

## APPENDIX A

### Principal Federal Legislation Related to Cooperative Technology Programs

Since 1980, a series of laws have been enacted to promote federal/civilian partnerships and to facilitate the transfer of technology between sectors. Among the most notable pieces of legislation have been the following:

**Stevenson–Wylder Technology Innovation Act (1980)**—Required federal laboratories to facilitate the transfer of federally owned and originated technology to state and local governments and to the private sector.

**Bayh–Dole University and Small Business Patent Act (1980)**—Permitted government grantees and contractors to retain title to federally funded inventions and encouraged universities to license inventions to industry. The Act is designed to foster interactions between academia and the business community.

**Small Business Innovation Development Act (1982)**—Established the Small Business Innovation Research Program within the major federal research and development agencies to increase government funding of research with commercialization potential within small, high technology companies.

**National Cooperative Research Act (1984)**—Encouraged U.S. firms to collaborate on generic, precompetitive research by establishing a rule of reason for evaluating the antitrust implications of research joint ventures. The Act was amended in 1993 by the National Cooperative Research and Production Act, which let companies collaborate on production as well as research activities.

**Federal Technology Transfer Act (1986)**—Amended the Stevenson–Wylder Technology Innovation Act to authorize Cooperative Research and Development Agreements between federal laboratories and other entities, including state agencies.

**Omnibus Trade and Competitiveness Act (1988)**—Established the Competitiveness Policy Council to develop recommendations for national strategies and specific policies to enhance industrial competitiveness. The Act created the Advanced Technology Program and the Manufacturing Technology Centers within National Institute of Standards and Technology to help U.S. companies become more competitive.

**National Competitiveness Technology Transfer Act (1989)**—Amended the Stevenson–Wylder Act to allow government-owned, contractor-operated laboratories to enter into cooperative research and development agreements.

**National Cooperative Research and Production Act (1993)**—Relaxed restrictions on cooperative production activities, enabling research joint venture participants to work together in the application of technologies they jointly acquire.

(Source: “U.S. and International Research and Development: Funds and Alliances,” *Science & Engineering Indicators 2000*, National Science Foundation, Washington, D.C., 2000. [Online]. Available: <http://www.nsf.gov/sbe/srs/seind00/start.htm>.)

## APPENDIX B

### List of Survey Respondents and States That Provided Input to the Synthesis

<b>AASHTO MEMBER DEPARTMENT</b>	
Alabama	Montana
Arizona	Nebraska
Arkansas	Nevada
California	New Jersey
Florida	New Mexico
Georgia	New York
Hawaii	North Carolina
Idaho	Oklahoma
Illinois	Pennsylvania
Kansas	Rhode Island
Kentucky	South Carolina
Louisiana	Tennessee
Maine	Utah
Maryland	Virginia
Michigan	Washington
Minnesota	West Virginia
Mississippi	Wyoming
Missouri	
<b>PROVINCE</b>	
Alberta	Ontario
Labrador	Quebec
New Brunswick	Saskatchewan

## APPENDIX C

### Synthesis Study

#### NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM Project 20-5, Topic 31-06

#### FACILITATING PARTNERSHIPS IN TRANSPORTATION RESEARCH

#### QUESTIONNAIRE

Because many mutually beneficial working relationships have developed in transportation research, there is now an excellent opportunity to enhance overall research efforts by examining the processes through which partnerships are formed and implemented and by highlighting tools that can be used by others to replicate partnership successes.

This questionnaire is being conducted to gather information on the diverse types of partnerships used at the state/provincial level. These partnerships may be with organizations internal to the agency or with a vast selection of external partners including other government organizations on the national, regional state, and local levels, academic, and other not-for-profit institutions, as well as private sector organizations. **The data provided by respondents will enable development of key factors that contribute to successful partnerships and provide useful tools to aid formation of partnerships in existing research programs.** The information collected through this questionnaire will be synthesized in a report of current practices which addresses “facilitating partnerships in transportation research.”

