?

38. A) Would you use the Retrospective Machine Search Service with an Individual Interest Profile, if the charge was $100 to $125 per request?

1) _____ Yes

2) _____ No, but would consider the service at a charge of approximately $ _____ per request

3) _____ No, at any charge (please comment) _____

_____

B) _____ What would be your probable number of requests per year?

C) _____ What would be the probable total number of requests per year within your organization?

39. The following is a list of the services which we have discussed:

A. Citation Journal - highlighted keyword listing from current water resources titles.

B. Abstract Services - Comprehensive condensed coverage of all water resources subject areas.

C. SDI Services - Selective dissemination of current notices of articles based on user profiles.

D. Retrospective Machine Search - State-of-the-art bibliography based on a specific search request.

Giving due consideration to cost factors and the relative utility of the services described, please indicate your preferences by answering the following questions. (Note: indicate your answers by choosing the appropriate letter(s) from the preceeding list)

1) If only one service was available which would you prefer? _____

2) If only two were available? _____ _____

3) If only three were available? _____ _____ _____

Since time is an important factor in the use of information services, consider the following questions: (Choose your responses from the column at the right)

40. Assuming you have need of the retrospective search service, what time period between request and receipt of the results would you consider:

1) _____ The most desirable time period?

2) _____ The maximum acceptable time period?

41. Assuming you request copies of materials as a result of the various services, what time period between order and receipt of the copy would you consider:

1) _____ The most desirable time period?

2) _____ The maximum acceptable time period?

A) 1 week or less

B) 2 weeks or less

C) 3 weeks or less

D) 1 month or less

Microform is becoming a popular form of document storage and transmission because of both cost factors and compactness in relative size (show samples). For example, a single sheet of microfiche may contain up to 60 pages of information and normally costs from 50 to 65 cents per sheet, while hardcopy normally costs from 6 to 10 cents per page with a minimum charge of $3.00. Microform readers vary in price from $2.50 for a cheap pocket model to $500.00 for a deluxe table model. Good serviceable projector models may be obtained for $50.00 to $150.00 each.

42. Do you currently have microform readers?

Yes _____ No _____ (If yes, what types and how many of each? _____

_____

43. If you used these information services, would you plan to request microform copies of material rather than hardcopy? (Consider cost, storage, and ability to make in-house copies of hardcopy material)

Yes _____ No _____ Main reason (comment) _____

_____

44. Availability of copies of printed material: Due to current copyright laws, certain material will only be available through the publishing source. The acquisition of material could be provided as a service of the central facility or could be left to the individual user. In any case, an indication of the source and cost of copies would be given with each abstract. What would be your feelings about being able to order all possible copies (where there is no legal restriction) from one central source? (Choose one of the following responses)

_____ This would be most desirable.

_____ Order source would make no difference.

_____ Ordering from original source would be most desirable.

45. Continual evaluation of services offered would promote improved quality of the services. Would you be willing to complete and return a short evaluation form.

_____ Periodically? (A few per year at irregular intervals)

_____ Regularly? (On receipt of material)

_____ No (please comment) _____

46. Would you, as a potential user of the Center, please give a brief statement as to some function(s) it might perform or service(s) it might provide which would be of significant value to you and your organization? _____

_____

_____

_____

_____

Part IV. Establishing User Profiles

An interest profile may be determined by providing up to 20 descriptor terms which describe a user's interest area. WRSIC is considering two types of profiles (Standard Interest Profiles and Individual Interest Profiles) for use with the various services. These profiles are established through a description of user needs and interests coupled with careful use of the Water Resources Thesaurus*.

In order to provide assistance in the establishment of a number of standard interest profiles, please provide the information as indicated on the interest profile worksheet. The sample worksheet will illustrate the type of data desired.

Part V. Summary Report

Yes _____ No _____ A summary report of the results obtained from this questionnaire will be made available to those who have completed a questionnaire. Do you wish to receive a copy of this report?

Thank you for your cooperation.

---

*This Thesaurus is a publication of the Office of Water Resources Research (OWRR), and copies may be obtained from the U. S. Government Printing Office at a cost of $2.00. The Thesaurus is a word list containing cross references and relationships among the scientific and technical terms used by researchers and others. It is used in the indexing of material which is abstracted, as well as in the selection of this material for distribution to the user.

Part VI. Subjective Comments

The following section should be completed immediately after the completion of the interview, but not in the presence of the interviewee.

1. How would you describe the respondent's understanding of water information problems and the potential for automated information systems?

1) _____ Excellent perception of the problem
2) _____ Aware of a large need
3) _____ Aware of a moderate need
4) _____ Aware of a small need
5) _____ Not interested

2. Describe your evaluation of the interview including your thoughts on the accuracy of the data obtained. _____

_____

_____

_____

_____

_____

3. Do you think this organization has a potential need to participate in WRSIC?
No _____ Yes _____. If so, to what extent?

Quantity

1) _____ Potential use of Citation Journal
2) _____ Potential use of Abstract Bulletin
3) _____ Potential use of SDI service involving Standard Interest Profile
4) _____ Potential use of SDI service involving individually tailored interest profile
5) _____ Potential use of retrospective search services (per year)
6) _____ Other (specify) _____

_____

WR-104 (3-68)
WRSIC

UNITED STATES
DEPARTMENT OF THE INTERIOR
WATER RESOURCES SCIENTIFIC INFORMATION CENTER
OPERATING FACILITY
BUILDING 67, DENVER FEDERAL CENTER, DENVER, COLORADO 80225

CURRENT AWARENESS PROGRAM--SELECTIVE DISSEMINATION OF INFORMATION
INDIVIDUAL INTEREST PROFILE WORKSHEET

NAME	John A Doe	SOCIAL SECURITY NUMBER	000-00-0000
POSITION	Supervisory Sanitary Engineer		
DEPARTMENT	Interior	OFFICE/BUREAU	Water Resources
DIVISION	Water Pollution	BRANCH	Pollutant Action Studies
SECTION	Natural Streams	UNIT	High-plains
TELEPHONE	(303)833-4872 Ext 9999	FTS	303-927-9999
INTERNAL MAIL CODE	AGRUE		

MAILING ADDRESS

High-plains Unit, Natural Streams Section
Water Pollution Division, Bureau of Water Resources
Building 68, Denver Federal Center

CITY	STATE	ZIP CODE
Denver	Colorado	80225

MY PROFESSIONAL INTERESTS ARE:

The sources, action, and effect of water pollution in the natural streams of the United States. The various sources of pollution, whether man-made or natural, including the major sources of industrial and municipal wastes, as well as such sources as agricultural wastes from feedlots, agricultural chemicals, erosion, acid mine drainage, street sweeping, snow melting chemicals, and organic pollution from swamplands. The action of pollutants in streams, including the path of pollutant, mixing and turbulence, dilution, self-purification, and the effect of new or additional pollutants on the existing pollutants at any point. The effect of pollutants in streams on the fish and wildlife in and adjacent to the stream, the effect on the ecology of the stream, and the effect on animal population using water in the stream.

DESCRIPTORS

1. pollutant identification
2. water pollution effects
3. *water pollution sources
4. effluents
5. industrial wastes
6. waste water (pollution)
7. sewage
8. thermal pollution
9. municipal wastes
10. management
11. path of pollutants
12. *self-purification
13. lotic environment
14. agricultural chemicals
15. farm wastes
16. acid mine water
17. streamflow
18. flow augmentation
19. *low-flow augmentation
20. *waste dilution

(Instructions on reverse side)

GPO 845-979

-104 (3-68)
SIC

UNITED STATES
DEPARTMENT OF THE INTERIOR
WATER RESOURCES SCIENTIFIC INFORMATION CENTER
(OPERATING FACILITY)
BUILDING 67, DENVER FEDERAL CENTER, DENVER, COLORADO 80225

CURRENT AWARENESS PROGRAM--SELECTIVE DISSEMINATION OF INFORMATION
INDIVIDUAL INTEREST PROFILE WORKSHEET

NAME		SOCIAL SECURITY NUMBER
POSITION		
DEPARTMENT		OFFICE/BUREAU
DIVISION		BRANCH
SECTION		UNIT
TELEPHONE	FTS	INTERNAL MAIL CODE
MAILING ADDRESS ⇨		
CITY	STATE	ZIP CODE

PROFESSIONAL INTERESTS ARE:	DESCRIPTORS
	1.
	2.
	3.
	4.
	5.
	6.
	7.
	8.
	9.
	10.
	11.
	12.
	13.
	14.
	15.
	16.
	17.
	18.
	19.
	20.

(Instructions on reverse side)

TEXAS A&M UNIVERSITY
COLLEGE STATION, TEXAS 77843

WATER RESOURCES INSTITUTE

February 24, 1969

Dr. Bill Ott
East Texas Research and Extension Center
Drawer "E"
Overton, Texas 75684

Dear Dr. Ott:

The Water Resources Scientific Information Center (WRSIC) was established in 1966 to assist in the retrieval and dissemination of scientific and technical information on water resources. In order to assist WRSIC in determining the user needs for water resources information services, a field study is being conducted by the Water Resources Institute of Texas A&M University under contract with the U.S. Department of Interior.

This questionnaire is addressed to you as one who has been working in the general area of water resources and possibly experienced problems in finding the technical information required in your work.

The study is being conducted to determine your needs for water resources information services and you will be the chief beneficiary of the results of this study. Since the success and accuracy of the study depends to a large extent on the responses received, we urge you to complete the enclosed questionnaire without delay. Because we know your time is valuable, the questionnaire was designed to require less than one half hour to complete.

Your cooperation in this important study is appreciated.

Sincerely yours,

J. R. Runkles
Acting Director

JRR:jrm

TEXAS A&M UNIVERSITY
COLLEGE STATION, TEXAS 77843

WATER RESOURCES INSTITUTE

March 24, 1969

Mr. Fred Parkey, General Manager
Red River Authority of Texas
502 Hamilton Building
Wichita Falls, Texas 76301

Dear Mr. Parkey:

On February 21st you were sent a questionnaire regarding the use of "water information" by your organization. We have not received your response to this request. It appears from the responses that we have had to this questionnaire, that the intent of the survey was not made completely clear by our first correspondence. Therefore, we are attempting to more fully explain the intent of the survey.

As you are probably aware, the amount of literature being published which is related to water and water resources is fantastic. It has, in fact, reached the point where it is virtually impossible to even keep aware of the published information which might help us in our work. The Water Resources Scientific Information Center (WRSIC) was, therefore, established under the U.S. Department of Interior as a national center to keep us informed of the available literature on water and water resources.

In order to assist WRSIC in determining the types of information services needed, this field study is being conducted by the Water Resources Institute of Texas A&M University under contract with the U.S. Department of Interior. We are therefore interested in knowing something about your organization, the type of literature you find useful, and where you obtain this literature. Since the success and accuracy of such a study depends to a large extent on the responses received, we urge you to complete the enclosed questionnaire without delay. This questionnaire is a duplicate of a questionnaire which we mailed you recently and is included in case you did not receive or have misplaced the original.

If you feel any of the questions are not applicable to you or your organization, please feel free to indicate "not applicable" to those questions and return the questionnaire.

Your assistance in this most important survey is appreciated.

Sincerely yours,

J. R. Runkles
Acting Director

JRR:lyn
Enclosure

A SURVEY OF
USER REQUIREMENTS FOR
WATER RESOURCES SCIENTIFIC INFORMATION

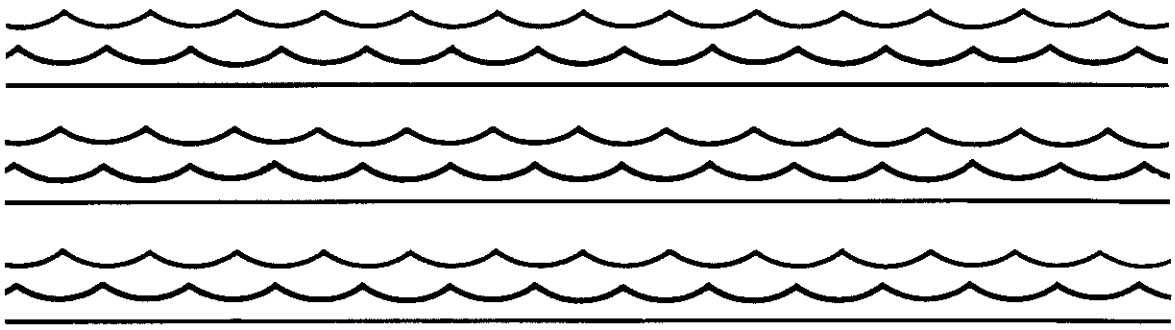
The Water Resources Scientific Information Center (WRSIC) was established by the Secretary of the Interior on January 25, 1966. Initial funding for WRSIC was provided by the Appropriation Act for the fiscal year 1968. The Center has been designated by the Federal Council for Science and Technology as the National Center for Water Resources scientific and technical information activities.

The objectives of the Water Resources Scientific Information Center are:

1. To serve as a focal point for national water resource technical information activities,
2. To initiate efforts to coordinate and complement existing technical information services.
3. To provide central operation of such water resource technical information services as can best be accomplished on a nationwide level,
4. To insure the rapid flow of technical information to interested individuals and agencies.

A user survey is being conducted by the Water Resources Institute of Texas A&M University under contract with the Water Resources Scientific Information Center. This most important survey is designed to obtain sufficient data needed for the development and evaluation of future WRSIC information services.

Your cooperation in the completion of the questionnaire will be greatly appreciated. In completing this questionnaire you will be performing an important task which will affect future information services.



Water Resources Institute
TEXAS A&M UNIVERSITY

A SURVEY OF USER REQUIREMENTS
FOR WATER RESOURCES SCIENTIFIC INFORMATION

Name of person completing this form_____

Title of person completing this form_____

Name of organization_____

Address of organization_____

_____

_____

1. Describe your duties in your present position by checking the appropriate spaces.

   1) ____ Administrative management

   2) ____ Technical management

   3) ____ Both administrative and technical management

   4) ____ Scientific and engineering (non-management)

   5) ____ Technical evaluation

   6) ____ Library services or information

   7) ____ Other (specify)_____

   _____

2. What is the primary purpose of the organization in relation to water resources? List up to five purposes in order of priority.

   1) ____
   2) ____
   3) ____
   4) ____
   5) ____

   A. Regulatory
   B. Research
   C. Planning
   D. Data collection and record maintenance
   E. Education
   F. Water resource user
   G. Water conservation and natural resources
   H. Design
   I. Construction
   J. Other (specify)_____

3. Approximate number of employees in the organization.

   1) ____ Supervisory or administrative

   2) ____ Professional (such as engineers)

   3) ____ Sub-professional (technicians)

4. What is the approximate number of employees who, in the normal course of their work, must have access to recently published technical information on water resources?

   1) ____ Supervisory or administrative

   2) ____ Professionals (such as engineers)

   3) ____ Sub-professional (technicians)

5. Of these employees, what percentage of their time is devoted to the search for technical water resources information? (Choose answer from the column at the right)

   1) ___ Supervisory or administrative

   2) ___ Professionals (such as engineers)

   3) ___ Sub-professional (technicians)

6. In your opinion, what percentage of their time should be devoted to this search of the literature if they are to adequately cover material which is available in the field? (Note: In most cases, a limited search of local resources may not provide a true indication of the information which is available.) (Choose answer from column at right)

   1) ___ Supervisory or administrative

   2) ___ Professionals (such as engineers)

   3) ___ Sub-professional (technicians)

A. None (0%)
B. Less than 5%
C. 5 to 10%
D. 10 to 25%
E. 25 to 50%
F. 50 to 75%
G. More than 75%

Would you now evaluate the information resources 7 through 14 in light of their usefulness to your organization? (Indicate by placing the appropriate letter in the space provided)

A) A very significant source (available and almost always used)
B) A significant source (available and usually used)
C) A source of limited significance (available but seldom used)
D) An insignificant source (available but not used)
E) Not available

7. ___ Personal reference libraries.

8. ___ An internal reference library maintained by your organization for use by its employees.

9. ___ A research person (or staff) whose primary duty is to provide assistance in literature searches.

10. ___ A public, private, or academic library which is readily accessible to members of your organization.

11. ___ A specialized information service external to your organization? If available, please specify ___

12. ___ Document centers or external library research services available to your organization? If available, please specify ___

13. ___ Information supplied by vendors, manufacturers, or suppliers.

14. ___ Significant resources of information for your organization other than those mentioned in questions 7-13. Please specify ___

Questions 15 through 25 are concerned with the sources of water resources information (i.e. printed literature) utilized by your organization and their value. Please evaluate each by choosing the appropriate response from the column at the right.

15. ____ Trade Journals
16. ____ Trade Magazines
17. ____ Handbooks
18. ____ Reference Books
19. ____ Project Reports
20. ____ Newsletters
21. ____ Printed Advertising
22. ____ Catalogues
23. ____ Abstract or Citation Bulletins
24. ____ Monographs

A. A very useful source
B. A useful source
C. A source of limited significance
D. Seldom, or never used
E. None applicable

25. Please list the titles of five of the most useful sources of information to your organization.

_____

_____

_____

26. Yes____ No____ Does your organization publish information which would be worthwhile and available for addition to WRSIC's data base?

If yes, please specify_____

_____

_____

27. Would you, as a potential user of the Water Resources Scientific Information Center, please give a brief statement as to some function(s) it might perform or service(s) it might provide which would be of significant value to your organization?_____

_____

_____

_____

_____

_____

_____

_____

_____

28. In the columns below, please indicate 5 to 20 specific topics which you feel best describe your organization's interest in water resources. Use asterisks to indicate your primary interests.

For example, a person interested in a HYDROLOGICAL CYCLE might list:

Atmospheric circulation	Percolation
*Base Flow	Recharge
Cloud Physics	*Runoff
Energy Budget	Saline Water Intrusion
Evaporation	Solar Radiation
Groundwater	Water Storage
*Hydrologic Budget	Sublimation
Infiltration	*Surface Water
Precipitable Water	Transpiration
Precipitation	*Water Balance

1) _____	11) _____
2) _____	12) _____
3) _____	13) _____
4) _____	14) _____
5) _____	15) _____
6) _____	16) _____
7) _____	17) _____
8) _____	18) _____
9) _____	19) _____
10) _____	20) _____

29. Yes____ No____ A summary report of the results obtained from this questionnaire will be made available to those who have completed a questionnaire. Do you wish to receive a copy of this report?

NOTE: Please return the completed questionnaire in the postage-paid envelope provided.

Case Study

Prepared

by

The Industrial Economics Research Division

Texas A&M University

A SURVEY OF USER REQUIREMENTS FOR WATER RESOURCES SCIENTIFIC INFORMATION

INTRODUCTION

Scientific information on water resources is of significant value to nearly all types of industry. It is only within the last few years that a centralized organization has been established to assist in the dissemination of water resources information.

The results of five interviews conducted by the staff of the Industrial Economics Research Division, Texas A&M University, with industrial firms are found in this study. Since only five firms were surveyed, no conclusions can be drawn nor inferences made concerning any industry or group of firms in any locality. Rather these interviews were conducted as case studies and should be interpreted as such. The questionnaire used in this study was prepared by the Water Resources Institute at Texas A&M University and is found in Appendix I-C-1.

SUMMARY

This report gives a detailed description of a survey conducted to determine the user requirements for water resources scientific information. It describes the type of industrial firms contacted, their information needs, their choice in information services desired, and their interest in water resources.

Five industrial firms from the Houston-Baytown area were contacted in the survey. The size of the firm ranged in total employment from 100 to 5,000. One firm was selected from each of the following industries: pulp and paper, food, primary metal and metalworking, petroleum, and chemical. Since the survey was conducted as case studies, the descriptions given may or may not reflect the attitude of any particular industry. The data collected, however, does provide information which can be helpful in future surveys to determine user requirements for water resources information.

The interviews were well received and the participants tried to be most helpful in arranging a suitable time and in entering into the discussion quite freely.

Internal reference libraries, corporate staff facilities, and information supplied by vendors, manufacturers, and suppliers were rated as significant or very significant information resources. Trade journals, trade magazines, handbooks and reference books were considered to be the most useful sources of information in printed literature.

The abstract bulletin and the retrospective search were cited as the types of information services most desired by the persons interviewed. The cost was not a determining factor in potential subscriptions in most instances.

There was a wide range in areas of interest with users of water resources information. The areas of interest included

water supply, surface and ground water, water usage, water treatment, water quality, water analysis, waste water handling and treatment, and waste water disposal.

METHODOLOGY

The selection of the five industrial firms interviewed was made jointly by a project being conducted under the Water Resources Institute and the Industrial Economics Research Division. A list of the firms contacted is shown in Appendix I-C-2. The five industries represented by the firms are pulp and paper, food, primary metal and metalworking, petroleum, and chemical and are all located in the highly industrialized Houston-Baytown area.

Initial contact with the firm to be interviewed was made by mail. The letter explaining the intent and purpose of the survey was sent to the highest official in the local plant requesting contact with the proper individual within the firm to interview. A copy of the letter sent to all firms is found in Appendix I-C-3.

Further contact was made by telephone to give more details about the survey and to arrange a definite time for the interview. Two of the interviews were handled on an individual basis while in the other three interviews an assistant was called in to participate.

The interviewer described in detail the purpose of the survey, the Water Resources Scientific Information Center, and

the Water Resources Institute's role in the dissemination of technical information. The interviewer read each question aloud and gave explanation and clarification when needed. Each participant was furnished with a questionnaire to follow during the interview. However, only one questionnaire was completed for each firm.

In addition to the questionnaire, descriptive printed materials used in the interview were a citation bulletin, a copy of WRSIC's Selected Water Resources Abstracts, a sample of WRSIC's SDI (Selective Dissemination of Information) notices, a microfiche card, and brochures showing various microfiche readers.

RESULTS

The Organization

The company representatives interviewed were all in responsible positions and, therefore, quite able to accurately present the firm's requirements for water resources scientific information. The usual duties of two of them were in administrative management, one in technical management, one in both administrative and technical management, and one in scientific and engineering (non-management or low-level management).

Table 1 indicates the size of the firms included in the survey and the number of supervisory or administrative, professional, and sub-professional personnel respectively. Hourly paid office clerks and plant workers are not included unless

they are classified in one of the above mentioned categories.

