

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

12

AFWAL-TR-82-0003



TECHNOLOGICAL RESOURCES APPLIED TO COMMERCIAL ENTERPRISES (TRACE)

Patricia B. Herdendorf
Ohio Technology Transfer Organization
The Ohio State University

July 1982

Final Report

Approved for public release; distribution unlimited.

DTIC
ELECTE
SEP 19 1983
S D
E

AIR FORCE WRIGHT AERONAUTICAL LABORATORIES
AIR FORCE SYSTEMS COMMAND
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

88-09 16 002

AD-A132 585

DTIC FILE COPY

NOTICE

When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture use, or sell any patented invention that may in any way be related thereto.

This report has been reviewed by the Office of Public Affairs (ASD/PA) and is releasable to the National Technical Information Service (NTIS). At NTIS, it will be available to the general public, including foreign nations.

This technical report has been reviewed and is approved for publication.



JAMES G. JOHNSON
Director, Tech Information Center



KENNETH M. ZIMMERMAN
SENIOR EDITOR

FOR THE COMMANDER



ROBERT K. BELT, JR., LT COL
Chief, Support Services Office

"If your address has changed, if you wish to be removed from our mailing list, or if the addressee is no longer employed by your organization please notify AFWAL/TST, W-PAFB, OH 45433 to help us maintain a current mailing list".

Copies of this report should not be returned unless return is required by security considerations, contractual obligations, or notice on a specific document.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

| REPORT DOCUMENTATION PAGE | | READ INSTRUCTIONS BEFORE COMPLETING FORM |
|--|---|---|
| 1. REPORT NUMBER AFWAL-TR-82-0003 | 2. GOVT ACCESSION NO. AD-A132 585 | 3. RECIPIENT'S CATALOG NUMBER |
| 4. TITLE (and Subtitle) TECHNOLOGICAL RESOURCES APPLIED TO COMMERCIAL ENTERPRISES (TRACE) | 5. TYPE OF REPORT & PERIOD COVERED FINAL | |
| | 6. PERFORMING ORG. REPORT NUMBER | |
| 7. AUTHOR(s) Patricia B. Herdendorf | 8. CONTRACT OR GRANT NUMBER(s) | |
| 9. PERFORMING ORGANIZATION NAME AND ADDRESS Ohio Technology Transfer Organization The Ohio State University Columbus, Ohio | 10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS | |
| 11. CONTROLLING OFFICE NAME AND ADDRESS Air Force Wright Aeronautical Laboratories Air Force Systems Command Wright-Patterson Air Force Base, Ohio 45433 | 12. REPORT DATE July 1982 | |
| | 13. NUMBER OF PAGES 115 | |
| 14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) Federal Laboratory Consortium on Tech Transfer James G. Johnson Midwest Regional Coordinator AFWAL/TST Bldg 22 Area B WPAFB, OH | 15. SECURITY CLASS. (of this report) Unclassified | |
| | 15a. DECLASSIFICATION DOWNGRADING SCHEDULE | |
| 16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited. | | |
| 17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) | | |
| 18. SUPPLEMENTARY NOTES | | |
| 19. KEY WORDS (Continue on reverse side if necessary and identify by block number) OTTO FLC Technology Transfer TRACE | | |
| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number) In early 1981 The Ohio Technology Transfer Organization (OTTO) was provided with funds by the Federal Laboratory Consortium for Technology Transfer (FLC) for the purpose of analyzing the technology transfer methods used in other FLC-funded demonstration projects. In order to determine the methods used in various transfers of technology a questionnaire was designed by a consultant, Dr Robert C. Miljus, Professor, Labor and Human Resources, of the Ohio State University. The questionnaire, the data gathered from it, and conclusions gathered are discussed in this report. | | |

TABLE OF CONTENTS

| | <u>Page</u> |
|---------------------------------------|-------------|
| Introduction | 1 |
| Methodology | 1 |
| Results | 3 |
| Recommendations | 18 |
| Appendices | |
| A. Questionnaire | 27 |
| B. Project Summaries | 39 |
| C. Survey Participants | 47 |
| D. Letter from MARC | 53 |
| E. Individual Project Responses | 57 |
| F. Respondents' Comments | 107 |

| | <u>Page</u> |
|---|-------------|
| Tables | |
| Table 1. Survey question 1 and response | 4 |
| Table 2. Survey question and response | 4 |
| Table 3. Survey question 3 and response | 5 |
| Table 4. Survey question 4 and response | 6 |
| Table 5. Survey question 5 and response | 7 |
| Table 6. Survey question 6 and response | 7 |
| Table 7. Survey question 7 and response | 8 |
| Table 8. Survey question 8 and response | 8 |
| Table 9. Survey question 9 and response | 9 |
| Table 10. Survey question 10 and response | 9 |
| Table 11A. Survey questions 11-15 and responses | 11 |
| Table 11B. Survey questions 16-24 and responses | 13 |
| Table 11C. Survey question 25 and response | 16 |
| Table 12. Survey questions 26-29 and responses | 17 |

| | |
|--------------------|-------------------------|
| By _____ | |
| Distribution/ | |
| Availability Codes | |
| Dist | Avail and/or Special |
| A | |

INTRODUCTION

The Ohio Technology Transfer Organization (OTTO) was formed in November 1979 to provide the state's private sector with technical information and assistance and access to new technologies available from federal laboratories as well as other sources. OTTO is headquartered at The Ohio State University with field agents located on the campuses of eleven of Ohio's two-year technical and community colleges.

In early 1981 OTTO was provided with funds by the Federal Laboratory Consortium for Technology Transfer (FLC) for the purpose of analyzing the technology transfer methods used in other FLC-funded demonstration projects.

METHODOLOGY

In order to determine the methods used in various transfers of technology a questionnaire was designed by a consultant, Dr. Robert C. Miljus, Professor, Labor and Human Resources, of The Ohio State University. This questionnaire incorporated questions dealing with four main areas:

1. form of initial contact
2. evaluation of the Technology Transfer
3. length of response time
4. quality of the experience

It was designed to provide ease of understanding and completion. A stamped, self-addressed envelope was provided for the return. A letter of introduction to and explanation of the purpose of the project was developed to accompany the questionnaire. Also, an explanation of the terms used in the questionnaire was provided.

A pilot study, to determine the viability of the questionnaire was conducted in early February. The FLC Executive Committee was asked to make comments on the effectiveness and validity of the questions. Any questions which were determined to be "sensitive" or unsuitable were removed. A revised questionnaire resulted from this pilot study (see Appendix A).

James G. Johnson, FLC Midwest Regional Coordinator, solicited lists of participants/users from other Regional Coordinators in whose regions these projects took place. This was followed-up with a reminder to those that had not responded, sent over the Electronic Information Exchange Systems (EIES). Each individual on the resulting list was sent a questionnaire and cover letter. The projects that these users participated in included the following (see Appendix B for brief description of each project).

1. Reservoir Cover Project, Far West Region
2. Private Sector Technology Transfer, Far West Region
3. Federal Regional Council Activities, Mid-Atlantic Region
4. EPA Hazardous Waste Program, Mid-Atlantic Region
5. Philadelphia Technology and Business Opportunities Conference, Mid-Atlantic Region
6. Delmarva Library Consortium, Mid-Atlantic Region
7. Establishing Science and Technology Linkages, Northeast Region
8. Computerized Personnel Management Information System, Far West Region
9. Science Advisory to a County, Southeast Region
10. Improved Refuse Collection Routing, Southeast Region
11. Project Outreach, Southeast Region

The number of users surveyed was dependent on the input of the Regional Coordinator. A list of survey participants is given in Appendix C.

One project in the Mid Continent Region, Interactions with a Trade Association, did not yield any participant names because the Mining and Reclamation Association of America, the principle user, declined to provide a list of its members. However, the results of a survey conducted during that project and contained in the final report will be incorporated in the study to the extent possible.

Of the 34 questionnaires mailed, 22 were returned. The rate of return was 65%. All eleven (11) of the projects surveyed were represented by at least one (1) reply. Although the return rate percentage was high, the sampling itself was very small. Data will be presented in raw numbers rather than percentages for this reason. Also, it was determined that a computer analysis of such a small sampling would not be required. Appendix E shows responses to each individual project.

A literature search resulted in several articles and books dealing with the subject of technology transfer methods. The purpose of the search was to compare the methodologies recommended by various authors to those used in this study. The literature cited is not intended to indicate an exhaustive search or complete *listing*.

RESULTS

Tables 1-12 show the responses received to each question by all respondents. All 22 respondents still held the same job title at the time of the survey as they held at the time of the demonstration project (Table 1). The greatest numbers of users represented state and local government with private business and academic institutions accounting for the second largest (Table 2). By far, the most frequent mechanism used to acquaint users with technology transfer was through personal contact (Table 3).

Conferences, seminars, reports, and specialized mailings accounted for the most numerous interactions, while data base information retrieval, one-on-one assistance, and packaged programs tied for second (Table 4). Tables 5 and 6 demonstrate that most of the users have a continuing relationship with the technology transfer coordinator which has lasted from a few weeks up to three years and in the great majority this has been definitely sufficient time.

The most common methods of interacting with the Technology Transfer Coordinator were a combination of face-to-face, telephone, and by mail communications. These interactions, in most cases, took place on an "as needed" basis rather than at specific intervals (Tables 7 and 8). It is interesting to note that only 2 users indicated that *computer conferencing was used in their interactions*.

Table 9 indicates that 6 of the 20 respondents to that question were contacted by the Technology Transfer Office. Of the remaining 14 who initiated the contact themselves, 10 got a response within one week. Only two waited four or more weeks. By far, the majority felt satisfied or very satisfied with this response time (Table 10).

TABLE 1

Question 1

Is your current job title the same as you held during the above project?

Response

| | |
|-----------|-----|
| <u>22</u> | Yes |
| <u>0</u> | No |

TABLE 2

Question 2

Check the type of organization with which you are affiliated.

Response

| | |
|-----------|-----------------------------------|
| <u>2</u> | Federal Government Agency |
| <u>3</u> | State Government Agency |
| <u>8</u> | Municipal/Local Government Agency |
| <u>3</u> | Private Business |
| <u>0</u> | Trade/Industrial Association |
| <u>3</u> | Academic Institution |
| <u>4*</u> | Other. Please explain. |

*Other: Public Library

Innovation Group (public-private non-profit organization)

Innovation Group (local government membership organization)

Chamber of Commerce

TABLE 3

Question 3

How did you or someone else in your organization first learn about the FLC Technology Transfer activities?

Response

- 0 Through a newspaper article
- 0 Through a radio or television story
- 10 A personal contact was made by a Technology Transfer staff member
- 3 Through a friend or associate who told you about it
- 6 Through an association contact or newsletter (trade association, Chamber of Commerce, etc.)
- 4 Attended a conference, workshop, seminar
- 1* Other. Please explain.

*Other: Networking with FLC is part of the job.

TABLE 4

Question 4

Please check the type of technology transfer interaction that your organization is/was involved in (check all that apply if more than one).

