Transportation Oral History
State of the Practice
and a Path Forward
TRANSPORTATION RESEARCH BOARD
2019 EXECUTIVE COMMITTEE OFFICERS

Chair: Victoria A. Arroyo, Executive Director, Georgetown Climate Center; Assistant Dean, Centers and Institutes; and Professor and Director, Environmental Law Program, Georgetown University Law Center, Washington, D.C.

Vice Chair: Leslie S. Richards, Secretary, Pennsylvania Department of Transportation, Harrisburg

Division Chair for NRC Oversight: Susan Hanson, Distinguished University Professor Emerita, School of Geography, Clark University, Worcester, Massachusetts

Executive Director: Neil J. Pedersen, Transportation Research Board

TRANSPORTATION RESEARCH BOARD
2018–2019 TECHNICAL ACTIVITIES COUNCIL

Chair: Hyun-A C. Park, President, Spy Pond Partners, LLC, Arlington, Massachusetts

Technical Activities Director: Ann M. Brach, Transportation Research Board

Caroline Alméras, Secretary General, European Conference of Transport Research Institutes, Standing Committee on International Cooperation Cochair


George Grimes, CEO Advisor, Patriot Rail Company, Denver, Colorado, Rail Group Chair

Brendon Hemily, Principal, Hemily and Associates, Public Transportation Group Chair

Nikola Ivanov, Deputy Director, Center for Advanced Transportation Technology Laboratory, University of Maryland, College Park, Young Members Council Chair

C. James Kruse, Director, Center for Ports and Waterways, Houston, Texas, Marine Group Chair

Debra Miller, Former Secretary, Kansas Department of Transportation, Freight Systems Group Chair

Mark Reno, Principal Engineer, Quincy Engineering, Inc., Rancho Cordova, California, Design and Construction Group Chair

Elizabeth Rushley, Lawhon & Associates, Inc., Columbus, Ohio, Planning and Environment Group Chair

Joseph Schofer, Professor and Associate Dean of Engineering, McCormick School of Engineering, Northwestern University, Evanston, Illinois, Policy and Organization Group Chair

William Varnedoe, Partner, The Kercher Group, Raleigh, North Carolina, Operations and Preservation Group Chair

Fred R. Wagner, Partner, Venable, LLP, Legal Resources Group Chair
Transportation Oral History
State of the Practice and a Path Forward

Jon Williams
Transportation Research Board (Retired)

Sponsored by
Standing Committee on Transportation History

June 2019
The Transportation Research Board is one of seven major programs of the National Academies of Sciences, Engineering, and Medicine. The mission of the Transportation Research Board is to provide leadership in transportation innovation and progress through research and information exchange, conducted within a setting that is objective, interdisciplinary, and multimodal.

The Transportation Research Board is distributing this E-Circular to make the information contained herein available for use by individual practitioners in state and local transportation agencies, researchers in academic institutions, and other members of the transportation research community. The information in this E-Circular was taken directly from the submission of the authors. This document is not a report of the National Academies of Sciences, Engineering, and Medicine.

Standing Committee on Transportation History
Asha Agrawal, Chair

David Ballard
Zach Barlow
Pierre Barrieau
Susan Binder
Jeffrey Brown
Gregory Casto
Ariane Dupont-Kieffer
Bradley Flamm
Emil Frankel
John Fuller
Nicholas Grisham
Owen Gutfreund
Björn Hasselgren
Julia Hildebrand
Mohammad Jalayer
Gloria Jeff
Robert Kirk
Hope Luhman

Peter Martin
Jean-Pierre Medevielle
Ann Miller
Daniel Rust
Robert Skinner
Ruth Steiner
Brian Tobin
Amit Varma
Roger White
Jon Williams

Oral History Subcommittee of the TRB Committee on Transportation History

Thomas B. Deen
John Fischer
John Fuller
Jonathan Gifford
Bob Noland
Alan E. Pisarski
Rolf Schmidt

Bob Skinner
Ruth Steiner
Marty Wachs

TRB Staff
Claire Randall, Senior Program Officer

Transportation Research Board
500 Fifth Street NW
Washington, D.C.
www.TRB.org
Overview

Oral history collects memories and personal commentaries of historical significance through recorded interviews (Ritchie, 2015, p.1). Kathryn Walbert, a prominent oral historian, has written the following to explain the unique value of oral history. 1

We have a wide range of primary sources upon which to draw when approaching the past. Newspapers, census data, diaries, letters, photographs, memoirs, and other documents all surely have their place, but oral history has several unique benefits that no other historical source provides.