Please return your completed questionnaire, along with supporting material, by August 31, 2000 to:

Barbara T. Harder  
B. T. Harder, Inc.  
1740 Addison Street  
Philadelphia, PA 19146

Telephone and e-mail contacts are encouraged: 215-735-2482 and btharder@sprintmail.com

Please provide the name of the person completing this questionnaire or someone else who may be contacted to obtain any needed follow-up information:

Name: \_\_\_\_\_  
Title/Division: \_\_\_\_\_  
Agency: \_\_\_\_\_  
Street Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Telephone & Fax: \_\_\_\_\_  
E-mail: \_\_\_\_\_  
If not the same as above, your name: \_\_\_\_\_

#### Summary of what to do:

- Complete general information (white sheets) about research activities partnerships.
- Complete TWO yellow forms—Beneficial Research Activities Partnerships—Internal (within agency) or external beneficial partnerships can be documented.
- Complete ONE blue form—Less Than Successful Research Activities Partnerships.
- Please send documentation about the partnership along with your completed questionnaire.

## DEFINITIONS

For the purpose of this questionnaire, we define:

**RESEARCH PARTNERSHIPS**—A research activity in which one or more organizations, in addition to your own research unit, participates by providing a part of the resources for a research effort and shares in the resulting benefits of the research.

**PARTICIPATION**—An agency unit or organization that in some tangible manner contributes to the conduct of the research effort through resource contribution (technical, facilities, equipment, financial, legal, marketing, or any variety of relevant services).

**RESEARCH ACTIVITIES**—Because state and provincial transportation agency research programs are involved in a wide spectrum of activities, we are defining research in its broadest context, thus including in addition to research, other related activities such as development, testing and evaluation, technology transfer— including training and education, deployment, and implementation. PLEASE NOTE THESE ACTIVITIES EMBRACE POLICY, PLANNING, FINANCIAL, AND ADMINISTRATIVE RESEARCH AS WELL AS TRADITIONAL TECHNICAL AREAS.

Partnerships are not contractual arrangements for strictly fee-paid services by an organization for your agency. Partnerships may be formally (legal/contractual agreement) or informally (verbal) constructed. Partnerships have a variety of names, such as coalitions, consortia, collaborative relationships, alliances, compacts, or affiliations.

## INFORMATION ABOUT RESEARCH ACTIVITIES PARTNERSHIPS

We have some general questions about research activities partnerships. Two checklists ask about the involvement in partnerships. We then follow with general questions and then narrow our questioning to individual partnerships. These questions will give us a snapshot of some of your research activities partnerships. We have included two types of forms to gather information about the various partnership arrangements in which your program and/or agency has participated. We have included **two forms for documenting beneficial partnerships** and **one form for documenting less than successful partnerships**. Describe one partnership relationship per form. PLEASE COPY THE FORM TO DOCUMENT ADDITIONAL PARTNERSHIPS. WE WELCOME WHAT YOU WILL SHARE.

### Beneficial Partnership Descriptions

Document the partnerships that have been or are expected to be beneficial to your organization. Document two of the most beneficial partnerships; please make only one internal, if possible. On the form we will be asking why this partnership worked and the benefits it produced. Please fill out the information as completely as possible.

### Less Than Successful Partnership Descriptions

Document one partnership that has not proven to be workable or was considered to be less than successful.

## INVOLVEMENT IN RESEARCH-RELATED PARTNERSHIPS, ALLIANCES, AND COALITIONS

We would like to know about the activities in which your agency's research program participates. We have listed a variety of items that are research partnerships, coalitions, or programs that perform or sponsor research and research related-activities.

Two tables to complete follow:

TABLE 1—STATE/PROVINCIAL AND LOCAL

TABLE 2—FEDERAL AND REGIONAL PUBLIC, ACADEMIC, AND PRIVATE SECTORS

TABLE 1— STATE/PROVINCIAL AND LOCAL

**Please specify a partnership name or partner organization as requested.**

<b>AGENCY PARTNERSHIPS/COALITIONS (such as with Maintenance Division Research Program)</b>
Other group/program within own agency, please specify _____
Other group/program within own agency, please specify _____
Other group/program within own agency, please specify _____
Other group/program within own agency, please specify _____
Other group/program within own agency, please specify _____
<i>STATE OR PROVINCIAL AGENCY PARTNERSHIPS/COALITIONS (Such as with Governor's Safety Council Research Program)</i>
Other state or provincial group/program, please specify _____
Other state or provincial group/program, please specify _____
Other state or provincial group/program, please specify _____
Other state or provincial group/program, please specify _____
<b>REGIONAL AND LOCAL PARTNERSHIPS/COALITIONS (such as with Municipal Agency Research Activities)</b>
Regional or local research coalition, please specify _____
Regional or local research coalition, please specify _____
Regional or local research coalition, please specify _____
Metropolitan planning organization research, please specify _____

TABLE 2—FEDERAL AND REGIONAL PUBLIC, ACADEMIC, AND PRIVATE SECTORS

Check all that apply and please specify a partnership name or partner organization as requested.