Response

- 3 The Technology Transfer Office or Agency assisted you in developing and presenting a proposal for funding support.
- 5 The Technology Transfer Office or Agency conducted a special study for your organization.
- 7 The Technology Transfer Office or Agency aided your organization in retrieving information stored in such data banks as EIES, NTIS, Dialog, etc.
- 11 Attended a conference, seminar or workshop in which technology transfer concepts, equipment, etc. were presented.
- 7 Received one-on-one technical assistance.
- 10 Was informed about special laboratory reports on studies which related to your organization's needs.
- 9 Was included in a mailing to receive specialized reports, newsletters, etc.
- 7 Was invited to participate in the implementation of a packaged program, technology, or computer system, etc.
- 3* Other. Please explain.

*Other: Program just beginning
FLC is a member of their Advisory Council
Identified new available equipment

TABLE 5

Question 5

For what length of time did the Technology Transfer Coordinator work with you/your organization on the project?

Response

- 11* Still working with us, and has been for approximately * months.
- 3 About 2 weeks or less
- 1 Between 3 and 4 weeks
- 2 About 2-3 months
- 3 About 4-5 months
- 1 About 6 months or more
- | | |
|------------|-----------|
| 36 months | 12 months |
| *24 months | 6 months |
| 18 months | 2 months |
| 15 months | ½ months |
-
-

TABLE 6

Question 6

Indicate the extent to which you feel that the above length of time is/was an adequate period to really be helpful to your organization.

Response

- 1 Definitely insufficient time
- 1 Somewhat insufficient time
- 3 Somewhat sufficient time
- 15 Definitely sufficient time
-
-

TABLE 7

Question 7

During the life of the project, what was the most common method of interacting with the Technology Transfer Coordinator or his/her office?

Response

- 17 Face-to-face discussions
 - 18 Over the telephone
 - 12 By mail
 - 2 Computer conferencing
 - 13 Really a combination of the above methods (please list)
-
-

TABLE 8

Question 8

How frequently did these interactions occur?

Response

- 1 Practically every day
- 1 About 2 or 3 times a week
- 4 Around 3 or 4 times a month
- 14 Occasionally, as needed
- 2* Other. Please explain.

* Other: 2-3 weeks
Once

TABLE 9

Question 9

If you/your organization initiated the contact with the Technology Transfer Office, how soon did they respond?

Response

- 6 They initiated the contact with us
 - 10 Within one week
 - 2 About two weeks later
 - 0 About three weeks later
 - 2 About 4 weeks later or more
-
-

TABLE 10

Question 10

Indicate how satisfied you are with the promptness of the above response.

Response

- 0 Very dissatisfied
 - 0 Dissatisfied
 - 2 Neither satisfied nor dissatisfied
 - 5 Satisfied
 - 14 Very satisfied
-
-

Tables 11A, B, C incorporate 15 questions. The responses range from strongly disagree to strongly agree. The first group of five questions (Table 11A) dealt with the effect upon the organization (i.e. employment opportunities, dollar savings, and efficiency) of the technology which was transferred. The response was generally neutral, however the majority were able to implement the technology while eight indicated an impact was made on the smoothness of operations and seven indicated that dollars were saved.

The next group of nine questions (Table 11B) dealt with the Technology Transfer Coordinator and the Technical Specialist (see Appendix A, Definition of Terms), and their abilities in identifying needs, performing linkages, technical knowledge, and tenacity. In each case a definite majority of respondents indicated either "agree or strongly agree." In no instance were "disagree or strongly disagree" indicated.

The final question in this section determined willingness to use this service again. Sixteen indicated a positive response and five remained neutral. No responses were negative (Table 11C).

Questions 26 through 29 (Table 12) asked if an assessment of the project was made and what the value of that assessment was to the user. Only six respondents indicated that an assessment was made, either through interviews or completion of a questionnaire, and only half of those thought the assessment was comprehensive and thorough. Of the six, five indicated that the evaluation was very helpful to them.

The final question of the survey asked for additional comments or suggestions. This question may reveal some of the most important information obtained from the survey.

Several respondents indicated a need for more aggressive promotion of technology transfer services. Those who considered themselves to be "middlepersons" in distributing information found technology transfer services to be a good reference. One mentioned the FLC newsletters TECTRA and PASS as "very useful tools...to local governments for

TABLE 11A

Question 11

Our organization has been able to implement the technology transfer which was made.

Response

- 1 Strongly Disagree (SD)
- 0 Disagree (D)
- 6 Neither Agree/Nor Disagree (N/N)
- 7 Agree (A)
- 5 Strongly Agree (SA)

Question 12

The technology transfer has had a very positive impact upon the efficiency/smoothness of our operations.

Response

- 1 SD
- 1 D
- 12 N/N
- 4 A
- 3 SA

Question 13

The technology transfer has aided us to date in saving a large amount of dollars.

Response

- 1 SD
- 0 D
- 12 N/N
- 7 A
- 1 SA

TABLE 11A (continued)

Question 14

The technology transfer has expanded employment opportunities in our organization.

Response

4 SD

9 D

7 N/N

0 A

1 SA

Question 15

The technology transfer has reduced the number of employees in our organization.

Response

6 SD

6 D

7 N/N

2 A

0 SA

TABLE 11B

Question 16

The Technology Transfer Coordinator was very effective in listening to and identifying our needs.

Response

 0 SD

 0 D

 5 N/N

 6 A

 10 SA

Question 17

The Technology Transfer Coordinator provided linkage with the appropriate Technical Specialist.

Response

 0 SD

 0 D

 3 N/N

 7 A

 11 SA

Question 18

The Technology Transfer Coordinator is/was an effective go-between throughout the duration of the project.

Response

 0 SD

 0 D

 7 N/N

 5 A

 9 SA

TABLE 11B (continued)

Question 19

The Technical Specialist with whom we worked was very knowledgeable, i.e., knew what he/she was talking about.

Response

 0 SD

 0 D

 4 N/N

 9 A

 8 SA

Question 20

The Technical Specialist was a very effective listener, e.g., patiently tried to understand what our problem was.

Response

 0 SD

 0 D

 4 N/N

 10 A

 7 SA

Question 21

The Technical Specialist was a very effective "translator", e.g., explaining the solution

Response

 0 SD

 0 D

 8 N/N

 9 A

 4 SA

TABLE 11B (continued)

Question 22

The Technical Specialist is/was a joy to work with; has a very positive attitude and is most personable.

Response

0 SD

0 D

6 N/N

9 A

6 SA

Question 23

The Technical Specialist really persevered; dug in on problems and did not give up easily.

Response

0 SD

0 D

6 N/N

9 A

5 SA

Question 24

The amount and number of times the Technical Specialist was willing to meet with us and address our needs was very sufficient.

Response

0 SD

0 D

5 N/N

9 A

7 SA

TABLE IIC

Question 25

Based upon our experience with this Technology Transfer project, we definitely would be willing to approach the Technology Transfer Office again for assistance if we had a problem or question.

Response

0 SD

0 D

5 N/N

5 A

11 SA

TABLE 12

Question 26

Has an evaluation or assessment of the Technology Transfer Project been conducted with you or your organization by the Technology Transfer Coordinator or his/her agency?

Response

6 Yes

15 No

Question 27

How was the evaluation conducted? Check each statement that applies.

Response

2 Through a personal, face-to-face interview

1 Through a telephone interview

1 We completed a questionnaire and mailed it back

0 Representatives from the Technology Transfer Office made a site visit to our organization and examined relevant records, tested the equipment, etc.

2* Other. Please explain.

*Other: Written reports

Question 28

In your opinion, how thorough was the evaluation which was conducted?

Response

0 Not very thorough; quite superficial

3 About average

3 Very comprehensive and thorough

Question 29

How helpful or informative was the evaluation report to you?

Response

0 Did not receive a copy of the report

0 Received a copy but it was not very helpful

1 It was moderately helpful

5 It was very helpful

cost saving information as well as updating...or adding systems." A suggestion was made to "institutionalize the National Innovation Network as a mechanism for effective coordination between the FLC and local/state government technology users." Several groups complained of financial difficulties which undermined the effectiveness of technology transfer assistance. A "catalogue of cost-benefit analyses demonstrating the effectiveness/productivity impacts of technology transfer" was requested. Most respondents agreed that their associations with technology transfer personnel have "been of great value." (For detailed comments see Appendix F.)

Project number 12, Federal Laboratory Interaction with Trade Associations (Mid-Continent Region), was not included in the present survey because the trade association, Mining and Reclamation Council of America (MARC), declined to supply a list of its members who in this case were the users (see Appendix D). However, the conclusion reached in the final report of that project states that the most efficient means of communication with a trade association are special mailings and newsletters. The need for timeliness of the technical information indicated that both these vehicles are necessary for greatest effectiveness.

RECOMMENDATIONS

Recommendations for the efficient and effective transfer of federal technology are made on the basis of the results of this present study and information gleaned from the literature. It is not only important to identify methods of transfer but also to understand barriers to effective transfer which may arise or factors which may influence the efficiency of those methods.

Dr. David Lingwood (1975), Center for the Utilization of Scientific Knowledge, University of Michigan, cites several problem areas in relation to the transfer and application of technology. The first of these is the reward problem. Efforts to get

research applied are not only not rewarded many times, but may in the eyes of their superiors be a detriment to those involved. Until this activity becomes sanctioned by directors of research facilities, the full value and potential of this process will not be realized.

Turn-around time is another important criterion. At least one respondent considered this factor less than adequate in his experience with the FLC. It is obvious that these problems and recommendations are related and may be interdependent. As the reward system improves (seemingly a perfect reason for implementing PL96-480), the turn-around time is also likely to improve.

More aggressive promotion of FLC's technology transfer services needs to be implemented. This promotion should be focused on both the public and private sectors. Experience of past efforts shows newsletters, special mailings, and conferences to be the most effective means by which to cover a wide audience.

Lingwood (1975) feels that the problem of the "R&D to client ratio" indicates the need for linkers and person multipliers. The ratio is very large. He says "something needs to be put into the middle. We have all learned that people make better people multipliers than impersonal media..."

Creighton et al.(1972) say that those linkers do not necessarily have to be additional persons or groups from the outside but can be a mechanism incorporated in either the supplier group or user group. This recommendation was based on the necessity of having to develop a third organization to become the broker. However, if the brokerage network already exists (e.g. network of higher education institutions in each state; revitalization of the National Innovation Network) then the need for developing a special technology transfer mechanism within the user organization may not be as vital.

Either through user brokers or a central collection point, information on new technologies which have been developed in the laboratories and have been assessed as

having commercial potential, should be made available. This should include all the pertinent information a user would need in order to determine if this technology bears deeper investigation. If the user then proceeds to apply this new technology, the costs and conditions involved must be made known to the user to the extent possible.

When determining the commercial feasibility of a new technology Bass (1974) lists six criteria:

1. technical feasibility
2. manufacturing practicality
3. market potential
4. regulatory acceptability
5. economic justification
6. entrepreneurial attractiveness

Samuel Doctors (1969) states that even though there are numerous federal programs in existence to transfer technology, with the exception of the Department of Agriculture, not enough thought has gone into means of motivating the use of new technologies or providing for local level, interpersonal technology transfer. He further states, "The transfer of federal R&D results is a very difficult problem, requiring a change in attitude by both transferees and transferors."

Another problem Lingwood (1972) discusses and which has occurred within the FLC is the "musical chairs problem." Just as in any speciality, it takes time and experience to become adept at effectively transferring technology. If the agent (laboratory representative) turn-over rate is high, then a great deal of time goes into training but the benefit of that training may not be realized.