Oral history allows you to compensate for the digital age. Historians of the eighteenth and nineteenth centuries can rely on extensive correspondence and regular diary entries for information about life in the past. But in today’s world, telephone, email, and web-based communication have largely replaced those valuable written records. Without oral history, much of the personal history of the late-twentieth and twenty-first centuries would be lost to future historians.

Oral history allows you to learn different kinds of information. Even when we do have extensive written sources about someone, we may not have the kind of information we want. Newspaper articles, speeches, and government documents may reveal significant useful information, but those kinds of sources often neglect more personal and private experiences. Through oral history, you can learn about the hopes, feelings, aspirations, disappointments, and personal experiences of the people you interview.

Oral history provides historical actors with an opportunity to tell their own stories in their own words. Through oral history, interviewees have a chance to participate in the creation of the historical retelling of their lives. Unlike … [historical figures who are no longer alive] and cannot complicate, extend, or argue with our understanding of… [their lives], living historical actors can enrich our understanding of history by telling their version of events and their interpretations in their own words.

The Oral History Subcommittee of the Transportation Research Board History Committee has conducted a project to locate, organize, preserve, and make useful existing oral histories of major transportation programs, projects, organizations, and methods by developing a comprehensive inventory. To date, over 1,000 transportation oral histories have been discovered, some one-offs, most as part of thematic collections.

These histories were found through a survey of 50 state DOT libraries, and 34 other libraries and collections pertaining to transportation. Many of the histories have been

1 The Value of Oral History
transcribed, digitized, and made available through the internet. They have been organized into a database that is available through the home page of the TRB History Committee.

These oral histories can be divided into the following categories:

- The Arc of a Long Career
- History from Below
- History of an Organization
- Modal Policy
- Mega Projects
- Contribution to a Broader Historical Enterprise
- Disasters

Some notable findings include:

- **Loma Prieta Earthquake.** A collection of interviews by Caltrans of over 100 of its employees responding to the 1989 Loma Prieta earthquake.
- **Interstate Highway System.** Interviews conducted by the American Association of State Highway and Transportation Officials of 101 individuals who played an important role in the planning and implementation of the construction of the Interstate Highway System in the United States.
- **Airline Industry.** The DePaul University College of Law “Conversations with Aviation Leaders” oral history project includes nine interviews with leaders of the airline industry to document the legal and policy history of the airline industry during the age of global deregulation.
- **Railroad Porters.** Oregon State University had an African American Railroad Porters Oral History Preservation Project, with 30 recorded and transcribed interviews.

Having established a baseline of existing transportation oral histories, the Oral History Subcommittee has turned its attention to collecting new oral histories from those with prominent careers in the transportation profession, thus allowing all others to learn from their experiences and recollections. To this end, the project proposes creating a guidebook for transportation agencies to conduct their own oral histories. This proposal is included as Appendix H of the report.

In preparation for the oral history guidebook proposal, the body of this report explores the following core topics associated with the collection of new oral histories:

- Purpose of the Project
- Selecting the Interviewees
- Archival Strategy
- Recording Equipment
- Transcription
- Preparing for an Oral History Interview
- Financial Cost of Oral Histories
- Sources of Funding
Also, in preparation for the collection of new oral histories, the Oral History Subcommittee has secured the cooperation of four repositories for new oral histories. These are:

- USDOT National Transportation Library
- George Mason University Library
- Voorhees Transportation Center Library, Rutgers University
- University of California Institute of Transportation Studies Library

ACKNOWLEDGMENTS

Special recognition is due to Brie Schwartz for her assistance with the internet survey of libraries and special collections conducted for this project, and to the many librarians and others who responded to the survey’s request for oral history information.