EXTERNAL PARTNERSHIP/PROGRAM	EXTERNAL PARTNERSHIP/PROGRAM
<p style="text-align: center;"><i>Federal Highway Administration</i></p> <p><input type="checkbox"/> SP&amp;R</p> <p><input type="checkbox"/> Regional Pooled-Fund Project</p> <p><input type="checkbox"/> Local Technical Assistance Program</p> <p><input type="checkbox"/> Experimental Projects</p> <p><input type="checkbox"/> Demonstration Projects</p> <p><input type="checkbox"/> Testing and Evaluation Projects</p> <p><input type="checkbox"/> Field Testing of FHWA developed products</p> <p><input type="checkbox"/> Other, please specify _____</p> <p style="text-align: center;"><i>SHRP Activities</i></p> <p><input type="checkbox"/> SHRP Implementation (including Superpave7)</p> <p><input type="checkbox"/> Long-Term Pavement Performance Program</p> <p><input type="checkbox"/> Other, please specify _____</p> <p style="text-align: center;"><i>AASHTO</i></p> <p><input type="checkbox"/> National Cooperative Highway Research Program</p> <p><input type="checkbox"/> National Transportation Product Evaluation Program</p> <p><input type="checkbox"/> Snow and Ice Cooperation Program</p> <p><input type="checkbox"/> Research activities by regional organizations (NASTO, WASHTO, etc.)</p> <p><input type="checkbox"/> Committee research activities, please specify _____</p> <p><input type="checkbox"/> Other, please specify, _____</p> <p style="text-align: center;"><i>Transportation Research Board</i></p> <p><input type="checkbox"/> Policy research studies</p> <p><input type="checkbox"/> Standing committees</p> <p><input type="checkbox"/> Other, please specify _____</p> <p><input type="checkbox"/> Other, please specify _____</p>	<p style="text-align: center;"><i>Other Alliances and Partnerships for Research</i></p> <p><input type="checkbox"/> Civil Engineering Research Foundation</p> <p><input type="checkbox"/> National Institute of Standards and Technology</p> <p><input type="checkbox"/> National Partnership Forum</p> <p><input type="checkbox"/> National Science Foundation</p> <p><input type="checkbox"/> National Laboratories Consortium</p> <p><input type="checkbox"/> ATA Foundation Trucking Research Institute</p> <p><input type="checkbox"/> Transit Cooperative Research Program</p> <p><input type="checkbox"/> U.S. Army Corps of Engineers</p> <p><input type="checkbox"/> International research consortium, please specify _____</p> <p><input type="checkbox"/> International research consortium, please specify _____</p> <p><input type="checkbox"/> Private Sector research partnerships/consortium</p> <p><input type="checkbox"/> Private sector research partnerships/consortium</p> <p><input type="checkbox"/> Other, please specify _____</p> <p><input type="checkbox"/> Other, please specify _____</p> <p><input type="checkbox"/> Other, please specify _____</p> <p style="text-align: center;"><i>Intelligent Transportation Systems</i></p> <p><input type="checkbox"/> ITS America research projects</p> <p><input type="checkbox"/> Automated Highway Systems</p> <p><input type="checkbox"/> ITS corridor coalitions research efforts, please specify _____</p> <p><input type="checkbox"/> Other ITS research, please specify _____</p>

<i>Other U.S.DOT and Federal Modal Administration</i>	<i>Academic</i>
<input type="checkbox"/> Federal Motor Carrier Safety Administration research <input type="checkbox"/> Federal Transit Administration research <input type="checkbox"/> Maritime Administration research <input type="checkbox"/> Research and Special Programs Administration research <input type="checkbox"/> National Highway Traffic Safety Administration research <input type="checkbox"/> Federal Railroad Administration research <input type="checkbox"/> Federal Aviation Administration research <input type="checkbox"/> Other USDOT research, please specify <hr/> <input type="checkbox"/> Other USDOT research, please specify <hr/>	<input type="checkbox"/> University transportation centers research <input type="checkbox"/> University institute, please specify <hr/> <input type="checkbox"/> University institute, please specify <hr/> <input type="checkbox"/> Other university consortium/alliance, please specify <hr/> <input type="checkbox"/> Other university consortium/alliance, please specify <hr/> <input type="checkbox"/> Other university consortium/alliance, please specify <hr/>

**GENERAL RESEARCH ACTIVITIES PARTNERSHIP INFORMATION**

- In how many research partnerships does your research unit participate? \_\_\_\_\_ (approximate number)
- Looking at all partnerships, please rate your research unit's participation with them. (Rate these according to their degree of participation: 1—highest participation, 2—second highest participation, 3—third highest participation, and so on.)
 