In dealing with the transfer of technology to state and local governments in particular, Lambright (1979), in his study of technology transfer to cities, concludes that technologies that are separable and incremental are not perceived as being as threatening as large-scale, costly technologies. Small-scale, cheap technologies can be abandoned if they don't work, or operate below expectations.

An additional area of difficulty regarding state/federal relations is "the lament by federal people concerned with innovation that local agencies are slow to adopt and use new technology" while the "cry from the localities" is that their problems are not understood by the federals. In turn, the states wonder if either Washington or the cities understand their pivotal position in the technology transfer process.

Bass (1974) also draws some general conclusions about the necessary conditions for successful transfer of technology.

1. Receptivity and competence of the beneficiary (user). The user must be completely favorable to the transfer and provide all necessary information about local requirements which may effect its applications, and including the skills needed by the recipient.
2. Dedication of the transferer. The supplier or transferer of technology must provide all the necessary information pertinent to the success of the effort. This was apparently a difficulty experienced in Project 8.
3. Mechanism of transfer. Congenial face-to-face interrelationship and close interaction between the source and recipient is important for effective transfer.
4. Agreement governing transfer. A contractual document should detail important aspects of the transfer including arbitration procedures.
5. Interim review. Periodic reviews should be established in order to avoid or correct short-falls.
6. Termination of transfer. Conditions for relieving the supplier of further responsibility should be established.

Kienzle et al.(1970) cite four chief methods of transferring technology and point out the pros and cons of each method. They are as follows:

1. Publications -- the best ways to disseminate new knowledge is through publication in periodicals and reports, however, the transfer period is estimated at from two to ten years.
2. Lectures -- Guest lectures, papers given at professional meetings or lectures to targeted groups is a second way of reaching a large audience. The transfer period in this case is one to three years.
3. Visits -- Visits by a researcher to industry or industry development personnel visiting laboratories, either in some type of exchange program or in a consulting agreement, is a third method of technology transfer. The transfer period is estimated at from six months to two years.
4. Courses -- Not to be confused with general training courses, this method of transferring technology includes brush-up courses, courses adapted to specific problems in an industry, and workshops with post-course visits. The transfer time ranges from a few days to one year.

In his conclusion, Kienzle et al.(1970) summarizes the findings as 1) the transfer of technology from research to industry is a joint effort in which both entities must be "attuned to a common language." 2) Personal discussion and mutual visits between the supplier and user is the best way to facilitate this understanding. 3) The best means of transferring research results vary according to the specific need. Both printed information and personal attention are important. 4) Industry must take a responsibility to remove the traditional fear of change and present an attitude of trust in research results.

Because the transfer of technology is important in both the private sector and public sector it is essential to recognize the differences in perception between the two. Peter House and David Jones (1976) cite four critical areas where these differences occur.

1. Role and Motivation. Private R&D businesses are market-responsive or market-disciplined. Government-sponsored R&D activities are, on the other hand, policy-responsive or mission-oriented.

2. Project Selection and Termination Criteria. Mission-oriented government agencies often feel that a project is complete when the feasibility of a technology within a particular mission area has been demonstrated. The private sector's standard of success is judged by the marketability of a product.

3. Client Relationships. Businesses generally tend to reduce risks by staying with service markets and clients with whom they have already established reputations. The public sector must please a wider spectrum of clientele which, because of conflicting pressures, can influence the outcome of a research project and can lead to "implementation failure."

4. Conduct of R&D. The strongest difference here is the decided disciplinary bias usually displayed within agency R&D as compared to the rather more interdisciplinary activities within private sector R&D.

In summary, six main areas should be considered when looking at methods of improving transfer:

1. Improve the reward system
2. Promote the transfer service more aggressively
3. Improve turn-around time
4. Make use of brokers
5. Provide pertinent information in a standard format on new technologies assessed to have commercial potential
6. Avoid frequent change of technology transfer agent

It is the hope of the Ohio Technology Transfer Organization that the information contained within this report will be useful to the Federal Laboratory Consortium in their endeavor to successfully promote the transfer of federally developed technology.

LITERATURE CITED

- Bass, L. W. 1974. Management aspects of technology transfer. In Manning, G.K. (Ed.) *technology transfer: successes and failures*. San Francisco Press, Inc., San Francisco, CA. p. 88-101.
- Creighton, J. W. Jolly, J. A., Denning, S. A. 1972. Enhancement of research and development output utilization efficiencies; linker concept methodology in the technology transfer process. Naval Postgraduate School, Monterey, CA. Report NPS-55CF72061A. 163 p.
- Doctors, S. I. 1969. The role of federal agencies in technology transfer. The M.I.T. press, Cambridge, Massachusetts. 230 p.
- House, P. W. and Jones, D. W. 1976. Getting it off the shelf: a methodology for implementing federal research. Westview Special Studies in Program Management. Westview Press, Boulder, CO. 282 p.
- Jolly, J. A., Creighton, J. W., and George, P. A. 1978. Technology transfer process model and annotated selected bibliography. Naval Postgraduate School, Monterey, CA. 72 p.
- Kienzle, O., Motten, A., Remmerswaal, J. L., Weill, R. 1970. The promotion of the relationship between research and industry in mechanical production. International Institution for Production Engineering Research (C.I.R.P.). Pergamon Press, London. 59 p.
- Lambright, W. H. 1979. Technology transfer to cities: processes of choice at the local level. Westview special studies in science, technology, and public policy. Westview Press, Boulder, Colorado. 188 p.
- Lingwood, D. A. 1975. A study of research utilization in the U.S. Forest Service. In Jolly, J. A. and Creighton, J. W. (Eds.). *Technology transfer in research and development*. Naval Postgraduate School, Monterey, CA . p. 37-48.

APPENDIX A
Questionnaire
Cover Letter
Definition of Terms

PREVIOUS PAGE
IS BLANK

QUESTIONNAIRE

Your Name: _____ Date: ___/___/___

Your Current Job Title: _____

Phone: ___ / ___ - ___

Affiliation: _____
(Name of firm or agency)

Address: _____

City State Zip Code

01. Is your current job title the same as you held during the above project?

_____ Yes

_____ No (If no, please indicate title and affiliation below)

02. Check (x) the type of organization with which you are affiliated.

1) _____ Federal Government Agency

2) _____ State Government Agency

3) _____ Municipal/Local Government Agency

4) _____ Private Business

5) _____ Trade/Industrial Association

6) _____ Academic Institution

7) _____ Other. Please explain.

03. How did you or someone else in your organization first learn about the FLC Technology Transfer activities?

- 1) _____ Through a newspaper article
 - 2) _____ Through a radio or television story
 - 3) _____ A personal contact was made by a Technology Transfer staff member
 - 4) _____ Through a friend or associate who told you about it
 - 5) _____ Through an association contact or newsletter (trade association, Chamber of Commerce, etc.)
 - 6) _____ Attended a conference, workshop, seminar
 - 7) _____ Other. Please explain.
-

04. Please check (x) the type of technology transfer interaction that your organization is/was involved in (check all that apply if more than one).

- 1) _____ The Technology Transfer Office or Agency assisted you in developing and presenting a proposal for funding support.
 - 2) _____ The Technology Transfer Office or Agency conducted a special study for your organization.
 - 3) _____ The Technology Transfer Office or Agency aided your organization in retrieving information stored in such data banks as EIES, NTIS, Dialog, etc.
 - 4) _____ Attended a conference, seminar or workshop in which technology transfer concepts, equipment, etc. were presented.
 - 5) _____ Received one-on-one technical assistance.
 - 6) _____ Was informed about special laboratory reports on studies which related to your organization's needs.
 - 7) _____ Was included in a mailing to receive specialized reports, newsletters, etc.
 - 8) _____ Was invited to participate in the implementation of a packaged program, technology, or computer system, etc.
 - 9) _____ Other. Please explain.
-

95. For what length of time did the Technology Transfer Coordinator work with you/your organization on the project?

- 1) _____ Still working with us, and has been for approximately _____ months.
- 2) _____ About 2 weeks or less
- 3) _____ Between 3 and 4 weeks
- 4) _____ About 2-3 months
- 5) _____ About 4-5 months
- 6) _____ About 6 months or more

96. Indicate the extent to which you feel that the above length of time is/was an adequate period to really be helpful to your organization.

- 1) _____ Definitely insufficient time
- 2) _____ Somewhat insufficient time
- 3) _____ Somewhat sufficient time
- 4) _____ Definitely sufficient time

97. During the life of the project, what was the most common method of interacting with the Technology Transfer Coordinator or his/her office?

- 1) _____ Face-to-face discussions
- 2) _____ Over the telephone
- 3) _____ By mail
- 4) _____ Computer conferencing
- 5) _____ Really a combination of the above methods (please list)

08. How frequently did these interactions occur?

- 1) _____ Practically every day
 - 2) _____ About 2 or 3 times a week
 - 3) _____ Around 3 or 4 times a month
 - 4) _____ Occasionally, as needed
 - 5) _____ Other. Please explain.
-

09. If you/your organization initiated the contact with the Technology Transfer Office, how soon did they respond?

- 1) _____ They initiated the contact with us
- 2) _____ Within one week
- 3) _____ About two weeks later
- 4) _____ About three weeks later
- 5) _____ About 4 weeks later or more

10. Indicate how satisfied you are with the promptness of the above response.

- 1) _____ Very dissatisfied
- 2) _____ Dissatisfied
- 3) _____ Neither satisfied nor dissatisfied
- 4) _____ Satisfied
- 5) _____ Very satisfied

Following are a number of statements which relate to Technology Transfer. Circle the number to the right of each statement which best reflects the extent of your agreement with each of the statements as they apply to you and your organization in the context of the project listed on Page 1.

| | <u>EXTENT OF YOUR AGREEMENT</u> | | | | |
|--|---------------------------------|-----------------|-----------------------------------|--------------|-----------------------|
| | <u>Strongly Disagree</u> | <u>Disagree</u> | <u>Neither Agree nor Disagree</u> | <u>Agree</u> | <u>Strongly Agree</u> |
| 11. Our organization has been able to implement the technology transfer which was made. | 1 | 2 | 3 | 4 | 5 |
| 12. The technology transfer has had a very positive impact upon the efficiency/smoothness of our operations. | 1 | 2 | 3 | 4 | 5 |
| 13. The technology transfer has aided us to date in saving a large amount of dollars. | 1 | 2 | 3 | 4 | 5 |
| 14. The technology transfer has expanded employment opportunities in our organization. | 1 | 2 | 3 | 4 | 5 |
| 15. The technology transfer has reduced the number of employees in our organization. | 1 | 2 | 3 | 4 | 5 |
| 16. The Technology Transfer Coordinator was very effective in listening to and identifying our needs. | 1 | 2 | 3 | 4 | 5 |
| 17. The Technology Transfer Coordinator provided linkage with the appropriate Technical Specialist. | 1 | 2 | 3 | 4 | 5 |
| 18. The Technology Transfer Coordinator is/was an effective go-between throughout the duration of the project. | 1 | 2 | 3 | 4 | 5 |

| | <u>Strongly Disagree</u> | <u>Disagree</u> | <u>Neither Agree nor Disagree</u> | <u>Agree</u> | <u>Strongly Agree</u> |
|--|--------------------------|-----------------|-----------------------------------|--------------|-----------------------|
| 19. The Technical Specialist with whom we worked was very knowledgeable, i.e., knew what he/she was talking about. | 1 | 2 | 3 | 4 | 5 |
| 20. The Technical Specialist was a very effective listener, e.g., patiently tried to understand what our problem was. | 1 | 2 | 3 | 4 | 5 |
| 21. The Technical Specialist was a very effective "translator", e.g., explaining the solution to us and making sure we understood the project. | 1 | 2 | 3 | 4 | 5 |
| 22. The Technical Specialist is/was a joy to work with; has a very positive attitude and is most personable. | 1 | 2 | 3 | 4 | 5 |
| 23. The Technical Specialist really persevered; dug in on problems and did not give up easily. | 1 | 2 | 3 | 4 | 5 |
| 24. The amount and number of times the Technical Specialist was willing to meet with us and address our needs was very sufficient. | 1 | 2 | 3 | 4 | 5 |
| 25. Based upon our experience with this Technology Transfer project, we definitely would be willing to approach the Technology Transfer Office again for assistance if we had a problem or question. | 1 | 2 | 3 | 4 | 5 |

26. Has an evaluation or assessment of the Technology Transfer Project been conducted with you or your organization by the Technology Transfer Coordinator or his/her agency?