PUBLISHER’S NOTE

The information in this E-Circular represents the collective work of the individual subcommittee members and not necessarily the organizations, agencies, or companies where they work. The views expressed in this publication are those of the subcommittee and do not necessarily reflect the views of the Transportation Research Board or the National Academies of Sciences, Engineering, and Medicine. This publication has not been subjected to the formal TRB peer-review process.
Preface

As a start we need to ask: What is an oral history? The Oral History Association defines it as:

Oral history is a field of study and a method of gathering, preserving and interpreting the voices and memories of people, communities, and participants in past events.

Today, as the association and others have pointed out, with the advent of the telephone, email, and the internet, the traditional record of letters, memoranda and other documents may no longer exist. Thus, more effort must be directed toward the recording of views of past history from those who were witness to it, or involved in it, to support our understanding of past events for the benefit of future historians and other interested parties.

A second question is: Why transportation oral history?

In America, and in many other places in the world, the period since World War II has seen dramatic changes in the technology, the impacts, the political contexts, as well as the social and economic implications of transportation in people’s lives. Examples of these changes abound and include the building of the Interstate Highway System, the shift in intercity travel from rails to air and the related relocation of mid-city passenger terminals to outlying airports, the shift from public transit to private cars along with the movement of mid-city shopping to suburban shopping centers, and the explosion of international trade enabled in part by containerization of freight. Many who participated in this revolution are reaching an age where their thoughts and perspectives, crucial to the understanding of these events may be lost unless we record and organize their experiences so as to permit easy access by future historians. There are many transportation professionals, now gone, from whom our understanding of the past would have been enhanced had we had the opportunity and foresight to ask about, record, and organize their experiences.

In such cases it may not be the basic facts that describe important events that are missing as those often are available. Rather, knowing the details of how decisions were made, what worked and what didn’t, and why, and what the societal conditions were at the time, inform our understanding. Clearly, what is asked, who is asked, and who does the asking is critical. More than a recitation of the good old days is required. Sometimes the results may be mini-autobiographies that shed light on important events.

Others, outside the transportation profession, have remarked about how weak we are in transportation in understanding our history. The TRB History Committee was formed to respond to that weakness. The accumulation and organizing of oral histories in our profession can make a significant contribution to expanding that understanding.

Alan E. Pisarski
Principal, Alan Pisarski Consulting
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Literature Review</td>
<td>2</td>
</tr>
<tr>
<td>Questionnaire</td>
<td>3</td>
</tr>
<tr>
<td>Surveys to Locate Oral History Collections</td>
<td>4</td>
</tr>
<tr>
<td>Findings</td>
<td>5</td>
</tr>
<tr>
<td>Discussion of Findings</td>
<td>9</td>
</tr>
<tr>
<td>Planning for New Oral Histories</td>
<td>11</td>
</tr>
<tr>
<td>Purpose of the Project</td>
<td></td>
</tr>
<tr>
<td>Selecting the Interviewees</td>
<td></td>
</tr>
<tr>
<td>Archival Strategy</td>
<td></td>
</tr>
<tr>
<td>Recording Equipment</td>
<td></td>
</tr>
<tr>
<td>Transcription</td>
<td></td>
</tr>
<tr>
<td>Preparing for an Oral History Interview</td>
<td></td>
</tr>
<tr>
<td>Financial Cost of Oral Histories</td>
<td></td>
</tr>
<tr>
<td>Sources of Funding</td>
<td></td>
</tr>
<tr>
<td>Resources</td>
<td>21</td>
</tr>
<tr>
<td>Appendix A. Questionnaire for Transportation Oral History</td>
<td>23</td>
</tr>
<tr>
<td>Appendix B. Columbia University</td>
<td>26</td>
</tr>
<tr>
<td>Appendix C. Louisiana State University T. Harry Williams Center for Oral History</td>
<td>28</td>
</tr>
<tr>
<td>Appendix D. Oral History Metadata Synchronizer</td>
<td>31</td>
</tr>
<tr>
<td>Appendix E. Incomplete Oral Histories</td>
<td>32</td>
</tr>
<tr>
<td>Appendix F. Prospectus: Oral History Guidebook for Transportation Agencies</td>
<td>35</td>
</tr>
</tbody>
</table>
Introduction

According to Donald Ritchie,

Oral history collects memories and personal commentaries of historical significance through recorded interviews. An oral history interview generally consists of a well-prepared interviewer questioning an interviewee and recording their exchange in audio or video format. Recordings of the interview are transcribed, (and) summarized or indexed and then placed in a library or archives (Ritchie, 2015, p.1).

