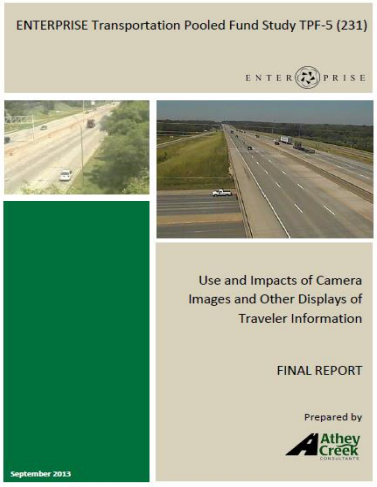
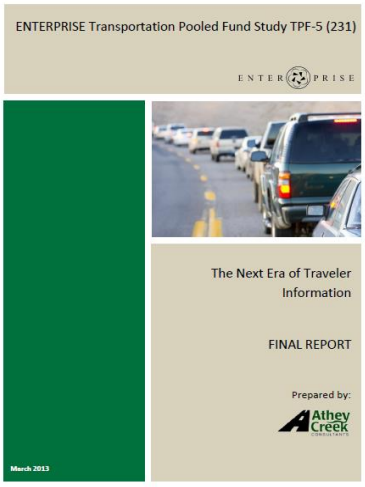
ENTERPRISE Transportation Pooled Fund Study TPF-5 (231)

ENTER PRISE





Investigating Distribution Mechanisms for ENTERPRISE Technical Products

PROJECT SUMMARY REPORT

Prepared by

Athey Creek CONSULTANTS

January 2015

Acknowledgements

This document was prepared for the ENTERPRISE Transportation Pooled Fund TPF-5(231) program. With agencies from North America and Europe, the main purpose of ENTERPRISE is to use the pooled resources of its members, private sector partners and the United States federal government to develop, evaluate and deploy Intelligent Transportation Systems (ITS).

Project Champion

Bill Legg, Washington State Department of Transportation, was the ENTERPRISE project champion for this effort. The project champion serves as the overall lead for the project.

Members of the ENTERPRISE Pooled Fund

Arizona Department of Transportation

Federal Highway Administration

Georgia Department of Transportation

Idaho Transportation Department

Illinois Department of Transportation

Iowa Department of Transportation

Kansas Department of Transportation

Maricopa County, Arizona

Michigan Department of Transportation

Minnesota Department of Transportation

Oklahoma Department of Transportation

Ministry of Transportation of Ontario

Pennsylvania Department of Transportation

Dutch Ministry of Transport (Rijkswaterstaat)

Texas Department of Transportation

Transport Canada

Washington State Department of Transportation

Table of Contents

1.0 Introduction and Project Overview 1
2.0 Overview of Transportation Information Repositories 3
2.1 Transportation Libraries 3
2.1.1 U.S. Department of Transportation Libraries 3
2.1.2 Transportation Research Board (TRB) Library 3
2.1.3 Transport Canada Library 4
2.1.4 ENTERPRISE Member Agency Libraries 4
2.2 Online Transportation Databases and Customized Search Engines 4
2.2.1 TRB Transportation Research Information Database (TRID) 5
2.2.2 USDOT National Transportation Library (NTL) Digital Repository 5
2.2.3 Transportation Libraries Union Catalog (TLCat) 6
2.2.4 TRB Research in Progress (RiP) Database 6
2.2.5 National Technical Information Service (NTIS) 7
2.2.6 Transport Research Portal 7
3.0 Distribution Options 8
3.1 Federal Transportation Libraries and Online Databases 8
3.2 ENTERPRISE Agency Libraries 9
3.3 Highly Accessed University Transportation Libraries 12
3.3.1 Northwestern University Transportation Library 12
3.3.2 Institute of Transportation Studies Library at University of California, Berkeley 12
3.4 ITS Professional Organizations 12
3.4.1 ITS America 13
3.4.2 State Chapters of ITS America (ENTERPRISE member States) 13
3.4.3 ITS Canada 14
4.0 ENTERPRISE Decisions for Distributing Technical Reports 15
4.1 Action Plan for Future Distribution 15
4.2 Costs for Future Distribution 18
4.3 Current Projects and Previously Published Reports 18
4.3.1 Current Projects Underway or Awaiting Authorization 18
4.3.2 Previously Published Final Technical Reports 18
Works Cited 19

1.0 Introduction and Project Overview

The ENTERPRISE Pooled Fund Study since its inception in 1991 has completed numerous Intelligent Transportation System (ITS) related projects. Outreach and communications efforts designed to disseminate research findings and other technical project findings are critical to advancing the state of practice in transportation. The ENTERPRISE pooled fund program, with the collective experience of its agency members and the wealth of information produced by its project findings, provides a key source of expertise for the development, application, and deployment of Intelligent Transportation Systems (ITS). Current mechanisms ENTERPRISE utilizes to share project results include:

- ENTERPRISE website
- Announcements to ENTERPRISE Executive Board members highlighting the publication of final reports for further distribution within the members' agencies
- Project presentations at ENTERPRISE Executive Board meetings
- Papers and presentations at international, national, regional, and local conferences
- Webinars that share project results with broad groups of ENTERPRISE agency personnel

This project was conducted to explore the potential for ENTERPRISE to disseminate its technical project results more broadly to the transportation community. This additional dissemination would attempt to reach a wider audience, more effectively contribute to the state of practice in ITS, help reduce duplication of effort on ITS-related research, promote the work of ENTERPRISE, and increase the likelihood that products and findings will be utilized by transportation professionals.

Reports produced by ENTERPRISE through its project work generally fall into one of the following categories:

- **Project Summary Reports:** These reports summarize results from projects that are customized to meet specific member needs by documenting project tasks and findings. Results from these projects often answer a specific question posed by one or more members.
- **Final Technical Reports**: These reports summarize results from projects that have a significant research and/or analysis component. Results from these projects often contribute to the state of knowledge on a topic and are likely of value as citations in related research endeavors.