_____ Yes (Go to Question 27)

_____ No (Go to Question 30)

27. How was the evaluation conducted? Check (x) each statement that applies.

1) _____ Through a personal, face-to-face interview

2) _____ Through a telephone interview

3) _____ We completed a questionnaire and mailed it back

4) _____ Representatives from the Technology Transfer Office made a site visit to our organization and examined relevant records, tested the equipment, etc.

5) _____ Other. Please explain.

28. In your opinion, how thorough was the evaluation which was conducted?

1) _____ Not very thorough; quite superficial

2) _____ About average

3) _____ Very comprehensive and thorough

29. How helpful or informative was the evaluation report to you?

1) _____ Did not receive a copy of the report

2) _____ Received a copy but it was not very helpful

3) _____ It was moderately helpful

4) _____ It was very helpful

30. In the space below (add sheets if you wish), please feel free to provide additional comments and suggestions which can enhance the effectiveness of technology transfer from your perspective.

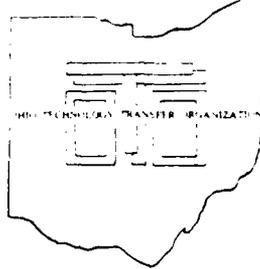
You have my permission to list my name and my organization in an Appendix to your report.

Yes No

THANKS FOR YOUR COOPERATION!

Founded by the Ohio Board of Regents

(614) 422-5485



to serve the needs of business and industry

OTTO/OSU
 The Ohio State University
 1712 Neil Avenue
 Columbus, Ohio 43210
 April 14, 1981

Dear :

The Ohio Technology Transfer Organization in cooperation with the Federal Laboratory Consortium is currently studying actual cases of technology transfer through both FLC demonstration projects and individual laboratories. Our objective is to determine the most effective ways to facilitate such transfers to both public and private sector users.

Your organization has been identified as having been a recipient of technology transfer from the federal laboratories. We are very interested in your experiences. Any suggestions that you may wish to offer in order to enhance such experiences for yourself and others in the future are, of course, most welcome.

Would you please share about 10 minutes of your time? Complete the attached Questionnaire and return in the stamped, self-addressed envelope which is included. There may be others in your organization who are equally knowledgeable about your technology transfer experiment. Their views may differ or be similar to yours. In any case, feel free to duplicate copies of this Questionnaire, invite them to complete and forward it to us. Or, if you prefer, contact me at (614) 422-5485 and I'll send you extra copies. Should you want or need any elaboration on any of the questions, please call.

Thank you for your cooperation in this project. If possible, please return the completed Questionnaire by May 15, 1981, or sooner.

Sincerely,

Patricia B. Herdendorf
 Administrator
 Ohio Technology Transfer Organization

PBH:bls
 Enclosures

DEFINITIONS OF CENTRAL TERMS

These may vary across the nation, but are offered below to provide a common frame of reference.

Technology Transfer Project:

Any information or assistance provided as a result of interaction between your organization and a federal laboratory.

Technology Transfer Office or Agency:

Any federal laboratory through which technical information or assistance is available.

User:

Any individual/organization within the private sector (business and industry) or public sector (state and local government) that can benefit from applied technologies resulting from federal research and development.

Technology Transfer Coordinator:

Any individual representing a Technology Transfer Office or Agency serving as a broker or liaison agent between the Office or Agency and User group.

Technical Specialist:

Any individual providing direct information or expertise, relative to a Technology Transfer Project, to a User group. This person may be the Technology Transfer Coordinator who may also act in the role or it may be an additional person such as a bench scientist, behavioral specialist, or computer information specialist, etc.

APPENDIX B
Project Summaries

Project 1: The Beaverton Reservoir Project -- Far West Region

Beaverton officials bought an expensive rubberized fabric cover for their water reservoir that had an expected life span of 15 years, provided it was coated with a special paint at regular intervals. A problem arose when the paint caused the water to develop an offensive odor. The FLC, contacted by Beaverton officials, sent samples of the paint and cover to Lawrence Livermore National Laboratory which discovered that benzene from the paint diffused through the cover, and the permeation rate was temperature-dependent. Using the original paint, but working primarily at night, Beaverton officials managed to solve the odor problem while still protecting the cover.
(1 response)

Project 2: Private Sector Technology Transfer -- Far West Region

The Federal Laboratory Consortium saw a need for an active technology transfer program based on a one-to-one linkage with the private sector. The first trial was in Santa Clara and was sponsored by the Santa Clara Chamber of Commerce. The task force consisted of representatives from the Santa Clara business community, the Southwest Innovation Group, and the City of Santa Clara. The Chamber representatives provided interaction between the representatives of business and of the FLC. The proposed technology transfer service was featured in the Chamber's "Industrial Newsletter" and was the topic for the Chamber's Industrial Seminar. Since its initiation in 1978 the project has been in operation with mixed results. Specific requests have produced excellent results, but it has been unable to develop a sustained increase in user demand, a characteristic considered essential for success.
(2 responses)

Project 3: Federal Laboratory Consortium and Federal Regional Council Interface -- Mid Atlantic Region

The Mid-Atlantic Region, Federal Laboratory Consortium for Technology Transfer, and the Region III, Federal Regional Council, have been meeting to explore projects of mutual interest and, in particular, to enhance the use of federal R&D laboratories and centers in providing technical assistance to state and local, public and private agencies. Specific joint efforts have been identified and initiated. These include a regional information retrieval system to improve the quality and responsiveness of technical information and assistance; a regional technology and business opportunity conference; and workshop meetings with regional federal agency offices to promote interagency technical cooperation.

Costs of the planning meetings and workshops are being covered by each participating agency. (1 response)

Project 4: EPA Hazardous Waste Technology Assistance Program -- Mid Atlantic Region

In response to a request from the Environmental Protection Agency, Region III Office, the Mid-Atlantic Region, Federal Laboratory Consortium for Technology Transfer and NAVAIRDEVCON are assisting in (1) locating the technical resources, facilities and expertise in the federal R&D laboratories and centers to test and identify organic compounds, including toxic and hazardous wastes, for potential use in emergency situations, (2) identifying new technology to assist in locating potential waste dump sites by remote sensing, and (3) emergency field investigations. (1 response)

Project 5: Technology and Business Opportunities
Conference (TBOC) -- Mid Atlantic Region

A conference was held in Philadelphia to present to the Mid-Atlantic Region's business and industry community the range of technology transfer and assistance programs to stimulate development. Representatives from 72 federal, state, and local agencies, prime contractors, and universities provided counseling, exhibits, and discussion panels for the 400 attendees. The evaluation by the attendees was overwhelmingly positive. It was considered an excellent opportunity to make contacts. Attendees wanted more private counseling and "energy" products. The exhibitors also evaluated the conference positively and recommended attendance at a similar conference. The organizers stressed the need for extensive publicity. (3 responses)

Project 6: DELMARVA Library Consortium -- Mid Atlantic Region

The purposes of this project were to use libraries in the DELMARVA area to distribute technical information of current value to their constituency across the region, to advertise available DTIG (DELMARVA Technology Innovation Group) technology brokerage services, and to solicit initial inquiries for DTIG. The consortium of 18 libraries was formalized in the organization DLC (DELMARVA Library Consortium). The FLC can use the DLC as an outreach mechanism to serve geographically dispersed businesses, towns, and citizens through an existing regional library network. The FLC-DLC interaction was to consist of four steps: 1) The FLC resources had to be put into a form usable to non-technical librarians; 2) Criteria to determine which inquiries were appropriate for referral to FLC would be developed; 3) The transposed resources and criteria would be incorporated in a manual; 4) Brochures about the program and user questionnaires for advertising and value assessment would be designed and distributed by the DLC. The project appears to be successful despite a delay caused by disagreement regarding the organizational and formal purpose of DLC. (2 responses)

Project 7: Establishing Science and Technology Linkages --Northeast Region

The purpose of this Northeast Regional project was to formally establish linkages in Connecticut and Rhode Island through the process of network-building among different categories of groups. These include the New England Innovation Group, local governments, state governments, community colleges, and others. The object was to form a system of "arteries and capillaries" through which information can be accessed and disseminated. (6 responses)

Project 8: Computerized Personnel Management Information System -- Far West Region

The FLC was to assist the City of San Diego in obtaining and using the CODAP (Computerized Occupational Data Analysis Program). San Diego decided not to proceed with the CODAP project. There was a study of the clerical occupational field, but the city wanted to change the focus to engineering, thereby changing the completion date. The decision to stop work on the project was unilateral and based on the insufficient available staff and the high cost of computer time. The project director and the Navy representative both disagreed with the decision. (1 response)

Project 9: Science Advisory to a County -- Southeast Region

FLC representatives were to help establish the function and role of a science advisor, and determine whether a union between the FLC and county administrators was of value. One representative met with negative results, while the other assisted in three projects: 1) furnishing criteria and specifications for solar heating of a senior citizen center; 2) information on electric vehicles for county use; 3) development of an optimum refuse routing collection system for five county areas -- a demonstration project with Florida Innovations Group. There was not enough interaction, but the program was to continue for six more months before a final evaluation. It would try to establish more formal, lasting linkages. (2 responses)

Project 10: Improved Refuse Collection Routing -- Southeast Region

The Florida Innovations Group proposed this project to provide more economical refuse collecting through improved routing and scheduling. Improved routing provides the "shortest path," lowering fuel and maintenance costs. Improved scheduling reduces crew sizes, lowering labor costs. Truck load capacities versus area refuse output would be optimized, reducing the number of trips needed. Improved customer services would result. (1 response)

Project 11: Project Outreach -- Southeast Region

Project Outreach makes use of three broker groups to reach the grass roots users of technology: the local chamber of commerce; the state innovation group; and the state, municipal, and county league meetings. The evaluation stressed that the FLC must work through established broker groups to market technologies; single purpose workshops and technology utilization projects get better results and applications than "shotgun" tactics; broker groups must identify needs, scope problems, and synthesize technologies for local applications; and the Outreach project is succeeding in identifying techniques and methods for supplying assistance to users. The project will continue to work for two years. (2 responses)

Project 12: Laboratory Interaction with Trade Associations -- Mid Continent Regions

This was a joint project between the Mining and Reclamation Council of America (MARC) and Los Alamos Scientific Laboratory. MARC developed a list of research needs of its members. When technologies were developed in the labs which were relevant to those needs, reports were submitted for review and distributed to the MARC membership via magazines, a newsletter, and special mailings (example: coal related R&D reports).