TABLE 1

EMPLOYMENT RANGE WITH APPROXIMATE NUMBER OF SUPERVISORY, PROFESSIONAL, AND SUB-PROFESSIONAL PERSONNEL

COMPANY	EMPLOYMENT RANGE	SUPERVISORY	PROFESSIONAL	SUB-PROFESSIONAL (TECHNICIANS)
1	1000-4999	350	350	350
2	1000-4999	150	25	50
3	1000-4999	1200	90	200
4	500-999	211	101	50
5	100-249	105	4	38

In each firm there were those employees as shown in Table 2 who, in the normal course of their activities, needed access to recently published technical information on water resources. Of that number only a very small percentage of their time was actually devoted to the search for technical water resources information. In the opinion of the interviewee most employees were spending about the right amount of time in their search for technical information. However, one person interviewed thought supervisory and administrative personnel should not devote any time in the search for water resources information but this should be left to the professional employees such as engineers and chemists, and their time devoted to the search should be increased from less than five percent to between five and ten percent.

TABLE 2

NUMBER OF EMPLOYEES REQUIRING WATER RESOURCES INFORMATION
WITH TIME ACTUALLY DEVOTED TO AND WHAT SHOULD
BE DEVOTED TO THE SEARCH FOR INFORMATION

COMPANY	SUPERVISORY			PROFESSIONAL			SUB-PROFESSIONAL		
	No.	% of Time		No.	% of Time		No.	% of Time	
		Actual	Should Be		Actual	Should Be		Actual	Should Be
1	40	0-5	0-5	30	5-10	5-10	30	0-5	0-5
2	3	0-5	0-5	2	0-5	0-5	0	---	---
3	1	0-5	0	2	5-10	10-25	0	---	---
4	30	0-5	5-10	15	0-5	5-10	0	---	---
5	5	0-5	0-5	2	0-5	0-5	4	0-5	0-5

Current Sources of Information

There is a wide variety of information resources available to most organizations seeking technical information. Table 3 indicates how each representative evaluated each resource in light of its usefulness to his firm. The Regional

TABLE 3

EVALUATIONS OF INFORMATION RESOURCES

INFORMATION RESOURCE	FIRM				
	1	2	3	4	5
Personal Reference Library	B	D	D	A	C
Internal Reference Library	B	B	B	B	E
Research Staff	C	E	A	B	E
Public or Academic Library	C	D	D	B	C
Specialized Information Service	B	D	D	C	D
Document Centers	B	D	A	C	D
Vendors, Manufacturers, Suppliers	A	B	B	B	C
Consultants or Laboratories	A	-	C	-	C
Technical Seminars	-	-	-	B	-
Corporate Staff Facilities	A	A	-	-	-

LEGEND: A--very significant; B--significant; C--limited significance; D--insignificant; E--not available

Information and Communication Exchange at Rice University and the Industrial Information Services at Southern Methodist University were named as specialized information services that had been used infrequently by two firms and none by the other three. According to the survey the resources relied upon most often are internal reference libraries, information supplied by vendors, manufacturers, and suppliers, and corporate staff

facilities at some central location servicing the entire company. Four of the five firms surveyed had an internal reference library.

Newsletters containing water resources information were described by four of the firms as available to them and a useful source of information. Only two of the firms regularly receive various state and federal reports dealing with some area of water resources.

The most common forms of printed literature serving as sources of water resources information are listed in Table 4.

TABLE 4

EVALUATIONS OF SOURCES (PRINTED LITERATURE) OF WATER RESOURCES INFORMATION

FORM OF PRINTED LITERATURE	FIRM				
	1	2	3	4	5
Trade Journals	A	A	A	A	A
Trade Magazines	A	B	C	A	C
Handbooks	B	A	A	A	B
Reference Books	B	A	C	A	B
Project Reports	C	A	D	C	A
News Letters	C	A	B	B	C
Printed Advertising	C	B	C	C	D
Catalogues	B	B	C	C	C
Abstract or Citation Bulletins	C	B	C	D	B
Monographs	C	C	D	D	A

LEGEND: A--very useful source; B--useful source; C--source of limited significance; D--seldom, or never used.

An evaluation of each information source by the persons

interviewed is also included. Trade journals, trade magazines, handbooks and reference books were considered to be the most useful sources of information.

The best utilization of journals and other publications as indicated by all persons interviewed was to read the articles of interest as the material is received and then file it for later reference. The average amount of time engaged in current-awareness activities was from four to five hours per week. Most firms encourage their employees to attend technical seminars, conferences, and meetings to keep current with recently published material on water resources.

Information Services

Possible future services of the Water Resources Scientific Information Center were described as being a citation journal distributed twice monthly at a cost of $15 to $20 per year; an abstract bulletin distributed twice monthly at a cost of $30 to $40 per year; a selective dissemination service using a standard interest profile distributed twice monthly at a cost of $80 to $100 per year; a selective dissemination service using an individual interest profile distributed twice monthly at a cost of $250 to $300 per year; and a retrospective machine search service with an individual interest profile at a charge of $100 to $125 per request.

Potential subscriptions to these types of services by the firms surveyed are indicated in Table 5. The abstract

bulletin and the retrospective search services appealed the most to those surveyed. In some instances more than one subscription would be utilized by the firm.

TABLE 5

POTENTIAL SUBSCRIPTIONS TO TYPES OF INFORMATION SERVICES

SERVICE	NO. OF FIRMS				TOTAL NO. OF SUBSCRIPTIONS
	TOTAL	YES	YES, AT REDUCED CHARGES	NO	
Citation Journal	5	1	-	4	1
Abstract Bulletin	5	4	-	1	8
Selective Dissemination:					
(1) Standard	5	-	1*	4	1
(2) Individual	5	2	1**	2	4
Retrospective Search	5	5	-	-	9

* $50 per year
** $150 per year

The comments given most frequently for not wanting the services at any charge can be summed up as follows:

(1) Availability in other types of services which are of more benefit, namely abstract bulletins and retrospective searches.

(2) Too broad in scope, not specific enough.

(3) Information distributed from corporate information center.

The last comment (3) should be given further consideration. A common structure in many industrial firms is that of a

corporate organization with offices and plants located in selected areas subordinate to the main office. The subordinate offices and plants are in many instances considered line operations and therefore certain decisions and responsibilities are not theirs but are reserved for the corporate office in order to reflect a company wide policy. Distribution of current-awareness information is often made in this manner. Even with some firms retrospective searches are made this way with the desired information being forwarded to the subordinate office.

This observation was made not only in this survey but also in previous similar surveys conducted by the Industrial Economics Research Division.

Preferences in information services are further shown in Table 6 based on supposition that not all services would be available. The abstract bulletin and the retrospective search are still considered to be the most desirable types of information services if only one or two services could be offered.

It was observed in the survey that microform readers are still used rather sparingly for reports. Four of the five firms surveyed have microform readers but they are used mostly for blueprints and other engineering drawings. Of the four firms possessing readers, only two would consider requesting microform copies of material rather than hardcopy. The reason given for requesting microform copies was limited storage space for hard copy material.

TABLE 6

CHOICE OF INFORMATION SERVICES

SERVICE	NO. OF FIRMS IF ONLY ONE AVAILABLE	IF ONLY TWO AVAILABLE	IF ONLY THREE AVAILABLE*
Citation Journal	-	1	1
Abstract Bulletin	3	4	4
Selective Dissemination:			
(1) Standard Profile	-	-	-
(2) Individual Profile	1	3	4
Retrospective Search	1	2	3

* One firm was interested only in two types of services

Areas of Interest Relating to Water Resources

A wide range of interest exists with users of water resources information. Table 7 lists the number of firms having a particular area of interest.

TABLE 7

AREAS OF INTEREST IN WATER RESOURCES

NUMBER OF FIRMS	AREAS OF INTEREST
3	Water Supply
2	Surface and Ground Water
3	Water Usage
3	Water Treatment
2	Water Quality
2	Water Analysis
2	Waste Water Handling and Treatment
1	Waste Water Disposal

APPENDIX I-C-1

Questionnaire

INDUSTRIAL ECONOMICS RESEARCH DIVISION
COLLEGE OF ENGINEERING
TEXAS A&M UNIVERSITY

A SURVEY OF USER REQUIREMENTS FOR WATER RESOURCES SCIENTIFIC INFORMATION

Date _____ _____ _____ _____Length of Interview (min.)
Month Day Year

Name of person completing this form _____

Title of person completing this form _____

Name of organization _____

Address of organization _____

_____

_____

Part I. The Organization

1. Describe your duties in your present position by checking the appropriate spaces.

   1) _____ Administrative management

   2) _____ Technical management

   3) _____ Both administrative and technical management

   4) _____ Scientific and engineering (non-management)

   5) _____ Technical evaluation

   6) _____ Library services or information

   7) _____ Other (specify) _____

   _____

2. Approximate number of employees in the organization.

   1) _____ Supervisory or administrative

   2) _____ Professional (such as engineers)

   3) _____ Sub-professional (technicians)

3. What is the approximate number of employees who, in the normal course of their work, must have access to recently published technical information on water resources?

   1) _____ Supervisory or administrative

   2) _____ Professionals (such as engineers)

   3) _____ Sub-professional (technicians)

4. Of these employees, what percentage of their time is devoted to the search for technical water resources information? (Choose answer from the column at the right)

   1) _____ Supervisory or administrative

   2) _____ Professionals (such as engineers)

   3) _____ Sub-professional (technicians)

5. In your opinion, what percentage of their time should be devoted to this search of the literature if they are to adequately cover material which is available in the field? (Note: In most cases, a limited search of local resources may not provide a true indication of the information which is available.) (Choose answer from the column at right)

   1) _____ Supervisory or administrative

   2) _____ Professional (such as engineers)

   3) _____ Sub-professional (technicians)

A.	None (0%)
B.	Less than 5%
C.	5 to 10%
D.	10 to 25%
E.	25 to 50%
F.	50 to 75%
G.	More than 75%

Part II. Current Sources of Information

Would you now evaluate the information resources 6 through 13 in light of their usefulness to your organization? (Indicate by placing the appropriate letter in the space provided)

A) A very significant source (available and almost always used)

B) A significant source (available and usually used)

C) A source of limited significance (available but seldom used)

D) An insignificant source (available but not used)

E) Not available

6. _____ Personal reference libraries.

7. _____ An internal reference library maintained by your organization for use by its employees.

8. _____ A research person (or staff) whose primary duty is to provide assistance in literature searches.

9. _____ A public, private, or academic library which is readily accessible to members of your organization.

10. _____ A specialized information service external to your organization? If available, please specify _____

_____

_____

11. _____ Document centers or external library research services available to your organization? If available, please specify ____

_____

12. _____ Information supplied by vendors, manufacturers, or suppliers.

13. _____ Significant sources of information for your organization other than those mentioned in questions 6-12. Please specify _____

_____

_____

_____

_____

14. Does your organization have a library?

Yes _____ No _____

List major water resource areas covered.

_____

_____

_____

15. Yes _____ No _____ Do you regularly receive (without individually requesting) various state and federal reports dealing with some area of water resources?

16. Yes _____ No _____ a. Do you receive newsletters which contain water resources information?

    Yes _____ No _____ b. Are these a useful source of information for current-awareness?

17. _____ Which of the following best describes your utilization of journals and other publications? Do you:

    A) Read the articles of interest as the material is received and then file it for later reference.

    --or--

    B) File the material as it is received. When a problem is presented, perform a search and read those articles which are relevant to the particular problem at hand.

18. _____ hours How much time do you use each week engaged in current-awareness activities? (Average number of hours)

19. List any programs or special services that the organization has to keep personnel current in terms of recent published material on technical aspects of water resources.

_____

_____

Questions 20 through 30 are concerned with the sources of water resources information (i.e. printed literature) utilized by your organization and their value. Please evaluate each by choosing the appropriate response from the column at the right.

20. _____ Trade Journals
21. _____ Trade Magazines
22. _____ Handbooks
23. _____ Reference Books
24. _____ Project Reports
25. _____ News letters
26. _____ Printed Advertising
27. _____ Catalogues
28. _____ Abstract or Citation Bulletins
29. _____ Monographs
30. _____ Other (please specify)

_____

A. A very useful source
B. A useful source
C. A source of limited significance
D. Seldom, or never used
E. None applicable

31. Yes _____ No _____ Does your organization publish information which would be worthwhile and available for addition to WRSIC's data base? If yes, please specify (also charges, if any)

_____

_____

_____

Part III. Information Services

Two types of information services which may possibly be offered by WRSIC in the foreseeable future include current awareness and retrospective search procedures. A description of some possible variations of these services is given below:

A. Current Awareness - Current awarensss services are designed to make the user aware of the existence of current literature which is available in his field. Possible services include:

1. Citation Journal - based on titled of publications, it would probably make use of permuted keyword indexes. For example, a keyword-in-context index to literature normally consists of three main sections: A keyword index, a bibliography, and an author index.

a. Keyword Index - Keywords in the title of a publication are arranged alphabetically down the center of each column. Within the limits of the column each title is shifted one word to the right, one keyword at a time, and placed in alphabetic order with all other keywords. Words which are not considered of interest are excluded from the keyword list. Associated with each title is a coded reference to more complete information which may be found in the bibliography.

b. Bibliography - The bibliography would contain, in reference number order, the author, title, publication reference, source of hard copy and/or microfiche copy, and cost of the copies.

c. Author Index - The Author Index would list the authors in alphabetic order and the associated coded references to each of his publication entries.

Normal use would involve referencing the keyword index or the author index and then locating complete information on the entry in the bibliography.

2. Abstract Bulletin - Current abstracts which are designed to indicate content or provide a summary of selected articles involving water resources information will be assembled into a booklet published twice monthly. Bibliographic information will be provided with each abstract to provide the user with information as to the cost and source of the desired documents.

   This publication could have several indexes which would provide a ready reference to select subsets of the abstracts which are included. Such indexes could include those described above in the KWIC Index, as well as indexes according to subject categories. Other variations could include several abstract bulletins which contain selected subsets of the total abstracts available arranged by subject categories. (References - Selected Water Resources Abstracts)

3. Selective Dissemination of Information (SDI) - SDI systems provide notification of significant publications in the area of interest of a particular user or a particular category of users. Notification is in the form of abstracts. Interest profiles will be used in the selection of these abstracts.

   Interest profiles may consist of up to 20 terms which describe an area of interest. WRSIC is considering two types of profiles for use with their SDI system. They are:

   Standard Interest Profiles: A large number of standard interest profiles will be developed to cover a variety of interests based on either specific subject areas or specific categories of users. These standard profiles are useful primarily due to economy of operation. It is less expensive to prepare current awareness distribution material where one profile may serve many users.

   Individual Interest Profiles: For those users who do not feel that the standard interest profile will adequately cover their information needs, the individual interest profile can be used. This profile is tailored to the specific interest areas of the user and can, in some cases, provide a better focus for the search procedures.

B. Retrospective Services - Retrospective searches are designed to provide a complete search of all abstracted articles which are contained in the historical data file to select those items which are of interest to a particular user.

1. Abstract Bulletin - A comprehensive abstract bulletin with subject and author issue indexes and yearly cumulative author and subject indexes, constitutes a retrospective service readily available to all users.

2. Machine Search - Automated Retrospective searches, based on specific areas of interest, result in the identification and availability of the abstracted information which meets the criteria outlined by the user. Sophisticated variations to search techniques can involve such things as the selection of items published after a certain date, the elimination of items which have a certain descriptor and the assignment of extra importance to certain descriptors or combinations of descriptors.

   Based on an analysis of these abstracts the user can obtain copies of those documents which are of sufficient interest.

Answer the following questions based on the assumption that the WRSIC data base contains all important technical information which has been published about the water resources problems which confront your organization.

Cost of services: Assuming the only means available for WRSIC to offer a service is through a charge for services rendered, consider the following questions:

32. A) Would you subscribe to a Citation Journal using a KWIC index format (distributed twice monthly), if one subscription cost $15 to $20 per year?

   1) _____ Yes

   2) _____ No, but would consider the service at a charge of approximately $ _____ per year.

   3) _____ No, at any charge (please comment) _____

   _____

   B) _____ What would be the probable total number of subscriptions within your organization?

33. A) Would you subscribe to an Abstract Bulletin (distributed twice monthly), if one subscription cost $30 to $40 per year?

   1) _____ Yes

   2) _____ No, but would consider the service at a charge of approximately $ _____ per year.

   3) _____ No, at any charge (please comment) _____

   _____

   B) _____ What would be the probable total number of subscriptions within your organization?

34. A) Would you subscribe to an SDI Service using a Standard Interest Profile (distributed twice monthly), if one subscription cost $80 to $100 per year?

1) _____ Yes

2) _____ No, but would consider the service at a charge of approximately $ _____ per year.

3) _____ No, at any charge (please comment) _____

_____

B) _____ What would be the probable total number of subscriptions within your organization?

35. A) Would you subscribe to a SDI Service using an Individual Interest Profile (distributed twice monthly), if one subscription cost $250 to $300 per year?

1) _____ Yes

2) _____ No, but would consider the service at a charge of approximately $ _____ per year.

3) _____ No, at any charge (please comment) _____

_____

B) _____ What would be the probable total number of subscriptions within your organization?

36. A) Would you use the Retrospective Machine Search Service with an Individual Interest Profile, if the charge was $100 to $125 per request?

1) _____ Yes

2) _____ No, but would consider the service at a charge of approximately $ _____ per request

3) _____ No, at any charge (please comment) _____

_____

B) _____ What would be your probable number of requests per year?

C) _____ What would be the probable total number of requests per year within your organization?

37. The following is a list of the services which we have discussed:

A. Citation Journal - Highlighted keyword listing from current water resources titles.

B. Abstract Services - Comprehensive condensed coverage of all water resources subject areas.

C. SDI Services - Selective dissemination of current notices of articles based on user profiles.

D. Retrospective Machine Search - State-of-the-art bibliography based on a specific search request.

Giving due consideration to cost factors and the relative utility of the services described, please indicate your preferences by answering the following questions. (Note: Indicate your answers by choosing the appropriate letter(s) from the preceeding list)

1) If only one service was available which would you prefer? _____

2) If only two were available? _____ _____

3) If only three were available? _____ _____ _____

Microform is becoming a popular form of document storage and transmission because of both cost factors and compactness in relative size (show samples). For example, a single sheet of microfiche may contain up to 60 pages of information and normally costs from 50 to 65 cents per sheet, while hardcopy normally costs from 6 to 10 cents per page with a minimum charge of $3.00. Microform readers vary in price from $2.50 for a cheap pocket model to $500.00 for a deluxe table model. Good serviceable projector models may be obtained for $50.00 to $150.00 each.

38. Do you currently have microform readers?

Yes _____ No _____ (If yes, what types and how many of each?) _____

_____

39. If you used these information services, would you plan to request microform copies of material rather than hardcopy? (Consider cost, storage, and ability to make in-house copies of hardcopy material)

Yes _____ No _____ Main reason (comment) _____

_____

40. Would you, as a potential user of the Center, please give a brief statement as to some function(s) it might perform or service(s) it might provide which would be of significant value to you and your organization? _____

_____

_____

_____

_____

Part IV. Areas of interest relating to water resources:

_____

_____

_____

_____

_____

APPENDIX I-C-2

List of Firms in Survey

LIST OF FIRMS

Humble Oil & Refining Company
Box 3950
Baytown, Texas 77520

Champion Papers
Division of U.S. Plywood-Champion Papers, Inc.
P. O. Box 872
Pasadena, Texas 77501

Armco Steel Corporation
P. O. Box 1367
Houston, Texas 77001

Petro-Tex Chemical Corporation
P. O. Box 2584
Houston, Texas 77001

Anheuser-Busch, Inc.
775 Gellhorn Drive
Houston, Texas 77029

APPENDIX I-C-3

Initial Letter of Contact

TEXAS A&M UNIVERSITY

INDUSTRIAL ECONOMICS RESEARCH DIVISION
College Station, Texas 77843
P. O. Box 77 FE Phone 713 845-4171

June 3, 1969

Mr. F. G. Turpin
Manager
Humble Oil & Refining Company
P. O. Box 3950
Baytown, Texas 77520

Dear Mr. Turpin:

The Water Resources Scientific Information Center (WRSIC) was established by the Secretary of Interior in 1966 to assist in the retrieval and dissemination of scientific and technical information of water resources. In order to assist WRSIC in determining the user needs for water resources information services a field survey is being conducted by the Industrial Economics Research Division in conjunction with the Water Resources Institute of Texas A&M University.

Since this survey is being conducted to determine industry's needs for water resources information services we would like to discuss this further with you. I plan to be in the Houston area the week of June 16-20. Would you please let me know the appropriate person or persons in your firm to contact so that I might call for an appointment during that time?

Your cooperation in this survey is desired and will be greatly appreciated.

Yours very truly,

Norman C. Whitehorn
Project Supervisor

NCW:bab

Appendix II

Conditional Responses

Confidence Limits

Data Tables

(a) Conditional Responses - Mail Questionnaire

MAIL QUESTIONNAIRE

Question 1.

Describe your duties in your present position by checking the appropriate spaces.

7) _____ Other (specify)_____

_____

Professor - Engineering Education.

Professor.

Resource Management.

Teaching; editor, Baylor Geological Studies Bulletins.

President of the Board of Directors.
Plum Creek Conservation District.

Attorney for same.

Bookkeeper and Administrative Advisor.

Maintenance.

Legal.

5 Supervisors elected to carry out duties for water supply.

Attorney.

Supervision.

Control of Water through Lavaca River through maintenance of weeks, willows and other debris.

The District acts in conjunction with Harrison and Marion Counties, and the city of Marshall as co-sponsor of an EDA project for the study and documentation of the present potential needs for additional water supply storage on Caddo Lake, Texas-Louisiana.

Director-Secretary-Treasurer

The city performs all the operations except formulation of policy for the water district under contract.

Only employee other than part-time bookkeeper.

General Manager

Public Water Supply Wastewater Treatment Garbage Collection and Disposal.

Ditch digger, meter reader, general water system operation.

Determine district policies, assure compliance.

Office manager and bookkeeper.

Secretarial.

City Clerk.

Those normally involving a secretary-treasurer, please see back page.

Advisory.

Legal.

Water Board Member.

As president of the Board I determine established policy, act on recommendations of members, and guide policy decisions.

Maintain Water and Sewer.

Water Consultant, Oil and Gas Well sitting.

Attorney for District.

Auditor.

Although construction of the project was completed in 1962 no water has been available for irrigation. Therefore we do not have an operational organization at this date.

Right now we are trying to arrange for building a water reservoir; financing, rights, etc.

Our manager, Mr. John Vacek, handles engineering and scientific details for us.

Take care of paper work in office, operate Water Plant, read meters and all other chores that pertain to the treatment of water.

General Supervision.

Secretary, Board of Commissioners.

I am a director serving along with two others and we try to keep the District in working order.

Secretary - Treasurer.

President of Board Directors and directing all functions of district delegated by the directors.

A landowner in the District.

See title above and Board of Directors.

The Drainage District is concerned mostly with the proper and adequate drainage without too much erosion.

Manager and operator.