This project focused on exploring options to further distribute final technical reports published by ENTERPRISE. In 2014, ENTERPRISE began adding a technical documentation page to its published final technical reports. The technical documentation page includes data elements such as a unique report number and key words that will allow these reports to be catalogued in transportation libraries or digital repositories to enhance access through key word searches. This project extended ENTERPRISE's efforts to gather the information needed to determine which additional mechanisms, if any, should be pursued to distribute its final technical reports.

Specific project objectives were as follows:

- **Objective #1:** Investigate mechanisms (libraries, digital repositories, and targeted email lists) for distribution of ENTERPRISE final technical reports, by exploring requirements, procedures, and related costs that would be involved if the wider distribution mechanisms were selected.
- **Objective #2**: To facilitate discussions among ENTERPRISE Board members to review various dissemination mechanisms, consider benefits vs. costs, and ultimately determine if any additional distribution should be pursued.

This project investigated the following options for distributing ENTERPRISE final technical reports:

Transportation Libraries:

- USDOT Libraries (National Transportation Library, FHWA Research Library, and Volpe National Transportation Systems Center Library)
- Transportation Research Board (TRB) Library
- Transport Canada Library
- ENTERPRISE Member Agency Libraries
- Highly Accessed University Transportation Libraries

Online Transportation Databases and Customized Search Engines:

- TRB Transportation Research Information Database (TRID)
- USDOT National Transportation Library (NTL) Digital Repository
- Transportation Libraries Catalog (TLCat)
- TRB Research in Progress (RiP) Database
- National Technical Information Service (NTIS)
- Transport Research Portal

ITS Professional Organizations

- ITS America
- State Chapters of ITS America
- ITS Canada

After collecting information about the each of the distribution options (submittal requirements and processes, audiences served, associated costs), the ENTERPRISE Executive Board reviewed the findings, discussed costs and benefits, and determined a future course of action. Following is a summary of the distribution decisions for technical projects that have a strong research or analysis component:

- ***Distribute Project Information*** to TRB Research-in-Progress (RiP) database. The primary purpose of submitting information to RiP database is to promote the work of ENTERPRISE, encourage coordination with similar research efforts, and reduce the potential for duplication of effort.
- ***Distribute Final Technical Reports*** to the following federal libraries and databases: TRB Transportation Research Information Database (TRID), USDOT National Transportation Library, and USDOT Volpe Library. The primary purpose of submitting reports to federal libraries and databases is to promote the work of ENTERPRISE and contribute to the states of practice on technical ITS topics.
- ***Distribute Announcements of Final Technical Reports*** for consideration in newsletters and other communications mechanisms to the following eleven (11) state agency research programs and ITS professional organizations: Georgia DOT research program, Pennsylvania DOT research program, Illinois DOT research program, Minnesota DOT research program, ITS America, ITS Canada, ITS Midwest, ITS Heartland, ITS Georgia, ITS Minnesota, and ITS Arizona. The primary purpose for submitting these announcements when final reports are published is to leverage existing mechanisms to share findings from ENTERPRISE projects with those who can benefit from the results.

A full summary of decisions for future distribution of its project information, including an action plan and costs, are documented in Section 4.

2.0 Overview of Transportation Information Repositories

When investigating distribution options for ENTERPRISE Technical Reports, it is important to understand how transportation professionals search for and find research literature. This section provides an overview of transportation libraries, databases, and search engines available to transportation professionals, to locate relevant research results and technical products.

2.1 Transportation Libraries

2.1.1 U.S. Department of Transportation Libraries

Libraries housed within the U.S. Department of Transportation (U.S. DOT) offer similar services to their employees. U.S. DOT libraries include:

- **National Transportation Library (NTL):** The National Transportation Library (NTL) is a repository of U.S. DOT transportation information, serves as a portal for transportation data, and provides library services to U.S. DOT employees.[1] The NTL hosts an online digital repository, in addition to physical library facilities. See Section 2.2 for additional information about the NTL Digital Repository.
- **FHWA Research Laboratory:** The FHWA Research Laboratory provides collections, electronic resources, and services in support of the research needs of FHWA staff. It also collects and maintains all research reports produced by and for FHWA research development and technology (RD&T).[2]
- **Volpe National Transportation Systems Center Library:** The Volpe Library is the knowledge repository of all Volpe-authored reports, journal articles, and conference papers and presentations. Housing more than 40 years of transportation research, the library actively engages in information support and research to transportation researchers both within and outside of Volpe.[3]

A somewhat unique aspect of the FHWA Research Library and the Volpe Library is that each feature results from their respective divisions that employ research staff who produce research publications and actively seek current transportation literature to inform their internally-led research efforts.

Contacts were made to USDOT libraries, to inquire about the potential to submit ENTERPRISE final technical reports to their repositories. Following is a brief summary of results of these inquiries.

- The NTL will accept published reports via the NTL Digital Repository.
- The FHWA Research Library requested that ENTERPRISE submit its published reports to the NTL Digital Repository, rather than submitting to the FHWA Research Library.
- The Volpe Library will accept electronic report files via email submittal. Submitted reports will also be cross-referenced in the USDOT Headquarters' catalog.

2.1.2 Transportation Research Board (TRB) Library

The Transportation Research Board (TRB) Library is the primary archive for publications of the Transportation Research Board, Highway Research Board, Strategic Highway Research Program, and the Marine Board.[4] The library provides information services to TRB staff, sponsors, TRB committees and panels, and researchers. In addition to the TRB Library's physical collection, TRB also hosts the Transportation Research Information Database (TRID), an online repository for transportation research

publications. The TRB Library accepts published reports via the TRID database and does not accept materials directly into the physical resource collection. See Section 2.2 for information about TRID.