Project 12 (continued)

A survey of randomly selected companies was performed to determine the effectiveness of the technology transfer process. Twenty companies were surveyed. The conclusion was that this method was most effective if the material is presented in a short, concise form that is easily scanned.

APPENDIX C
Survey Participants

The following persons have given permission to use their names and addresses as participants in this survey.

Mr. Frank J. Bagen, Jr.
Executive Vice President
Bay County Chamber of Commerce
P.O. Box 1850
Panama City, FL 32401

Mr. Edwin A. Bethea
Director, Research Scientist
Technology Utilization & Commercialization Center
Engineering Experiment Station,
Economic Development Laboratory
Georgia Institute of Technology
Atlanta, GA 30332

Mr. Ed Button
Conn Dot
P.O. Drawer A
Wethersfield, CT 06109

Mr. Joseph G. Caffey
Staff Director, Federal Regional Council
Mid-Atlantic Federal Regional Council
Curtis Building, Rm. 922
6th and Walnut Streets
Philadelphia, PA 19106

Dr. Charles E. Dougan
Director of Research, Bureau of Planning
and Research
Connecticut Department of Transportation
P.O. Drawer A
Wethersfield, CT 06109

Mr. Leonard Elenowitz
Director, Federal Relations
Maryland Department of Economic
and Community Development
2525 Riva Road
Annapolis, MD 21401

Mr. B. Harold Farmer
Director, Florida Innovation Group
P.O. Box 16000YJ
Tampa, FL 33687



Mr. Arthur A. Gangell
Operations Office Manager
City of Groton, Department of Utilities
295 Meridian Street
Groton, CT 06340

Mr. Arthur H. Goetz
Administrator
Wicomico County Free Library
P.O. Box 951
Salisbury, MD 21801

Mr. William E. Hanna, Jr.
Mayor
City of Rockville
111 Maryland Avenue
Rockville, MD 20850

Mr. David Hargreaves
Property Control Officer
City of Hartford, Finance Department
550 Main Street
Hartford, CT 06103

Mr. Kevin Hathaway
President, Mesophase, Inc.
P.O. Box 3204
Standord, CA 94305

Ms. Martha F. Miser
Chief Management Analyst
Operations Improvement
Management Services
55 Main Street
Hartford, CT 06106

Mr. John C. Painter
Head Librarian
Delaware Technical and Community College
Route 18
Georgetown, DE 19947

Mr. Bryant G. Pake
Resource Applications Manager
New England Innovation Group
251 Main Street
Berlin, NH 03570

Mr. D.F. Parham, Sr.
Building Official
Escambia County Board of County Commissioners
1700 North "E" Street
Pensacola, FL 32501

Mr. Richard D. Rabon
Project Coordinator
Escambia County, Department of Utilities
P.O. Box 3388
Pensacola, FL 32506

Mr. Rich Snapper
Personnel Director
City of San Diego, Civil Service Commission
202 "C" Street, City Administration Building
San Diego, CA 92101

Mr. Pat Teague
City Administrator
City of Beaverton
4950 S.W. Hall Blvd.
Beaverton, OR 97005

APPENDIX D
Letter from MARC



Mining and Reclamation Council of America

Suite 525 • 1575 Eye Street, N.W. • Washington, D.C. 20005 • (202) 789-0220

G. B. FREDERICK
Chairman of the Board

BEN E. LUSK
President

Ms. Patricia B. Herdendorf
OSU/OTTO
Ohio State University
1712 Neil Ave.
Columbus, OH 43210

May 20, 1981

Dear Pat:

As per your request please find enclosed a copy of our final report on the "Demonstration Project on Federal Laboratory Interaction with Trade Associations".

I apologize that I cannot make MARC members available for your project, however if there comes a time in the future where we may be of assistance please contact me. In addition, please feel free to send us a copy of your results, if you think that it may be of interest to our membership, and we will consider running an article in our fortnightly newsletter, Coal Now.

Thank you again for your interest. I look forward to hearing from you sometime in the future.

Sincerely yours,


Lauri L. Myers
Manager, Technical & Research Services

enclosure

APPENDIX E
Responses to Individual Projects

PREVIOUS PAGE
IS BLANK

PROJECT 1: Beaverton Reservoir Project (1 Response)

03. How did you or someone else in your organization first learn about the FLC Technology Transfer activities?

A personal contact was made by a Technology Transfer staff member

Attended a conference, workshop, seminar

04. Please check the type of technology transfer interaction that your organization is/was involved in (check all that apply if more than one).

The Technology Transfer Office or Agency conducted a special study for your organization.

Attended a conference, seminar or workshop in which technology transfer concepts, equipment, etc. were presented.

Was informed about special laboratory reports on studies which related to your organization's needs.

05. For what length of time did the Technology Transfer Coordinator work with you/your organization on the project?

About 2-3 months

06. Indicate the extent to which you feel that the above length of time is/was an adequate period to really be helpful to your organization.

Somewhat sufficient time

07. During the life of the project, what was the most common method of interacting with the Technology Transfer Coordinator or his/her office?

Over the telephone

By mail

08. How frequently did these interactions occur?

Around 3 or 4 times a month

09. If you/your organization initiated the contact with the Technology Transfer Office, how soon did they respond?
Within one week
10. Indicate how satisfied you are with the promptness of the above response.
Satisfied
11. Our organization has been able to implement the technology transfer which was made.
Agree
12. The technology transfer has had a very positive impact upon the efficiency/smoothness of our operations.
Agree
13. The technology transfer has aided us to date in saving a large amount of dollars.
Neither Agree Nor Disagree
14. *The technology transfer has expanded employment opportunities in our organization.*
Strongly Disagree
15. The technology transfer has reduced the number of employees in our organization.
Strongly Disagree
16. The Technology Transfer Coordinator was very effective in listening to and identifying our needs.
Strongly Agree
17. The Technology Transfer Coordinator provided linkage with the appropriate Technical Specialist.
Strongly Agree
18. The Technology Transfer Coordinator is/was an effective go-between throughout the duration of the project.
Strongly Agree
19. The Technical Specialist with whom we worked was very knowledgeable, i.e., knew what he/she was talking about.
Strongly Agree

20. The Technical Specialist was a very effective listener, e.g., patiently tried to understand what our problem was.

Strongly Agree

21. The Technical Specialist was a very effective "translator", e.g., explaining the solution to us and making sure we understood the project.

Agree

22. The Technical Specialist is/was a joy to work with; has a very positive attitude and is most personable.

Agree

23. The Technical Specialist really persevered; dug in on problems and did not give up easily.

Strongly Agree

24. The amount and number of times the Technical Specialist was willing to meet with us and address our needs was very sufficient.

Agree

25. *Based upon our experience with this Technology Transfer project, we definitely would be willing to approach the Technology Transfer Office again for assistance if anyone has a problem or question.*

Strongly Agree

26. Has an evaluation or assessment of the Technology Transfer Project been conducted with you or your organization by the Technology Transfer Coordinator or his/her agency?

Yes

27. How was the evaluation conducted?

Through a telephone interview

28. In your opinion, how thorough was the evaluation which was conducted?

About average

29. How helpful or informative was the evaluation report to you?

It was very helpful

PROJECT 2: Private Sector Technology Transfer (2 Responses)

03. How did you or someone else in your organization first learn about the FLC Technology Transfer activities?

A personal contact was made by a Technology Transfer staff member

Attended a conference, workshop, seminar

04. Please check the type of technology transfer interaction that your organization is/was involved in (check all that apply if more than one).

The Technology Transfer Office or Agency aided your organization in retrieving information stored in such data banks as EIES, NTIS, Dialog, etc. (2)

Was informed about special laboratory reports on studies which related to your organization's needs.

05. For what length of time did the Technology Transfer Coordinator work with you/your organization on the project?

Between 3 and 4 weeks

About 2-3 months

06. Indicate the extent to which you feel that the above length of time is/was an adequate period to really be helpful to your organization.

Somewhat insufficient time

Somewhat sufficient time

07. During the life of the project, what was the most common method of interacting with the Technology Transfer Coordinator or his/her office?

Over the telephone (2)

08. How frequently did these interactions occur?

Around 3 or 4 times a month

Occasionally, as needed

09. If you/your organization initiated the contact with the Technology Transfer Office, how soon did they respond?

Within one week

About two weeks later

10. Indicate how satisfied you are with the promptness of the above response.
- Satisfied
 - Very satisfied
11. Our organization has been able to implement the technology transfer which was made.
- Disagree
 - Neither Agree Nor Disagree
12. The technology transfer has had a very positive impact upon the efficiency/smoothness of our operations.
- Disagree
 - Neither Agree Nor Disagree
13. The technology transfer has aided us to date in saving a large amount of dollars.
- Neither Agree Nor Disagree (2)
14. The technology transfer has expanded employment opportunities in our organization.
- Strongly Disagree
 - Neither Agree Nor Disagree
15. The technology transfer has reduced the number of employees in our organization.
- Strongly Disagree
 - Disagree
16. The Technology Transfer Coordinator was very effective in listening to and identifying our needs.
- Neither Agree Nor Disagree
 - Strongly Agree

17. The Technology Transfer Coordinator provided linkage with the appropriate Technical Specialist.
- Neither Agree nor Disagree
- Strongly Agree
18. The Technology Transfer Coordinator is/was an effective go-between throughout the duration of the project.
- Neither Agree nor Disagree (2)
19. The Technical Specialist with whom we worked was very knowledgeable, i.e., knew what he/she was talking about.
- Neither Agree nor Disagree
- Strongly Agree
20. The Technical Specialist was a very effective listener, e.g., patiently tried to understand what our problem was.
- Neither Agree nor Disagree
- Strongly Agree
21. The Technical Specialist was a very effective "translator", e.g., explaining the solution to us and making sure we understood the project.
- Neither Agree nor Disagree (2)
22. The Technical Specialist is/was a joy to work with; has a very positive attitude and is most personable.
- Neither Agree nor Disagree
- Strongly Agree
23. The Technical Specialist really persevered; dug in on problems and did not give up easily.
- Neither Agree Nor Disagree
- Strongly Agree
24. The amount and number of times the Technical Specialist was willing to meet with us and address our needs was very sufficient.
- Neither Agree nor Disagree
- Strongly Agree

25. Based upon our experience with this Technology Transfer project, we definitely would be willing to approach the Technology Transfer Office again for assistance if anyone has a problem or question.

Neither Agree nor Disagree

Strongly Agree

26. Has an evaluation or assessment of the Technology Transfer Project been conducted with you or your organization by the Technology Transfer Coordinator or his/her agency?

No (2)

PROJECT 3: Federal Regional Council Activities (1 Response)

03. How did you or someone else in your organization first learn about the FLC Technology Transfer activities?

A personal contact was made by a Technology Transfer staff member

04. Please check the type of technology transfer interaction that your organization is/was involved in (check all that apply if more than one).

The Technology Transfer Office or Agency aided your organization in retrieving information stored in such data banks as EIES, NTIS, Dialog, etc.

Attended a conference, seminar or workshop in which technology transfer concepts, equipment, etc. were presented.