<input type="checkbox"/> internal agency partners	<input type="checkbox"/> local government partners
<input type="checkbox"/> other agency within your state	<input type="checkbox"/> private sector partners
<input type="checkbox"/> other state agency partners	<input type="checkbox"/> non-profit institutes or association partners
<input type="checkbox"/> federal agency partners	<input type="checkbox"/> other partners, please specify type
<input type="checkbox"/> university/academic partners	_____
- Of **all** the **federal-aid funds** your program manages, what percentage is committed to research activities partnerships? (Do not include the funding provider as a partner or all of the funds would be partnership related.) \_\_\_\_\_ percent (For example of SP&R Part II funds, Safety funds, and others.)
- If your research unit receives **state funds**, do you form partnerships with these? What percentage is committed to research activities partnerships? \_\_\_\_\_ percent
- For your agency's research program, in the next 3–5 years, will there be change in the level of commitment to research activities partnerships? \_\_\_\_\_ percent change (use – percent, + percent, or no change)  
 Why will these changes occur? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
- Of the research activities partnerships in which your research unit participates what percent are with  
 Internal agency partners \_\_\_\_\_ percent External to the agency partners \_\_\_\_\_ percent
- Which partnerships produce more implementable results? (check one) Internal \_\_\_\_\_ External \_\_\_\_\_
- What are the three most important factors in **forming** a research activities partnership?
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_

9. What are the three most important factors in **sustaining** a research activities partnership?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

10. What are the three top items that make **forming a research partnership difficult**? Please rank the difficulty using 5 as most difficult and 1 as least difficult.

Items that make <b>forming</b> a research partnership difficult	Rating (5-1)
1.	
2.	
3.	

11. What are the three top items that make **sustaining a research partnership difficult**? Please rank the difficulty using 5 as most difficult and 1 as least difficult.

Items that make <b>sustaining</b> a research partnership difficult	Rating (5-1)
1.	
2.	
3.	

12. Does your organization have any policies regarding forming partnerships? Yes \_\_\_\_\_ No \_\_\_\_\_  
 If yes, PLEASE ENCLOSE A COPY OF THE POLICIES WITH YOUR COMPLETED QUESTIONNAIRE.

13. Does your organization have any checklists, general tools, or other documentation that guides a person? through the formation, operation, and closing of a research activity partnership? Yes \_\_\_\_\_ No \_\_\_\_\_  
 If yes, PLEASE ENCLOSE A COPY OF THIS DOCUMENTATION WITH YOUR COMPLETED QUESTIONNAIRE.

14. What is the most often used manner of communicating within vital and successful partnerships in which your agency participates?  
 \_\_\_ in person \_\_\_ fax \_\_\_ telephone \_\_\_ e-mail \_\_\_ written reports \_\_\_ other

15. How often is it necessary to communicate with partners to keep the partnership vital and on course? \_\_\_ monthly  
 \_\_\_ daily \_\_\_ quarterly \_\_\_ weekly \_\_\_ annually \_\_\_ bi-monthly \_\_\_ other

16. Please rate the following items according to their importance in facilitating research activities partnerships. (3—very important, 2—moderately important, 1—somewhat important, 0—not important)

- \_\_\_ standard contracts or agreements
- \_\_\_ legislated formation of partnerships
- \_\_\_ legislated funding
- \_\_\_ written guidelines for forming and managing partnerships
- \_\_\_ personnel specifically committed to managing partnerships
- \_\_\_ facilities reserved for research activities partnerships



- \_\_\_ top management involvement in partnership formation
- \_\_\_ top management involvement in partnership operations
- \_\_\_ cross-functional team-building capability within agency
- \_\_\_ training personnel to participate effectively within partnerships
- \_\_\_ other, please specify \_\_\_\_\_