2.1.3 Transport Canada Library

According to a CBC News Ottawa online news article (posted May 2, 2012), the Transport Canada Library was closed in 2012 as a part of government budget cuts that eliminated a series of libraries and archives throughout several government departments.[5]

2.1.4 ENTERPRISE Member Agency Libraries

U.S. State Departments of Transportation (DOTs) often operate libraries that offer a number of services including reference assistance, purchasing and housing professional publications and periodicals, and interlibrary loans. A directory of libraries at state transportation agencies can be found at: Directory of State Highway and Transportation Department Libraries.[6]

State DOT libraries are often housed within the agency's research functional area. These libraries often utilize national transportation databases to access published technical reports, in addition to or in lieu of maintaining printed or electronic copies in-house. See Section 2.2 for a description of transportation databases that are often accessed by agency library professionals to locate literature.

2.2 Online Transportation Databases and Customized Search Engines

Internet search engines such as Google, Bing, and Yahoo (among others) are often the first mechanism chosen when conducting an online search for information. However, these search engines may not locate many publications, reports, and resources on specific transportation topics. Therefore, a number of online databases and customized search engines have been developed to help narrow the focus when searching for transportation information. Transportation professionals, especially researchers, commonly use these databases and customized search engines to find relevant literature.

The online databases and customized search engines summarized in this section typically contain research from multiple contributors and/or offer the capability to search multiple repositories simultaneously. Figure 2-1 shows a screenshot from the Iowa Department of Transportation Library website[7], with links to commonly used transportation databases and customized search engines.

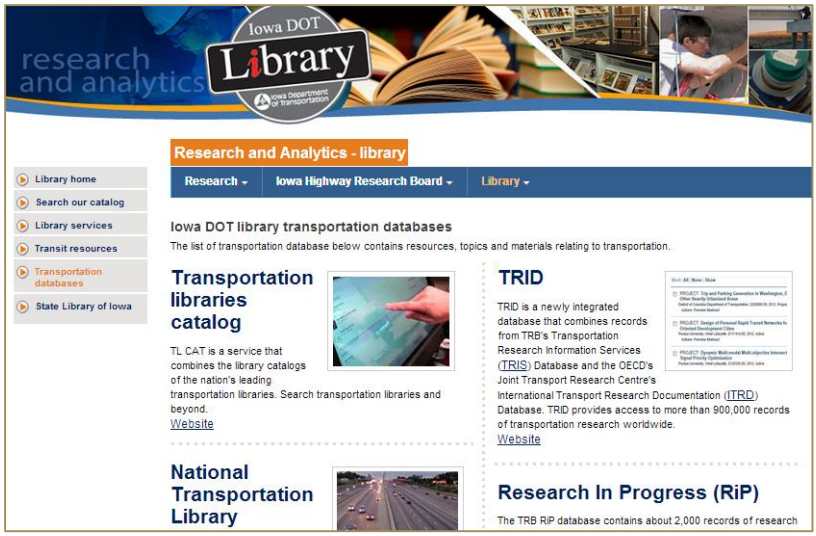


Figure 2-1: Screenshot from Iowa DOT Library Website - Links to Transportation Databases

The online databases and customized search engines investigated in this project include:

- TRB Transportation Research Information Database (TRID)
- USDOT National Transportation Library (NTL) Digital Repository
- Transportation Libraries Union Catalog (TLCat)
- TRB Research in Progress (RiP) Database
- National Technical Information Service (NTIS)
- Transport Research Portal

2.2.1 TRB Transportation Research Information Database (TRID)

The Transportation Research Information Database (TRID), hosted by the Transportation Research Board (TRB), is an integrated database that combines the records from TRB's Transportation Research Information Services (TRIS) Database and International Transport Research Documentation (ITRD) Database. TRID is the world's largest and most comprehensive bibliographic source on transportation information. It contains more than one million records of published and ongoing research, covering all modes and disciplines of transportation.[8]

Published reports can be easily submitted to the TRID database, via an online web form. Figure 2-2 shows a screenshot of the online web form for submitting published technical reports to TRID.

Figure 2-2: Screenshot of web form to submit a publication to TRID

2.2.2 USDOT National Transportation Library (NTL) Digital Repository

The USDOT National Transportation Library (NTL) Digital Repository collects and maintains significant research and statistical publications that are of value to federal, state, and local transportation decision makers, transportation analysts, and researchers. The NTL Digital Repository currently contains approximately 40,000 items.[9] The NTL Integrated Search searches the NTL Digital Repository and other web accessible transportation resources, including State DOT and University Transportation Centers' research publications and document repositories.[10]

Technical reports can easily be submitted to the NTL Digital Repository by sending an electronic document or a web link to the published report to NTLDigitalSubmissions@dot.gov. The email address is populated by selecting "Submit" from the Integrated Search System web page, which populates the email address for submittal. Figure 2-3 shows a screenshot of the NTL Integrated Search System web page, where submissions of reports can be made.