One objective of this project is to locate, organize, preserve, and make useful existing oral histories of major transportation programs, projects, organizations, and methods by developing a comprehensive inventory of oral histories recorded by key participants in these activities. The resulting synthesis may be used to establish in one place a portal to transcripts and recordings that are in publicly accessible archives, and to establish a program for finding permanent, publicly accessible homes for transcripts and recordings that are not in accessible archives. As well, the project will propose and detail a way forward for doing new transportation oral histories.

Information for this project was gathered by literature review, surveys, and interviews. Findings are documented in this report. The project is overseen by the TRB History Committee Oral History Subcommittee, which has reviewed all materials, and has participated in the work of the project. It is intended that the this report be published as a Transportation Research Board E-Circular sponsored by the TRB Transportation History Committee and attributed to members of the committee.
Literature Review

Literature of the discipline of oral history was reviewed to locate existing collections that might contain transportation oral histories, and to discover "best practices" for conducting future oral histories including approaches, tools, and resources generally available to oral historians and useful to transportation historians and policy researchers.

Candidates for survey were discovered among state departments of transportation libraries, located from Minnesota DOT Transportation Library’s Directory of State Highway and Transportation Department Libraries (2017). Other libraries and collections were identified from the Oral History Association’s list of Oral History Centers and Collections (Oral History Association, 2017), and the USDOT National Transportation Library’s Directory of Transportation Libraries and Information Centers (Dresley, 2014).

There is a copious literature on how to conduct oral histories. Two volumes were especially useful sources of information on the practice of oral history: *Doing Oral History* (Ritchie, 2015) and *The Oral History Manual* (Sommer and Quinlan, 2009). As well, the Oral History Association webpage includes a section on “Principles and Best Practices,” and a list of “Web Guides to Doing Oral History,” with links to each guide (Oral History Association, 2017).
Questionnaire

An online questionnaire was prepared with assistance from TRB staff (see Appendix A). The questionnaire explored the following:

- Purpose of collecting
- Number of interviews
- Dates of collection
- Topics of interviews
- Transcription and editing practices
- Media for storage
- Procedures by which researchers can access them, including URLs

The questionnaire was formatted for transmission via an e-survey provider.
Surveys to Locate Oral History Collections

The study surveyed two groups: state departments of transportation libraries and other libraries and collections.

Fifty-one state DOT libraries were surveyed. Of these, 37 responded to the survey. The non-respondents were then sent a second survey questionnaire. Those not responding to this were then surveyed by a telephone call to the librarian. For some of these, there was no current librarian in place to respond. The web pages of the remaining non-responding states were then searched using the term “oral history.” This exercise turned up only a combined New York State DOT and Vermont DOT project to memorialize the Lake Champlain Bridge, which included 22 oral histories. Of those responding to the survey and those contacted by phone, only four were found to have oral history collections pertaining to the DOT and its operations. These are:

- Caltrans, which from 1978–1998, produced the “Highway Recollections” series consisting of tape recordings and published transcriptions of interviews with retired engineers, highway maintenance workers, administrators, and other personnel who have shared their insights on past highway development and changes within the Department. As well, in 1989, Caltrans commissioned an oral history project to document the personal and professional experiences of Caltrans employees who worked to restore the state's damaged infrastructure following the Loma Prieta earthquake.

- The Kentucky Transportation Center, which is affiliated with the Transportation Cabinet, in 2010 conducted two oral history projects: a history of the Transportation Center and a history of transportation in Kentucky.

- Oregon DOT from 1976 to 2015 had an extensive oral history program with interviews of 100 of its employees. Many of these are in need of being digitized and transcribed. As well, an interview with chief engineer Cathy Nelson was videotaped upon her retirement from the DOT.

- South Dakota DOT commissioned a history of the DOT, 1956–present, titled “Going Places.” While this has not been published, its preparation included a number of oral histories of DOT employees. (History of the South Dakota Department of Transportation, 2017).