17. In general, why does your agency form partnerships? Check as many as apply.

- |  |   |
|--|---|
| ___ to gain technical expertise                        | ___ to advance commercialization              |
| ___ to add administrative/project management expertise | ___ to provide enhanced competitive advantage |
| ___ to leverage funding                                | ___ to reduce duplication of research efforts |
| ___ to fulfill a regulatory requirement                | ___ to accomplish more basic research         |
| ___ to satisfy a political need                        | ___ other, please specify _____               |

**BENEFICIAL RESEARCH ACTIVITIES PARTNERSHIP DESCRIPTION**

**Partnership Name** \_\_\_\_\_

**Partnership Goal, Objective, or Vision** \_\_\_\_\_

**Partnership Participants**

Please list the participants, what they contribute to the partnership and whether the contribution was in-kind (no funds were exchanged). Use the following codes for the type of partnership. Non-profit organizations may be transportation associations or trade groups or other similar bodies.

TYPE—PLEASE USE CODE		CONTRIBUTION—PLEASE USE ONE OF THESE OR YOUR OWN DESCRIPTION
1. academic	6. state/provincial government	-technical expertise/researchers
2. private sector company	7. state/provincial non-profit	-technicians
3. local public sector	8. federal government	-project management and administration
4. regional government	9. national non-profit	-equipment
5. regional non-profit	10. international	-research facilities
	11. internal to agency	-funding
		-research or pilot site
		-tech transfer/implementation
		-training and education

Type Code	Participant Organization	Y if Lead Organization	Contribution to Partnership If Financial Please Put Percent of Total Funding	%	In-Kind Service Yes or No
	Put your organization name here:				
	Put other organization names here:				

Please continue on a separate sheet, if necessary.

1. **Type of Arrangement** (Check one)

- informal, no written agreement
- interagency agreement
- memorandum of understanding
- contract
- other, please specify \_\_\_\_\_

**PLEASE SEND A COPY OF THE AGREEMENT WITH YOUR COMPLETED QUESTIONNAIRE**

2. **Why was the partnership formed?** (Rate top three reasons, 1—top reason, 2—second reason, 3—third reason)

- to gain technical expertise
- to add administrative/project management expertise
- to leverage funding
- to fulfill a regulatory requirement (**please send copy of regulation**)
- to satisfy a political need
- to advance commercialization
- to provide enhanced competitive advantage
- to reduce duplication of research efforts
- to accomplish more basic research
- other, please specify \_\_\_\_\_
- other, please specify \_\_\_\_\_

3. When did the partnership **first start**? \_\_\_\_\_ (mm/yy) What is **current term** of the partnership? \_\_\_\_\_ (months or years)

4. Was a **specific organization created** for this partnership? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, are the project team members **co-located in a defined facility or area**? Yes \_\_\_\_\_ No \_\_\_\_\_

If no, how are **team communications** handled among the various partnership organizations?

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5. **Resources** (please provide estimates if you do not know the definitive values.)

Annual Value of Resources Your Organization Will Contribute	Total Value of Resources Your Organization Will Contribute	Annual Value of All Resources Contributed by All Participants	Total Value of All Resources Contributed by All Participants
\$	\$	\$	\$

6. What factors were the **most influential in enabling** this partnership to be formed?

1. \_\_\_\_\_  
 2. \_\_\_\_\_  
 3. \_\_\_\_\_

7. What factors were the **most detrimental to forming and sustaining** the partnership?

1. \_\_\_\_\_  
 2. \_\_\_\_\_  
 3. \_\_\_\_\_

8. What occurred to **overcome these detrimental factors**? Who or what changed?

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9. How were the **cultures, schedules and potentially competing agendas agreed upon** for this partnership?  
 Please summarize the three most critical items that facilitated agreement.

1. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 2. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 3. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

10. Were efforts made to **match skills and strengths** of the various partnership organizations?  
 Yes \_\_\_\_\_ No \_\_\_\_\_ If yes, how was this done?