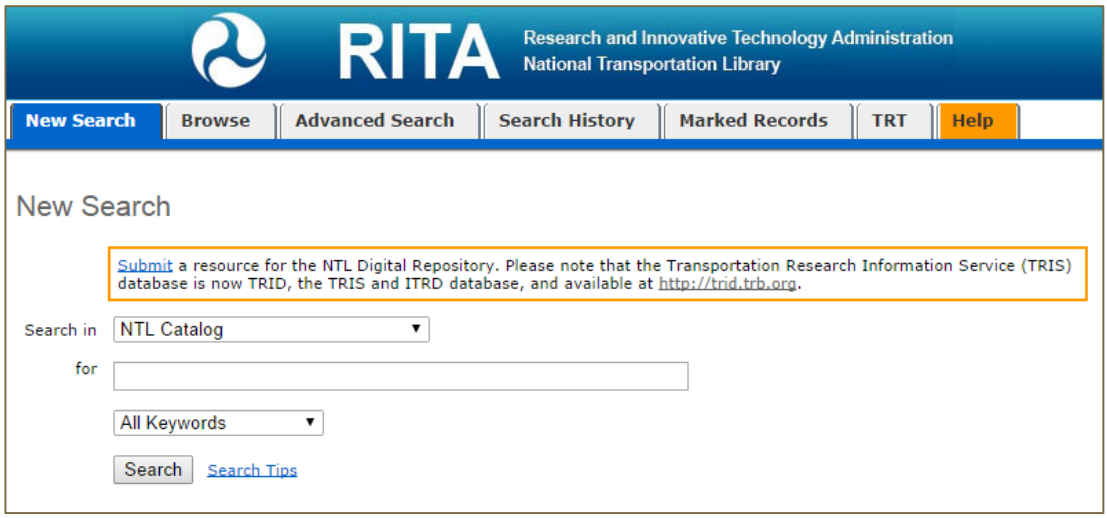


Figure 2-3: Screenshot of USDOT National Transportation Library (NTL) Integrated Search Web Page

2.2.3 Transportation Libraries Union Catalog (TLCat)

The Transportation Libraries Union Catalog (TLCat) is an Online Computer Library Catalog (OCLC) that provides meta-search capability across the resources of the nation's largest transportation libraries housed at universities, federal agencies, and state agencies.[11]

Libraries searched through TLCat are listed at: http://ntl.bts.gov/tlcat/index.html. In addition to federal repositories such as the USDOT National Transportation Library (NTL) and the TRB TRID Database, ENTERPRISE member agency libraries that are searchable through TLCat include Michigan DOT, Illinois DOT, Minnesota DOT, Kansas DOT, Iowa DOT, Washington State DOT, and Pennsylvania DOT.

Because TLCat is a customized search engine and not a collection or repository, it does not accept publications such as final technical reports.

2.2.4 TRB Research in Progress (RiP) Database

The Research in Progress (RiP) database, hosted by the Transportation Research Board (TRB), contains more than 26,000 current or recently completed transportation research projects, mostly those funded by the modal administrations of the U.S. Department of Transportation, state DOTs, or by TRB's cooperative research programs.[12] The addition of new research projects and status changes are made online by each individual contributor, and each project is removed from the database when it is completed.

Though anyone can access records from the RiP database online, only state agencies, federal agencies and universities with designated user privileges can add and delete records from RiP. An agency can

request that TRB add designated individuals (such as a consultant supporting a pooled fund study) to gain access to add and delete a record from the RiP database as a representative of the agency.

2.2.5 National Technical Information Service (NTIS)

The National Technical Information Service (NTIS), hosted by the United Stated Department of Commerce, is a central resource for government-funded scientific, technical, engineering, and business related information. NTIS provides access to approximately 3 million publications covering over 350 subject areas, including transportation.[13] Documents in the NTIS Technical Reports collection are the results of federally funded research. NTIS provides public access to a number of digital reports at no cost, while other publications (such as older print-only materials) are available for purchase.

NTIS will accept reports from ENTERPRISE. Electronic and print submittal is required, along with a completed Report Documentation Page (SF-298). Complete submittal instructions can be found at: http://www.ntis.gov/services/submit/.

2.2.6 Transport Research Portal

The Transport Research Portal was developed as part of the Hermes Project, an international collaborative project funded by the European Commission's 7th Framework Programme for Research, Technological Development, and Demonstration (FP7 Programme). The aim of Hermes Project is to foster a closer and more effective communication between researchers working in the field of transport technologies, both in the European Union (EU) and internationally.[14]

Upon inquiry to the Portal's online contact, a response indicated that the Transport Research Portal does not house or store documents; rather, the Portal serves as a gateway to transportation databases and digital repositories worldwide. The response recommended that ENTERPRISE upload its reports to the TRB TRID database, as anything that is uploaded into TRID will be available when searching the Transport Research Portal.

3.0 Distribution Options

This section includes a summary of distribution options and estimated costs for distributing final technical reports to libraries and databases, as well as a summary of options for distributing announcements when final reports are published, for consideration in newsletters or other communications mechanisms of ENTERPRISE agency libraries and ITS professional organizations.

3.1 Federal Transportation Libraries and Online Databases

In order to collect information about federal transportation libraries and databases (including whether or not they will accept reports from ENTERPRISE and any associated costs), online research was conducted and contacts were made. A summary of this research and inquiries can be found in Table 3-1.

Table 3-1: Distribution Options for Federal Transportation Libraries and Online Databases

Agency/ Organization	Library	Accepts reports?	Cost	Submission Instructions
U.S. Department of Transportation (USDOT)	National Transportation Library (NTL) Digital Repository	Yes	None	Email PDF and web link to: NTLDigitalSubmissions@dot.gov (Accepts reports back to 1995)
	Volpe National Transp. Systems Center	Yes	None	Email PDF and web link to: susan.dresley@dot.gov
	FHWA Research Library (Turner Fairbank)	No - Submit to NTL	N/A	N/A
Transportation Research Board (TRB)	Transportation Research Information Database (TRID)	Yes	None	Submit PDF and web link at: http://trid.trb.org/submit.aspx Or email PDF and web link to: tris-trb@nas.edu
	Research In Progress (RiP) Database	No – Accepts active research	None	Submit information at: http://rip.trb.org/ (Consultants gain access to data entry portal through Pooled Fund lead state)
	TRB Library	No – Submit to TRID	N/A	N/A
Transport Canada	Transport Canada does not have a library (closed in 2012)			
U.S. Department of Commerce	National Technical Information Service (NTIS)	Yes	None	Submit PDF, hard copy, and report documentation page: • Submit PDF or URL to: input@ntis.gov • Send 1 hard copy to address at: www.ntis.gov/services/submit/ • Include a completed Report Documentation Page (SF-298) with each report
European Commission	Transport Research Portal	No – Submit to TRID	N/A	N/A

3.2 ENTERPRISE Agency Libraries

A survey was sent to librarians and research program managers at ENTERPRISE agencies, to collect information about whether they would accept final technical reports from ENTERPRISE, associated costs, and submittal processes. Because it is becoming more common for agency research programs to disseminate research findings within their agencies and beyond, the survey also inquired about whether these entities have mechanisms in place to distribute ENTERPRISE products (e.g. print or electronic newsletter, social media, etc.) Finally, respondents were asked to review the list of national transportation libraries and databases to which ENTERPRISE is considering reports and to offer any additional suggestions.