Interviews with a number of state DOT librarians disclosed that many states have collections of oral histories that are housed in state archives or libraries.

The second set of surveys was sent to “other libraries and collections.” Thirty-four entities were selected for survey based on the following criteria: there is focus on transportation, and there is a known collection of oral histories. Of these, 32 responded either to the survey or to phone interviews. Several additional repositories were identified in the course of the survey and interview processes and were added to those surveyed.
Findings

Over 1,000 transportation oral histories were identified, some one-offs, most as part of thematic collections. Information on these is found in a table on the TRB Transportation History Committee webpage (https://transporthistory.wordpress.com/oral-histories/). This includes:

- Location by state
- Repository
- Name of the history
- Year or years collected
- Format
- Description
- URL to the history, or when this is not available, to the repository where it is held

The table has been sorted alphabetically by state. URLs are hyperlinked to the item in the “Name of the History” column.

Most of these histories fall into one or more of the following categories:

- The Arc of a Long Career
- History from Below
- History of an Organization
-Modal Policy
- Mega Projects
- Contribution to a Broader Historical Enterprise
- Disasters

THE ARC OF A LONG CAREER

This category comprises oral histories of those with prominent careers in the transportation profession. This includes key participants in national, state, and metropolitan transportation programs, as well as leaders in research and private sector work. Typically, the interviewee discusses their education, early work experiences, major achievements, and colleagues and protégées encountered throughout their career. It is from these histories that we might gain valuable insights for the future development and operation of our transportation systems. Notable examples are the Paula Hammond interview conducted as part of the Oregon State University Sesquicentennial Oral History Project, the interviews with Louis Gambaccini, Thomas B. Deen, Martin Robins, Marty Wachs, and Alan E. Pisarski conducted by the Alan M. Voorhees Transportation Library and Oral History Initiative, and the interview with Robert Albee, to document the Boston, Massachusetts Big Dig.
HISTORY FROM BELOW

“History from below seeks to take as its subjects ordinary people, and concentrates on their experiences and perspectives, contrasting itself with the stereotype of traditional political history and its focus on the actions of ‘great men’” (University of London, 2018).

Oral history lends itself well to giving voice to those who might otherwise be hidden from historical accounts. Significant findings include the Oregon State University “Oregon African American Railroad Porters Oral History Preservation Project,” with 30 recorded and transcribed interviews.

The Newberry Library Railroad Archives holds transcriptions of 15 depositions describing work conditions of Pullman porters for the trial of Earl A. Love v. The Pullman Company. Mr. Love was a porter for Pullman Co. for more than 40 years, during which time he was required to perform the duties of a conductor, without receiving the higher pay associated with that job. Mr. Love claimed discrimination based on his race, under Title VII of the Civil Rights Act of 1964.

HISTORY OF AN ORGANIZATION

Oral histories provide a means for first person accounts of life working in an organization, and the history through time of that organization, including its growth, successes and failures. The interviews may be part of a larger enterprise to capture the organization’s history.

The consulting firm of Alan M. Voorhees & Associates, Inc., (AMV) was founded in 1961, and grew to include ten offices in the United States, as well as offices in Caracas, London, Melbourne, Sao Paulo, Toronto, and Zurich. In 2017, former employees of AMV held a reunion during which they recounted the early history of the company, and told many stories that relayed the culture, history, and folklore of AMV. These have been recorded on videotape and are available through YouTube.

The Louisville and Nashville Railroad (the L&N), was a Class I railroad that operated freight and passenger services in the southeast United States. Chartered by the state of Kentucky in 1850, the road grew into one of the great success stories of American railroad business, operating under one name continuously for 132 years (Wikipedia, 2018). The University of Louisville Libraries and the Kentucky Oral History Commission conducted 50 oral history interviews of former employees. These interviews cover the history of the L&N from the mid-1920s until the late-1970s. A wide variety of individuals were interviewed, from managers to engineers, shop workers, and firemen, all discussing their involvement and work from their particular perspectives.