11. What research **property issues** resulting from the partnership effort had to be addressed within this project? **(Please send documentation with your completed questionnaire.)**

- \_\_\_ patent rights
- \_\_\_ trademark protection
- \_\_\_ copyright
- \_\_\_ residual interests
- \_\_\_ intellectual property rights ownership
- \_\_\_ license arrangements
- \_\_\_ other, please specify \_\_\_\_\_  
 \_\_\_\_\_

12. What **benefits** were received from the activity resulting from this partnership? (check all that apply)
- |   |  |
|---|--|
| <input type="checkbox"/> enhanced safety                      | <input type="checkbox"/> produced innovative product                         |
| <input type="checkbox"/> cost savings                         | <input type="checkbox"/> produced new design or specification                |
| <input type="checkbox"/> increased productivity               | <input type="checkbox"/> produced new method or process                      |
| <input type="checkbox"/> fulfilled (in part) agency goals     | <input type="checkbox"/> enabled organizational learning about partnerships  |
| <input type="checkbox"/> model for subsequent partnerships    | <input type="checkbox"/> solidified relationship with important organization |
| <input type="checkbox"/> enhanced technical expertise         | <input type="checkbox"/> other, please specify _____                         |
| <input type="checkbox"/> enhanced administrative expertise    | _____  |
| <input type="checkbox"/> because of partnership, enabled      | <input type="checkbox"/> other, please specify _____                         |
| <input type="checkbox"/> greater/higher level of results than | _____  |
| <input type="checkbox"/> could have generated on own          | <input type="checkbox"/> other, please specify, _____                        |

13. How were (are) **benefits of the partnership measured**?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

14. Were benefits or outcome **goals** of the research activity defined for your agency?  
 Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, to what extent were they achieved? \_\_\_\_\_ (use 25%, 50%, 75%, 100%, greater than 100%)

15. Within the past five years, **how many implementable results** has the partnership produced?  
 \_\_\_\_\_ (number)

16. How many of these results produced in the last five years has **your agency implemented** (or is in the process of implementing)? \_\_\_\_\_ (number)

17. How did you **measure whether the partnership was successful**?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

18. How **easy would this partnership arrangement be to replicate** in another agency? (use rating 5—most difficult, 4—difficult, 3—neither difficult or easy, 2—easy, 1—very easy.) \_\_\_\_\_ rating

19. What elements would be **easiest to replicate** in another agency?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

20. What elements would be **most difficult to replicate** in another agency?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Please send any documentation that would help describe the partnership, including agreements and any tools or instruments that assisted in making the partnership possible.**

**(End of this form, fill in one more please)**

**LESS THAN SUCCESSFUL RESEARCH ACTIVITIES PARTNERSHIP DESCRIPTION**

**Partnership Goal, Objective, or Vision** \_\_\_\_\_

**Partnership Participants**

Please list the participants, what they contribute to the partnership, and whether the contribution was in-kind (no funds were exchanged). Use the following codes for the type of partnership. Non-profit organizations may be transportation associations or trade groups or other similar bodies.

TYPE—PLEASE USE CODE		CONTRIBUTION—PLEASE USE ONE OF THESE OR YOUR OWN DESCRIPTION
1. academic	6. state/provincial government	-technical expertise/researchers
2. private sector company	7. state/provincial non-profit	-technicians
3. local public sector	8. federal government	-project management and administration
4. regional government	9. national non-profit	-equipment
5. regional non-profit	10. international	-research facilities
	11. internal to agency	-funding
		-research or pilot site
		-tech transfer/implementation
		-training and education

Type Code	Participant Organization	Y if Lead Organization	Contribution to Partnership If Financial Please Put Percent of Total Funding	%	In-Kind Service Yes or No
	<b>Put your organization name here:</b>				
	<b>Put other organization names here:</b>				

Please continue on a separate sheet, if necessary.

**1. Type of Arrangement (Check one)**

- informal, no written agreement
- interagency agreement
- memorandum of understanding
- contract
- other, please specify \_\_\_\_\_

**PLEASE SEND A COPY OF THE AGREEMENT WITH YOUR COMPLETED QUESTIONNAIRE**

2. **Why was the partnership formed?** (Rate top three reasons, 1—top reason, 2—second reason, 3—third reason)
- \_\_\_ to gain technical expertise
  - \_\_\_ to add administrative/project management expertise
  - \_\_\_ to leverage funding
  - \_\_\_ to fulfill a regulatory requirement (**please send copy of regulation**)
  - \_\_\_ to satisfy a political need
  - \_\_\_ to advance commercialization
  - \_\_\_ to provide enhanced competitive advantage
  - \_\_\_ to reduce duplication of research efforts
  - \_\_\_ to accomplish more basic research
  - \_\_\_ other, please specify \_\_\_\_\_
  - \_\_\_ other, please specify \_\_\_\_\_
3. When did the partnership **first start**? \_\_\_\_\_ (mm/yy) What is **current term** of the partnership?  
 \_\_\_\_\_ (months or years)

4. **Resources** (Please provide estimates if you do not know the definitive values.)