The survey was sent to the 14 ENTERPRISE state/provincial member agencies. 7 responses to the survey were received. Questions and responses are summarized in Tables 3-2 through 3-5.

Table 3-2: ENTERPRISE Agency Library Survey Question 1 and Responses: In what format should reports be submitted, what are the submittal instructions, and is there a cost to submit reports?

Agency	Report Format	Submittal Instructions	Cost
Georgia DOT	Electronic	Email to Stardina Wyche: swyche@dot.ga.gov	None
Iowa DOT	Electronic (PDF)	Email to Leighton Christiansen: leighton.christiansen@dot.iowa.gov and dot.library@dot.iowa.gov	None
Illinois DOT	Both print and electronic	**Print**: Karen Perrin, Policy and Research Center, Illinois DOT, 2300 S. Dirksen Parkway, Room 320, Springfield, IL 62764 **Electronic**: Karen.Perrin@illinois.gov	None
Pennsylvania DOT	Electronic (PDF & web link)	Email to Kenita Honesty: khonesty@pa.gov	None
Minnesota DOT	Both print and electronic	**Print**: MnDOT Library, M.S. 155, Room 175 Transportation Building, 395 John Ireland Boulevard, Saint Paul, MN 55155 **Electronic**: library.dot@state.mn.us	None
Kansas DOT	Electronic preferred (PDF or link to PDF online)	**Electronic**: library@ksdot.org **Print or CD-ROM**: Marie Manthe, Kansas DOT Library, 700 SW Harrison St. Topeka, KS, 66603-3745	None
Washington State DOT	Both print and electronic	**Print**: WSDOT Library, SLC-15, PO Box 47425 310 Maple Park SE OLYMPIA WA 98504-7425 **Electronic**: Library@wsdot.wa.gov	None
Arizona DOT	Both print and electronic	**Print**: Dale Steele, 206 S. 17th Ave., MD 075R Phoenix, AZ 85007 **Electronic**: dsteele@azdot.gov	None

Table 3-3: Survey to ENTERPRISE Agency Libraries Question 2 Responses: What outreach mechanisms does your library or research program have, will you accept final reports from ENTERPRISE, and what is the process to submit announcements?

Agency	Outreach Mechanisms	Accept Final Report Announcements from ENTERPRISE?	Submittal Instructions
Georgia DOT	Electronic newsletter, Print newsletter	Yes	Submit to bbui@dot.ga.gov or swyche@dot.ga.gov. A written summary article is helpful.
Iowa DOT	None	N/A	N/A
Illinois DOT	Electronic newsletter	Yes	Submit to: Karen.Perrin@illinois.gov
Pennsylvania DOT	Mass email with all new library materials for the quarter	Yes	Submit to: khonesty@pa.gov
Minnesota DOT	Electronic/print newsletter, Facebook page, Twitter, Blog, LinkedIn group, Email list	Yes	Submit to: nick.busse@state.mn.us (Also submit photos for social media mechanisms)
Kansas DOT	Email list (primary), quarterly electronic newsletter	No	N/A
Washington State DOT	Distribution list via GovLoop; website	No	N/A
Arizona DOT	None	N/A	N/A

Table 3-4: Survey to ENTERPRISE Agency Libraries Question 3 Responses: Are there any other transportation libraries or databases (USDOT NTL, FHWA Research Library, USDOT Volpe Library, TRB Library, Transport Canada Library, TRB TRID, TRB Research in Progress database) you would recommend that ENTERPRISE submit its technical reports to?

Agency	Suggested Library or Database
Iowa DOT	• Northwestern University Transportation Library • (European Commission) Transport Research Portal
Minnesota DOT	• NTIS (National Technical Information Service)
Kansas DOT	• Northwestern University Transportation Library
Washington State DOT	• NTIS (National Technical Information Service) • Northwestern University Transportation Library • UC-Berkeley Institute of Transportation Studies Library • FHWA Office of Corporate Research & Technical Innovation Management
Georgia DOT, Illinois DOT, Pennsylvania DOT, Arizona DOT: *No additional suggestions provided*.	

Table 3-5: Survey to ENTERPRISE Agency Libraries Question 4 Responses: Please provide any advice or recommendations you may have, regarding ENTERPRISE's efforts to distribute its published final reports.

Agency	Recommendations
Iowa DOT	• An RSS feed or subscribable email alert might be a good idea. • Seek permission to distribute announcements via the TRANLIB listserv that goes out to transportation librarians around the world.
Kansas DOT	• ENTERPRISE members should find out if their agency has a library and/or digital repository, make contact with the staff overseeing it, and either forward final reports to those staff members, or encourage them to sign up to receive alerts or emails when new reports are released.
Georgia DOT, Illinois DOT, Pennsylvania DOT, Minnesota DOT, Washington State DOT, Arizona DOT: *No recommendations provided.*	

3.3 Highly Accessed University Transportation Libraries

Per recommendations from library and research management professionals at ENTERPRISE agencies, collected via the survey summarized in Section 3.2 of this report, the following two highly accessed university-based transportation libraries were contacted to learn about the potential to submit ENTERPRISE final technical reports to their collections:

- Northwestern University Transportation Library
- Institute of Transportation Studies Library at University of California, Berkeley

3.3.1 Northwestern University Transportation Library

The Transportation Library of Northwestern University is one of the largest transportation information centers in the world, containing over 500,000 items and encompassing information on all transportation modalities, including: air, rail, highway, pipeline, water, urban transport and logistics. It includes a significant collection on law enforcement, police management and traffic enforcement.[15]

The Northwestern University Transportation Library will accept final technical reports from ENTERPRISE. While acceptance of materials is not guaranteed, the majority of submitted materials are accepted. There is no cost to submit reports.