MODAL POLICY

As Alan E. Pisarski points out in this E-Circular’s Preface, the period following World War II has seen major changes in our transportation systems and demand across all modes. These include deregulation of airlines, consolidation of rail lines, containerization of shipping, and expanded tolling and management of highways. Oral histories were discovered bearing on such subjects, including the following.
The DePaul University College of Law conducted a “Conversations with Aviation Leaders” oral history project. From 2006–2016 nine interviews with leaders of the industry were filmed to document the legal and policy history of the airline industry during the age of global deregulation.

The St. Louis Mercantile Library, John W. Barriger III National Railroad Library holds 28 Interviews (1990–2010) with the foremost leaders in railroads, focusing on the theory and practice of railroading in the 20th century with an emphasis on mergers and deregulation.

The JFK Presidential Library in Boston, MA has an extended interview with Najeeb Halaby, FAA Administrator (1961–1965). Halaby discusses different civil rights issues throughout John F. Kennedy’s administration, including the process of and problems with desegregating airport terminals in accordance with Boynton v. Virginia (1960); the 1961 hijacking of a plane, referred to as the El Paso incident; constructing and dedicating the new John Foster Dulles Airport; federal transportation policy; and running the Federal Aviation Administration, including problems with certain political figures, among other issues.

MEGA PROJECTS

There are major initiatives that transform the transportation system, locally, regionally, or nationally. The planning, development, and implementation of these may have involved hundreds or thousands of workers. Their experiences with these large projects lend themselves to remembrance through oral history, which might include remembrances from those who did not, or would not, write down their observations.

Construction of the 40,000-mile Interstate Highway System was begun in 1956, and the core system was completed in 1992. The American Association of State Highway and Transportation Officials (AASHTO) organized a project beginning in the late 1980s to interview individuals who played an important role in the planning and implementation of the construction of the Interstate Highway System in the United States. Over 100 interviews were recorded in 1986-1992. These currently reside George Mason University Libraries, Special Collections Research Center.

CONTRIBUTION TO A BROADER HISTORICAL ENTERPRISE

Oral histories may be done as one component of a more extensive history. One example is the demolition (2009) and subsequent reconstruction of the Lake Champlain Bridge between Vermont and New York. The original bridge was both an engineering marvel and a cultural landmark. After the bridge was demolished, a commemoration program to preserve the memory of the bridge was developed using various formats and media. All commemoration materials are available through a special website, including: a resource guide, interpretive displays, six film shorts, a documentary film, a popular history book (Spanning the Decades: The Lake Champlain Bridge Story), an Historic American Engineering Record (HAER), and oral histories of 22 individuals with a connection to the 1929 Lake Champlain Bridge, including the engineer who designed the new bridge.
A similar project was designed to fulfill the historical mitigation requirements associated with the dismantling of the eastern span of the San Francisco–Oakland Bay Bridge. The Bay Bridge Oral History Project Interviews focused on the men and women who spent a good portion of their careers working on the bridge, whether as painters or engineers, toll-takers or architects, labor or management. The project coincided with, and contributed to, the research phase and design phase of an exhibit at Oakland Museum of California on the social and environmental history of the San Francisco Bay and a variety of related media events.

DISASTERS

Disasters may occur directly to transportation facilities or may affect them tangentially. Oral history interviews with first responders are informative for understanding the nature and impact of the disaster and effectiveness of response efforts. These histories can inform planning for resilience and future disaster response. Among the histories discovered are a collection from Caltrans of its employees responding to the 1989 Loma Prieta earthquake, the September 11, 2001 Oral History Narrative and Memory Project from Columbia University, and Stories of Hurricane Sandy on the Jersey Shore, held at the Nunn Center for Oral History at the University of Kentucky.
Discussion of Findings

Over 1,000 oral histories related to transportation were discovered by this research and these are cataloged in a table on the TRB Transportation History Committee webpage (https://transporthistory.wordpress.com/oral-histories/). The interviews are as varied as the transportation industry itself. Subjects include aviation, trains, buses, ships, highways, bridges, bicycles, and more. Captains of industry and chief engineers are included, as well as bus drivers and railroad porters. The stories told bring an immediacy to the near history of transportation.