05. For what length of time did the Technology Transfer Coordinator work with you/your organization on the project?

Still working with us

06. Indicate the extent to which you feel that the above length of time is/was an adequate period to really be helpful to your organization.

Definitely sufficient time

07. During the life of the project, what was the most common method of interacting with the Technology Transfer Coordinator or his/her office?

Over the telephone

08. How frequently did these interactions occur?

Occasionally, as needed

09. If you/your organization initiated the contact with the Technology Transfer Office, how soon did they respond?

Within one week

10. Indicate how satisfied you are with the promptness of the above response.

Very satisfied

11. Our organization has been able to implement the technology transfer which was made.

Agree

12. The technology transfer has had a very positive impact upon the efficiency/smoothness of our operations.

Agree

13. The technology transfer has aided us to date in saving a large amount of dollars.

Neither Agree Nor Disagree

14. The technology transfer has expanded employment opportunities in our organization.

Disagree

15. The technology transfer has reduced the number of employees in our organization.

Disagree

16. The Technology Transfer Coordinator was very effective in listening to and identifying our needs.

Agree

17. The Technology Transfer Coordinator provided linkage with the appropriate Technical Specialist.

Agree

18. The Technology Transfer Coordinator is/was an effective go-between throughout the duration of the project.

Agree

19. The Technical Specialist with whom we worked was very knowledgeable, i.e., knew what he/she was talking about.

Agree

20. The Technical Specialist was a very effective listener, e.g., patiently tried to understand what our problem was.

Agree

21. The Technical Specialist was a very effective "translator", e.g., explaining the solution to us and making sure we understood the project.

Agree

22. The Technical Specialist is/was a joy to work with; has a very positive attitude and is most personable.

Agree

23. The Technical Specialist really persevered; dug in on problems and did not give up easily.

Agree

24. The amount and number of times the Technical Specialist was willing to meet with us and address our needs was very sufficient.

Agree

25. Based upon our experience with this Technology Transfer project, we definitely would be willing to approach the Technology Transfer Office again for assistance if anyone has a problem or question.

Agree

26. Has an evaluation or assessment of the Technology Transfer Project been conducted with you or your organization by the Technology Transfer Coordinator or his/her agency?

No

PROJECT 4: EPA Hazardous Waste Program (I Response)

03. How did you or someone else in your organization first learn about the FLC Technology Transfer activities?

A personal contact was made by a Technology Transfer staff member

04. Please check the type of technology transfer interaction that your organization is/was involved in (check all that apply if more than one).

The Technology Transfer Office or Agency conducted a special study for your organization.

Received one-on-one technical assistance.

Other. Identified new equipment available; provided consulting type service advice in specialized areas.

05. For what length of time did the Technology Transfer Coordinator work with you/your organization on the project?

Still working with us

06. Indicate the extent to which you feel that the above length of time is/was an adequate period to really be helpful to your organization.

Somewhat sufficient time

07. During the life of the project, what was the most common method of interacting with the Technology Transfer Coordinator or his/her office?

Face-to-face discussions

Over the telephone

By mail

08. How frequently did these interactions occur?

Occasionally, as needed

09. If you/your organization initiated the contact with the Technology Transfer Office, how soon did they respond?

Within one week

10. Indicate how satisfied you are with the promptness of the above response.

Very satisfied

11. Our organization has been able to implement the technology transfer which was made.

Strongly Agree

12. The technology transfer has had a very positive impact upon the efficiency/smoothness of our operations.

Neither Agree nor Disagree (too soon)

13. The technology transfer has aided us to date in saving a large amount of dollars.

Neither Agree nor Disagree

14. The technology transfer has expanded employment opportunities in our organization.

Disagree

15. The technology transfer has reduced the number of employees in our organization.

Disagree

16. The Technology Transfer Coordinator was very effective in listening to and identifying our needs.

Agree

17. The Technology Transfer Coordinator provided linkage with the appropriate Technical Specialist.

Strongly Agree

18. The Technology Transfer Coordinator is/was an effective go-between throughout the duration of the project.

Strongly Agree

19. The Technical Specialist with whom we worked was very knowledgeable, i.e., knew what he/she was talking about.

Agree

20. The Technical Specialist was a very effective listener, e.g., patiently tried to understand what our problem was.

Agree

21. The Technical Specialist was a very effective "translator", e.g., explaining the solution to us and making sure we understood the project.

Agree

22. The Technical Specialist is/was a joy to work with; has a very positive attitude and is most personable.

Neither Agree nor Disagree (unknown)

23. The Technical Specialist really persevered; dug in on problems and did not give up easily.

Agree

24. The amount and number of times the Technical Specialist was willing to meet with us and address our needs was very sufficient.

Agree

25. Based upon our experience with this Technology Transfer project, we definitely would be willing to approach the Technology Transfer Office again for assistance if anyone has a problem or question.

Strongly Agree

26. Has an evaluation or assessment of the Technology Transfer Project been conducted with you or your organization by the Technology Transfer Coordinator or his/her agency?

No

PROJECT 5: Technology and Business Opportunities Conference (3 Responses)

03. How did you or someone else in your organization first learn about the FLC Technology Transfer activities?
- Through a friend or associate who told you about it (2)
 - Through an association contact or newsletter (trade association, Chamber of Commerce, etc.)
04. Please check the type of technology transfer interaction that your organization is/was involved in (check all that apply if more than one).
- The Technology Transfer Office or Agency assisted you in developing and presenting a proposal for funding support.
 - The Technology Transfer Office or Agency conducted a special study for your organization.
 - Attended a conference, seminar or workshop in which technology transfer concepts, equipment, etc. were presented. (3)
 - Received one-on-one technical assistance.
 - Was included in a mailing to receive specialized reports, newsletters, etc.
05. For what length of time did the Technology Transfer Coordinator work with you/your organization on the project?
- Still working with us, and has been for approximately (2) (12) months.
 - About 4-5 months
06. Indicate the extent to which you feel that the above length of time is/was an adequate period to really be helpful to your organization.
- Definitely sufficient time (3)
07. During the life of the project, what was the most common method of interacting with the Technology Transfer Coordinator or his/her office?
- Face-to-face discussions (3)
 - Over the telephone (2)
 - By mail (2)

08. How frequently did these interactions occur?
- Around 3 or 4 times a month
 - Occasionally, as needed
 - Other. Every 2-3 weeks
09. If you/your organization initiated the contact with the Technology Transfer Office, how soon did they respond?
- Within one week (3)
10. Indicate how satisfied you are with the promptness of the above response.
- Satisfied
 - Very satisfied (2)
11. Our organization has been able to implement the technology transfer which was made.
- Neither Agree Nor Disagree (2)
 - Agree
12. The technology transfer has had a very positive impact upon the efficiency/smoothness of our operations.
- Neither Agree Nor Disagree (2)
 - Agree
13. The technology transfer has aided us to date in saving a large amount of dollars.
- Neither Agree Nor Disagree
 - Agree (2)
14. The technology transfer has expanded employment opportunities in our organization.
- Strongly Disagree
 - Disagree
 - Neither Agree nor Disagree

15. The technology transfer has reduced the number of employees in our organization.
- Strongly Disagree
- Neither Agree nor Disagree
- Agree
16. The Technology Transfer Coordinator was very effective in listening to and identifying our needs.
- Neither Agree nor Disagree
- Agree
- Strongly Agree
17. The Technology Transfer Coordinator provided linkage with the appropriate Technical Specialist.
- Agree (2)
- Strongly Agree
18. The Technology Transfer Coordinator is/was an effective go-between throughout the duration of the project.
- Agree (2)
- Strongly Agree
19. The Technical Specialist with whom we worked was very knowledgeable, i.e., knew what he/she was talking about.
- Neither Agree nor Disagree
- Agree
- Strongly Agree
20. The Technical Specialist was a very effective listener, e.g., patiently tried to understand what our problem was.
- Neither Agree nor Disagree
- Agree
- Strongly Agree

21. The Technical Specialist was a very effective "translator", e.g., explaining the solution to us and making sure we understood the project.
- Neither Agree nor Disagree
 - Agree
 - Strongly Agree
22. The Technical Specialist is/was a joy to work with; has a very positive attitude and is most personable.
- Agree (2)
 - Strongly Agree
23. The Technical Specialist really persevered; dug in on problems and did not give up easily.
- Neither Agree nor Disagree
 - Agree
 - N/A
24. The amount and number of times the Technical Specialist was willing to meet with us and address our needs was very sufficient.
- Neither Agree nor Disagree
 - Agree
 - Strongly Agree
25. Based upon our experience with this Technology Transfer project, we definitely would be willing to approach the Technology Transfer Office again for assistance if anyone has a problem or question.
- Neither Agree nor Disagree
 - Agree
 - Strongly Agree
26. Has an evaluation or assessment of the Technology Transfer Project been conducted with you or your organization by the Technology Transfer Coordinator or his/her agency?
- Yes (2)
 - No

27. How was the evaluation conducted? Check each statement that applies.

Through a personal, face-to-face interview (2)

28. In your opinion, how thorough was the evaluation which was conducted?

About average (2)

29. How helpful or informative was the evaluation report to you?

It was moderately helpful

It was very helpful

PROJECT 6: DELMARVA Library Consortium (2 Responses)

03. How did you or someone else in your organization first learn about the FLC Technology Transfer activities?

A personal contact was made by a Technology Transfer staff member (2)

04. Please check the type of technology transfer interaction that your organization is/was involved in (check all that apply if more than one).

The Technology Transfer Office or Agency conducted a special study for your organization.

Attended a conference, seminar or workshop in which technology transfer concepts, equipment, etc. were presented.

Received one-on-one technical assistance.

Was informed about special laboratory reports on studies which related to your organization's needs.

Was included in a mailing to receive specialized reports, newsletters, etc.

Was invited to participate in the implementation of a packaged program, technology, or computer system, etc.

05. For what length of time did the Technology Transfer Coordinator work with you/your organization on the project?

Still working with us, and has been for approximately 18 months.

06. Indicate the extent to which you feel that the above length of time is/was an adequate period to really be helpful to your organization.

Definitely sufficient time (2)

07. During the life of the project, what was the most common method of interacting with the Technology Transfer Coordinator or his/her office?

Face-to-face discussions (2)

Over the telephone (2)

By mail (2)

08. How frequently did these interactions occur?

Occasionally, as needed (2)

09. If you/your organization initiated the contact with the Technology Transfer Office, how soon did they respond?

They initiated the contact with us

Within one week

10. Indicate how satisfied you are with the promptness of the above response.

Very satisfied (2)

11. Our organization has been able to implement the technology transfer which was made.

Agree

Strongly Agree

12. The technology transfer has had a very positive impact upon the efficiency/smoothness of our operations.

Agree

Strongly Agree

13. The technology transfer has aided us to date in saving a large amount of dollars.

Neither Agree nor Disagree

Agree

14. The technology transfer has expanded employment opportunities in our organization.

Disagree

Neither Agree nor Disagree

15. The technology transfer has reduced the number of employees in our organization.

Disagree

Neither Agree nor Disagree

16. The Technology Transfer Coordinator was very effective in listening to and identifying our needs.
- Agree
Strongly Agree
17. The Technology Transfer Coordinator provided linkage with the appropriate Technical Specialist.
- Agree
Strongly Agree
18. The Technology Transfer Coordinator is/was an effective go-between throughout the duration of the project.
- Strongly Agree (2)
19. The Technical Specialist with whom we worked was very knowledgeable, i.e., knew what he/she was talking about.
- Strongly Agree (2)
20. The Technical Specialist was a very effective listener, e.g., patiently tried to understand what our problem was.
- Agree
Strongly Agree
21. The Technical Specialist was a very effective "translator", e.g., explaining the solution to us and making sure we understood the project.
- Agree
Strongly Agree
22. The Technical Specialist is/was a joy to work with; has a very positive attitude and is most personable.
- Agree
Strongly Agree
23. The Technical Specialist really persevered; dug in on problems and did not give up easily.
- Agree
Strongly Agree

24. The amount and number of times the Technical Specialist was willing to meet with us and address our needs was very sufficient.