President of Board of Directors.

Secretary to the Board of Directors.

Policy Determination.

Secretary to the Board of Directors and Serving as a Director.

General supervision of survey under $200, 000 grant - re: Feasibility of intergrated sewer system for lower Rio Grande Valley.

Tax Accessor and Collector and Office Manager.

President of Association.

Attorney for District.

Education field.

National representation and coordination of member interests in natural resources field.

Attorney.

General research and education.

Association management.

Study, action, (testimony), programs of educational nature.

Consulting Engineers.

Construction management.

General Clerical

Owner.

General Contractor - Heavy.

Question 2.

What is the primary purpose of the organization in relation to water resources? List up to five purposes in order of priority.

J. Other (specify) _____

_____

My personal research interest is the institutional aspect of water conservation and development.

Flood prevention.

Drainage of farm and ranch lands.

Drainage.

Agricultural Drainage.

City Planning and Sanitation.

Furnish Water and Sewer to district.

Sewer user.

Treatment of Water and Sewage - distribution of water and collection of sewage.

Water law.

Supervision of industrial district purchasing water from Corpus Christi

To supply water for civilian use and for recreational purposes.

Flood Control

Flood Control.

Flood Control.

None.

Protection of Ranch and Farm Land.

Operation of public dock for shipping.

The District acts in conjunction with Harrison and Marion Counties, and the City of Marshall as co-sponsor of an EDA project for the study and documentation of the present potential needs for additional water supply storage on Caddo Lake, Texas-Louisiana.

Transportation.

Navigation.

Water Treatment and Sewage Treatment.

Supply water to town of Someract.

This District delivers Irrigation water to 50,000 irrigable acreas.

Management and operation.

Deliver water for irrigation.

Irrigation.

Operation of distribution system.

This is a Water District serving residents in North Harris County.

Pumping and Distribution irrigation water.

Distribution of Domestic and Irrigation Water.

To supply water to Benjamin.

Irrigation.

Flood Control.

Drainage of Excess Rain and Runoff of Surface water.

Drainage.

Primary purpose was to build a 5 mile levee protecting lands from Trinity River Overflows.

Operating Water and Sewer system.

Water for Conservation.

City Distribution.

Flood Water regarding structures under Pl 566 with multipurpose dam - no water being used from the reservoir.

Water Works.

Coordinate local flood control program.

Domestic supply only.

Is helping our District grow.

Primary function - Drainage.

Drainage and Flood control.

We take care of the drainage of the territory in our district.

Flood control.

Protect land from floodwaters of Chambers Creek.

Flood prevention.

Drainage - Ward County Water Improvement District #2.

Flood Control.

Drainage and Proper Outlets to Sea Level.

Getting the Water Off the Land.

Drainage of Farm Land.

Drainage and Flood Protection.

Water Drainage Only.

Drainage.

Maintenance of mail drainage ditches, lateral ditches and spoil banks.

Only duty is administration of Authority's business.

Municiples supplies.

Maintenance and operation of systems.

Flood Control.

Impound and deliver raw water to four member cities of the District.

Delivery of Irrigation Water.

Supply for City.

Dam and Reservoir under construction.

Flood Control.

National representation and coordination of member interests in natural resources field.

Suitability for pipeline hydrostatic testing.

Photogrammetric Services - Mapping.

Our organization is a general contractor interested in earth work, road construction and paving.

Others not applicable.

Not applicable.

Aggregate Production.

Question 11.

_____ A specialized information service external to your organization? If available, please specify.

American Water Resources Association indexing and abstracting services. Microfilm package purchased by academic library.

Texas Water Development Board Library.

Soil Conservation Service.

Committee on Desert Arid Zone Research
Science Information Exchange - A National Registry of Research in Progress.

Water Development Board; Texas Water Rights Commission; Soil Testing Laboratory - Texas A&M; Texas Tech Agricultural Department; Corps of Engineers, Bureau of Reclamation; University of Texas Hydraulics Laboratory.

Consulting Engineering Organizations.

Harris County Health Department
Texas Water Quality Board

National Association of Counties.

Soil Conservation Service

Engineer Reports.

Publications of the U.S.G.S.

Water Department, City of Temple, Texas.

Texas Water Report.

Consulting Water Engineer.

Our consulting engineering firm.

PUC, El Paso, Texas.

Soil Conservation Service.

None.

None.

None.

We rely on our engineer who has a good library and all technical information from many sources.

None.

None.

Texas Water Rights Commission, Texas Soil and Water Commission.

Hudspeth County Health Department and Texas State Department of Health.

International Boundary and Water Commission Blue Book.

Reagan and McCaughan, Consulting Engineers, 320 Wilson Building, Corpus Christi, Texas.

Clearing house for ground water data for arid and semi-arid West Texas.

SCS.

Not Applicable.

Four Soil Conservation Districts make information available.

Consultant Engineering Firm.

County Soil Conservation Office.

U. S. Bureau of Reclamation - Water Resources Scientific Information Center, Denver, Colorado.

Yours.

AWWA.

None.

Hunter Associates - Engineers.

Consultants.

U. S. Bureau of Reclamation Division of Irrigation Operations.
U. S. Department of Agriculture.

Texas Water Rights Commission Texas Water Development Board.

National Chamber affiliates have in some instances provided the central staff with technical expertise.

National LWV material and we talk with everyone who can provide information from personal qualification or as reference for other data.

Library is available through our associate engineering firm Freese, Nichols and Endress in Fort Worth, Texas. Considerable data is available through this source.

Have never required use of above.

Question 12.

_____Document centers or external library research services available to your organization? If available, please specify.

Engineering Library - Texas A&M University.

Inter-library loan services of academic library. United Engineers Library, New York.

Library resources on the A&M campus seem to be limited to your faculty, staff and students.

Texas A&M Library.

U. S. Department of Agriculture Library.

By mail, Texas A&M University.

University of Houston, Rice, Texas A&M University.

Public Library, University of Houston,

Army Engineers.

Houston Public Library, University of Houston, Document Center.

Water Department, City of Temple, Texas
Hunter Associates, Austin, Texas.

San Antonio Public Library.

City Libraries and Public officials and organizations.

El Paso PVC.

No except at our engineers.

Pan American College.

Hudspeth County Health Department and Texas State Department of Health.

Not applicable.

Soil Conservation Service.

Texas Water Development Commission.

SCS.

No need.

None.

County Sanitation Engineer.

Unknown.

Not applicable.

No.

U. S. Bureau of Reclamation, Division of Irrigation Operations.

A&M University.

Library of Congress, Congressional and Administrative Agencies, Studies, and reports.

None.

None.

Public and Semi-public groups.

SMU Science Information Center.

UTEP - Engineering Library.

Don't know.

Texas Technological College, Lubbock, Texas.

Not applicable.

No use required.

Question 14.

_____ Significant resources of information for your organization other than those mentioned in Questions 7-13. Please specify.

Texas District Office - U. S. Geological Survey, Civil Engineering Department, University of Texas.

Local governmental agency and consulting firms libraries.
Indexing and abstracting of international literature as carried out by the American Water Resources Association.
Note: It would appear that a coordinated service be arranged between WRSIC and AWRA; i.e. WRSIC handle North American Continent literature and AWRA provide the coverage for International literature. Some contract arrangement might be made.

River Basin Authorities (Texas); OWRR; USPHS; FWPCA; State Health Departments; State Water Agencies; Private Consultants; University Water Resources Research Centers.

Close contact with and feedback from:
Texas Water Development Board publications; USGS Hydrology reports; U. S. Weather Bureau; U. S. Public Health Service; and Waco City Water Department; USGS Water-supply papers, groundwater investigations, special reports, etc.

Publications of ASAE and ASCE.

NIL.

The commissioners rely upon their general experience.

U. S. Department of Agriculture.

We subscribe to the AWWA Journal, Southwest Water Works Journal. Trade Journals - Federal Journal and we receive almost all of the manufacturers catalogues, etc.

Latest from Vendors, Department of Commerce, Etc.

Health Department.

None.

Information available from Congressmen and State Legislators. Also, services of all firm are available.

TV and Newspaper reports on water releases from Falcon Dam, slainity content and total volume available.

A subscription to Texas Water Report is very helpful, and making use of the Congressman for this District as an ombudsman, from whom we get applicable Federal publications.

Don't know.

USGS and other state and federal agencies.

Consultants such as consulting engineers; economists, and attorneys; state and federal agencies, and colleges and universities.

Bulletins, letters etc.
Texas Water Control Board.
Austin, Texas

State Agencies.

Bureau of Reclamation.

Discussing common problems with general managers of other water districts.

Maybe for future use the above listed information resources might be useful to this organization, but not at the present time.

We subscribe to the AWWA Journal, Southwest Water Works Journal, Trade Journals - Federation Journal and we receive almost all of the manufacturers catalogues etc.

Our engineers library and technical information from many sources in his office.

We subscribe to the AWWA Journal, Southwest Water Works Journal, Trade Journals - Federation Journal and we receive almost all of the manufacturers catalogues etc.

Texas A&M Experiment Station
Texas A&I
U. S. Department of Agriculture

Trade Journals and Magazines.

U. S. Bureau of Reclamation and U. S. Army Corps of Engineers.

7 through 14
"Not applicable"

U. S. Soil Conservation Service.

Local Association: Engineers; Neighbors.

None.

AWWA Journal.

Sample data from water wells, accurage drillers logs, water measurements, pumping tests, geological data.

This entire page does not apply to our operation as our Mr. John Vacek is the only regular employee and looks after all details of our operation.

Municipal Advisory Service
Fort Worth, Texas

Soil Conservation Service.

None.

Soil Conservation Service personnel and engineers provide us with information.

None needed.

Stated, Four soil conservation districts make information available.

Soil Conservation Service.

Monthly production and quality records from our operations.

Generally contact other water districts to find if they have had same problems. Out District is only 2 years old.

None.

Consulting Engineers, state Health Department.

Rice/Belt Works Association.

TWDB - TWRC.

Rady & Associates, Engineers, Fort Worth, Texas
Freese & Nichols, Engineers, Fort Worth, Texas.
Facility under contract to the City of Mineral Wells who assumes all operation and maintenance. Palo Pinto County Municipal Water District #1 was formed as an instrumentality to fund the construction of a municipal water supply.

Ionics, Incorporated, 65 Grove Street, Watertown, Massachusetts.

Water well drilling and service companies.

Not applicable.

None of the above are accessable to our organization.

Bureau of Reclamation
Texas A&M University.

U. S. Geological Survey
Texas Water Development Board
Texas Water Rights Commission
Texas Department of Public Health

I have left this blank, except for the fact that we rely upon our engineers, whom we know rely in varying degrees on all these sources. As president of the board, I try to keep informed through my work as chairman of State Bar Water Committee, University of Texas Water Law Institutes, and I hope to attend the conferences on water at A&M.

Texas Water Development Board, and Red Bluff Water Power Control District.

Planning and development handled through consulting engineers.

No.

Occassionally outside experts will be commissioned to perform special assignments. In these instances, the outside experts will rely on their own information sources.

Seminars, etc.

American Waterworks Association Journal and Manuals
Water Pollution Control Federation Journal and Manuals
"Manual for Water Utility Operations" - This Association
"Manual for Wastewater Operations" - This Association
Proceedings - Annual short school - This Association
Proceedings - Industrial Water and Waste Conference - Texas Water Pollution Control Association.

This is further elaboration on #11 as well: we concentrate on personal interview and data gathering for local concerns, study papers, reports, legislative bills.

We receive information from Water, Incorporated and Texas Water Conservation Association.

Libraries at A&M, Texas University, USGS, Etc.

We are a subsidiary of the firm Lockwood Andrews & Newman, Inc. and their library is available to us.

Sources obtained from North Plains Water District Office.

Irrigation Age Magazine.

State and Federal Publications
Occasional useful Seminar Publications.

City of Corpus Christi records.

Houston has many libraries and two Universities and two Colleges plus much information can be obtained for Austin, Texas.

Plans and specifications by architects and Engineers on specific projects.

None require.

Question 25.

Please list the titles of five of the most useful sources of information to your organization.

Abstracts (1).
Advanced equipment as supplied by manufacturers (1).
Advances in Agronomy (1).
AGC Austin Heavy Bulletin (1).
Agroclimate Atlas of Texas (and similar reports) (1).
Agronomy Journal (2).
Agronomy Monographs (1).
AGU Water Resources Research (1)
Air and Water News (1).
American Chemical Society (1).
American Management Association Publications (1).
Analysis of Water and Sewage (1).
ASAE Agricultural Engineering (1).
ASAE Transactions (1).
ASCE (2).
ASCE Hydraulics Journal (1).
ASCE Irrigation and Drainage Journal (2).
ASCE Journals (2).
ASCE Magazine (1).
ASCE Proceedings (2).
ASCE Publications (4).
ASH Bibliographies (1).
AWRA Abstracts (1).
AWRA Bulletin (1).
AWWA Journal (26).

AWWA Magazine (1).

Brazos River Authority (1).

Builders Exchange (1).

Bulletins (2).

Bulletins put out by the local County agent (1).

Bureau of Public Roads Hydraulic Information Circular (1).

Bureau of Reclamation - Irrigation Operation and Maintenance Bulletin (1).

Bureau of Reclamation Design Standards (1).

Bureau of Reclamation Publications (2).

Business Week (1).

Catalogs (7).

Cities Comprehensive Master Plan (1).

City Attorney Association (1).

City Water Board of San Antonio (1).

Civil Engineering Magazine (3).

Clay Pipe Institute (1).

Climatological Data, ESSA (1).

Clow National Pipe Economy (1).

Comment - At present time these have not been established for Overton (1).

Comment - No Specifics (1).

Comment - Not Applicable - Sources are too general (1).

Commissioners Court (Legal Aspect) (1).

Community Water System's Handbook (1).

Concrete Pipe (1).

Concrete Pipe Association of America (2).

Consultants (1).

Consulting Engineers (2).

Consulting Engineers Reports (1).

Daily News (1).

Design of Concrete Structures (1).

Dickey Clony Manufacturing Company (1).

Dissertation Abstracts (1).

Donley County Soil Conservation Board (1).
Drainage and Flood Control Engineering (1).
Drinking Water Standards (1).
El Paso PVC (1).
Engineering Extension Service (1).
Engineering Index (1).
Engineering Manual by Perry (1).
Engineering News Record (2).
Farm Publications (1).
Feasibility Studies (1).
Federal Register (1).
Federal Water Development Information (1).
Field Experience (Project Reports) (1).
Flooding Sources (1).
Fluid Power - Designers Manual (1).
Forestry Abstracts (1).
Forrest and Cotton (1).
FWPCA (2).
FWPC Journal (1).
General Contractor Association (1).
General Water Information (1).
Government Purchasing Digest (1).
Government Publication of Data (such as "Climatological Data") (1).
Ground Water and Wells - Edward Johnson Incorporated (1).
Ground Water Publication (1).
Ground Water Supply Engineering (1).
Ground Water - National Water Well Publication (1).
Ground Water Age (1).
Hall County Commissioners Court (1).
Handbooks (7).
Handbook - Civil Engineers Handbook (1).
Handbook - Civil Engineers Design Handbook (1).
Handbook - Concrete Pipe Handbook (1).

Handbook - General Engineering Handbook (1).

Handbook - Hydraulics Handbook by King (3).

Handbook - Kings Hydraulic Handbook (1).

Handbook of Civil Engineering (1).

Handbook of Culvert and Drainage Practice (2).

Handbook of Drainage (1).

Handbook of Drainage and Water Control (1).

Handbook of Flow in Open Channels (1).

Handbook of Hydraulics (3).

Handbook - Civil Engineering Handbook - Urquhart (1).

Harris County Health Department (1).

Health Department (1).

Highway and Road Bridges (1).

Highway Branch (1).

High Plains Underground Water Conservation District 'Cross Section' (1).

Hudsepth County Health Department (1).

Hydrology - Meinzer (1).

International Boundary and Water Commission (1).

Investigations in Erosion Control & Reclamation of Eroded Land-USDA-T. B.859 (1).

Ionics, Incorporated (Books on Ionics Plants) (1).

Irrigation Age (3).

Irrigation Engineering and Maintenance (1).

Jim Wells County Ground Water (1).

Latest Design Criteria by Ours and other engineers (1).

Library of Congress Listing (1).

Local Association (1).

Local Farmers and Ranchers (1).

Lockwood Andrews and Newmane Project Report for Alice Water Authority (1).

Maintenance Handbook (1).

Management - San Antonio River Authority (1).

Manual for Wastewater Operations - This Association (1).

Manual for Water Utility Operations - This Association.

Manufacturers (2).

Mayo + Manager - Jefferson Publication (1).

McAllen Pipe Supply (1).

Methods for Collection and Analysis of Water Samples - Rainwater and Thatcher (1).

Maintenance Handbook (1).

Management - San Antonio River Authority (1).

Manual For Wastewater Operations - This Association (1).

Manual for Water Utility Operations - This Association (1).

Manufacturers (2).

Mayo + Manager - Jefferson Publication (1).

McAllen Pipe Supply (1).

Methods for Collection and Analysis of Water Samples - Rainwater and Thatcher (1).

Muller Catalogues (1).

Nation Cities (1).

Nature and Properties of Soil - Lyon and Buckman (1).

NCSA (1).

Neighboring City Water Works Operators (1).

Newsletters (3).

Newspapers (2).

News and other reports of other projects (such as at Seattle) (1).

No Preference (1).

NSGA (1).

Organization has no office at present (1).

Other Water Districts (1).

Out Engineers (1).

Our Service Company (1).

Plans (1).

Plumbing Inspectors Handbook (1).

Pocket Companion - Carnegie Steel Company (1).

Printed Advertising (1).

Proceedings of Texas Water Works Short School (1).

Proceedings of the Fourth West Texas Water Conference, Texas Tech (1).

Proceedings - Annual Short School - This Association (1).

Proceedings - Industrial Water and Waste Conference - Texas Water Pollution Control Association (1).

Project Reports (4).

Public Health Service (1).

Public Water Supplies - Turneaur - Russell (1).

Public Works Magazine (3).

Pump Engineering Data (1).

Rainfall Records (1).

Records of Water Use - Cities (1).

Reference (1).

Reference Books (4).

Reports and Bulletins (1).

Research Persons (1).

Resources for the Future (1).

Rockwell Manufacturing Company (1).

Rohan Company (1).

Ruben H. Donnelley Publishing (1).

Runoff Tables (1).

Sales Personnel (3).

Sanitary Service Corporation (1).

Self Geological Studing Well (1).

Separate Papers as announced in AWRA Newsletter, Bulletin, ASCE Newsletter, etc. (1).

Sewage - Folwell (1).

Sewage Collection Workers Manual (1).

Sewer Plant Operators Manual (5).

Short Schools and Extension Courses (8).

Soil and Water Conservation District Samples (1).

Soil Conservation Service (11).

Soil Science Society of America Proceedings (2).

Southwest Water Works Journal (11).

Specifications (1).

Standard Methods (2).

Standard Methods for Water and Waste (1).

State and Federal Government Reports (1).

State Publications on Water Conservation (1).

Study and Interpretation of the Chemical Characteristics of Natural Water - HEM (1).

Surveying Theory and Practice by Davis (1).

Texas A&M Research Publication (1).

Texas A&M - Reports (1).

Texas A&M Extension Service Manuals (1).

Texas A&M Extension Service (1).

Texas A&M University (3).

Texas Contractor (1).

Texas Highway Department Hydraulic Manual (1).

Texas Municipal League Publications (1).

Texas Soil and Water Conservation Service (1).

Texas State Department of Health (1).

Texas State Health Department (1).

Texas Tech Research Publication (1).

Texas Town and City (1).

Texas Water and Sewage Association (1).

Texas Water and Sewage Manuals (2 books) (1).

Texas Water Commission (1).

Texas Water Commission Bulletins (1).

Texas Water Conservation Association (3).

Texas Water Development Board Publications (5).

Texas Water Development Board (10).

Texas Water Journal (1).

Texas Water Pollution Control Board Letters and Bulletins (1).

Texas Water Quality Board (3).

Texas Water Report (7).

Texas Water Rights Commission (5).

Texas Water Works Manual (1).

Textbooks (4).
The American City Magazine (3).
The Cross Section (1).
The Survey Being Made (1).
Trade Journals (5).
Trade Magazines (4).
Transtex Supply (1).
Trinity River Authority (1).
University of Texas Center for Research in Water Resources (1).
U. S. Army Corps of Engineers Bulletins (1).
U. S. Army Corps of Engineers Reports (2).
U. S. Army Specifications (1).
U. S. Corps of Engineers - Hydraulic Tables (1).
U. S. Corps of Engineers Data (1).
U. S. Department of Health, Education and Welfare (1).
U. S. Department of Interior Technical Publications (1).
U. S. Government Publications (2).
USBR Publications (1).
USDA Bulletins (1).
USDA Yearbook of Agriculture (1).
U. S. Geological Survey (6).
USGS Maps (1).
USGS Publications (3).
USGS Quadrangle Maps (1).
USGS Reports (1).
USGS Surface Water Records (2).
USGS Technical Reports (1).
USGS Water Resources Data for Texas (1).
USGS Water Supply Papers (1).
USWB
USWB Climatological Data (1).
USWB Weather Reports Monthly Summaries (1).
Various Construction Trade Journal and Magazine (1).

Various Studies by other Engineers (1).
Various Water Authority Reports (1).
Vendors and Manufacturers (1).
Vernons Civil Statues - Water Volume (1)
Vernons Civil Statues of the State of Texas (3).
W and W Management (1).
W. W. Coym, PE, Muerta Creek Project Report (1).
Waste Water Bulletins (1).
Water and Sewage Works (4).
Water and Wastes Engineering Magazine (4).
Water Incorporated (2).
Water Manual (1).
Water Master Report (1).
Water Newsletter (1).
Water Plant Operators Manual (2).
Water Quality Board Letters and Bulletins (1).
Water Resources Bulletins (1).
Water Resources Council (1).
Water Service in Texas Cities (1).
Water Supply and Sewerage (1).
Water Supply and Waste Water Disposal (1).
Water Test and Analysis (1).
Water Works Operators Manual (9).
Watershed Planning Handbook (only one used) (1).
We don't need any (1).
Weekly Reports (1).
Western Water News (2)
WPCA Journal (2).
WPCF (2)
WPCF Journal (11).

Question No. 26.

Yes____No____Does your organization publish information which would be worthwhile and available for addition to WRSIC's data Base?

If yes, please specify _____

The Texas Highway Department Hydraulic Manual.

Very limited number of scholarly articles and technical (research) papers. --number expected to increase sharply as graduate education program expands.

Technical research reports, and proceedings of water conferences.