When submitting reports to the Northwestern University Transportation Library, a PDF attached to an email is preferred. Other acceptable formats include a link to a webpage for where the report can be downloaded or a hard copy. For email submission, send a PDF to Roberto Sarmiento, Head of the Transportation Library, at r-sarmiento@northwestern.edu.

3.3.2 Institute of Transportation Studies Library at University of California, Berkeley

The Harmer E. Davis Transportation Library at the Institute of Transportation Studies, University of California, Berkeley, houses one of the pre-eminent transportation collections in the United States. The ITS Library serves the research needs of the Institute of Transportation Studies and the University of California system.

Upon contacting the Institute of Transportation Studies Library, an email response from a staff member indicated that while many of the ENTERPRISE reports appear to be relevant to the interests of their students and staff, the library is not able to accept reports due to low staffing levels. The response also indicated that the ITS Library relies heavily on the TRB TRID database when conducing literature searches and strongly recommended that ENTERPRISE submit technical reports to TRID.

3.4 ITS Professional Organizations

ITS professional organizations were chosen to be investigated as a potential resource to distribute announcements when ENTERPRISE final technical reports are published, due to the strong potential to reach many ITS practitioners. It is important to note that these organizations are currently strongly utilized by ENTERPRISE to share project findings through presentations at national and locally-sponsored conferences and annual meetings. Therefore, inquiries to these agencies were focused on the outreach/communications mechanisms (e.g. newsletters, membership email lists, social media) that exist within each organization and the potential for ENTERPRISE to submit announcements of final technical reports, for inclusion in these mechanisms.

3.4.1 ITS America

The ITS America website was reviewed for the existence of newsletter or other communications mechanisms. ITS America was also contacted to inquire about the potential for ENTERPRISE to submit announcements of final technical reports.

Members of ITS America can take advantage of in-place mechanisms to publicize events and products, including press release postings to the ITS America homepage and announcements in the e-newsletter.

ENTERPRISE, as a member of ITS America, can submit announcements of final technical reports to ITS America, for consideration to be included in the monthly *ITS America Society Update* newsletter. ITS America encourages short, concise submissions that have links to additional content, and they reserve the right to edit content prior to publishing. Announcements of ENTERPRISE final technical reports should be submitted to Caroline Kotila at ckotila@itsa.org for consideration.

3.4.2 State Chapters of ITS America (ENTERPRISE member States)

State Chapters of ITS America often serve as an effective venue for sharing information and best practices among local ITS practitioners. As such, the ITS State Chapters that have representation from the ENTERPRISE member states were investigated as a potential mechanism to reach transportation professionals within the states that comprise ENTERPRISE. Audiences reached through these mechanisms often include not only ITS professionals employed by ENTERPRISE member agencies, but also industry and consultant professionals who provide services to the member agencies.

In order to request information about the outreach/communications mechanisms used by ITS State Chapters, an online questionnaire was issued to the ITS State Chapters that have representation from ENTERPRISE member states. The eleven ITS State Chapters investigated, along with the ENTERPRISE agency or agencies (shown in parenthesis) represented by each chapter, are listed below:

- ITS Arizona (Arizona DOT)
- ITS Georgia (Georgia DOT)
- Gulf Region ITS (Mississippi DOT)
- ITS Heartland (Iowa DOT, Kansas DOT, and Oklahoma DOT)
- ITS Michigan (Michigan DOT)
- ITS Midwest (Illinois DOT)
- ITS Minnesota (Minnesota DOT)
- ITS Pennsylvania (Pennsylvania DOT)
- ITS Rocky Mountain (Idaho DOT)
- ITS Texas (Texas DOT)
- ITS Washington (Washington State DOT)

Five (5) ITS State Chapters responded to the questionnaire. Questions and responses from the online questionnaire issued to ITS State Chapters with representation from ENTERPRISE agencies can be found in Table 3-7.

Table 3-7: Questions & Responses from Questionnaire to ITS State Chapters with ENTERPRISE States: What outreach mechanisms does your chapter have, how many transportation professionals do these mechanisms reach, will you accept final report announcements from ENTERPRISE, and what are the submittal instructions?

State Chapter	Outreach Mechanisms	Number of ITS professionals reached	Accept Final Report News Item?	Submittal Instructions
ITS Midwest	• Electronic/print Newsletter • Membership Email List	50-100	Yes	Email to: Charles.Sikaras@illinois.gov and john.gray2@aecom.com
ITS Heartland	• Electronic Newsletter • Membership Email List • Facebook page	More than 300	Yes	Email to: hein@ksdot.org (newsletter editor)
ITS Georgia	• Electronic Newsletter • Membership Email List • Facebook page • Twitter account • Blog	More than 300	Yes	Email to: itsgachapter@gmail.com
ITS Minnesota	• Electronic Newsletter • Website	More than 300 (Approx. 800)	Yes (If on a topic for ITS in MN)	Email to: info@itsmn.org
ITS Arizona	• Electronic Newsletter • Membership Email List	More than 300	Yes	Email to: info@itsaz.org

3.4.3 ITS Canada

The ITS Canada website was reviewed for the existence of a newsletter or other communications mechanisms. ITS Canada was also contacted to inquire about the potential for ENTERPRISE to submit announcements of final technical reports.