If yes, are the project team members **co-located in a defined facility or area**? Yes \_\_\_\_\_ No \_\_\_\_\_

Annual Value of Resources Your Organization Will Contribute	Total Value of Resources Your Organization Will Contribute	Annual Value of All Resources Contributed by All Participants	Total Value of All Resources Contributed by All Participants
\$ _____	\$ _____	\$ _____	\$ _____

5. What factors were the **most influential in enabling** this partnership to be formed?
1. \_\_\_\_\_
  2. \_\_\_\_\_
  3. \_\_\_\_\_
6. What factors were the **most detrimental to forming and sustaining** the partnership?
1. \_\_\_\_\_
  2. \_\_\_\_\_
  3. \_\_\_\_\_
7. How did this experience **contribute to you or your agency's learning** about research activities?
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
8. Did the **initial agreement provide for amicable settlement** of the differences of this partnership?  
 Yes \_\_\_\_\_ No \_\_\_\_\_
9. Were benefit or outcome **goals** of the research activity defined for your agency?  
 Yes \_\_\_\_\_ No \_\_\_\_\_  
 If yes, to what extent were they achieved? \_\_\_\_\_ (use 25%, 50%, 75%, 100%, greater than 100%)

10. Within the past five years, **how many implementable** results has the partnership produced?  
\_\_\_\_\_ (number)

11. How many of these results produced in the last five years has your agency implemented (or is in the process of implementing)? \_\_\_\_\_ (number)

12. How did you **measure whether the partnership was successful or less than successful?**

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13. What could you share with other research activities partnerships to help them avoid the problems this effort encountered?

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**Please send any documentation that would help describe the partnership, including agreements and any tools or instruments that were part of the partnership experience.**

**END**

**THANK YOU VERY MUCH FOR YOUR ANSWERS, COMMENTS, AND WISDOM!**

## APPENDIX D

### External Research Partnerships in Which State and Provincial Research Units Participate

There are a host of partnerships in which state and provincial research units participate. Although it is impossible to list all partnerships mentioned in the survey responses, research unit managers consistently mentioned a number of important partnerships. The following listing provides the web addresses of these partnerships, where more information about the partnership organization and activities can be obtained.

#### WEBSITE ADDRESSES OF A VARIETY OF RESEARCH PARTNERSHIPS

FHWA-sponsored partnerships Research and Technology Partnerships such as: SP&R, Pooled Fund Projects, Experimental, Demonstration, and Test and Evaluation Projects Local Technical Assistance Program (LTAP)	FHWA Turner–Fairbank Highway Research Center <a href="http://www.tfsrc.gov/">http://www.tfsrc.gov/</a>  FHWA sponsorship, LTAP <a href="http://www.ltapt2.org/">http://www.ltapt2.org/</a>
Strategic Highway Research Program (SHRP) Activities SHRP Implementation	TRB SHRP Implementation website <a href="http://www4.trb.org/trb/dive.nsf/web/shrp_implementation?OpenDocument">http://www4.trb.org/trb/dive.nsf/web/shrp_implementation?OpenDocument</a>
Long-Term Pavement Performance Program	AASHTO Innovative Technologies website <a href="http://leadstates.tamu.edu/">http://leadstates.tamu.edu/</a> FHWA sponsorship <a href="http://www.tfsrc.gov/pavement/ltp/ltp.htm">http://www.tfsrc.gov/pavement/ltp/ltp.htm</a>
Other SHRP cooperative research, including C-SHRP	Canadian SHRP <a href="http://www.cshrp.org/">http://www.cshrp.org/</a>
AASHTO Research and Technology Partnerships National Cooperative Highway Research Program (NCHRP) National Transportation Product Evaluation Program (NTPEP)	NCHRP, cooperative program managed by TRB <a href="http://www4.nas.edu/trb/crp.nsf/">http://www4.nas.edu/trb/crp.nsf/</a> AASHTO sponsored <a href="http://www.transportation.org/programs/ntpep/site.nsf/allpages/overview?opendocument">http://www.transportation.org/programs/ntpep/site.nsf/allpages/overview?opendocument</a>
Snow and Ice Cooperative Program (SICOP)	Sponsored by AASHTO, American Public Works Association, and National Association of County Engineers <a href="http://www.sicop.net/">http://www.sicop.net/</a>
Other Alliances and Research Consortia Civil Engineering Research Foundation	Highway Innovative Technology Evaluation Center <a href="http://www.cerf.org/hitec/">http://www.cerf.org/hitec/</a>
National R&T Partnership Forum	TRB information website <a href="http://www4.nas.edu/trb/homepage.nsf/web/framework?OpenDocument">http://www4.nas.edu/trb/homepage.nsf/web/framework?OpenDocument</a>
	TRB Special Report 261 available from TRB and downloadable from TRB website <a href="http://nationalacademies.org/trb/">http://nationalacademies.org/trb/</a>