Not at this time.

SURFACE AND GROUND WATER STUDIES: STREAM BASIN HYDROLOGY: stream sediment studies; water chemistry studies....all of the Central Texas area.

However, most of this work is published in periodicals.

Limited information on supplementing rainfall with sprinkler irrigation. Crop moisture relationships.

(1) Water level measurements annually, of selected observation wells.
(2) Conductivity readings on selected wells.
(3) Map publications on underground water.

Periodic study reports i.e. Water Quality Management Plan for the Guadalupe River Basin, Texas. This study is currently underway.

If newsletters are more important to WRSIC than the District's monthly publication, the Cross Section, would qualify.

Volume in 2 parts being mailed to you.

File monthly report on Government Employment and Payrolls, U. S. Department of Labor (Texas Employment Commission): publish semi-annual financial reports in local newspaper; file annual budget and report on amount and type of work done.

Annual Operations Report.

Only on Ionics Plants.

Make reports as required to state agencies.

We hope, when our survey is complete, it will be valuable to others; and that our project can become a pilot project for the State.

The Runnels County soil and water Conservation does publish information that would be useful.

Much of published information would be of general interest. However, as noted above, in certain instances more detailed material is published that might be very worthwhile to WRSIC's data base.

Manual for Water Utility Operations
Manual for Wastewater Operations
Proceedings - Annual short school

1) National League material (Primarily testimony)
2) Local test, money

Does not Publish - But does have Aerial Film Negatives of Various Areas.

Question 27.

Would you, as a potential user of the Water Resources Scientific Information Center, please give a brief statement as to some function(s) it might perform or service(s) it might provide which would be of significant value to your organization?

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1. Provide quick bibliographies on very narrow technical subjects of most recent results.
2. Provide state-of-the-art bibliographies for course lecture preparations.
3. Provide means to do literature searches with regard to research and publication in connection with graduate degree programs.
4. Provide quick access to a significant data bank.
5. Current awareness abstracts and reviewers comments on new books.

Provide listings of references on specified topies (processes) such as evapo-transpiration; supply them according to the intrinsic nature at the study be it basic, developmental, or applied. Further, supply each (basic-developmental, or applied) by 1) author, 2) section of country 3) by river basin, 4) by problem area.

Contract and non-contract research (literature part)

Flow records of Central Texas streams, water chemistry, surface and ground waters of Central Texas.

Furnish rapid flow of technical information to interested individuals.

Coordinating the compilation and publication of annotated bibliographies for as many as possible of the topics listed in question 28, would help everyone using water resources information. The bibliographies should be updated at least every five years and more often, if possible.

1. Collect comprehensive detailed information on the amount and quality of underground water available on each farm. (similar to SCS land use maps or detailed county soil maps.)

1) Water shed inventories
2) Surface water structures and impoundment values
3) Irrigation Consulting
4) Drainage Consulting
5) Precipitation Probabilities
6) Underground water resources inventories

This center would give my organization a strong crutch to lean on that would be accepted as authentic to the people we serve. For example the water samples done for me by Texas A&M University are accepted without question by irrigation farmers and industry alike.

1. The Water Control Districts are interested in reducing:
   A. Soil erosion, storing temporary floodwater to reduce downstream flooding:
2. Recreation and wildlife development are secondary benefits, and people need cost and returns information in connection with the small watershed programs to determine the returns on investment.

This district is concerned with drainage, erosion, retarding dams in ditches.

Subjects concerning agricultural drainage and underground water supply for urban water systems.

Provide information on salt water conversion.

1) Non-Technical manuals on Sanitation. (city)
2) Non-Technical manuals on Sewage System.
3) Water District Manuals (Administrative)
4) Work-Simplification manual, concerning short-cuts in paper-work.

We can use information on subjects:
Modern Maintenance procedures, new materials water treatment, sewer treatment, State regulations and any recommended procedures for a more efficient water and sewer service.

Some ground water tables and Lake Houston data.

Work closer with the small water districts and try to see the conditions that they are forced to work under due to the limited amount of finance that is available.

Information concerning eliminations of moss in lake.

Our duties are Flood and Drainage. We use S.C.S. and Corp of Engineers. We do not have any of your material, so we do not know what you have for our use.

1) Irrigation
2) Flood gates
3) Brush control
4) Bank stabilization
5) Flood way maintenance
6) Water pumping in large quantity

The value of such a Center would be the information that could become available to public officials on methods to best conserve our water and natural resources and abate pollution.

Nothing known at this time - our organization was organized to plan flood control works of improvement and maintenance.

The Red River Improvement District #1 was established to build a levee to protect Farm and Ranch Lands. Officers serve without pay and hold functions and expenditures to the lowest possible level in view of the 73% parity level that has prevailed the last few years in the farming and ranching business.

Will advise later as to how your services can be used in our program.

Provide and assist all forms of government in obtaining adequate supplies of water reasonably priced for consumer, industrial and agricultural users, as contrasted to crisis situations of feast or famine as now exist.

As a potential user of water for navigation purposes, the District would profit from information as to the best sources of Texas waters needed in the Red River Waterway navigation channel proposed from the Mississippi River to Daingerfield, Texas via Old Red River, and Twelve Mile and Cypress Bayous. As a part of the local cooperation for this waterway project, local interests are required to obtain without cost to the United States any water rights that may be found necessary for the operation of the project in the interest of navigation. It is readily observable that the Cypress Valley Navigation District would be intensely interested in information as to likely sources of this water.

Do not feel that the information requested is pertinent to our Navigation District or that the publications available are of significant assistances.

The Willacy County Navigation District purchases water from the Port Mansfield Public Utility District for ships, boats and home use. The water is Health Approved by the Texas Health Department. It comes from a well 18 miles west of Port Mansfield and is piped to the Port and goes through the Ionics Plant where 80% of the minerals are removed. At the well site iron and magnesium are taken out of the water through filters and it is pumped the 18 miles through a 12" pipeline. The well produces about 400,000 gallons per day and after going through the plant about 28% is wasted taking out the minerals.

Stream Gauging Data
Water Quality Data
Meterological Data
Economic Data - Population, growth, etc. as related to water resources

Underground water supply source information. Underground water chemical analysis.

Research of literature for specific problem papers and formuli.

Not applicable.

1) Information relating to new products in water works field.
2) List of suppliers in the area where equipment can be repaired and/or replacement parts obtained without going to factory which is usually located in the New England States.

1) Advise Water Control Districts & City Water Departments of any New Health hazards arising and ways of combating them
2) Information on Water Tables in Area.
3) Methods where by run off could be utilized to recharge our under ground water supply.

4) Economical methods where by salts and other minerals could be removed from local water supply.

The Irrigation business needs a simple course, reasonably full proof, inexpensive means of measuring water to the individual user.

A comprehensive collection of overall design standards for water distribution systems is desirable. Up to date solutions to specific problems as developed in various locations should be made available to all interested parties. Pertains to construction, operation, and maintenance of storage and distribution systems.

I would appreciate being informed of any new technique developed for water distribution and conservation as related to agricultural irrigation.

This is a small water district and we are interested in the amount of water allotted and available and the distribution of the same.

Of minimal interest.

In the event Ozona's Fresh Water Supply became polluted, all information available in regard to a new supply would be very helpful, also any information which could improve our present supply would be of significant value to our organization.

This project is under the Small Watershed Act # PL566.

Unknown - our district provides normal W.C.&LDIST. Services. We have no fulltime employees. All technical information is provided by civil engineers hired from time to time. He (they) is assumed to have adequate knowledge to deal with 30,000 g. p. d. current output.

Information which would make us more informed on future needs of the area such as secondary and tertiary sewage treatment; also, how we may avail ourselves of surface water such as Lake Livingston.

Any information that would be something new as opposed to that commonly used by top engineers.

None Known - we use consultants and contracting services.

Not that I can think of

We are interested basically in availability of ground and surfaces waters for development of municipal water supply and irrigation purposes.

Provide information as to best water utilization methods for determining optimum soil moisture methods for determining soil moisture depletion and minimum moisture toleration of various plants.

Erosion control - Economical surface evaporation (film) control - Non-toxic weed control - Concrete canal lining maintenance - Concrete (underground) pipeline maintenance.

Not knowing what the Information Center will provide I feel the information on the Texas Master Plan might help us in planning for future use of water and distribution of same.

Handling and use of irrigation water.

1) Loading to improvement surface water quality
2) Loading to improvement saline soils
3) Loading to Blackish or saline water to that suited for irrigation.
4) Any help or facts leading to trans-basin or trans-state transfer of water where reasonably justified.

Control of vegetation in and adjacent to irrigation waterways; contamination and pollution of domestic and irrigation waters; developments in pipeline construction and control of seepage from canals and reservoirs.

Provide a listing of available literature and other information available regarding water supplies for small communities, research developments and other items of interest to water boards for small comunities.

Water District set up to supply well water to Benjamin - Probably would not use scientific Information Center information.

No, not at this time or either in the near future.

Give out monthly statements of service and findings to organizations

Any information that would help in the operation of a 45,000 acre irrigation district..

Probably not.

High Water Studies.

We were formed for the purpose of getting a flood prevention program on the Upper Bosque River watershed. It is doubtful that we would have need for any information from the center.

Would help in future planning and construction.

Develop accurate ground water data in the Western half, Texas to aid in the securing legislation to protect the dwindling ground water resources. The oil industry and the sulpher interests, together with excessive irrigation is rapidly converting this part of the State into 2 desert areas.

Continue research in all phases of Water Resources Development within the state of Texas .... and continue to cooperate and work with local Governmental Agencies in solving their problems, and make data available to all agencies such as this district.

This service is sorely needed as indicated by answers to above questions.

I am not sure it would provide any services at all in our line of business. We serve a small community with drinking water approximately 140 meters. The shallow water sand went salty and it became necessary to dig a deep well to provide water that was drinkable.

Please refer to item 2.

We are not a potential user of the Water Resources Scientific Information Center.

Make available any information you may have as to rainfall runoff in the Gulf Coast area of Texas along with rainfall intensities and frequencies also quantities of flow on streams in Brazos County, Texas. Details and instructions of installing inexpensive gageing stations to measure runoffs in streams for various rainfall frequencies. Any information available in setting up records on rainfall frequencies and measurements of stream flows would be useful information.

Design of reservoirs, ditches and levees. Methods of utilizing surface water. Historical data on rainfall and runoff. Financing for water control.

Drainage.

Cannot think of any.

Do away with such foolishness and save the tax payers money.

We could use information on control of erosion, flumes, proper size outlets, dams, ways and means of conveying drainage waters to sea level.

The Nueces county drainage district No. 2 was created for the purpose of draining the area which it covers. It does not serve in water conservation in any way. Most of the questions asked cannot be answered as they do not apply to this Drainage District.

Pumping costs for well contrasted with impoundment, and treatment of surface water in South Texas.

Provide specialized information service to external questions.

Since we have no knowledge of the exact function of this organization and are not familiar with the concept we have no recommendations to make at this time.

Probably the most important function that I could suggest is a library of material available by mail.

Such a center could be of significant usefulness if it could provide access to an notification of the availability of information relating to the following fields:

a) Water Quality Control
b) New Techniques in water resource management
c) Corrosion control
d) Design and construction methods.

Our problem lies in the fact that no bonds have been approved, no construction has begun, no water or sewage facility is being provided by this entity, and therefore the need for technical material has not been established. The future prospect of this organization becoming a public service is not rosy. The answers to above questions can be interpreted as speculative guessing.

Keep us informed on improvements in sewer and water fields.

Provide information concerning latest developments in the field.

It might help keep up with New Technical Advances in Water Treatment, water supply, sources of water supply and etc.

This water authority, which has been approximately 13 years in the effort and planning, is now awaiting legislative action for a revote of member cities to determine continuation of the project. The authority holds a valid permit to impound 25,500 acre feet of water. It also holds an Amandatory Grant Agreement from the Department of Housing and Urban Development. Said grant would provide $1,500,000 to assist in the building of our reservoir. We had withheld the information you requested, hoping we could have a favorable vote of the member towns, get the project underway, then furnish you with more information. We will be happy to cooperate in every way possible if this much needed project can be built. We should know by the first of June of this year.

Not sure if it will be of service.

Make available information on advancements in the field or providing a potable water supply, treatment and distribution.

Would not be a potential user.

Furnish water from Willacy County Navigation District operating Port Mansfield. The District has an artesian well seven miles east of Raymondville with filters to remove the iron and magnesium and the water is pumped 18 miles to Port Mansfield where it is run into the Ionics Plant (built by Ionics, Inc. of Watertown, Massachusetts) where 80% of the minerals are removed. We have Health approved water. The well is about 1200' deep and carries 150' of water sand. No water is wasted except at the Ionics Plant - 28% of the water is waste and is pumped into the bay as it goes through the Ionics Plant and into storage. The function of the district is to furnish water to the port. We believe its the only plant of its kind this side of Buckeye, Arizona although there may be a small one at Dell City, Texas.

I am afraid this questionnaire does not apply to us. We operate a small water supply system and are trying to get a loan to install sewerage system. Our only problem has been locating a good underground supply of water in a geological fault area.

In the conservation of our Water Resources, being users.

All systems which are not operatable are on Ground Water. No real need for additional information.

The district has no plans to construct the water and sanitary sewer system to serve residential and commercial customers within the forseeable future.

Projected future use of water per capital also projected future growth - percentage wise.

It could furnish much information when making feasibility studies.

Reservoir operation and water storage management of water quality.

We could use engineering and evaluation information on sub-drainage and salt removal for our drainage program; information on reservoir operations, remote control, pumping, metering, and conduits in our irrigation system; and information on water requirements for various crops.

I have left this blank, except for the fact that we rely upon our engineers, whom we know rely in varying degrees on all these sources. As President of the Board, I try to keep informed through my work as Chairman of State Bar Water Committee, University of Texas Water Law Institutes, and I hope to attend the conferences on water at A&M.

Ways and means of water development for city use - and for recreation.

Methods for conserving water - Evaporation, etc.

The Soil Conservation Service and a list of land owners put in retainer dams and drainage ditches to reclaim west land that we wanted to dam and are not interested in the institutes and have no water we want to go to West Texas to help put us out of farming you are too late to help us.

Information of this kind can help us to organize the association along the lines of more intelligent water resource uses.

Our primary obligation is to deliver irrigation water for agricultural use, but any knowledge in the field of water is to our benefit. If you would make information available on an annual basis as follows: The current practice, the development results of past research including a rating of useful, unknown, and failure, the immediate areas of research to be investigated, with probable method of attack.

Report and history of the Colorado River Municipal Water District.

It might be useful to know the water table's present position and its future expectations.

The type of service presently rendered by me in connection with the Water Control and Improvement District is not such that the type of information inquired about in this questionnaire would be beneficial to me and other than containing matters of just general information would serve no useful purpose of the Water District I represent or for my association with it.

Some of the information could be disseminated to our members by various means.

The most significant function, I believe, would be the service WRSIC could provide in being a focal point for national water resource in technical information. I believe this would facilitate the rapid flow of technical information to interested persons and agencies.

Provide one place to find everything.

We are always looking for information or laws.

Reference material for members of TFA - industrial water users.

WRSIC might serve as a center for water and waste-water operator training and certification information. A center has been mentioned but not established at Clemson University and in the Washington Office of the Water Pollution Control Federation.

While the primary information given by League of Women Voters is usually directed toward education of members and general public, or informing decision-making public officials what we consider to be the public interest we need to be kept informed by such resources as the Scientific Information Center so that we do our job of interpretation and support of the public interest.

A central source of information is desirable.

Design off channel reservoirs
Design drainage structures
Design Water Distribution System
Good data on streams discharge.

Provide printout of recently (last 10 years) published material by very specific title. Some judgements factor as to value of the material would be most helpful - but probably impossible to determine except by individual.

Maybe

Furnish data on current published data pertaining to water resources, including availability. It would also be helpful to be advised on current national and state legislative activity relating to water resources.

Source of research data.

Do not anticipate a need for this service for our operations.

Assistance in developing public and private water supply.

Reference information for our library.

Data relating to geology of various areas, ground water levels, decline.

Questionable

Irrigation feasibility studies (system design). Water quality for various construction purposes and engineering design,

Any information pertinent to water pollution and water conservation.

Our firm operates in West Texas and are concerned with around water supplies, surface water supplies, recharge, periolation, etc. In this area.

List of information, by subject, that is available and location where it can be obtained.

Look for ways to see that only significant matter gets printed. We do not anticipate any particular need you could fill.

Applications of aerial photogrammetry.

Keep us informed or send us the latest Water Resources reports or studies for this general area and plans for the state.

I doubt we would use it.

Not applicable.

Information as to future construction projects.

None other than general education.

It would help as a ready supply of information on river flows, expected ground and subsurface water information, draw down conditions, etc.

Methods of construction would be the only service useful.

Bid reports in detail.
Cost of materials for construction.

See #28.

Our main concern with water information is following correct procedures in obtaining temporary water permits for highway construction.

Condensed, up to the minute information. Available in a short period of time.

Not a potential user.

General hydraulic design information pertaining to highways, in the event this information is not already available.

(b) Conditional Responses - Personal Interview

PERSONAL INTERVIEW

Question 1.

Describe your duties in your present position by checking the appropriate spaces.

7)____Other (specify)_____

Economics

Fisher Biologist

Operation and Maintenance of completed projects

Distribution and agency publications

Research and Teaching

Educational

Teaching

Extension Education

Research(Irrigation)

Advisor to Agriculture research

Research

Technical Report Writing and Research Sales

General Governmental Research

Federal River and Harbor

Improvement as Manager of Local Responsible Agency

Legal

Legislative

Developing In-House Information and Procedures

Coastal Engineering

Real Estate Development

Construction cost estimating

Estimator

PERSONAL INTERVIEW

Question 2.

What is the primary purpose of the organization in relation to water resources? List up to five purposes in order of priority.

J) Other (specify) _____

Impact studies to determine future growth.

Recreation Fish and Wildlife and Environmental resources.

Flood control.

Operation and Maintenance Irrigation and Municipal & Industrial Uses.

Management of Water and Boundary Treaties.

Long Term Lending.

Economic Studies.

Public Health Studies.

Public Health - Water Oriented.

Water Pollution Control relative to oil and gas production.

Water Pollution Control responsibility relating to oil and gas production.

Research into Administrative Organization.

Transport over Water.

Operate public part facilities and industrial developments on navigable waters.

Water Resources and Development Management.

Water Resources Development and Management.

Consulting.

Develop programs for clients (Environmental).

PERSONAL INTERVIEW

Question 11.

A specialized information service external to your organization?
If available, please specify _____

_____

Scientific Information exchange

SIF , DOD ,

Waterways Experiment Station, Hydrologic Research Center, Coastal Engineering Research Center (all Corps of Engineers), ESSA Weather Bureau, U. S. Geological Survey Federal Water Pollution Control Administration.

Texas Water Development Board, Federal Water Pollution Control Soil Conservation Service Bureau of Outdoor Recreation.

Recap (USBR) Selected dissemination of Technical Information (USBR). Selected Water Resources Abstracts (OWRR).

Current Awareness Program (Bureau of Reclamation) Selective Dissemination of Information Water Resources Abstracts.

Technical Library - USBR - Denver Federal Center - Denver, Colorado Selective Information Dissemination - USBR - Denver.

U. S. Department of Interior, Water Resources Scientific Information Center - Current Awareness Program.

Selected Water Resources Abstracts -- USDI Water Resources Scientific Information Center.

WRSIC, USBR Abstract Service USGS Monthly Publication Bulletin; USGS Monthly Publication - "Abstracts of Northern American Geology" USGS Monthly Publication "Geophysical Abstracts".

Reclamation SDI service, USGS monthly list of publications, reclamation monthly recap (same as SDI, except monthly compilation)

Water Resources Abstracts
Water Resources Scientific Information Center

USDI Water Resources Abstracts.

Regional Office - Recreation and Watersheds Division Atlanta, Georgia

R.O. Division of Engineering.

Economic Research service and Agricultural Research service of USDA.

Economic Research Service
Agricultural Research Service

Economic Research Service, Agricultural Research Service

Regional Technical Service Center

USDA Library - Beltsville

Smithsonian Information Exchange

ASCE Published Papers

Hydata, etc.

Libraries of Computer Programs and available software.

Government publications and publications of Water Resource Institutes

Up-to-date information of short lived usefulness not normally for libraries.

Scientific Information Exchange

All state and federal water agencies, plus fish and wildlife service, soil conservation service, corps of engineers.

Texas Water Development Board and USGS and Texas Water Quality Board

NASA - Scans

Hydata, Hydor publications

WRSIC

SIE

Citation index, Water resources abstract, Citation Abstract Service, Clearinghouse Service etc.

Rice

Existence

WRSIC, BASIC

WRIS

WRSIC

USGS Water Supply Papers and Professional Papers ESSA bulletins and reports

National Weather record center, North Carolina

U. S. District Engineer

Texas Legislative Service

Texas Legislative Service

Outside Consultant services

State Agencies

Rice University Library

Texas Water Development Board USGS

Water Resources Association and ASCE Retrieval

Water Resources Association and ASCE Retrieval

ASCE, Water Resources Association

Geodox

Consultant Engineers

Consulting Engineer Firms

AWRA Services

USGS, Texas Water Commission Texas Water Development Board, ASCE American Geophysical Union.

Public Library

Department of Interior

U. S. Government Service - Department of Interior

Various; such as USGS Texas Water Development Board, U. S. Weather Bureau; Department of Interior (Rainfall data.)

Dodge Reports

PERSONAL INTERVIEW

Question 12.

Document centers or external library research services available to your ogranization? If available, please specify_____

_____

Resources for the Future

Waterways Experiment Station

Inter-Library Loans Primarily from various Universities

Bureau of Reclamation Library (Denver)

Proceedings ASCE, ASME, ASEE

University of Texas Bureau of Business Research - Texas A&M experiment and extension service

Denver USBR Library Water Resources Scientific Information Center

FWPCA Libraries in Cincinnati and Washington, D. C.

Libraries in other regions such as Cincinnati and Washington, D. C.

Experiment

Department of the Army

USDA Library Washington, D. C. ASCE New York; Library of Congress; Congressional Record.

American Society of Civil Engineers N.Y.C.; USDA Library Washington, D. C.; Library of Congress and Congressional Record.

Regional Technical Service Center

Texas A&M Library - College Station

USDA Library

National Agricultural Library

National Agricultural Library

Not in my field

Documents Library, (Federal repository) State Library

Government Document Repositories (University of Texas and State Library)

WRSIC, SIC

SIE, Fish & Wildlife Service Denver Library

Technical Library

Defense Department Document Commission (DDC)

USGS Texas Water Development Board

Defense Document Center

Texas Technological College Library

Texas Technological University

Later library loan arrangement with various public and private libraries.