ITS Canada produces the "ITS Canada CONNECTS" newsletter, which is currently posted to the website. According to the October 2014 edition of "ITS Canada CONNECTS", an effort is underway to implement a software system for creating and distributing the newsletter, for future editions.[16]

ENTERPRISE, which is a member of ITS Canada, can submit final report announcements for inclusion in the "ITS Canada CONNECTS" newsletter. Announcements should be submitted to Janneke Poelking at janneke@itscanada.ca.

4.0 ENTERPRISE Decisions for Distributing Technical Reports

During the December 11, 2014 ENTERPRISE Executive Board meeting, a summary of distribution options was presented to the Board, along with an action plan and estimated costs. This section documents the distribution mechanisms selected for final technical products and an action plan listing steps to complete the dissemination.

Discussion at the December 11 Board meeting indicated that members are interested in distributing to the mechanisms that present the best value for the investment of ENTERPRISE funds. The action plan documented in this section are based on the following rationale:

- Distribution to national libraries and databases is favored over distribution to ENTERPRISE state agency libraries. National libraries and databases tend to be more highly accessed, and state agency libraries will have free access to locate published materials in national libraries and databases (e.g. the TRB TRID database).
- Minimize costs (labor and direct costs) associated with printing and mailing hard copies of reports to libraries.
- Distribution of announcements to organizations that have newsletters or other outreach mechanisms is favored since these venues present a significant payoff to reach many transportation professionals through the use of in-place distribution mechanisms.

4.1 Action Plan for Future Distribution

Following is the action plan, to be implemented for new technical projects submitted for authorization after January 1, 2015.

1) Submit Technical Project Information to TRB Research-in-Progress (RiP) Database:

The primary purpose of submitting information to the Research-in-Progress (RiP) database is to promote the work of ENTERPRISE, encourage coordination with similar research efforts, and reduce the potential for duplication of effort.

a) Submissions to the RiP database will include ENTERPRISE projects that have a significant research and/or analysis component and for which a final technical report is expected to be published at the conclusion of the project.

b) The ENTERPRISE program management consultant will work with Michigan DOT (administrating state for the ENTERPRISE Pooled Fund) to gain access to enter project information, on behalf of ENTERPRISE and the Michigan DOT.

c) For each applicable project, information will be entered into the RiP database when the project begins. Project elements to be entered will include project title, abstract, start date, anticipated completion date, status (active, completed, etc.), contract/grant number, funding amount, project URL, subject categories, sponsor organization(s), project manager(s), performing organization(s), and principal investigator(s).

d) Project information will be submitted at: http://rip.trb.org/

e) For each applicable project, information will be updated as needed, throughout the life of the project (e.g. if the project manager/champion changes, if the project abstract is modified, when projects are completed.)

2) Submit Final Technical Reports to Federal Libraries and Databases:

The primary purpose of submitting reports to federal libraries and databases is to promote the work of ENTERPRISE and contribute to the states of practice on technical ITS topics.

a) Final technical reports submitted to federal, libraries and databases will be those that are produced to document results from ENTERPRISE projects that have a significant research and/or analysis component.

b) Reports will be submitted in electronic format, to the following federal libraries and databases:
   - USDOT National Transportation Library (NTL) Digital Repository
   - USDOT Volpe National Transportation Systems Center
   - TRB Transportation Research Information Database (TRID)

c) Each electronic report submission will include a cover email with link to the report PDF on ENTERPRISE website. The cover letter/email will include a request to catalog the report in the organization's library or database.

d) Reports will contain a cover page with the ENTERPRISE logo, a technical documentation page (with report number, key words, abstract, sponsor, and other information), and an acknowledgements page that credits the ENTERPRISE member agencies, project champion(s), and other project participants. Reports will not be edited to address accessibility by people with disabilities. Individual ENTERPRISE projects might decide to make the electronic report prepared for the project accessible to people with disabilities, but these would be individual project decisions, outside of this effort to document decisions to circulate typical final technical reports.

e) Distribution lists (names, email addresses, and mailing addresses) will be updated to account for organizational/position changes, as needed.

Table 4-1 provides submittal instructions for distributing final technical reports to federal libraries and databases.

Table 4-1: Submittal Instructions for Final Technical Reports

Library or Database	Submittal Instructions
USDOT NTL Digital Repository	Email PDF and web link to: NTLDigitalSubmissions@dot.gov
USDOT Volpe National Transportation Systems Center Library	Email PDF and web link to: susan.dresley@dot.gov
TRB Transportation Research Information Database (TRID)	Submit PDF and web link at: http://trid.trb.org/submit.aspx

3) Submit Final Technical Report Announcements for Consideration in Outreach Mechanisms:

The primary purpose for submitting announcements to ITS professional organization and DOT research programs when final reports are published is to leverage existing mechanisms (e.g. newsletters, social media, other) to share findings from ENTERPRISE projects with those who can benefit from the results. The focus of this distribution is to reach transportation professionals, especially those who work within the geographical locations of the ENTERPRISE member agencies.

a) As each final technical report is completed and posted to the ENTERPRISE website, an email announcement will be created for distribution. Announcements will be sent to the following 11 organizations who indicated they will accept news items from ENTERPRISE:

- ITS America
- ITS Canada
- ITS State Chapters with ENTERPRISE members: ITS Minnesota, ITS Arizona, ITS Georgia, ITS Heartland, and ITS Midwest
- ENTERPRISE Agency Libraries or Research Programs: Georgia DOT, Pennsylvania DOT, Minnesota DOT, Illinois DOT

b) Announcements will include a 1-2 paragraph summary of the project, URL linking to the report published on the ENTERPRISE website, and a request to consider including the final report announcement in their newsletters or other outreach mechanisms.

c) Distribution lists (names, email addresses) will be updated to account for organizational and position changes, as needed.