Agree

Strongly Agree

25. Based upon our experience with this Technology Transfer project, we definitely would be willing to approach the Technology Transfer Office again for assistance if anyone has a problem or question.

Agree

Strongly Agree

26. Has an evaluation or assessment of the Technology Transfer Project been conducted with you or your organization by the Technology Transfer Coordinator or his/her agency?

No

PROJECT 7: Establishing Science and Technology Linkages (6 Responses)

03. How did you or someone else in your organization first learn about the FLC Technology Transfer activities?

A personal contact was made by a Technology Transfer staff member (2)

Through an association contact or newsletter (trade association, Chamber of Commerce, etc.) (4)

04. Please check the type of technology transfer interaction that your organization is/was involved in (check all that apply if more than one).

The Technology Transfer Office or Agency assisted you in developing and presenting a proposal for funding support. (2)

The Technology Transfer Office or Agency conducted a special study for your organization. (1)

The Technology Transfer Office or Agency aided your organization in retrieving information stored in such data banks as EIES, NTIS, Dialog, etc. (3)

Attended a conference, seminar or workshop in which technology transfer concepts, equipment, etc. were presented. (3)

Received one-on-one technical assistance. (3)

Was informed about special laboratory reports on studies which related to your organization's needs. (4)

Was included in a mailing to receive specialized reports, newsletters, etc. (5)

Was invited to participate in the implementation of a packaged program, technology, or computer system, etc. (3)

Other. Program just beginning

05. For what length of time did the Technology Transfer Coordinator work with you/your organization on the project?

Still working with us, and has been for approximately (6) (½) months.

About 2 weeks or less (3)

06. Indicate the extent to which you feel that the above length of time is/was an adequate period to really be helpful to your organization.

Definitely insufficient time (1)

Definitely sufficient time (5)

07. During the life of the project, what was the most common method of interacting with the Technology Transfer Coordinator or his/her office?

Face-to-face discussions (6)

Over the telephone (6)

By mail (2)

Computer conferencing (1)

08. How frequently did these interactions occur?

Practically every day (1)

Occasionally, as needed (4)

Other. Once

09. If you/your organization initiated the contact with the Technology Transfer Office, how soon did they respond?

They initiated the contact with us (2)

Within one week (3)

10. Indicate how satisfied you are with the promptness of the above response.

Satisfied (1)

Very satisfied (5)

11. Our organization has been able to implement the technology transfer which was made.
- Neither Agree nor Disagree (2)
 - Agree (2)
 - Strongly Agree (2)
12. The technology transfer has had a very positive impact upon the efficiency/smoothness of our operations.
- Neither Agree nor Disagree (4)
 - Strongly Agree (2)
13. The technology transfer has aided us to date in saving a large amount of dollars.
- Neither Agree nor Disagree (2)
 - Agree (3)
 - Strongly Agree (1)
14. The technology transfer has expanded employment opportunities in our organization.
- Disagree (3)
 - Neither Agree nor Disagree (2)
 - Strongly Agree (1)
15. The technology transfer has reduced the number of employees in our organization.
- Strongly Agree (2)
 - Neither Agree nor Disagree (3)
 - Agree (1)
16. The Technology Transfer Coordinator was very effective in listening to and identifying our needs.
- Neither Agree nor Disagree (1)
 - Strongly Agree (4)

17. The Technology Transfer Coordinator provided linkage with the appropriate Technical Specialist.
- Neither Agree nor Disagree (1)
 - Agree (2)
 - Strongly Agree (3)
18. The Technology Transfer Coordinator is/was an effective go-between throughout the duration of the project.
- Neither Agree nor Disagree (3)
 - Strongly Agree (3)
19. The Technical Specialist with whom we worked was very knowledgeable, i.e., knew what he/she was talking about.
- Neither Agree nor Disagree (1)
 - Agree (2)
 - Strongly Agree (3)
20. The Technical Specialist was a very effective listener, e.g., patiently tried to understand what our problem was.
- Neither Agree nor Disagree (1)
 - Agree (2)
 - Strongly Agree (3)
21. The Technical Specialist was a very effective "translator", e.g., explaining the solution to us and making sure we understood the project.
- Neither Agree nor Disagree (2)
 - Agree (2)
 - Strongly Agree (2)
22. The Technical Specialist is/was a joy to work with; has a very positive attitude and is most personable.
- Neither Agree nor Disagree (1)
 - Agree (2)
 - Strongly Agree (3)

23. Technical Specialist really persevered; dug in on problems and did not give up easily.
- Neither Agree nor Disagree (1)
 - Agree (3)
 - Strongly Agree (2)
24. The amount and number of times the Technical Specialist was willing to meet with us and address our needs was very sufficient.
- Neither Agree nor Disagree (2)
 - Agree (2)
 - Strongly Agree (2)
25. Based upon our experience with this Technology Transfer project, we definitely would be willing to approach the Technology Transfer Office again for assistance if anyone has a problem or question.
- Neither Agree nor Disagree (1)
 - Strongly Agree (5)
26. Has an evaluation or assessment of the Technology Transfer Project been conducted with you or your organization by the Technology Transfer Coordinator or his/her agency?
- Yes (3)
 - No (3)
27. How was the evaluation conducted? Check each statement that applies.
- We completed a questionnaire and mailed it back
 - Other. Data provided to organization for review
28. In your opinion, how thorough was the evaluation which was conducted?
- Very comprehensive and thorough (3)
29. How helpful or informative was the evaluation report to you?
- It was very helpful (3)

PROJECT 8: Computerized Personnel Management Information System (1 Response)

03. How did you or someone else in your organization first learn about the FLC Technology Transfer activities?

A personal contact was made by a Technology Transfer staff member

04. Please check the type of technology transfer interaction that your organization is/was involved in (check all that apply if more than one).

Was invited to participate in the implementation of a packaged program, technology, or computer system, etc.

05. For what length of time did the Technology Transfer Coordinator work with you/your organization on the project?

About 6 months or more

06. Indicate the extent to which you feel that the above length of time is/was an adequate period to really be helpful to your organization.

Definitely sufficient time

07. During the life of the project, what was the most common method of interacting with the Technology Transfer Coordinator or his/her office?

Face-to-face discussions

08. How frequently did these interactions occur?

Around 3 or 4 times a month

09. If you/your organization initiated the contact with the Technology Transfer Office, how soon did they respond?

They initiated the contact with us

10. Indicate how satisfied you are with the promptness of the above response.

Very satisfied

11. Our organization has been able to implement the technology transfer which was made.

Strongly Disagree

12. The technology transfer has had a very positive impact upon the efficiency/smoothness of our operations.

Strongly Disagree

13. The technology transfer has aided us to date in saving a large amount of dollars.

Strongly Disagree

14. The technology transfer has expanded employment opportunities in our organization.

Strongly Disagree

15. The technology transfer has reduced the number of employees in our organization.

Strongly Disagree

16. The Technology Transfer Coordinator was very effective in listening to and identifying our needs.

Neither Agree nor Disagree

17. The Technology Transfer Coordinator provided linkage with the appropriate Technical Specialist.

Strongly Agree

18. The Technology Transfer Coordinator is/was an effective go-between throughout the duration of the project.

Agree

19. The Technical Specialist with whom we worked was very knowledgeable, i.e., knew what he/she was talking about.

Agree

20. The Technical Specialist was a very effective listener, e.g., patiently tried to understand what our problem was.

Agree

21. The Technical Specialist was a very effective "translator", e.g., explaining the solution to us and making sure we understood the project.

Agree

22. The Technical Specialist is/was a joy to work with; has a very positive attitude and is most personable.

Neither Agree nor Disagree

23. The Technical Specialist really persevered; dug in on problems and did not give up easily.

Agree

24. The amount and number of times the Technical Specialist was willing to meet with us and address our needs was very sufficient.

Agree

25. Based upon our experience with this Technology Transfer project, we definitely would be willing to approach the Technology Transfer Office again for assistance if anyone has a problem or question.

Neither Agree nor Disagree

26. Has an evaluation or assessment of the Technology Transfer Project been conducted with you or your organization by the Technology Transfer Coordinator or his/her agency?

No

PROJECT 9: Science Advisor to a County (2 Responses)

03. How did you or someone else in your organization first learn about the FLC Technology Transfer activities?
- Through an association contact or newsletter (trade association, Chamber of Commerce, etc.)
- Attended a conference, workshop, seminar
04. Please check the type of technology transfer interaction that your organization is/was involved in (check all that apply if more than one).
- Attended a conference, seminar or workshop in which technology transfer concepts, equipment, etc. were presented.
- Was informed about special laboratory reports on studies which related to your organization's needs. (2)
- Was invited to participate in the implementation of a packaged program, technology, or computer system, etc.
05. For what length of time did the Technology Transfer Coordinator work with you/your organization on the project?
- About 4-5 months
06. Indicate the extent to which you feel that the above length of time is/was an adequate period to really be helpful to your organization.
- Definitely sufficient time
07. During the life of the project, what was the most common method of interacting with the Technology Transfer Coordinator or his/her office?
- Face-to-face discussions
- Over the telephone
- By mail (2)
08. How frequently did these interactions occur?
- Occasionally as needed (2)
09. If you/your organization initiated the contact with the Technology Transfer Office, how soon did they respond?
- About two weeks later
- About 4 weeks later or more



10. Indicate how satisfied you are with the promptness of the above response.
- Neither satisfied nor dissatisfied
- Satisfied
11. Our organization has been able to implement the technology transfer which was made.
- Disagree
- Neither Agree nor Disagree
12. The technology transfer has had a very positive impact upon the efficiency/smoothness of our operations.
- Neither Agree nor Disagree (2)
13. The technology transfer has aided us to date in saving a large amount of dollars.
- Neither Agree nor Disagree (2)
14. The technology transfer has expanded employment opportunities in our organization.
- Disagree
- Neither Agree nor Disagree
15. The technology transfer has reduced the number of employees in our organization.
- Disagree
- Neither Agree nor Disagree
16. The Technology Transfer Coordinator was very effective in listening to and identifying our needs.
- Neither Agree nor Disagree
- Agree
17. The Technology Transfer Coordinator provided linkage with the appropriate Technical Specialist.
- Neither Agree nor Disagree
- Agree

18. The Technology Transfer Coordinator is/was an effective go-between throughout the duration of the project.

Neither Agree nor Disagree (2)

19. The Technical Specialist with whom we worked was very knowledgeable, i.e., knew what he/she was talking about.

Neither Agree nor Disagree

Agree

20. The Technical Specialist was a very effective listener, e.g., patiently tried to understand what our problem was.

Neither Agree nor Disagree

Agree

21. The Technical Specialist was a very effective "translator", e.g., explaining the solution to us and making sure we understood the project.