Texas A&M University College Station provides photostatic copies of references upon request.

USDA Library Texas A&M University Library

U. S. Government Printing Office

State and Federal Agencies

Rice University

Southern Methodist University information center

Rice University Library, University of Houston, Shell Research Library

Later Library Loan available through Engineering Division Technical Library

Rice University

STATE

Rice University, University of Houston, A&M, University of Texas

State Agencies

Public Library, Southwest Research

Public Library

PERSONAL INTERVIEW

Question 14.

Significant sources of information for your organization other than those mentioned in questions 7-13. Please specify _____

_____

Not readily available

Miscellaneous

Internal records and data collected by the Corps of Engineers

State Water Agencies, Individual Cities

Hydrologic Engineering Center - Sacramento, California

State Agencies and Gulf States marine Fisheries Commission

Technical and Trade Maps and Publications I.E. American Water Works Association

Open files of USGS; Texas Water Board; University of Texas

Technical Seminars, conferences, etc.

Technical Society Newsletters

Research (in house) and (supported by out of house FWPCA Grants and Contracts)

Other state and federal agencies

In house and out house research state and local agencies that deal in water resources

U. S. Geological Survey list of publications (monthly and annually) and "open file reports" listing.

State of Texas
Other Federal Agencies Bureau of Agricultural
Corps of Engineers, U.S.G.S.

Government agencies such as USGS, Bureau of Reclamation, IBC Texas Water Development Board, Texas Water Rights Commission.

NASA DATA BANK
CRES - Kansas

Federal Agencies - Corps of Engineers
Bureau of Reclamation - Soil Conservation
Service - Geological Survey

Routine Distribution lists on which this Agency is listed - Universities Consultants, etc.

In-House Data Program

None

State Agencies, Educational Institutions, State Library

All Federal and State Agencies, Educational Institutions State Libraries

USGS - Parks and Wildlife Department AWWA Journal - Water Pollution, Control Federal Journal - Conference of State Sanitary Engineers USPHS, WPCA - Water Development Board - Texas Water Quality Board

U. S. Public Health Service

Bureau of Commercial Fisheries
Texas A&M University -WRI

None

Federal Water Pollution Control Administration Corps of Engineers - U. S. Geological Survey, Texas A&M University - University of Texas.

Magazine Articles

Personal Libraries of other staff members, Popular Magazines and Newspapers

Personal Libraries of other staff members

Articles in Popular Magazines

Lamar Technological Library (Beaumont)

Guard in re: Federal pollution control laws, etc.

Federal and State Agencies located in Texas

Periodicals

U. S. Geological Survey Publications

U.S.G.S., Texas Water Quality Board, Texas Water Development Board-State Health Department

Geodex

Commercial Organizations servicing the area.

Technical publications, published technical research papers, periodicals, governmental agencies.

Water Well drilling contractors, Irrigation-Water District Managers.

Water Drilling Contraction
Water Engineers
Oil Well Logs
Water Boards or Districts

Water well drillers, Oil Well Logs

Local Water Boards

Also Local well drillers - inhabitants etc.

Department of Interior, - Local county Agents - Local to area water well drillers --

Consulting Engineer Firms
Civil Engineering Department, Texas A&M University

Primate Periodical Publications, i.e. "Water Resources", etc. Governmental i.e. State Highway Departments, Federal Publications, Etc. on Proposed projects, Studies, feasibility Reports.

Water Well Drillers, Logs of Wells

PERSONAL INTERVIEW

Question 15.

Does your organization have a library?

Yes_____No_____

c) List major water resource areas covered._____

_____

Navigation, flood control water supply, conservation, pollution control, meteorology, oceanography, beach erosion and shore processes, recreation, general hydraulics and hydrology.

All areas

Outdoor recreation
Aquatic Biology - Fish and Wild Life

All

All areas

Biology and Hydrology of Western Gulf Estuaries

General

General

Irrigation, Municipal and Industrial Uses, General

Construction and Irrigation

Survey of Current Business
Crop and Livestock Report
Prices Paid and Received
Bureau of Business Research

Engineering Geology

Water chemistry, Drainage, runoff, evaporation, meteorology, Hydraulics, ground water, soil water, reservoirs, Consumptive use, Erosion, Sediment, Estuaries water utilization, water yield, irrigation, water use.

Soil Science
Agronomy
Drainage

Surface Water, Quantity and Quality

Surface and Ground water quantity and quality

Pollution and Control

Water Pollution, Quantity and Quality of Water Control of water pollution.

Pollution and control

Stream flow, water quality from Geologic Survey Precipitation and Evaporation records from the Weather Bureau - Various articles, items on water quality and watershed treatments.

Water Quality
Ground Water - Location and Amount

All

Geographic - SWVS; Hydraulics, Hydrology, Water Quality, Water Law, Basic Data

Precipitation - Stream flow

Watersheds, Hydrology
Irrigation and Drainage
Ground Water, Stream Flow

Water use efficiency; Soil Water Evaporation; Evaporation Transportation

Hydrologic Cycle
Ground Water
Water Resource Inventories and Needs

Agricultural, Pollution, Stream flow
Infiltration, Water use by plants

Flood prevention
Sedimentation
Hydraulics

Research
Water Conservation

Soil Water, Evaporation, Transpiration, water cycle, erosion, meteorology

All except project planning; special interest areas are evapotranspiration, drainage, and soil and water salinity

Federal agency reports, state agency reports technical literature (ASCE ASAE) private companies and university publications.

Surface, ground, quality, water use, type, quantitative, structural planning, design, water rights.

Water needs, uses, systems, development, requirements for irrigation and manipulations.

Law, Economics, Government (All material associated with water quality control)

Water Quality, Pollution Control, Water and Waste Water Technology, Water Supply Technology.

Reservoir Construction, Hydraulics, Hydrology

Hydraulics

Water Quality Management - Public Health Aspects.

Water Quality Management Health Aspects - Environmental Oriented.

Game and Fish

Ground Water Availability
Surface Water Availability
Water Quality for Recreational Use

Industrial Waste Treatment
Water Re-use and Renovation

Maps

Hydraulic engineering
Sanitary engineering

Sanitary engineering, hydrology

All

Estuarine and Marine Biological Literature

Irrigation

Water for Irrigation

Sedimentation and erosion
Climatic Factors
Land uses and treatments

The Atmosphere, The Oceans

Harbors and Waterways
Potable Water - Raw Water - Pollution Regulation and Laws

All

All areas

Waste and Water Engineering

Legislation

All Water Resources areas

All Water Areas

Hydrology - USGS Publication Water Quality Data from State and Federal Agencies.

Surface Water
Ground Water

Limited to Construction, Civil Engineering Information

Ground and Surface Water Supply and Quality
Water Resources and Hydrology, Water Treatment
and Distribution, Flood Control, Coastal Engineering.

Water Quality
Water Supply
Water Distribution
Flood Control
Coastal Engineering
Water Treatment
Water Resources and Hydrology

Supply, Distribution quanity,
coastal, treatment, flood
control, etc.

Offshore structures
Fault Dams

Irrigation, Power (Hydrology), Water Resources Development, Waste Treatment

Water Supply
Ground Water (Well point systems)

Hydrology
Rainfalls
Water Conservation
Dewatering

Research and Long Range Plan
Planning - 1-5 years
Construction
Dewatering
Pollution

Ground Water, Dewatering, Coffer dams, Dams, Pipe Flows, Wells, Flood Control

Ground Water, Stream Flow, Dewatering, Flood Frequency, Rainfall.

Well Point system dewatering
ground water

PERSONAL INTERVIEW

Question 17a.

Yes_____ No_____ Do you receive newsletters which contain water resources information?
If yes, please specify _____

_____

American Rice Growers Newsletter
FAO Rice Newsletter
Wildlife Newsletter

Weekly letter published by American Waterway Operators, Inc.
Texas Water Report, Texas Pollution Report - and many, many others.

Texas Water Report, Texas Water Conservation Association, National Reclamation Association.

AWRA Newsletter, Sanitary Engineering Newsletter, Clean Water Report.

Texas Water Report, Texas Pollution Report.

Reclamation News Western States Water News, Trinity Valley

Texas Water Report, Texas Water Pollution Report, USGS Reports, OSW, FWPCA.

Texas Water Report, Texas Water Pollution Report, USGS Publications, OSW, FWPCA Reports.

Texas Water Report, Texas Water Pollution Report - Water Resources Annual Report OSW - FWPCA.

Texas Water Report, Texas Water Conditions, etc.

U. S. Geological Survey.

Texas Water Report, Pollution Report

Texas Water Report, Water Resources News Letter, Texas Water Central Association AWWA, ASCE Technical Division

Technical Divisions of ASCE, TWCA, AWWA.

Texas Water Report

AWRA, TWCA, NRA, Texas Water Report, Hydata.

Texas Water Reports, Waste and Water Engineering, Environmental Engineering and Science.

Hydraulics Division ASCE Newsletter - AWRA, Texas Water Report.

Texas Water

Texas Water Report and similar

Texas Water Conservation Association.

Texas Water Conservation Association, Edwards Underground Water District. Rainfall Data, Department of Interior.

State Highway Department (Various) and other state water resources agencies.

Some state and Government agencies

Research League, AGC, Railroad Commission

TSPE, ASCE

AWRA and others, UCOWR

Texas Water Report, Texas Pollution Report.

Texas Water Report, Water and Air Pollution Report.

Texas Water Report, Texas Water Pollution Report.

Water Pollution

Water Report (Texas); Water Pollution (Texas) Waterway Economics.

Texas Water Report, Texas Water Pollution Control Board.

Texas Water Report, Ocean News.

Newsletters from Texas Water Development Board.

Wildlife-Environmental Resources.

Texas Water Report Colorado River Association.

Texas Water Report.

Texas Water Report, ASCE News Bulletin, E.O.S.

Texas Water Report Rio Grande Basin Reports.

Texas Water Development Board, National Reclamation Association.

Texas Water Report.

Austin Geological Society Bulletin, University of Texas Geological Newsletter, Bureau Economical Geological, Texas Public Bulletin

Texas Water Development Board monthly summary of water conditions in Texas. USGS ditto for USA.

Texas Water Report Washington Newsletter, Denver Newsletter.

Texas ASCE Technical Journals - Texas Water News - Texas Pollution News.

Texas Water Report, Department of Interior News Releases.

Clipping Service, Texas Water Report, Department of Interior, News Releases, Technology for Texas.

Newspaper clipping service Texas Water Report Texas Pollution Report.

Forest Service Information from higher levels.

Water Newsletter, Texas Water Report, Groundwater, Pesticides Montoring Journal

Water Newsletter

Texas Water development Board, University of Texas, Water Resource Council.

Texas Water Development Board, University of Texas, Water Resources Council.

Texas Water Development Board, University of Texas, Water Resources Council, Washington, D. C.

Texas Water Report and others.

Texas Water Report, Tuesday News Bulletin.

USGS

USDA Library - Beltsville.

ASCE, AWWA, Cross-section.

Hydrocomp-Palo Alto, California.

Hydata, Water Newsletter.

Bureau Reclamation, pollution and water quality, water resources.

Air and Water Pollution Newsletter AWRA Newsletter.

Washington Newsletter, HPUWCD Cross Section, Texas Water Report, probably 10 to 12 in all.

Texas Water Report *McGraw-Hill Newsletter.

Water Reports.

Air and Water Report. Texas Water Development Board's Newsletter (or Bulletin) Texas Pollution Report.

Water Pollution Report, Austin Report, Water Resources Research.

Steward Long's weekly report USGS monthly information Bulletin.

Texas Water Report.

Weekly Water Pollution Report and Texas Water Report.

Texas Water Report, Texas Pollution Report.

Texas Water Report,Texas Pollution Report.

Texas Water and Pollution Report

Air/Water Pollution Report, Texas Pollution Report, Business Publishers Incorporated Report.

UCOWR

FWPCA Newsletter

State-Federal

UCOWR, AAPSE newsletters, various other newsletters.

Receive five.

Texas Water Development Bulletin.

PERSONAL INTERVIEW

Question 20.

List any programs or special services that the organization has to keep personnel current in terms of recent published material on technical aspects of water resources.

Circulation of periodicals by Library. Seminars as need arises following attendance by employees at schools.

Not aware of any.

Librarian circulates recently published material.

Publication distribution and routing.
Research distribution and routing.

Publication Digest: Quick release (Superintendent of Documents).

Library circulates latest data as received.

Circulation of periodicals and other technical information.
Regional planning conferences in water resources.
Academic training courses.
In-house training sessions.

Circulation of articles and documents of interest to economic area studies.

Outdoor Recreation
Aquatic (Fresh-Water) Biology
(Marine and Estuarine Biology

Attendance at various seminars
Corps of Engineers sponsored conferences
Personal routing of items of interest

List of published material usually routed to all personnel within office for their information.

Circulation of weekly library acquisition list to all professional or scientific personnel.

See 11. In addition, article and report are routed through individuals to see if they might be interested.

Current awareness program (Bureau of Reclamation) Selective Dissemination of Information - Water Resources Abstracts.

Routing of information as received under II - 11.

Significant articles and information is circulated among interested employees.

Circulation of significant or interesting data.

Maintain an abstract file for reference; copies of significant articles circulated; encourage participation in professional societies.

Limited attendance at technical conferences. SDI Program.
Contracts with USBR technical specialists of our Denver Office.

1. Water Resources Scientific Information Center
2. Chief, Land Resources (Denver) staff send out copies of new significant literature as it appears.

Water Pollution and Water Conservancy.

Circulation of Technical Materials received to all professional personnel.

Circulation of accessions to library.

All library material is circulatize or the listing of material is sent out.

Training Schools - USDA Graduate School.

Sanitation Water Procurement.

A weekly notice of publications received in the library.

Seminars of short courses - put on by Agency or have personnel attend at other locations.

Routing services, in-service workshops, participation in professional society meetings, staff conferences, budgeted purchase of literature and formal technical training facilities.

Routing technical material; participation on professional society meetings; staff conferences; budgeted purchases of technical literature; formal technical training facilities provided for others.

Routing Technical Material Services
In-Service Workshops
Attendance at Technical Society Meetings and Short Courses.
Staff Conferences
Purchase of Technical Literature
Formal Technical Training Facilities (Training Center)

Routing published lists of available data and reports.

Nothing other than selective routing of particularly interesting article or paper.

USDA - Abstracts on Soil and Water Conservation manuscripts and publications.

Seminars

Monthly seminars
Various staff members circulate information of interest that might not be seen by others.

Subject matter seminars or workshops are held periodically.

Dr. Raney of Division Staff sends out monthly letter with new titles of interest; also selected reprints library committee scans publisher's flyer's and brochures for new titles of interest.

Library acquisition lists periodically.

Established circularization lists of periodicals and acquisition listings.

Routing of periodicals as received.
Routing of acquisition lists.

Desalination, weather modification, groundwater rechange, evaporation, pumping, power costs, construction costs.

List of Recent Library Acquisitions.

Library facilities, routing significant publications to appropriate personnel.

Make publications available, seminars etc.

We make it available to them.

Provide periodicals.

1. Provides publications,
2. A subject card file is being maintained on relevant articles and papers,
3. Subscribes to a "clipping service"

Participation in technical meetings.
Surface water hydrologic research

Participation in technical meetings
Surface water hydrologic research

Participation in technical and Professional Meetings.

Technical meetings.
Professional meetings.

All publications or reports circulated. New texts or manuals purchased as funds permit-preparation of lectures for operator training-preparation of reports covering studies undertaken.

Annual and Regional short Schools.

Distribution of current information
Occasional water resources conferences.

State Park Development and management
Planning future location of state parks and recreation sites

Provide (or purchase) any reference books they require.
Provide support to visit other laboratories.

We have our own key work Index
Retrieval System on Computer Punch Cards

Circulates some incoming material to staff.
Route junk mail to member most likely to be interested.

All (seminars, courses, etc.)

Seminars

Reading program - personal
Office Seminars - weekly

Circulation of selected documents

Monthly hydrographic bulletins
published by U. S. Army District Engineer

Make publications and reports available to appropriate personnel.
Support attendance of appropriate personnel at technical seminars and meetings.

Management and professional personnel attend appropriate seminars, conferences, etc. Technical periodicals and documents are routed to all concerned for perusal.

Attending Conferences

Liberal dues and publications budget
Liberal conferences and meetings budget

Reports are routed to manager and professional employees - conference attendance in field.

Water Legislation

Send personnel to meetings and conferences.

Attending conferences and professional meetings.

Engage in many programs - furnish speakers and panel - members.

Personnel encouraged to attend engineering conferences.

Encouragement of attendance at technical meetings whenever considered potentially helpful.

Send personnel to ASCE and similar meetings
Monthly meetings for information dissemination

Send personnel to Water Resources Conference
Send personnel other meetings on water

All written material available distributed.

Attempt to use any available time to have staff personnel review or scan appropriate material and publications, in an attempt to stay abreast of current developments.

Circulation of periodicals among selected personnel.

Texas Water Plan
State Laws regarding use of water
Pollution

Central library in office.

Only water pollution.

Salt Water Disposal.

PERSONAL INTERVIEWS

Question 32.

Please list the titles of five of the most useful sources of information to your organization.

Project Reports
Resources for the Future
Corps Engineering Regulations
Corps Engineering Manual

Chief of Engineers Regulations
Chief of Engineers Manuals
Green Book?

U.S.G.S. Water Supply Papers
U.S.W.B. Climatological Data
Corps of Engineers Engineering Manuals dealing with Hydrology
U.S.G.S. Reports
U.S.W.B. Bulletins

Water Engineering
Water Development Board Newsletters

Engineering Manuals
National Planning Association Material
Census Data
Project studies
Research reports - Water and Related
Land Resources

Corps of Engineers Engineering Manual
Coastal Engineering Research Center TR4
Kings Handbook of Hydraulics
Texas Water Report
U. S. Geological Survey Reports

American Water Way operators Publications
American Society of Civil Engineers
(Various federal water project reports)
Land Economics
U.S. Census Bureau Publications

Bureau of Outdoor Recreation Department
U. S. Federal Wildlife Annual Reports
U. S. Park Service - Statistics

American Water Works Association Journal
State Water Board Publications
Bureau of the Census Publications
USGS Water Supply Papers
Reports of Consultants

ASCE Journals
Project Reports for Nearby Associations
EM's and ER's published by Chief of Engineering
USGS Reports
State Reports

Biological Abstracts
Gulf and Caribbean Fisheries Institution
American Fisheries Society
Institute of Marine Science
Fisheries Bureau of the Fish and Wildlife Service

Journal of Hydraulic Division (ASCE)
Journal of Irrigation Division
A.G.U.
Denver Library (Recap) Books

American Waterworks
ASCE - Hydrology and Structural Divisions
Association Journals

Civil Engineering
Engineering Monographs
Project Reports
Hydraulics Handbooks
Textbooks

Survey of Current Business
Journal of Farm Economics
UT-BBR Monthly Reports
Reclamation Manual
State Publications

State and Federal Geological
Survey Publications Handbooks
Reference Books
Project Reports
Abstract Bulletins

Various USBR technical
Monographs and Denver specialists
SDI Service
USGS monthly list of publications
Texas Water Development Board
Publications
Technical Journals

Proceedings Soil Science Society
Agronomy Journal
Agricultural Engineering
Chief Land Reservation Denver Office
U. S. Salinity Laboratory Publications

USGS Water Supply Papers
Texas Water Commission Reports
Water Resources Abstracts
ACE Technical Papers
USGS Quality Reports College Information

Bureau of Reclamation Manuals
Engineering News Record
ASCE Publications
USDR Water Resources Abstracts
Publications by Universities such as Oical at Davis

Water Pollution Control Federal Journal
Journal at Sanitary Engineering ASCE
USG Survey Publications
ACS Journal
ASCh. Engineering Journal

U. S. Geological Survey Publications
ASCE Publications
In house (FWPCA) Publications
American Chemical Society
American Society of Chemical Engineers

Water Pollution Control Federation
(ASCE) Journal of the Sanitary
Engineering Division
AS of Chemical Engineers
USGS Publications
ACS Journals

Geologic Survey Reports Water-quality Streamflow
Forest Service Handbooks and Manual
Water Development Board Publications
U. S. Weather Bureau Publications

Forest Service Manual and Handbook Research Papers - for Exhibition Status
Texas Water Development Board
U. S. Weather Bureau
U. S. Geological Bulletins

Geological Survey list of publications
American Association of Petroleum Geologist Bulletin
Texas Water Development Board List of Publications
Geological Society of American Bulletin
U. S. Government Monthly Catalogue of Publications

1) IBWC Annual Reports
2) USGS Water Supply Papers*
3) Bureau of Reclamation Reports
4) Reports by Arizona, California, New Mexico, and Texas
5) Weather Bureau Reports

USGS Water Supply Papers
Water Resources Council Publications
River Basin Reports
Research Publications and Handbooks
USDA Watershed Work Plans
Corps of Engineers Project
Reports and Summary of Annual Activities

USGS Water Supply Papers
Climatological Data - U. S. Weather Bureau
Technical Papers - U. S. Weather Bureau
USDA Agricultural Research Service
Special Reports
Special Reports by USGS

1) Proceedings, ASCE
2) USGS Water Supply Bulletins
3) Agricultural Research Bulletins
4) "Design of Small Dams", USB Rel
5) USGS Special Reports
6) Water Resources Council Publisher

Handbooks
Water Supply Papers
Climatological Data Bulletin
Research Reports
Technical Releases

Texas Water Report
Project Reports
Journal of Soil and Water Conservation

Engineering Handbooks published by the organization
Textbook References and Society Transactions
State Published Reports
Federal Reports
Research Agencies and University
Published Reports

Soils and Fertilizer Abstracts
Journal of Soil and Water Conservation
Agronomy Journal
Soil Science Society of American Proceedings

Water Resources Research Journal
ASCE Hydraulics Journal
ASCE Irrigation and Drainage Journal
Annotated Bibliographics
USDA - ARS - SWC Bibliographics

Transaction of ASAE
Journal of Hydraulic Division ASCE
Water Resources Research
Journal of Geophysical Research
Journal of Solid Water Conservation

Transactions ASAE
Water Resources Research
Hydraulics Division Journal
Transactions of ASCE
ARA 41 reports

Soil Science Society American Proceedings
Water Research
J. Applied Meteorology
Agronomy Journal
American Society Agronomy
Monograph Series

Water Resources Research
Soil Science Society of American Proceedings
Agronomy Journal
Agricultural Engineering Journal and Transactions
Journal of Meteorology

Meteorology Tables - Smithsonian Institute
Clearing House for Federal Science and Technical Information
Hydata
Defense Documentation Center
Water Resources Abstracts
Professional Journals in Earth Science and Meteorology
Biology Research Index

ASCE Journals
ASCE Magazines
Federal Project Reports
Federal Research results
University Research results

Engineering News Record
Air and Water Pollution Newsletter
AWRA Newsletter
ASCE Journal
Texas Water Report

Selected Water Research Abstracts
Engineering Index

Engineering News Record
AMS Journal of Atmosphere Sciences
Journal of AGU
ASCE Publications
Department of Agriculture Publications
U. S. Geological Survey Water Supply papers

Water Resources Research
Journal of Farm Economics
Catalog of Office of Water Resources Research
Agricultural Experiment Station Publishers
Government Censuses

Published reports
Other water resource organization
TWDB
ASCE handbooks
Engineering News Record Equivalent
OWRR and WRSIC abstracts

McGraw-Hill Washington Newsletter
California Water Quality Criteria
Journal of Water Pollution Association
Public Works Magazine
Journal ASCE
National Association of Countries

Water Pollution Central
Federation Journal
Water and Sewage Works Journal
Journal of AWWA

ASCE

Handbook on Toxicities
Journal of Water Pollution Control Federation
Water Quality Criteria
Technical reference books dealing with waste and waste water treatment usually textbooks.
Trade Magazines: Chemical Engineering
Waste and Waste
Water Journal

Reference Books, Handbooks
Abstracts Bulletin
Project Report, Monographs

Reference Books, Handbooks
Monographs, Abstract Bulletin's
Project Reports

Journal of ASCE
USGS Surface Water Bulletins
American Concrete Institution Handbooks
Engineering News-Record
IWDB Publications

Commission Records

Water Pollution Control Federation Journal
AWWA Journal
Newsletters (Item 17)
Publications of USPHS
Texts on Wastewater Treatment

AWWA - Journal
Water Works Operators Manual
Drinking Water Standards
Text Books
Public Health Engineering Abstracts

FWPCA - Water Quality Criteria
USGS - Water Quality Records
USGS - Water Flows
Water Quality Board - Requirements
Fish and River Pollution by SRE Jones

Water Development Board Publications
USGS Publications
Water Quality Board Publications
Texas Water Report
Texas Pollution Report

Progress Reports from Contractors
San Francisco Bay Study Reports

Water Resources
SSSAP
Soil Science
J Soil Water Conservation
Agricultural J.