It should not be thought that this study of existing transportation oral histories is complete. The survey for this project discovered that the University of Alaska Fairbanks Library has a collection of more than 12,000 oral histories, several hundred of which relate to transportation, but which cannot be accessed without physically visiting the library. As noted previously, many states have oral history collections in state libraries and archives. These were not explored by this study.

One obvious finding is the varied state of how the oral histories have been archived. Some collections are held in a formal archive, have been digitized and transcribed, and are fully available through the internet. Others have been digitized and transcribed, but access can only be obtained through a gatekeeper. Others may be on tape or CD and not transcribed. A prominent collection resides as tapes and CDs in a filing cabinet in a government office. One university initiative recorded over 40 oral history interviews with the “Founding Fathers of Intermodalism,” but the university library has misplaced the filing box containing the tapes of these interviews, which were never transcribed. Appendix E contains a compendium of incomplete oral histories found through this project. Clearly there is a need for an initiative to rescue these orphan oral histories and restore them to safety and public access.

Another concern is that oral history programs intended to be ongoing have stopped. Two cases come to mind. The Caltrans “Highway Recollections” series of interviews with employees that went on for 20 years from 1978 with over 40 interviews performed, but after 1998, there were no more. There is an active Caltrans History Preservation Committee, which acknowledges the existing oral histories, so the reasons for the cessation might be discoverable. Oregon DOT, according to ODOT librarian Laura Wilt had an active program of employee oral histories from the mid-1970s into the 1990s. After this, interest in the program declined to the point where many of the existing histories have not been transcribed or digitized. There is evidence of an overall societal decline in interest in history.

New data from the US Department of Education confirms … the number of students receiving bachelor’s degrees in history fell 10.1 percent from 2014 to 2015, and 21 percent from the recent high in 2012 (Townsend, 2017).

Students are increasingly drawn to STEM subjects, and less attracted to the humanities. Another marker is declining interest in historical sites and museums.

In 2012, only 24 percent of Americans older than 18 visited a historic site in 2012—13 percent lower than in 1982. Attendance drops are particularly pronounced among younger Americans. Only 20.5 percent of Americans between the ages of 18 and 24
visited a historic site in 2012—down about 8 percentage points from just 10 years earlier (Tiedermann and Marisco, 2017).

This is not an argument that history is becoming irrelevant in our rapidly changing, high tech world. Instead it is incumbent on us to make the case for the necessity of recording and understanding the past, and why history matters for our future.
Planning for New Oral Histories

An oral history project is more than a collection of interviews. Properly done, the project begins with a series of planning steps, leading to interviews through which oral history information is collected, and followed by post-interview activities (Sommer, p11). Below is the process proposed for a new series of transportation oral histories. The steps are:

- Purpose of the Project
- Selecting the Interviewees
- Archival Strategy
- Recording Equipment
- Transcription
- Preparing for an Oral History Interview
- Financial Cost of Oral Histories
- Sources of Funding

This report includes as Appendix F a prospectus for creating an Oral History Guidebook for Transportation Agencies.

PURPOSE OF THE PROJECT

Establishing, up front, a clear purpose gives definition to the project, and helps frame the essential steps for the conduct of the project, such as procuring funding, selecting who to interview and who to conduct the interviews, and deciding where to house the completed interviews. As an example, below is a purpose statement from an oral history project conducted by DePaul University.

The "Conversations with Aviation Leaders" oral history project is developing a record of the legal and policy history of the airline industry during the age of global deregulation, as told through the voices and memories of its participants. The project is a valuable resource for the large community of students, scholars, and policymakers interested in understanding the airline industry’s role in the broader deregulatory movement that continues to transform economic policy today (DePaul College of Law, 2006-2016).

This leads to extended videotaped conversations with eight aviation leaders, including Jeffery Shane, Alfred Kahn, and Gerald Baliles, collected at DePaul’s Conversations Oral History Project website. It includes transcriptions of the interviews published in the journal, *Issues in Aviation Law and Policy*.