Table 4-2 provides submittal instructions for distributing announcements of published final technical reports, for consideration to be included in newsletters and other outreach mechanisms.

Table 4-2: Submittal Instructions for Final Technical Report Announcements

Organization		Submittal Instructions
ITS Professional Organizations	ITS America	Email to: Caroline Kotila at ckotila@itsa.org
	ITS Canada	Email to: Janneke Poelking at janneke@itscanada.ca
	ITS Midwest	Email to: charles.sikaras@illinois.gov and john.gray2@aecom.com
	ITS Heartland	Email to: Tom Hein at hein@ksdot.org
	ITS Georgia	Email to: itsgachapter@gmail.com
	ITS Minnesota	Email to: info@itsmn.org
	ITS Arizona	Email to: info@itsaz.org
Agency Research Programs	Georgia DOT	Email to: bbui@dot.ga.gov or swyche@dot.ga.gov
	Pennsylvania DOT	Email to: Kenita Honesty at khonesty@pa.gov
	Illinois DOT	Email to: Karen Perrin at Karen.Perrin@illinois.gov
	Minnesota DOT	Email to: Nick Busse at nick.busse@state.mn.us (Also submit photos for social media mechanisms)

4) Document All Distributions Completed:

- A tracking log will be created and maintained to document all final technical reports distributed, including the following for each report: report title, organizations to which the report was submitted, and dates of submittal. The tracking log will be posted to and maintained on the ENTERPRISE "members only" web page.

5) Provide Descriptive Meta Elements on ENTERRPRISE Project Web Pages

- Meta tags include key words describing a webpage and are used by online search engines to decide which results are relevant to show users who have typed in a search query. The use of meta tags on ENTERPRISE project web pages that include final technical reports may enhance the search results when a user types in a topic.
- All ENTERPRISE project web pages will include meta tags with descriptive text such as keywords, to enhance the ability for internet search engines to find and list ENTERPRISE web pages when user searches are conducted.

4.2 Costs for Future Distribution

The estimated cost to execute the action plan outlined in Section 4.1 is $600 per project. These costs include distribution of project information, reports, and news announcements for technical projects authorized after January 1, 2015. Costs for these future projects will be included in the budget for each individual project authorization scope of work.

4.3 Current Projects and Previously Published Reports

In an effort to distribute findings from ENTERPRISE that are currently underway and previously published technical reports, this section outlines actions to be taken for these cases.

4.3.1 Current Projects Underway or Awaiting Authorization

Current projects and those projects for which an authorization is underway will be addressed on a case-by-case basis, depending on the level of funding available within each project. Distribution of final technical reports may include a range of options and costs, including limited distribution to one or more of the libraries, databases, or organizations listed in this document. These projects include:

- Countermeasures for Wrong Way Driving on Freeways (authorized, in progress)
- Performance Measures and Reporting (awaiting authorization)
- Integrating ITS with Planning and Operations (awaiting authorization)

4.3.2 Previously Published Final Technical Reports

The following seven (7) technical reports were published by ENTERPRISE between 2012 and 2014:

- Deployment Strategy for Rural Connected Vehicle Systems
- Next Generation Traffic Data and Incident Detection from Video
- Synthesis of Intelligent Work Zone Practices
- The Next Era of Traveler Information
- Use and Impacts of Camera Images and Other Displays of Traveler Information
- Understanding Utilization of Third Party Travel Data and Information
- Impacts of Traveler Information on the Overall Network

These reports will be submitted for inclusion in the following three federal libraries and databases: USDOT NTL Digital Repository, USDOT Volpe Library, and TRB TRID database. Costs for this distribution will be supported by the ENTERPRISE management support contract.

Works Cited

[1] United States Department of Transportation. National Transportation Library (NTL) website. http://ntl.bts.gov/about_ntl.html

[2] United States Department of Transportation. Federal Highway Administration (FHWA) Research Library website. http://www.fhwa.dot.gov/research/library/

[3] United States Department of Transportation. Volpe National Transportation Systems Center Library website. http://www.volpe.dot.gov/library/about-library

[4] Transportation Research Board. Transportation Research Library (TRB) Library website. http://www.trb.org/InformationServices/TRBLibrary1.aspx

[5] CBC News Ottawa. (Posted May 2, 2012). *Federal libraries, archives shutting down - Researchers, academics, genealogists losing important research tools for their work.* Retrieved October 1, 2014 from CBC News Ottawa: http://www.cbc.ca/news/canada/ottawa/federal-libraries-archives-shutting-down-1.1139085

[6] Minnesota Department of Transportation website. http://www.dot.state.mn.us/library/dotlist.html

[7] Iowa Department of Transportation. Iowa Department of Transportation Library website. http://www.iowadot.gov/research/databaselist.html

[8] Transportation Research Board. Transportation Research Information Database (TRID) website. http://trid.trb.org/

[9] United States Department of Transportation. National Transportation Library (NTL) website. http://ntl.bts.gov/policies/colldev.html#_Toc343614906

[10] United States Department of Transportation. National Transportation Library (NTL) website. http://ntlsearch.bts.gov/repository/index.do?&d=dc+OR+po

[11] Online Computer Library Center (OCLC) global cooperative. Transportation Libraries Union Catalog (TLCat) website. http://tlcat.worldcat.org/

[12] Transportation Research Board. Research in Progress website. http://rip.trb.org/

[13] United States Department of Commerce. National Technical Information Service (NTIS) website. http://www.ntis.gov/

[14] European Commission 7th Framework Programme for Research, Technological Development, and Demonstration. Transport Research Portal website. http://www.intransport.eu/search

[15] Transportation Library of Northwestern University website. http://www.library.northwestern.edu/libraries-collections/evanston-campus/transportation-library

[16] ITS Canada. October 2014 “ITS Canada CONNECTS Newsletter.” http://www.itscanada.ca/news/its_newsletter/fall2012/index.html