AICHE - Monograph
Environmental Engineering Journals
ASCE - Sanitary Division
J. FWPCA
Water and Industrial Wastes

TWDG - Bulletins
USGS - Publications
Ground Water
Water Resource Research
AGU Publications

ASAE - Journal
ASCE - Journal
Irrigation Age
Journal of Irrigation and Drainage ASCE
Transactions of ASAE

Proceedings ASCE
Water Power
Abstracts in Travaux Hoville
Blanch, Etc.
Water Resources Abstract USDI
Water and Water Engineering

Journals, AWWA, WPCF,
SED of ASCE, TWDB reports,
University Water Resource
center reports

Environments Science and Technology
APCA Journal
Water Resources Abstracts
JAWWA
JWPCF

Limnology and Oceanography
Biological Bulletin
Journal of the Marine Biological
Association of the United Kingdom
Many Reference Books
Journal of Invertebrae Patheology

Irrigation Age Magazine Newsletter
Cross Section (Water Abstract)
Irrigation of Soils (American Society of Agronomy)

ASCE Irrigation and Drainage Journal
Transactions American Society of Agricultural Engineering
AGU Water Resources Research
Theses, Dissertations, University, Experiment Station and Departmental Reports
Hydraulics Journal of ASCE
USDA and USBR and USGS Reports

Agricultural Engineering Magazine
Monograms
Annual Reports
Water District Newsletters
Water Resources Research Abstracts

Avalanche Journal (Newspaper)
Monthly Weather Review
Irrigation Age

Water Resources Research
Annual Reports of CSIRO
Irrigation Age
Agronomy Society Monogram No. 11
Irrigation of Agricultural Lands
Agronomy Journal

Journal WPCF
Water and Sewage Works
Chemical Engineering
Merck Index
Chemical Engineers Handbook
Perry's, Rubber, etc.

Water Resources Research
ASCE Hydraulic Journal
Irrigation and Drainage Journal
ASAE Transaction
ASCE Transactions

Meteorology and Geology Abstracts
Journal of Marine Technology
Journal of Geophysical Research
Journal of Atmospheric Science
Journal of Applied Meteorology

ASCE Journals
Seely Handbook
Book Water and Wastewater Engineers
Engineeing News Record
Harbor and Port Handbook

Maritime Reporter
World Ports Magazine
Waterways Journal
Hydrographic Bulletins, USCE
Volume Annual Report, Chief of Engineers
(Waterborne Commerce Statistics)

USGS Reports and Bulletins
Texas Legislative Service
Texas Water Report
Texas Pollution Report
Clean Water Report

Texas Water Development Board
Reports and Bulletins
USGS Reports and Bulletins
Texas Water Report
Texas Pollution Report
Clean Water Report

USGS Reports
Water Resources Data for Texas
(Department of Interior)
Proceedings of the National Conference on Water Pollution (U. S. Department of H. E. and W.)
Interstate Conference on Water Problems and Federal Water Resources Council
Soil Conservation Project Reports

1) Reference Book (Economics of Regional Water Quality Management)
2) ASCE Sanitary Engineering Journal
3) WPCF Journal
4) USGS Water Resources Data
5) Clean Water Report

Texas Water Development Board - Reports
Texas Pollution Reports
USGS Reports

USGS Reports
Water Development Board Reports
Water Quality Board Reports
Engineering News Record

Civil Engineering
Texas Water Report
USGS Reports
Water Works Engineering
Texas Water Pollution Report

AWWA, FWPCA, Trade
Magazines, USPHS
Publications, State Regulatory
Rules and Regulations

USGS
TWDB Publications
U. S. Corps of Engineers Reports
AWWA Journals
ASCE Journals

USGS Water Supply Papers
Texas Water Development Board Publications
AWWA Journal
Weather Bureau Climatological
Data
ASCE Journals

U. S. Geological Survey Water Resources Information Bulletin
Journal Water Pollution Control Federation
U. S. Geological Survey - Surface Water Records

AWWA Journal
Water Control Federation
ASCE Journals
USGS

Water Supply Papers, USGS
Technical Books
Special Reports and Monographs
Technical Magazines
Journals of ASCE, AWWA etc.

ASCE Journals and Magazines
ASCE Manuals and Research
Engineering News Record
DERC.

ASCE
CERC
AWWA

Journal of Soil Mechanics, ASCE
Geotechnique
Canadian Geotechnical Journal
International Soil Conference

Handbooks
Reference Books
Project Reports
Trade Magazines
Trade Magazines

Civil Engineering
Power (Water)
Texas Water Report
Reference Books

USGS - WSP
Texas Water Report
Hydata and Hydor

Engineering News Record
Water Works Journal

Engineering News Record
Water Works Journal
Willing Water
Constructor
Texas Contractor
Contractors and Engineers

U. S. Corps Engineering Data
Waterway Journal

Floods in Texas
ASCE Journals
U. S. Weather Bureau

1) Technical Data - Bureau of Reclamation
2) Historical Records
3) Technical Handbooks
4) Trade Data
5) Company experience

Department of Interior
Country Agricultural Agents
Water Well Drillers
Texas Water Commission
Hand Books

Hand Books
Project Reports
Interviews with Local Authorities
Trade Magazines
Personal Experience

Dodge Reports State Highway Bulletins
Agricultural Bulletins
Trade Magazines
U. S. Government Project advance
Notices

AGC Bulletins
Dodge Reports
Trade Magazines
U. S. Government Pamphlet and Project Report
State Highway

Engineering News Reclamation

PERSONAL INTERVIEW

Question 33.

Yes____No____ Does your organization publish information which would be worthwhile and available for addition to WRSIC data base? If yes, please specify (also charges, if any)

Project Reports - Probably no charge

Survey Reports
Project Reports

Project Reports

Research Reports

Publication Digest; - Quick release (Superintendent of Documents)

Library circulates latest data as received

Survey Reports (General Investigations) of
Civil Works Projects; Post-disaster
Hurricane reports.

Project reports and studies which would indicate water requirement needs no charge to federal agencies.

Water supply part of Corps of Engineers Reports - No cost to other Federal Agencies, cost of printing to others.

Publications resulting from biological and hydrological research (Probably at no charge)

Very occasionally.

Project Reports on Research
Planning Project Reports
No Charge

Project Reports on Research
Planning Reports on River Basins

Planning and Project Reports
No Charge

No cost

Annual Water Bulletin, Rio Grande)
Western Water Bulletin, Annual) No charge to Federal and State Agencies

Available through superintendent of Documents,
River Basin Reports and Upstream Watershed Mark Plans,
Soil Conservation Magazine.

Through Superintendent of Documents
River Basin Reports
Pl-566 Watershed Reports
Technical Handbooks Developed by SCS
Monthly Soil Conservation Magazine
Government Printing Office

1. Available through U. S. Superintendent of Documents
   Washington, D. C.
2. River Basin Reports and Small Watershed Project Reports, P.L. 566.
   Superintendent of Documents.
3. Soil Conservation Magazine, Monthly, SCS, Washington, D. C.

Handbooks, Technical Releases, Technical Memorandums, Technical Papers,
Watershed Work Plans - usually no charge

Handbooks (Engineering)
Project Investigations reports
USDA Bulletins and Technical Papers

Reprints available of research
published in Scientific Journals such as Agronomy Journal and Soil Science
Society of American Proceedings - No charge.

Technical Articles in Journals - No charge

ARS Technical reports and journal reports

Hydrologic data book (Black Book)
Technical journal reports of research

Various bulletins on technical subjects

Reports of technical investigations and studies

TWDB publications (Technical)

Periodically we publish technical papers at no charge.

Published bulletins - no charge

Primarily Data (Free probably)

Unpublished papers may be available.

Unpublished papers may be available.

Job Completion Reports - Federal aid to Fish and Wildlife - no charge.

Project Reports Resulting from Contractors Studies.

ICASALS and WTWI proceedings

Limited numbers of copies of technical reports at no charge.

Progress Reports on contracts and grants, articles in scientific Journals

Journal Papers

High Plains Irrigation Survey - None

Bulletins, Progress Reports and Technical Articles published by Texas Agricultural Experiment Station.

Progress Reports
Miscellaneous Reports
Bulletins

Various Project Reports for Public Agencies
Technical Paper Publications in Journals

Publications would probably be of no interest to WRSIC

USDA and TAES in several different series.

These will be project reports.

Research Grant Reports (no charge)
Basin Water Resource Studies (no charge)

Texas Water (a monthly report)

Individual Articles: no charge

Individual Papers: no charge

Project Reports - no charge - available on client approval

Comprehensive Water and Sewer Plans

Papers proposed for technical meetings
Some reports for public bodies
No charge if extra copies are available, otherwise reproduction cost.

Papers presented at Technical meetings
Reports for Public Bodies
(No charge if extra copies available)
(otherwise reproduction cost)

Project reports for specific areas.

Engineering reports/studies pertaining to our properties.

Possibly

Not as a general rule.

Various reports as prepared by B&R

PERSONAL INTERVIEW

Question 34.

Would you subscribe to a Citation Journal using a KWIC index format (distributed twice monthly), if one subscription cost $15 to $20 per year?

A) _____Yes

_____ No, but would consider the service at a charge of approximately $_____per year.

_____No, at any charge (please comment)_____

_____

Need limited - therefore too many titles to go through.

Most of data already available from present sources.

Interest and requirements too varied, prefer to browse.

Need to know more about contents before can spend time and effort to order.

Abstracts are better for my uses.

This would not be the most useful type of service to me.

This area handled by other staff in S.O.

Not interested.

Keyword index is not entirely discriminatory.

Information available from other sources.

No time to wait for information.

Too many citations would not be of interest to my field of interest.

Would need an abstract.

Would need an abstract.

Have no desire for Citation Journal.

Usefulness of information would be limited.

Would not be of specific use.

Not used extensively enough for personal set if available on campus.

Question use would be sufficient to want any charge.

Prefer Abstract Bulletin.

Organization responsibility.

Organization responsibility for subscription.

Abstract Bulletin would fill needs.

Prefer abstracts.

Too tedious.

The information presented here would not make this service attractive.

Do not currently have sufficient interest in available information.

May at later date, but do not feel information necessary in our operations at this time.

Service not needed at present.

Too general.

Review time not considered economically feasible.

Abstract Bulletin would be preference over Citation Journal.

PERSONAL INTERVIEW

Question 35.

Would you subscribe to an Abstract Bulletin (distributed twice monthly) if one subscription cost $30 to $40 per year?

A) _____Yes

_____No, but would consider the service at a charge of approximately $_____per year.

B) _____No, at any charge (please comment)_____

_____

Most of data already available from present sources.

Same as 34 (3)

Information available from other sources.

Would not be of specific use.

Same as 34, (3)

Library search is not that difficult and especially since one available.

Not certain coverage would be broad enough to cover interest.

Organization responsibility.

Same as 34, (3)

If SDI service is available.

Covers too broad a term

Same as 34 A.

Same as above.

Service not needed as present.

Too general

Same as 34 A.

PERSONAL INTERVIEW

Question 36.

Would you subscribe to an SDI Service using a Standard Interest Profile (distributed twice monthly), if one subscription cost $80 to $100 per year?

A) _____Yes

_____No, but would consider the service at a charge of approximately $_____ per year.

_____No, at any charge (please comment)_____

_____

Cost would not be in line with our needs and interests.

Interest and requirements too varied

Not of enough need in our work.

This would not be the most useful type of service to me.

Same as 34A.

Need all literature for library.

Not enough flexibility.

Information available from other sources.

Not at line division level, but recommend for Agency level.

No need for such a service.

Not needed.

Have found AWRA abstracts (all 50 categories) virtually useless while engaged in bibliographic research.

Too expensive.

Abstract Bulletin performs essentially same service.

Same as 34A.

Not necessary in normal operation.

Unless directed towards Texas Water Problems.

Unless aimed specifically at Texas or matters of direct concern in Texas Water.

Not enough activity to warrant.

Wouldn't use it that much.

Abstract Bulletin.

Too extensive for our need.

Would not anticipate enough use at this time to justify.

Same as above.

Service not needed at present.

Too hard to maintain detailed file for our particular need.

Same as 34.

Would not wish control of Standard Interest Profile fixed to specific interest - needs or interests may vary widely in organization.

PERSONAL INTERVIEW

Question 37.

Would you subscribe to a SDI Service using an Individual Interest Profile (distributed twice monthly), if one subscription costs $250 to $300 per year?

A) _____Yes

_____No, but would consider the service at a charge of approximately $_____ per year.

_____No, at any charge (please comment)_____

_____

The SDI would be satisfactory.

Sample indicates mechanical aspects only - we are interested more in sociological aspects.

Interest and requirements too varied and prefer to browse.

Standard interest profile would be all that would be necessary.

Not required.

Cost too high and questions 34 to 36 serves needs.

This would not be the most useful type of service to me.

This area handled by other staff in S.O.

Ditto #36

Too costly for operating budget.

Information available from other sources.

Funds not available.

Needs met otherwise.

Would have insufficient need to justify stocking. Anyway, would need several, as several disciplines are in my division.

Standard interest profile would probably be satisfactory.

Standard Profile would be sufficient.

Abstracts are sufficient.

Abstracts are sufficient

Same comment as 36 A(3) Too expensive.

No interest, too expensive.

No budget for this.

Not needed.

Expensive

Too expensive.

Same as 34 (3).

Not at this time.

Not needed on this cost basis.

Ditto #36

Standard Profile Preferable.

Not sufficient staff involvement to justify.

Standard profile would usually cover.

Too extensive for our need.

Could not justify at this time.

Need could be supplied by Standard Interest Profile.

Same

Not necessary at present.

To meet our needs we would require many individual interest profiles because of the variance and intermittent type of need.

See 36.

Same as 34.

No need for such services on information in our organization.

No need.

See 36.

PERSONAL INTERVIEW

Question 38.

Would you use the Retrospective Machine Search Service with an Individual Interest Profile, if the charge was $100 to $215 per request?

A) _____Yes

_____No, but would consider the service at a charge of approximately $_____ per request.

_____No, at any charge (please comment)_____

_____

For our specific needs, would probably do the required research ourselves.

Interest and requirements too varied and prefer to browse.

Research of this type not performed by us.

Budget would not permit use of this service.

Abstract would be of the most interest.

34 A3.

Too costly for operating budget.

Cost prohibitive.

Current funding would not permit although this appears to be a useful tool.

See 37

No interest.

No budget for this.

Not needed.

Same as 34 (3)

Not at this time.

Not needed on this cost basis.

Not needed at this time.

Same as 37.

Subsequent information might change opinion.

Probably Not.

No current needs.

Same

No benefit at present.

Same as 34

See 36

PERSONAL INTERVIEW

Question 42.

Do you currently have microform readers?

Yes_____No_____(If yes, what types and how many of each?_____

Various
Microfiche and Microfilm (one each)
Microfiche (1) Microfilm (1)
Microfiche and Microfilm (1 ea.)
1 Microfilm
1 Microfilm
35 and 16 mm film reader
1 Projection type
One-Microfiche; One-Microfilm
Microfilm
See Librarians response
Microfilm
One - don't know type, perhaps we don't own, but have it on loan.
One Microfilm reader
One Microfilm
One Microfilm reader
Microfilm
One microfilm for plan recording
One microfilm
One microfilm reader
One
N5 in Library
Microfilm reader
Two microfilm

Microfilm

One microfilm

Kodak - one reader

Kodak

Microfilm for letters and reader printer for drawings.

One microfilm

One microfilm

One microfilm

Uncertain

PERSONAL INTERVIEW

Question 43.

If you used these information services, would you plan to request microform copies of material rather than hardcopy? (Consider cost, storage, and ability to make in-house copies of hardcopy material.)

Yes____No____Main reason (comment)_____

_____

No-No faculty to read or reproduce microform at this time.

Yes-Storage make local hard copies.

No-Ability to make in-house copies.

Yes-Cost and more flexible in storage and use.

Yes-Compactness

Yes-Reduce Storage

No-Inconvenience of microform for circulation.

No-Convenience of use

Yes-Storage and cost. Usually would not need to copy

Yes-All the above reasons

Yes-Storage space

Yes-Storage

Yes-Storage and cost

No-Experience

No-Readers, no experience, no serious storage problem, since most material borrowed.

No-Experience has definite merits.

Yes-Save space and data is available when needed.

Yes - Cost.

Yes-Broad review to find actual information desired.

Yes-Saving in cost and storage.

Yes-To be used when exact hardcopy needed is not known.

Yes-Storage space is a problem.

Yes-Storage, ease of use.

No-Infrequency of use, need for direct copies quickly.

Yes-Cost and storage.

No-Information may be routed to several readers.

No-Cannot copy the microform.

No-Can route or exchange the hardcopy among staff at different physical locations.

No-Inconvenient.

Yes-Storage.

Yes-Storage.

Yes-To reduce storage space.

Yes-Cost.

Yes-Cheaper.

Yes-Ease of storage.

No-I would not likely be the one to conduct the search or the one with storage problems.

No-Need instant referral at desk of source material, occassionally need xerox copies for working materials.

No-Lack of familiarity.

Yes-Elimination of massive storage.

Yes-Space saved.

No-Inconvenient to use.

No-Inconvenient to use.

No-Convenience of use.

No-Not set-up as yet.

Yes-Less volume and storage

Yes-Storage

No-Ability to use hard copy with none flexibility.

No-Equipment.

No-Hardcopy more convenient for present usage

No-Inconvenience.

No-Too inconvenient.

Yes-Storage, hardcopies generally not used beyond once or twice then dormant and storage problem.

No-So long as adequate, storage space is available hard copies vastly.

No-Easier to read hardcopy.

No-Funds not available.

No-Funds not available.

Yes-Space

Yes-Storage and cost

Yes-Less expensive and storage.

Yes-Cost storage.

No-Extent of usage would not justify.

No-No readers.

No-Have no microfilm equipment but have plenty of storage space.

Yes-Have facilities and can make hardcopy.

Blank-Possibly.

Yes-Ease of storage and retrieval.

No-Ability to reproduce.

Yes and No - Would need both at different times.

Yes and No - Depending on individual use or circulation through firm.

No-Limited request for information.

Yes-Ability to make in-house copies.

No-No Reader

No-No Reader

Yes-Plan to have 105 mm facilities in 1-2 years.

Unknown.

No-Sufficient interest and use potential within Engineering Division could generate need at later date.

No-Microfilm reader not handy in every office.

No-Not enough volume anticipated.

Yes-Storage

Yes-Cost, storage, most of other file will be microfilmed within next 5-10 years.

Yes-Storage space.

Yes-File space.

Yes-If available use less storage space.

PERSONAL INTERVIEW

Question 45.

Continual evaluation of services offered would promote improved quality of the services. Would you be willing to complete and return a short evaluation form:

_____Periodically? (A few per year at irregular intervals)

_____Regularly? (On receipt of material)

_____No (please comment)_____

_____

This would be handled by watershed staff.

Reluctantly.

Limited time prevents.