Neither Agree nor Disagree (2)

22. The Technical Specialist is/was a joy to work with; has a very positive attitude and is most personable.

Neither Agree nor Disagree

Agree

23. The Technical Specialist really persevered; dug in on problems and did not give up easily.

Neither Agree nor Disagree (2)

24. The amount and number of times the Technical Specialist was willing to meet with us and address our needs was very sufficient.

Neither Agree nor Disagree

Strongly Agree

25. Based upon our experience with this Technology Transfer project, we definitely would be willing to approach the Technology Transfer Office again for assistance if anyone has a problem or question.

Neither Agree nor Disagree

Agree

26. Has an evaluation or assessment of the Technology Transfer Project been conducted with you or your organization by the Technology Transfer Coordinator or his/her agency?

No (2)

PROJECT 10: Improved Refuse Collection Routing (1 Response)

03. How did you or someone else in your organization first learn about the FLC Technology Transfer activities?

A personal contact was made by a Technology Transfer staff member

Attended a conference, workshop, seminar

04. Please check the type of technology transfer interaction that your organization is/was involved in (check all that apply if more than one).

The Technology Transfer Office or Agency aided your organization in retrieving information stored in such data banks as EIES, NTIS, Dialog, etc.

Was informed about special laboratory reports on studies which related to your organization's needs.

Was included in a mailing to receive specialized reports, newsletters, etc.

05. For what length of time did the Technology Transfer Coordinator work with you/your organization on the project?

Still working with us, and has been for approximately 15 months.

06. Indicate the extent to which you feel that the above length of time is/was an adequate period to really be helpful to your organization.

Definitely sufficient time

07. During the life of the project, what was the most common method of interacting with the Technology Transfer Coordinator or his/her office?

Face-to-face discussions

Over the telephone

By mail

Computer conferencing

08. How frequently did these interactions occur?

Occasionally, as needed

09. If you/your organization initiated the contact with the Technology Transfer Office, how soon did they respond?

Not Answered

10. Indicate how satisfied you are with the promptness of the above response.

Very satisfied

11. Our organization has been able to implement the technology transfer which was made.

Strongly Agree

12. The technology transfer has had a very positive impact upon the efficiency/smoothness of our operations.

Agree

13. The technology transfer has aided us to date in saving a large amount of dollars.

Neither Agree nor Disagree

14. The technology transfer has expanded employment opportunities in our organization.

Neither Agree nor Disagree

15. The technology transfer has reduced the number of employees in our organization.

Neither Agree nor Disagree

16. The Technology Transfer Coordinator was very effective in listening to and identifying our needs.

Strongly Agree

17. The Technology Transfer Coordinator provided linkage with the appropriate Technical Specialist.

Strongly Agree

18. The Technology Transfer Coordinator is/was an effective go-between throughout the duration of the project.

Strongly Agree

19. The Technical Specialist with whom we worked was very knowledgeable, i.e., knew what he/she was talking about.

Agree

20. The Technical Specialist was a very effective listener, e.g., patiently tried to understand what our problem was.

Agree

21. The Technical Specialist was a very effective "translator", e.g., explaining the solution to us and making sure we understood the project.

Agree

22. The Technical Specialist is/was a joy to work with; has a very positive attitude and is most personable.

Agree

23. The Technical Specialist really persevered; dug in on problems and did not give up easily.

Agree

24. The amount and number of times the Technical Specialist was willing to meet with us and address our needs was very sufficient.

Strongly Agree

25. Based upon our experience with this Technology Transfer project, we definitely would be willing to approach the Technology Transfer Office again for assistance if anyone has a problem or question.

Strongly Agree

26. Has an evaluation or assessment of the Technology Transfer Project been conducted with you or your organization by the Technology Transfer Coordinator or his/her agency?

No

PROJECT 11: Project Outreach (2 Responses)

03. How did you or someone else in your organization first learn about the FLC Technology Transfer activities?

Through a friend or associate who told you about it

Through an association contact or newsletter (trade association, Chamber of Commerce, etc.)

04. Please check the type of technology transfer interaction that your organization is/was involved in (check all that apply if more than one).

Attended a conference, seminar or workshop in which technology transfer concepts, equipment, etc. were presented.

Received one-on-one technical assistance.

Was informed about special laboratory reports on studies which related to your organization's needs.

Was included in a mailing to receive specialized reports, newsletters, etc.

Was invited to participate in the implementation of a packaged program, technology, or computer system, etc.

05. For what length of time did the Technology Transfer Coordinator work with you/your organization on the project?

Still working with us, and has been for approximately 36 months.

About 2-3 months

06. Indicate the extent to which you feel that the above length of time is/was an adequate period to really be helpful to your organization.

Definitely sufficient time (2)

07. During the life of the project, what was the most common method of interacting with the Technology Transfer Coordinator or his/her office?

Face-to-face discussions (2)

Over the telephone

By mail

08. How frequently did these interactions occur?
- About 2 or 3 times a week
 - Occasionally, as needed
09. If you/your organization initiated the contact with the Technology Transfer Office, how soon did they respond?
- They initiated the contact with us
 - About 4 weeks later or more
10. Indicate how satisfied you are with the promptness of the above response.
- Neither satisfied nor dissatisfied
11. Our organization has been able to implement the technology transfer which was made.
- Agree
12. The technology transfer has had a very positive impact upon the efficiency/smoothness of our operations.
- Neither Agree nor Disagree
13. The technology transfer has aided us to date in saving a large amount of dollars.
- Neither Agree nor Disagree
14. The technology transfer has expanded employment opportunities in our organization.
- Disagree
15. The technology transfer has reduced the number of employees in our organization.
- Diagree
16. The Technology Transfer Coordinator was very effective in listening to and identifying our needs.
- Agree
17. The Technology Transfer Coordinator provided linkage with the appropriate Technical Specialist.
- Strongly Agree

18. The Technology Transfer Coordinator is/was an effective go-between throughout the duration of the project.
- Agree
19. The Technical Specialist with whom we worked was very knowledgeable, i.e., knew what he/she was talking about.
- Agree
20. The Technical Specialist was a very effective listener, e.g., patiently tried to understand what our problem was.
- Agree
21. The Technical Specialist was a very effective "translator", e.g., explaining the solution to us and making sure we understood the project.
- Neither Agree nor Disagree
22. The Technical Specialist is/was a joy to work with; has a very positive attitude and is most personable.
- Neither Agree nor Disagree
23. The Technical Specialist really persevered; dug in on problems and did not give up easily.
- Neither Agree nor Disagree
24. The amount and number of times the Technical Specialist was willing to meet with us and address our needs was very sufficient.
- Agree
25. Based upon our experience with this Technology Transfer project, we definitely would be willing to approach the Technology Transfer Office again for assistance if anyone has a problem or question.
- Agree
26. Has an evaluation or assessment of the Technology Transfer Project been conducted with you or your organization by the Technology Transfer Coordinator or his/her agency?
- No

APPENDIX F
Respondents' Comments

The following are comments made by the survey respondents:

"To make information available re: technology transfer examples to all agencies and make known the general availability of such services." (Project 1)

"Needs to be more aggressively promoted to industry--believe it can prove to be quite valuable." (Project 2)

"I only used this service for literature reference searching and to locate a few government labs that might use the technology I deal with. Utilization of this service gave my company no direct positive benefit. However, I would not be adverse to using it again if the occasion arose. (Project 2)

"Because of perceived value to local government, we are now organizing Tec Transfer and Business Opportunity Conference June 24, 1981. Initial response from early press releases to the private sector very positive. Believe more such efforts should be undertaken with state and other business oriented groups." (Project 5)

"Our consortium is unique in the sense that we (Southern Campus Library) are a middle person for distributing information, personal contacts, etc. If a person, organization, agency, etc. needs technical assistance and contact us and we are unable to help them we immediately call on our technology transfer agent and ask for his assistance. (Project 6)

"There are 14 libraries located on the Delmarva Peninsula associated with this consortium. We are in the process of developing a microcomputer network that will link the consortium members with one another for more efficient and inexpensive communication methods. The technology transfer project has enabled us to provide assistance and information to persons we might not have been able to help." (Project 6)

"Two very useful tools available through federal laboratory consortium and the marine science consortium is their newsletters (TECTRA and PASS) which contain very useful data. We have this information to be useful to local governments for cost saving information as well as updating systems of adding systems." (Project 6)

"Institutionalize the National Innovation Network as a mechanism for effective coordination between the FLC and local/state government technology users. Also, produce a catalogue of cost-benefit analyses demonstrating the effectiveness/productivity impacts of technology transfer; send an autographed copy to Mr. Stockman." (Project 7)

"We have not been involved in a specific technology transfer project. Our coordinator has identified resource people to work with us in the areas of word processing, water supplies, administrative staff evaluation, obtaining surplus government equipment, electronic location of underground utilities, guest lecturers for school system (I am also a local board of education member), mentally retarded vocational education, aquifer identification. She has also set up a monthly meeting of retired lab employees and members of local government units. Lots of ideas are kicked around and there is a spinoff--there is an exchange of technology and ideas between the local governmental units. She is also doing a great P.R. job for the lab and the U.S. Navy. My enthusiasm for this program knows no bounds. Just to think

that big government cares about us little guys is really a lift. Our coordinator is fantastic and takes the program beyond technology transfer in the strict sense by developing all sorts of support activity. (Project 7).

"Make it more commonly known (via personal contact) to all municipalities. Get cities involved by finding their area of expertise and transferring that." (Project 7)

"Please note that we would enjoy further contact with the technology transfer group. The interest taken in the City of Hartford thus far is appreciated." (Project 7)

"Our association with personnel of Naval Underwater Systems Tech. Trans. personnel has been of great value. Pertinent information is sent to us at frequent intervals. It is necessary to point out that our Department has also made some of our developments available to the Naval Underwater Systems personnel and to the Connecticut Conference of Municipalities, i.e., data and information on the Connecticut Brine System and the Connecticut Crash Cushion, for which the Connecticut Dept. of Transportation holds patents." (Project 7)

"We experienced difficulty in the project we started because the staff and monetary costs were not fully defined or explained up front. When the full costs became apparent, we cancelled the project. The only suggestion would be to have fully defined what the impact of the project would be in terms of money, staff, resources, etc., when a local agency is contacted." (Project 8)

"Due to budget consideration, implementation of any program has been held in abeyance. This office is 100% fee-supported, making it almost impossible to make improvements at present." (Project 9)

"The concept of the technology transfer as pertained to our particular project was a good one, but, problems arose with the computer program used itself rather than with the transferability of the technology. Had the program run as expected, the technology transfer would have been much more successful." (Project 9)

"FLC should develop an aggressive marketing of Federal technology to local governments. Perhaps FLC could utilize communications media of statewide local government organizations to publicize available technology (Florida League of Cities, State Association of County Commissioners, Florida City & County Management Assoc., Florida Innov. Group, etc.) Federal Lab resources should be devoted specifically to research needs common to local governments." (Project 10)

"It is my belief that there is the potential of an effective technology transfer mechanism already in place. What is needed is more awareness of how the system can best be utilized. There is a need to improve the "turn-around" time for responses; however, this should improve once the user understands what the system needs (information from the user) and what information can be obtained (what kind of information is available.) (Project 11)