**WEBSITE ADDRESSES OF A VARIETY OF RESEARCH PARTNERSHIPS**

National Science Foundation (NSF)	NSF website <a href="http://www.nsf.gov/">http://www.nsf.gov/</a>
Transit Cooperative Research Program (TCRP)	TCRP cooperative program managed by TRB <a href="http://www4.trb.org/trb/crp.nsf/reference%5Cappendices/TCRP+Overview">http://www4.trb.org/trb/crp.nsf/reference%5Cappendices/TCRP+Overview</a>
University Transportation Centers (UTC)	UTC website <a href="http://utc.dot.gov/">http://utc.dot.gov/</a>

## APPENDIX E

### Synopsis of the Treatment of Intellectual Property in Selected Research Partnership Agreements and Memorandums of Understanding

This table shows examples of how intellectual property is handled in state DOTs and provincial ministries of transportation. **The selected items are specific examples and may not be the only means by which these agencies treat intellectual property.**

State or Province	Synopsis of the Treatment of Intellectual Property in Selected Cases
Alabama	All intellectual property belongs to the state unless the partner gives the state highway agencies and the U.S. government irrevocable, nonexclusive, nontransferable, royalty-free license to practice each invention in manufacturing, use, and disposition.
California	From Memorandum of Understanding regarding seismic research; all intellectual property has public ownership.
Kansas	Department of Transportation (DOT) can publish data; university keeps intellectual property including patents and copyrights. DOT has the royalty-free, nonexclusive, irrevocable license to use any patent or copyright if university does not patent or copyright, then DOT is free to do so.
Louisiana	Similar to Alabama.
Maine	Similar to Alabama.
Missouri	Example is a Cooperative Research and Development Agreement (see chapter seven for the specific language).
Montana	Copyright must include the other party than the requesting party; the other party has the right to include a disclaimer or acceptance.
Nebraska	Patentable discoveries belong to the public.
North Carolina	The state has the free license to use patented devices or procedures, no royalties to be paid, freely licensed to use, distribute, and make derivative works of copyrighted materials and may extend right to others.
Rhode Island and other New England States	New England Transportation Consortium (NETC)—Title of all products of research resides with the university that prepared the report. The university will grant NETC member departments, the U.S. government, and the general public nonexclusive, irrevocable, royalty-free, worldwide license for copyright data to use, reproduce, and prepare derivative works.
West Virginia	All rights from discoveries are sole property of the contractor. All state DOTs and the U.S. government are granted an irrevocable, nonexclusive, nontransferable, and royalty-free license to practice such invention in the manufacture, use, and disposition.

State or Province	Synopsis of the Treatment of Intellectual Property in Selected Cases
Ontario	<p>Grant program—Ownership and copyrights are property of the ministry and the research organization. These are shared according to contributed costs, with no royalties, but can sublicense. Research organization pays all copyright and patent royalties regarding the ministry's use of deliverables.</p> <p>Agreement for collaborative work (includes the National Research Council of Canada)—Companies own their own intellectual property. An attempt is made to determine who is the inventor; if this cannot be determined, it is a joint invention and names co-inventors, within 6 months. After the end of the project a license is negotiated with the Council—The collaborator gets a copyright free without time limit for patents; the Council gets a fully prepaid, royalty-free license for use in research purposes within the Council. Collaborator negotiates with the Council for a sublicense.</p>

Abbreviations used without definition in TRB Publications:

AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
IEE	Institute of Electrical and Electronics Engineers
ITE	Institute of Transportation Engineers
NCHRP	National Cooperative Highway Research Program
NCTRP	National Cooperative Transit Research and Development Program
NHTSA	National Highway Traffic Safety Administration
SAE	Society of Automotive Engineers
TCRP	Transit Cooperative Research Program
TRB	Transportation Research Board
U.S.DOT	United States Department of Transportation