(c) Confidence Limits - Question 3

Supervisory or Administrative

Group	95%		90%		75%		60%	
1	12.5	33.1	14.2	31.4	16.8	28.8	18.4	27.2
2	4.1	14.4	4.9	13.5	6.2	12.2	7.0	11.4
3	0.7	1.8	0.8	1.8	1.0	1.6	1.0	1.5
4	1.9	3.7	2.0	3.6	2.3	3.3	2.4	3.2
8	0.9	8.1	1.5	7.5	2.4	6.6	2.9	6.1
9	-2.6	75.9	3.8	69.5	13.6	59.7	19.8	53.5
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	8.0	15.9	8.6	15.2	9.6	14.2	10.2	13.6
19	14.3	85.7	20.2	79.8	29.1	70.9	34.7	65.3

Professional

Group	95%		90%		75%		60%	
1	27.8	91.3	32.9	86.1	40.9	78.2	45.9	73.2
2	8.9	35.9	11.1	33.7	14.5	30.3	16.6	28.2
3	6.0	18.0	7.0	17.0	8.5	15.5	9.4	14.6
4	13.3	29.1	14.6	27.8	16.5	25.9	17.8	24.6
8	0.8	1.7	0.8	1.7	1.0	1.5	1.0	1.5
9	-2.2	56.9	2.6	52.1	10.0	44.7	14.7	40.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	24.3	59.6	27.1	56.7	31.6	52.3	34.4	49.5
19	13.0	64.6	17.2	60.4	23.7	53.9	27.7	49.8

Question 3
Confidence Limits of Number of Employees
in the Organization
(Personal Interviews)

Sub-Professional

Group	95%		90%		75%		60%	
1	20.3	63.4	23.8	59.9	29.2	54.5	32.6	51.1
2	13.2	46.5	16.0	43.7	20.1	39.6	22.7	37.0
3	1.3	7.3	1.8	6.9	2.6	6.1	3.0	5.6
4	23.4	59.2	26.3	56.3	30.8	51.8	33.6	49.0
8	7.8	55.7	11.7	51.8	17.7	45.8	21.5	42.0
9	-61.9	383.9	-25.5	347.5	30.2	291.8	65.5	256.5
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	27.4	64.6	30.5	61.5	35.1	56.9	38.0	54.0
19	5.1	298.6	29.1	274.6	65.8	237.9	89.0	214.7

Question 3

Confidence Limits of Number of Employees
in the Organization
(Personal Interviews)

Supervisory or Administrative

Group	95%		90%		75%		60%	
3	0.4	2.6	0.6	2.4	0.9	2.1	1.0	2.0
4	0.9	5.5	1.3	5.1	1.8	4.5	2.2	4.1
5	0.9	2.4	1.0	2.2	1.2	2.1	1.3	1.9
6	0.7	5.5	1.1	5.1	1.7	4.5	2.1	4.1
7	-0.5	7.1	0.1	6.5	1.1	5.5	1.7	4.9
8	0.8	3.2	1.0	3.0	1.3	2.7	1.5	2.5
9	1.2	3.8	1.4	3.6	1.8	3.2	2.0	3.0
10	-0.6	5.9	-0.1	5.4	0.7	4.6	1.3	4.1
11	1.5	3.3	1.7	3.2	1.9	2.9	2.0	2.8
12	0.9	2.5	1.1	2.4	1.3	2.2	1.4	2.0
13	1.5	3.1	1.7	3.0	1.9	2.8	2.0	2.7
14	-2.9	10.9	-1.8	9.8	0.0	8.0	1.1	6.9
15	-0.1	4.1	0.2	3.8	0.8	3.2	1.1	2.9
16	1.0	3.5	1.2	3.3	1.5	3.0	1.7	2.8
17	2.0	5.0	2.2	4.8	2.6	4.4	2.8	4.2
18	1.2	4.3	1.4	4.1	1.8	3.7	2.1	3.4
19	7.1	25.6	8.6	24.1	10.9	21.8	12.4	20.3

Question 3

Confidence Limits of Number of Employees

in the Organization

(Mail Questionnaires)

Professional

Group	95%		90%		75%		60%	
3	3.4	15.3	4.3	14.3	5.8	12.8	6.8	11.9
4	3.1	11.9	3.8	11.2	4.9	10.1	5.6	9.4
5	0.1	1.1	0.2	1.1	0.3	0.9	0.4	0.8
6	-3.1	13.1	-1.8	11.8	0.3	9.7	1.5	8.5
7	-4.0	13.6	-2.5	12.1	-0.3	9.9	1.0	8.6
8	-0.3	1.0	-0.2	0.9	0.0	0.7	0.1	0.6
9	-0.1	2.1	0.1	1.9	0.3	1.7	0.5	1.5
10	-0.1	2.1	0.1	1.9	0.3	1.7	0.5	1.5
11	0.2	0.8	0.3	0.7	0.4	0.7	0.4	0.6
12	-0.0	0.5	0.0	0.5	0.1	0.4	0.1	0.4
13	0.2	0.7	0.3	0.7	0.3	0.6	0.4	0.6
14	-0.1	2.1	0.1	1.9	0.3	1.7	0.5	1.5
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.1	1.4	0.2	1.3	0.4	1.2	0.5	1.0
17	-2.8	12.2	-1.6	10.9	0.3	9.1	1.5	7.9
18	2.6	6.7	3.0	6.4	3.5	5.9	3.8	5.5
19	-5.3	25.7	-2.8	23.2	1.1	19.3	3.5	16.9

Question 3

Confidence Limits of Number of Employees

in the Organization

(Mail Questionnaires)

Sub-Professional								
Group	95%		90%		75%		60%	
3	-7.5	33.5	-4.2	30.2	1.0	25.0	4.2	21.8
4	-2.9	20.3	-1.0	18.4	1.9	15.5	3.7	13.6
5	-1.7	6.9	-1.0	6.2	0.1	5.2	0.8	4.5
6	-5.8	26.4	-3.1	23.8	0.9	19.8	3.4	17.2
7	-7.7	23.7	-5.1	21.1	-1.2	17.2	1.3	14.7
8	-0.2	1.5	0.0	1.4	0.2	1.2	0.3	1.0
9	-0.2	2.7	0.0	2.5	0.4	2.1	0.6	1.9
10	-2.6	7.9	-1.7	7.0	-0.4	5.7	0.4	4.9
11	-0.5	13.8	0.7	12.6	2.5	10.8	3.6	9.7
12	0.2	2.5	0.4	2.3	0.7	2.0	0.8	1.8
13	0.7	3.8	0.9	3.5	1.3	3.2	1.6	2.9
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	-0.2	0.7	-0.2	0.7	0.0	0.5	0.0	0.5
16	0.5	2.1	0.7	2.0	0.9	1.8	1.0	1.7
17	-2.3	54.7	2.3	50.0	9.4	42.9	14.0	38.4
18	5.3	21.9	6.6	20.5	8.7	18.5	10.0	17.1
19	2.2	44.1	5.6	40.6	10.8	35.4	14.1	32.1

Question 3
Confidence Limits of the Number of Employees
in the Organization
(Mail Questionnaires)

(d) Confidence Limits - Question 4

Supervisory or Administrative

Group	95%		90%		75%		60%	
1	5.5	13.3	6.2	12.7	7.1	11.7	7.8	11.1
2	3.9	10.5	4.5	9.9	5.3	9.1	5.8	8.6
3	0.4	2.0	0.5	1.8	0.7	1.6	0.8	1.5
4	1.2	3.0	1.3	2.9	1.6	2.6	1.7	2.5
8	-0.2	1.7	0.0	1.5	0.2	1.3	0.3	1.2
9	-4.3	26.3	-1.8	23.8	2.0	20.0	4.4	17.6
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	3.8	7.2	4.0	6.9	4.5	6.5	4.7	6.2
19	2.2	10.2	2.9	9.6	3.9	8.6	4.5	7.9

Professional

Group	95%		90%		75%		60%	
1	12.7	38.5	14.8	36.4	18.1	33.2	20.1	31.2
2	6.8	30.9	8.7	28.9	11.7	25.9	13.6	24.0
3	2.3	6.4	2.6	6.1	3.1	5.5	3.4	5.2
4	3.1	5.1	3.3	4.9	3.5	4.7	3.7	4.5
8	-0.2	0.7	-0.2	0.7	0.0	0.5	0.0	0.5
9	-5.5	25.8	-2.9	23.3	1.0	19.4	3.5	16.9
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	6.8	23.2	8.1	21.9	10.2	19.8	11.5	18.5
19	6.2	13.4	6.7	12.8	7.7	11.9	8.2	11.3

Question 4

Confidence Limits of Number of Employees
in the Organization Who Must Have Access
to Recently Published Technical Information
on Water Resources
(Personal Interviews)

Sub-Professional

Group	95%		90%		75%		60%	
1	5.2	11.5	5.8	11.0	6.5	10.2	7.0	9.7
2	-1.1	22.4	0.9	20.5	3.8	17.5	5.6	15.7
3	0.4	2.0	0.5	1.8	0.7	1.6	0.8	1.5
4	1.7	4.5	1.9	4.3	2.3	3.9	2.5	3.7
8	-1.0	3.0	-0.6	2.6	-0.1	2.1	0.2	1.8
9	-3.4	12.7	-2.1	11.4	0.0	9.4	1.2	8.1
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	2.5	6.3	2.8	6.0	3.3	5.5	3.6	5.2
19	0.3	4.7	0.7	4.3	1.2	3.8	1.6	3.4

Question 4
Confidence Limits of Number of Employees
in the Organization Who Must Have Access
to Recently Published Technical Information
on Water Resources
(Personal Interviews)

Supervisory or Administrative

Group	95%		90%		75%		60%	
3	-0.1	2.4	0.1	2.2	0.4	1.9	0.6	1.7
4	0.5	3.2	0.7	3.0	1.0	2.6	1.2	2.4
5	0.5	2.0	0.6	1.9	0.8	1.7	0.9	1.6
6	0.5	2.2	0.6	2.1	0.8	1.9	1.0	1.7
7	0.1	1.9	0.3	1.7	0.5	1.5	0.6	1.4
8	0.0	2.3	0.2	2.2	0.5	1.9	0.7	1.7
9	0.8	2.7	1.0	2.5	1.2	2.3	1.3	2.2
10	-0.3	1.0	-0.2	0.9	-0.1	0.7	0.1	0.6
11	0.8	1.3	0.8	1.3	0.9	1.2	1.0	1.2
12	0.2	1.3	0.3	1.3	0.5	1.1	0.6	1.0
13	0.6	1.3	-0.7	1.2	0.7	1.1	0.8	1.1
14	-0.3	1.0	1.2	0.9	-0.1	0.7	0.1	0.6
15	1.0	2.3	0.1	2.2	1.3	2.1	1.4	1.9
16	0.1	1.9	0.3	1.7	0.5	1.5	0.6	1.4
17	0.8	2.4	0.9	2.3	1.1	2.1	1.2	1.9
18	0.4	3.3	1.7	3.1	1.0	2.7	1.3	2.5
19	1.2	3.0	1.3	2.8	1.5	2.6	1.7	2.5

Question 4

Confidence Limits of Number of Employees
in the Organization Who Must Have Access
to Recently Published Technical Information
on Water Resources
(Mail Questionnaires)

	Professional							
Group	95%		90%		75%		60%	
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	1.2	13.1	2.2	12.1	3.7	10.6	4.6	9.7
4	1.4	6.6	1.8	6.2	2.5	5.5	2.9	5.1
5	0.0	1.0	0.1	0.9	0.2	0.8	0.3	0.7
6	-0.2	3.4	0.1	3.1	0.5	2.6	0.8	2.4
7	-0.7	3.3	-0.4	3.0	0.1	2.5	0.5	2.1
8	-0.3	1.0	-0.2	0.9	0.0	0.7	0.1	0.6
9	-0.2	1.7	0.0	1.5	0.2	1.3	0.3	1.2
10	-0.1	2.1	0.1	1.9	0.3	1.7	0.5	1.5
11	0.2	0.7	0.2	0.7	0.3	0.6	0.3	0.6
12	0.0	0.5	0.0	0.4	0.1	0.4	0.1	0.3
13	0.2	0.6	0.2	0.6	0.3	0.5	0.3	0.5
14	-0.3	1.0	-0.2	0.9	-0.1	0.7	0.1	0.6
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.1	1.6	0.2	1.5	0.4	1.3	0.5	1.2
17	-0.2	1.4	0.0	1.3	0.2	1.1	0.3	1.0
18	1.5	5.5	1.9	5.1	2.4	4.6	2.7	4.3
19	-0.2	2.8	0.0	2.6	0.4	2.2	0.7	2.0

Question 4

Confidence Limits of Number of Employees
in the Organization Who Must Have Access
to Recently Published Technical Information
on Water Resources
(Mail Questionnaires)

Sub-Professional

Group	95%		90%		75%		60%	
3	-0.5	6.8	0.1	6.2	1.0	5.3	1.6	4.7
4	-0.6	2.6	-0.3	2.3	0.1	1.9	0.3	1.7
5	-0.1	0.4	-0.1	0.3	0.0	0.3	0.0	0.2
6	-0.4	2.9	-0.1	2.6	0.3	2.2	0.6	1.9
7	-1.9	5.9	-1.3	5.3	-0.3	4.3	0.3	3.7
8	-0.3	1.0	-0.2	0.9	0.0	0.7	0.1	0.6
9	-0.1	1.1	0.0	1.0	0.2	0.8	0.3	0.7
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.3	0.8	0.3	0.8	0.4	0.7	0.4	0.7
12	-0.1	0.2	0.0	0.1	0.0	0.1	0.0	0.1
13	0.1	1.4	0.2	1.3	0.4	1.2	0.5	1.1
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	-0.3	1.0	-0.2	0.9	-0.1	0.7	0.1	0.6
16	0.1	1.6	0.2	1.5	0.4	1.3	0.5	1.2
17	-0.1	0.6	0.0	0.5	0.0	0.5	0.1	0.4
18	0.5	1.6	0.6	1.5	0.7	1.4	0.8	1.3
19	-0.2	1.5	0.0	1.4	0.2	1.1	0.3	1.0

Question 4
Confidence Limits of Number of Employees
in the Organization Who Must Have Access
to Recently Published Technical Information
on Water Resources
(Mail Questionnaires)

Supervisory or Administrative

Group	95%		90%		75%		60%	
1	5.5	13.3	6.2	12.7	7.1	11.7	7.8	11.1
2	3.9	10.5	4.5	9.9	5.3	9.1	5.8	8.6
3	0.4	1.9	0.6	1.8	0.7	1.6	0.9	1.5
4	1.3	2.7	1.4	2.6	1.6	2.4	1.7	2.3
5	0.5	2.0	0.6	1.9	0.8	1.7	0.9	1.6
6	0.5	2.2	0.6	2.1	0.8	1.9	1.0	1.7
7	0.1	1.9	0.3	1.7	0.5	1.5	0.6	1.4
8	0.2	1.8	0.4	1.6	0.5	1.5	0.7	1.3
9	-2.0	16.6	-0.5	15.1	1.8	12.8	3.3	11.3
10	-0.3	1.0	-0.2	0.9	-0.1	0.7	0.1	0.6
11	0.8	1.3	0.8	1.3	0.9	1.2	1.0	1.2
12	0.2	1.3	0.3	1.3	0.5	1.1	0.6	1.0
13	0.6	1.3	0.7	1.2	0.7	1.1	0.8	1.1
14	-0.3	1.0	-0.2	0.9	-0.1	0.7	0.1	0.6
15	1.0	2.3	1.1	2.2	1.3	2.1	1.4	1.9
16	0.1	1.9	0.3	1.7	0.5	1.5	0.6	1.4
17	0.9	2.4	1.0	2.2	1.2	2.1	1.3	1.9
18	1.9	4.4	2.1	4.2	2.4	3.9	2.6	3.7
19	2.0	5.6	2.3	5.3	2.7	4.8	3.0	4.5

Question 4

Confidence Limits of Number of Employees
in the Organization Who Must Have Access
to Recently Published Technical Information
on Water Resources
(Personal Interviews and Mail Questionnaires)

Professional

Group	95%		90%		75%		60%	
1	12.7	38.5	14.8	36.4	18.1	33.2	20.1	31.2
2	6.5	29.6	8.3	27.7	11.2	24.8	13.1	23.0
3	2.8	8.1	3.2	7.7	3.9	7.0	4.3	6.6
4	3.0	5.2	3.1	5.0	3.4	4.7	3.6	4.5
5	0.0	1.0	0.1	0.9	0.2	0.8	0.3	0.7
6	-0.2	3.4	0.1	3.1	0.5	2.6	0.8	2.4
7	-0.7	3.3	-0.4	3.0	0.1	2.5	0.5	2.1
8	-0.1	0.7	-0.1	0.7	0.1	0.5	0.1	0.5
9	-3.1	15.9	-1.6	14.4	0.8	12.0	2.3	10.5
10	-0.1	2.1	0.1	1.9	0.3	1.7	0.5	1.5
11	0.2	0.7	0.2	0.7	0.3	0.6	0.3	0.6
12	0.0	0.5	0.0	0.4	0.1	0.4	0.1	0.3
13	0.2	0.6	0.2	0.6	0.3	0.5	0.3	0.5
14	-0.3	1.0	-0.2	0.9	-0.1	0.7	0.1	0.6
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.1	1.6	0.2	1.5	0.4	1.3	0.5	1.2
17	-0.2	1.3	0.0	1.2	0.1	1.0	0.3	0.9
18	4.0	11.1	4.6	10.5	5.5	9.6	6.0	9.1
19	2.7	6.9	3.0	6.5	3.5	6.0	3.9	5.7

Question 4

Confidence Limits of Number of Employees
in the Organization Who Must Have Access
to Recently Published Technical Information
on Water Resources
(Personal Interviews and Mail Questionnaires)

Sub-Professional

Group	95%		90%		75%		60%	
1	5.2	11.5	5.8	11.0	6.5	10.2	7.0	9.7
2	-1.1	22.4	0.9	20.5	3.8	17.5	5.6	15.7
3	0.3	4.0	0.6	3.7	1.1	3.3	1.4	3.0
4	1.2	3.5	1.3	3.3	1.6	3.0	1.8	2.8
5	-0.1	0.4	-0.1	0.3	0.0	0.3	0.0	0.2
6	-0.4	2.9	-0.1	2.6	0.3	2.2	0.6	1.9
7	-1.9	5.9	-1.3	5.3	-0.3	4.3	0.3	3.7
8	-0.2	1.4	-0.1	1.3	0.1	1.1	0.2	1.0
9	-1.8	7.8	-1.0	7.0	0.2	5.8	0.9	5.1
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.3	0.8	0.3	0.8	0.4	0.7	0.4	0.7
12	-0.1	0.2	0.0	0.1	0.0	0.1	0.0	0.1
13	0.1	1.4	0.2	1.3	0.4	1.2	0.5	1.1
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	-0.3	1.0	-0.2	0.9	-0.1	0.7	0.1	0.6
16	0.1	1.6	0.2	1.5	0.4	1.3	0.5	1.2
17	-0.1	0.6	0.0	0.5	0.0	0.4	0.1	0.4
18	1.3	3.1	1.4	2.9	1.6	2.7	1.8	2.5
19	0.3	2.0	0.4	1.9	0.6	1.7	0.8	1.5

Question 4

Confidence Limits of Number of Employees
in the Organization Who Must Have Access
to Recently Published Technical Information
on Water Resources
(Personal Interviews and Mail Questionnaires)

(e) Primary Purpose of Organization as a Function of Source of Information

TYPE OF USER	TOTAL	VERY SIGNIFICANT SOURCE	SIGNIFICANT SOURCE	LIMITED SIGNIFICANCE	INSIGNIFICANT SOURCE	NOT AVAILABLE	NO RESPONSE
Regulatory	6.80	16.13	16.13	12.90	3.23	16.13	35.48
Research	7.02	37.50	28.13	15.62	9.37	6.25	3.12
Planning	11.18	35.29	11.76	13.73	7.84	19.61	11.76
Data Collection	1.10	20.00	0.00	20.00	0.00	20.00	40.00
Education	3.95	55.56	16.67	5.56	0.00	11.11	11.11
W. R. User	20.18	16.30	16.30	14.13	5.43	30.43	17.39
Water Conserv.	10.53	20.83	12.50	10.42	6.25	18.75	31.25
Design	7.24	45.45	36.36	9.09	0.00	6.06	3.03
Construction	7.89	8.33	13.89	5.56	5.56	19.44	47.22
Other	11.40	7.69	5.77	13.46	11.54	7.69	53.85
No Response	12.72	0.00	1.72	0.00	0.00	3.45	94.83
TOTAL	100.00	20.39	14.25	10.53	5.26	15.79	33.77

PERCENTAGES

PRIMARY PURPOSE OF ORGANIZATION VERSUS SOURCE OF INFORMATION
PERSONAL REFERENCE LIBRARY (QUESTION 7)

TYPE OF USER	TOTAL	VERY SIGNIFICANT SOURCE	SIGNIFICANT SOURCE	LIMITED SIGNIFICANCE	INSIGNIFICANT SOURCE	NOT AVAILABLE	NO RESPONSE
Regulatory	6.80	19.35	3.23	3.23	6.45	35.48	32.26
Research	7.02	31.25	25.00	12.50	3.12	25.00	3.12
Planning	11.18	19.61	31.37	15.69	7.84	15.69	9.80
Data Collection	1.10	0.00	20.00	0.00	20.00	20.00	40.00
Education	3.95	27.78	11.11	11.11	0.00	44.44	5.56
W. R. User	20.18	3.26	15.22	10.87	1.09	51.09	18.48
Water Conserv.	10.53	20.83	22.92	12.50	2.08	14.58	27.08
Design	7.24	36.36	33.33	3.03	9.09	12.12	6.06
Construction	7.89	8.33	8.33	13.89	5.56	11.11	52.78
Other	11.40	3.85	9.62	7.69	5.77	19.23	53.85
No Response	12.72	0.00	1.72	1.72	0.00	3.45	93.10
TOTAL	100.00	13.38	16.01	9.21	3.95	24.12	33.33

PERCENTAGES

PRIMARY PURPOSE OF ORGANIZATION VERSUS SOURCE OF INFORMATION
INTERNAL REFERENCE LIBRARY (QUESTION 8)

TYPE OF USER	TOTAL	VERY SIGNIFICANT SOURCE	SIGNIFICANT SOURCE	LIMITED SIGNIFICANCE	INSIGNIFICANT SOURCE	NOT AVAILABLE	NO RESPONSE
Regulatory	6.80	6.45	6.45	19.35	3.23	32.26	32.26
Research	7.02	0.00	12.50	6.25	6.25	71.88	3.12
Planning	11.18	5.88	9.80	13.73	5.88	54.90	9.80
Data Collection	1.10	0.00	20.00	0.00	20.00	20.00	40.00
Education	3.95	5.56	22.22	5.56	0.00	55.56	11.11
W. R. User	20.18	2.17	4.35	0.00	3.26	68.48	21.74
Water Conserv.	10.53	10.42	2.08	8.33	0.00	47.92	31.25
Design	7.24	3.03	6.06	12.12	0.00	66.67	12.12
Construction	7.89	0.00	2.78	2.78	2.78	41.67	50.00
Other	11.40	0.00	11.54	3.85	0.00	26.92	57.69
No Response	12.72	0.00	1.72	0.00	0.00	3.45	94.83
TOTAL	100.00	3.07	6.80	5.92	2.41	46.27	35.53

PERCENTAGES

PRIMARY PURPOSE OF ORGANIZATION VERSUS SOURCE OF INFORMATION
RESEARCH PERSON (QUESTION 9)

TYPE OF USER	TOTAL	VERY SIGNIFICANT SOURCE	SIGNIFICANT SOURCE	LIMITED SIGNIFICANCE	INSIGNIFICANT SOURCE	NOT AVAILABLE	NO RESPONSE
Regulatory	6.80	9.68	6.45	16.13	6.45	25.81	35.48
Research	7.02	25.00	40.63	25.00	3.12	3.12	3.12
Planning	11.18	3.92	15.69	33.33	11.76	23.53	11.76
Data Collection	1.10	0.00	20.00	0.00	20.00	20.00	40.00
Education	3.95	33.33	38.89	11.11	0.00	5.56	11.11
W. R. User	20.18	5.43	13.04	14.13	17.39	31.52	18.48
Water Conserv.	10.53	2.08	14.58	25.00	8.33	22.92	27.08
Design	7.24	6.06	21.21	42.42	18.18	6.06	6.06
Construction	7.89	0.00	5.56	19.44	16.67	5.56	52.78
Other	11.40	0.00	3.85	17.31	9.62	13.46	55.77
No Response	12.72	0.00	1.72	0.00	0.00	3.45	94.83
TOTAL	100.00	5.92	13.60	19.08	10.31	16.67	34.43

PERCENTAGES

PRIMARY PURPOSE OF ORGANIZATION VERSUS SOURCE OF INFORMATION
PUBLIC, PRIVATE, OR ACADEMIC LIBRARY (QUESTION 10)

TYPE OF USER	TOTAL	VERY USEFUL SOURCE	USEFUL SOURCE	LIMITED SIGNIFICANCE	SELDOM OR NEVER USED	NONE APPLICABLE	NO RESPONSE
Regulatory	6.80	9.68	16.13	3.23	12.90	25.81	32.26
Research	7.02	40.63	15.62	21.88	15.62	3.12	3.12
Planning	11.18	33.33	27.45	19.61	5.88	11.76	1.96
Data Collection	1.10	20.00	20.00	0.0	40.00	0.0	20.00
Education	3.95	38.89	27.78	11.11	0.0	5.56	16.67
W. R. User	20.18	8.70	26.09	23.91	17.39	8.70	15.22
Water Conserv.	10.53	14.58	31.25	14.58	4.17	8.33	27.08
Design	7.24	24.24	33.33	33.33	3.03	0.0	6.06
Construction	7.89	11.11	25.00	13.89	8.33	2.78	38.89
Other	11.40	5.77	19.23	15.38	7.69	11.54	40.38
No Response	12.72	3.45	3.45	0.0	1.72	6.90	84.48
TOTAL	100.00	16.01	22.15	16.01	8.99	8.55	28.29

PERCENT

PRIMARY PURPOSE OF ORGANIZATION
VERSUS VALUE OF TRADE JOURNALS

(QUESTION 21)

TYPE OF USER	TOTAL	VERY USEFUL SOURCE	USEFUL SOURCE	LIMITED SIGNIFICANCE	SELDOM OR NEVER USED	NONE APPLICABLE	NO RESPONSE
Regulatory	6.80	3.23	16.13	19.35	9.68	16.13	35.48
Research	7.02	18.75	15.62	34.38	25.00	3.12	3.12
Planning	11.18	11.76	31.37	29.41	11.76	11.76	3.92
Data Collection	1.10	0.0	20.00	0.0	40.00	0.0	40.00
Education	3.95	16.67	33.33	16.67	5.56	11.11	16.67
W. R. User	20.18	4.35	29.35	27.17	15.22	9.78	14.13
Water Conserv.	10.53	0.0	37.50	20.83	2.08	12.50	27.08
Design	7.24	30.30	30.30	30.30	3.03	0.0	6.06
Construction	7.89	5.56	27.78	13.89	8.33	2.78	41.67
Other	11.40	1.92	19.23	11.54	7.69	13.46	46.15
No Response	12.72	1.72	1.72	0.0	1.72	6.90	87.93
TOTAL	100.00	7.46	23.90	19.96	9.65	8.99	30.04

PERCENT

PRIMARY PURPOSE OF ORGANIZATION
VERSUS VALUE OF TRADE MAGAZINES

(QUESTION 22)

TYPE OF USER	TOTAL	VERY USEFUL SOURCE	USEFUL SOURCE	LIMITED SIGNIFICANCE	SELDOM OR NEVER USED	NONE APPLICABLE	NO RESPONSE
Regulatory	6.80	22.58	19.35	9.68	6.45	16.13	25.81
Research	7.02	21.88	37.50	18.75	12.50	9.37	0.0
Planning	11.18	33.33	39.22	7.84	0.0	15.69	3.92
Data Collection	1.10	0.0	20.00	20.00	20.00	0.0	40.00
Education	3.95	33.33	16.67	22.22	5.56	11.11	11.11
W. R. User	20.18	23.91	17.39	16.30	14.13	9.78	18.48
Water Conserv.	10.53	22.92	16.67	10.42	12.50	10.42	27.08
Design	7.24	39.39	45.45	12.12	0.0	0.0	3.03
Construction	7.89	11.11	25.00	5.56	16.67	2.78	38.89
Other	11.40	7.69	19.23	9.62	7.69	11.54	44.23
No Response	12.72	1.72	1.72	0.0	1.72	8.62	86.21
TOTAL	100.00	20.18	22.15	10.75	8.33	9.65	28.95

PERCENT

PRIMARY PURPOSE OF ORGANIZATION
VERSUS VALUE OF HANDBOOKS

(QUESTION 23)

TYPE OF USER	TOTAL	VERY USEFUL SOURCE	USEFUL SOURCE	LIMITED SIGNIFICANCE	SELDOM OR NEVER USED	NONE APPLICABLE	NO RESPONSE
Regulatory	6.80	19.35	19.35	9.68	9.68	16.13	25.81
Research	7.02	21.88	50.00	21.88	3.12	0.0	3.12
Planning	11.18	31.37	33.33	15.69	1.96	13.73	3.92
Data Collection	1.10	20.00	0.0	20.00	20.00	0.0	40.00
Education	3.95	27.78	22.22	27.78	0.0	5.56	16.67
W. R. User	20.18	17.39	23.91	11.96	16.30	10.87	19.57
Water Conserv.	10.53	20.83	20.83	16.67	6.25	10.42	25.00
Design	7.24	39.39	39.39	15.15	3.03	0.0	3.03
Construction	7.89	8.33	25.00	2.78	22.22	2.78	38.89
Other	11.40	5.77	15.38	7.69	9.62	15.38	46.15
No Response	12.72	3.45	0.0	0.0	5.17	6.90	84.48
TOTAL	100.00	17.98	23.03	11.62	8.99	8.99	29.39

PERCENT

PRIMARY PURPOSE OF ORGANIZATION
VERSUS VALUE OF REFERENCE BOOKS

(QUESTION 24)

TYPE OF USER	TOTAL	VERY USEFUL SOURCE	USEFUL SOURCE	LIMITED SIGNIFICANCE	SELDOM OR NEVER USED	NONE APPLICABLE	NO RESPONSE
Regulatory	6.80	6.45	29.03	9.68	12.90	16.13	25.81
Research	7.02	25.00	50.00	15.62	3.12	3.12	3.12
Planning	11.18	33.33	37.25	11.76	5.88	7.84	3.92
Data Collection	1.10	20.00	20.00	20.00	20.00	0.0	20.00
Education	3.95	16.67	44.44	16.67	5.56	5.56	11.11
W. R. User	20.18	5.43	22.83	22.83	15.22	16.30	17.39
Water Conserv.	10.53	20.83	31.25	14.58	2.08	8.33	22.92
Design	7.24	21.21	33.33	24.24	12.12	3.03	6.06
Construction	7.89	11.11	11.11	13.89	19.44	2.78	41.67
Other	11.40	13.46	9.62	11.54	7.69	11.54	46.15
No Response	12.72	0.0	0.0	0.0	3.45	6.90	89.66
TOTAL	100.00	14.04	23.90	14.25	9.21	9.21	29.39

PERCENT

PRIMARY PURPOSE OF ORGANIZATION
VERSUS VALUE OF PROJECT REPORTS

(QUESTION 25)

TYPE OF USER	TOTAL	VERY USEFUL SOURCE	USEFUL SOURCE	LIMITED SIGNIFICANCE	SELDOM OR NEVER USED	NONE APPLICABLE	NO RESPONSE
Regulatory	6.80	3.23	19.35	16.13	12.90	19.35	29.03
Research	7.02	0.0	18.75	50.00	15.62	12.50	3.12
Planning	11.18	9.80	33.33	31.37	15.69	5.88	3.92
Data Collection	1.10	20.00	0.0	20.00	20.00	0.0	40.00
Education	3.95	22.22	44.44	22.22	0.0	0.0	11.11
W. R. User	20.18	4.35	26.09	19.57	21.74	14.13	14.13
Water Conserv.	10.53	10.42	25.00	20.83	12.50	6.25	25.00
Design	7.24	6.06	12.12	45.45	21.21	9.09	6.06
Construction	7.89	0.0	8.33	16.67	25.00	8.33	41.67
Other	11.40	7.69	5.77	13.46	15.38	13.46	44.23
No Response	12.72	1.72	1.72	1.72	3.45	6.90	84.48
TOTAL	100.00	5.92	18.42	21.71	15.35	10.09	28.51

PERCENT

PRIMARY PURPOSE OF ORGANIZATION
VERSUS VALUE OF NEWS LETTERS

(QUESTION 26)

TYPE OF USER	TOTAL	VERY USEFUL SOURCE	USEFUL SOURCE	LIMITED SIGNIFICANCE	SELDOM OR NEVER USED	NONE APPLICABLE	NO RESPONSE
Regulatory	6.80	0.0	3.23	6.45	35.48	19.35	35.48
Research	7.02	0.0	3.12	31.25	40.63	21.88	3.12
Planning	11.18	0.0	5.88	27.45	49.02	15.69	1.96
Data Collection	1.10	0.0	0.0	20.00	20.00	20.00	40.00
Education	3.95	0.0	16.67	16.67	44.44	5.56	16.67
W. R. User	20.18	4.35	6.52	25.00	31.52	13.04	19.57
Water Conserv.	10.53	0.0	0.0	29.17	27.08	16.67	27.08
Design	7.24	0.0	6.06	27.27	54.55	6.06	6.06
Construction	7.89	0.0	8.33	11.11	22.22	16.67	41.67
Other	11.40	0.0	1.92	19.23	23.08	11.54	44.23
No Response	12.72	0.0	1.72	0.0	5.17	6.90	86.21
TOTAL	100.00	0.88	4.61	19.74	30.92	13.38	30.48

PERCENT

PRIMARY PURPOSE OF ORGANIZATION
VERSUS VALUE OF PRINTED ADVERTISING

(QUESTION 27)

TYPE OF USER	TOTAL	VERY USEFUL SOURCE	USEFUL SOURCE	LIMITED SIGNIFICANCE	SELDOM OR NEVER USED	NONE APPLICABLE	NO RESPONSE
Regulatory	6.80	0.0	12.90	29.03	19.35	6.45	32.26
Research	7.02	3.12	6.25	31.25	34.38	18.75	6.25
Planning	11.18	1.96	7.84	37.25	21.57	25.49	5.88
Data Collection	1.10	0.0	0.0	20.00	20.00	20.00	40.00
Education	3.95	11.11	5.56	16.67	38.89	11.11	16.67
W. R. User	20.18	7.61	19.57	20.65	19.57	14.13	18.48
Water Conserv.	10.53	0.0	4.17	16.67	29.17	16.67	33.33
Design	7.24	15.15	33.33	27.27	12.12	9.09	3.03
Construction	7.89	0.0	8.33	11.11	25.00	13.89	41.67
Other	11.40	1.92	9.62	17.31	13.46	11.54	46.15
No Response	12.72	3.45	1.72	0.0	1.72	6.90	86.21
TOTAL	100.00	4.17	11.18	19.96	19.52	13.82	31.36

PERCENT

PRIMARY PURPOSE OF ORGANIZATION
VERSUS VALUE OF CATALOGUES

(QUESTION 28)

TYPE OF USER	TOTAL	VERY USEFUL SOURCE	USEFUL SOURCE	LIMITED SIGNIFICANCE	SELDOM OR NEVER USED	NONE APPLICABLE	NO RESPONSE
Regulatory	6.80	0.0	12.90	3.23	12.90	35.48	35.48
Research	7.02	12.50	37.50	31.25	12.50	3.12	3.12
Planning	11.18	5.88	21.57	29.41	23.53	13.73	5.88
Data Collection	1.10	0.0	20.00	20.00	20.00	0.0	40.00
Education	3.95	27.78	33.33	5.56	5.56	11.11	16.67
W. R. User	20.18	1.09	13.04	6.52	23.91	34.78	20.65
Water Conserv.	10.53	0.0	12.50	14.58	18.75	18.75	35.42
Design	7.24	9.09	21.21	18.18	27.27	18.18	6.06
Construction	7.89	0.0	2.78	11.11	27.78	13.89	44.44
Other	11.40	1.92	9.62	11.54	11.54	19.23	46.15
No Response	12.72	0.0	0.0	0.0	3.45	6.90	89.66
TOTAL	100.00	3.73	14.25	12.50	17.54	19.08	32.89

PERCENT

PRIMARY PURPOSE OF ORGANIZATION
VERSUS VALUE OF ABSTRACT BULLETINS

(QUESTION 29)

TYPE OF USER	TOTAL	VERY USEFUL SOURCE	USEFUL SOURCE	LIMITED SIGNIFICANCE	SELDOM OR NEVER USED	NONE APPLICABLE	NO RESPONSE
Regulatory	6.80	3.23	9.68	3.23	9.68	38.71	35.48
Research	7.02	25.00	28.13	21.88	15.62	6.25	3.12
Planning	11.18	3.92	9.80	17.65	39.22	21.57	7.84
Data Collection	1.10	0.0	20.00	20.00	20.00	0.0	40.00
Education	3.95	22.22	27.78	16.67	5.56	11.11	16.67
W. R. User	20.18	0.0	8.70	7.61	25.00	35.87	22.83
Water Conserv.	10.53	4.17	12.50	10.42	20.83	18.75	33.33
Design	7.24	9.09	30.30	12.12	18.18	18.18	12.12
Construction	7.89	0.0	0.0	2.78	27.78	25.00	44.44
Other	11.40	1.92	7.69	17.31	9.62	17.31	46.15
No Response	12.72	0.0	0.0	0.0	3.45	6.90	89.66
TOTAL	100.00	4.61	11.18	10.31	18.86	21.27	33.77

PERCENT

PRIMARY PURPOSE OF ORGANIZATION
VERSUS VALUE OF MONOGRAPHS

(QUESTION 30)

TYPE OF USER	YES	NO, BUT WOULD CONSIDER IT AT LOWER CHARGE	NO, AT ANY CHARGE	NO RESPONSE	TOTAL
Regulatory	1	0	4	1	6
Research	12	0	8	1	21
Planning	15	1	12	2	30
Data Collection	1	0	0	0	1
Education	5	2	1	0	8
W. R. User	3	1	2	1	7
Water Conserv.	11	1	4	0	16
Design	7	2	2	3	14
Construction	2	0	7	1	10
Other	2	1	6	4	13
TOTAL	59	8	46	13	126

QUESTION 34 - WOULD YOU SUBSCRIBE TO A CITATION JOURNAL (DISTRIBUTED TWICE MONTHLY) USING A KWIC INDEX FORMAT IF ONE SUBSCRIPTION COST $15 TO $20 PER YEAR?

TYPE OF USER	YES	NO, BUT WOULD CONSIDER IT AT LOWER CHARGE	NO, AT ANY CHARGE	NO RESPONSE	TOTAL
Regulatory	4	1	0	1	6
Research	14	2	5	0	21
Planning	23	6	1	0	30
Data Collection	0	0	0	1	1
Education	4	3	1	0	8
W. R. User	4	1	2	0	7
Water Conserv.	14	1	1	0	16
Design	10	0	3	1	14
Construction	4	0	5	1	10
Other	1	3	5	4	13
TOTAL	78	17	23	8	126

QUESTION 35 - WOULD YOU SUBSCRIBE TO AN ABSTRACT BULLETIN (DISTRIBUTED TWICE MONTHLY) IF ONE SUBSCRIPTION COST $30 TO $40 PER YEAR?

TYPE OF USER	YES	NO, BUT WOULD CONSIDER IT AT LOWER CHARGE	NO, AT ANY CHARGE	NO RESPONSE	TOTAL
Regulatory	1	2	2	1	6
Research	7	6	7	1	21
Planning	17	3	10	0	30
Data Collection	0	1	0	0	1
Education	0	5	3	0	8
W. R. User	2	3	2	0	7
Water Conserv.	7	3	5	1	16
Design	7	1	4	2	14
Construction	3	1	5	1	10
Other	0	2	7	4	13
TOTAL	44	27	45	10	126

QUESTION 36 - WOULD YOU SUBSCRIBE TO AN SDI SERVICE USING A STANDARD INTEREST PROFILE (DISTRIBUTED TWICE MONTHLY) IF ONE SUBSCRIPTION COST $80 TO $100 PER YEAR?

TYPE OF USER	YES	NO, BUT WOULD CONSIDER IT AT LOWER CHARGE	NO, AT ANY CHARGE	NO RESPONSE	TOTAL
Regulatory	0	1	4	1	6
Research	4	7	9	1	21
Planning	9	8	10	3	30
Data Collection	0	0	1	0	1
Education	0	3	5	0	8
W. R. User	0	2	5	0	7
Water Conserv.	2	1	12	1	16
Design	4	1	6	3	14
Construction	2	0	7	1	10
Other	1	2	6	4	13
TOTAL	22	25	65	14	126

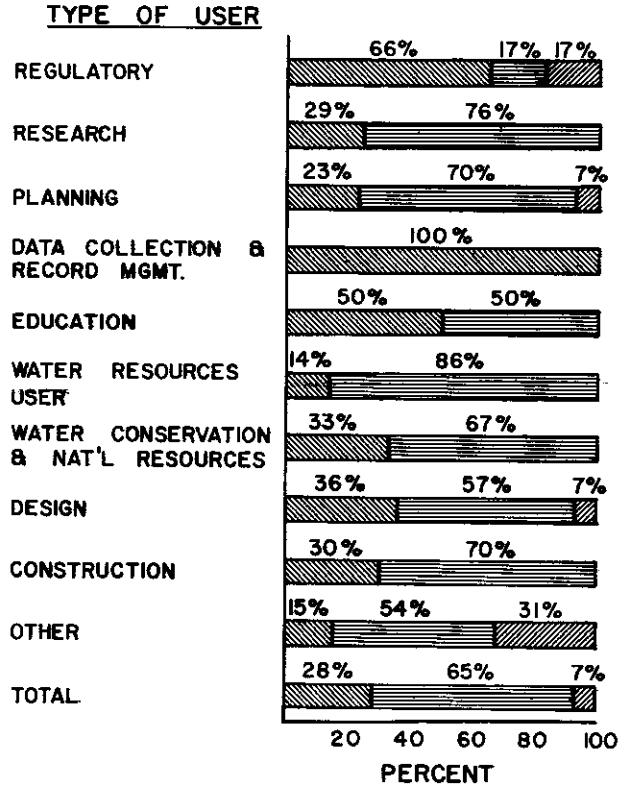
QUESTION 37 - WOULD YOU SUBSCRIBE TO AN SDI SERVICE USING AN INDIVIDUAL INTEREST PROFILE (DISTRIBUTED TWICE MONTHLY) IF ONE SUBSCRIPTION COST $250 TO $300 PER YEAR?

TYPE OF USER	YES	NO, BUT WOULD CONSIDER IT AT LOWER CHARGE	NO, AT ANY CHARGE	NO RESPONSE	TOTAL
Regulatory	1	3	1	1	6
Research	9	4	7	1	21
Planning	13	5	11	1	30
Data Collection	0	0	1	0	1
Education	1	4	3	0	8
W. R. User	1	1	5	0	7
Water Conserv.	5	3	7	1	16
Design	4	4	2	4	14
Construction	5	0	4	1	10
Other	4	1	4	4	13
TOTAL	43	25	45	13	126

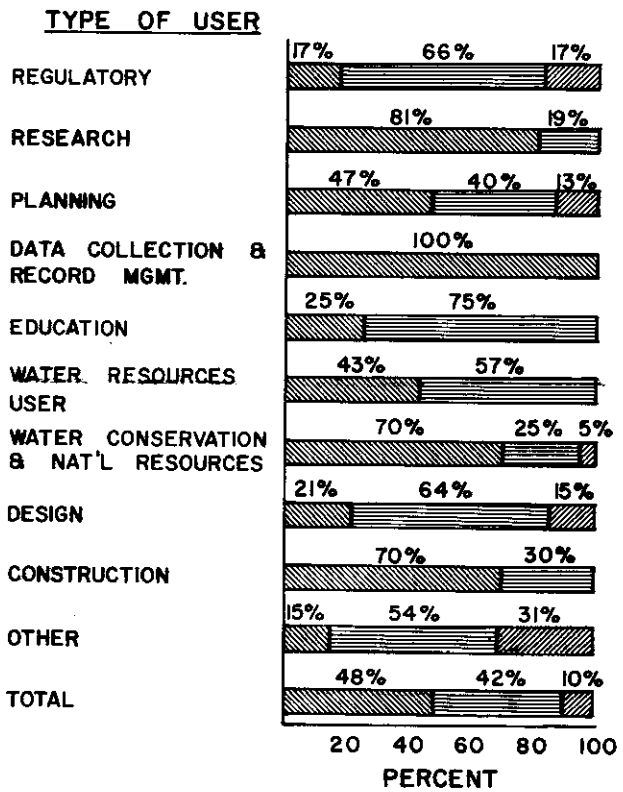
QUESTION 38 - WOULD YOU USE THE RETROSPECTIVE MACHINE SEARCH SERVICE WITH AN INDIVIDUAL INTEREST PROFILE, IF THE CHARGE WAS $100 TO $125 PER REQUEST?

TYPE OF USER	CITATION JOURNAL	ABSTRACT SERVICES	SDI SERVICES	RETROSPECTIVE MACHINE SEARCH	NO RESPONSE	TOTAL
Regulatory	0	4	1	0	1	6
Research	1	10	5	4	1	21
Planning	1	16	10	2	1	30
Data Collection	0	0	1	0	0	1
Education	2	2	3	1	0	8
W. R. User	0	3	3	1	0	7
Water Conserv.	1	9	3	2	1	16
Design	1	6	2	4	1	14
Construction	0	2	3	4	1	10
Other	1	3	3	2	4	13
TOTAL	7	55	34	20	10	126

QUESTION 39 - IF ONLY ONE OF THE SERVICES DISCUSSED WERE AVAILABLE, WHICH WOULD YOU PREFER?



QUESTION 42, DO YOU CURRENTLY HAVE MICROFORM READERS ?



QUESTION 43, IF YOU USED THESE SERVICES WOULD YOU PLAN TO REQUEST MICROFORM COPIES RATHER THAN HARD COPIES ?

YES
NO
NO RESPONSE