The deliberations of the TRB Transportation History Committee reveal a sense of impending and irretrievable loss, as discussed in the preface of this report. In response, we might propose a generalized purpose: to capture through oral history the knowledge of principal movers, shakers, and thinkers, before they leave us forever. But how to coalesce this general purpose into one more specific, leading to identification of those to be interviewed?
SELECTING THE INTERVIEWEES

The section Findings (above), discusses existing oral histories of notables, classified as “The Arc of a Long Career.” Those interviewed were often selected for their affiliation with a university, a program, or an agency. Although, Bob Noland has explained that those interviewed for the Alan Voorhees Oral History Initiative were chosen as “targets of opportunity” (i.e., they were well-known and were available at a convenient time and place, such as the TRB Annual Meeting.) A more focused approach might be to select those identified for award by a national program. These would be individuals whose careers and contributions have already been vetted by their peers, relieving the Transportation Oral History Subcommittee of that responsibility.

TRB has the:

- Sharon D. Banks Award
- W. N. Carey, Jr., Distinguished Service Award
- Roy W. Crum Distinguished Service Award
- Thomas B. Deen Distinguished Lectureship
- Frank Turner Medal for Lifetime Achievement

ITE has several national awards:

- Theodore M. Matson Memorial Award
- Wilbur S. Smith Distinguished Transportation Educator Award


APTA gives awards in a number of areas, the most promising of which would be the Hall of Fame, which since 1983 has been awarded to “individuals who have long and distinguished careers in the industry; who have made extraordinary contributions to public transportation.” [https://www.apta.com/members/memberprogramsandservices/awards/Documents/2017_awards_program_10-06-17.pdf](https://www.apta.com/members/memberprogramsandservices/awards/Documents/2017_awards_program_10-06-17.pdf)

AREMA has the W. W. Hay Award, but appears to be oriented to projects and railroads, not individuals.

Another approach noted in the section above is “History of an Organization.” The Centennial Anniversary of TRB is collecting oral histories from a number of past and current TRB leaders, including executive directors and other senior staff, and chairs of the TRB Executive Committee and the TRB Division Committee. These oral histories will be shared in the TRB centennial book. The centennial celebration could also be an opportunity for “History from Below” interviews with staff with long careers at TRB on their perspectives of how the organization has changed and evolved through the years. In fact, the current project for
commemorating the centennial, while it undertakes some extended interviews, does not include publicly available oral histories.

There may still be some other opportunities for TRB-related oral histories, even not connected to the 100th anniversary. For example, the TRB Committee on Historic and Archaeological Preservation in Transportation (ADC50) is planning to gather thoughts, experiences, and memories about its work to ensure that the committee’s history survives to inform future generations. Oral history might be a part of that and other similar enterprises.

Oral history might augment our understanding of currently shifting and expanding worlds of modal policy. Autonomous vehicles are generating great interest from both innovators and regulators, as are unmanned aerial vehicles (drones). Oral history from early adopters and regulators of these technologies would be intriguing. Another possibility is the proposed organizational reform of air traffic control in the U.S. In 2015, an Air Traffic Control Symposium on Organizational Reform Options was held at the National Academies of Sciences, Engineering, and Medicine (NASEM). Oral histories of the speakers chosen for this symposium would be a useful companion to the DePaul University “Conversations with Aviation Leaders” oral history project, intended to document the legal and policy history of the airline industry during the age of global deregulation (Conversations with Aviation Leaders oral history project). Note that Jeffrey Shane appears in both the DePaul project and the NASEM symposium.

Transportation mega projects such as the Interstate Highway System and the San Francisco Bay Bridge have occasioned oral history of planning, design, construction, and sometimes use of the new facilities. The following mega projects might also be candidates for oral history or oral history in addition to what has already been done. (Total funding shown in billions of real dollars at the time of the project, not discounted for future years.)

Completed
"Big Dig" Central Artery/Tunnel Project (Boston, MA, $22B)
Eastern span replacement of the San Francisco–Oakland Bay Bridge ($6.5B)
World Trade Center Transportation Hub (NYC, $3.9B)
2nd Avenue Subway, Phase 1 (NYC, $4.3B)

Under Construction
Honolulu Rail Transit (Oahu, HA, $10B)
New Tappan Zee Bridge (NYC, $3.9B)
California High-Speed Rail ($64B)
FasTracks (Denver, CO, $5.3B)
Alaskan Way Viaduct (Seattle, WA, $5B)
Birmingham Northern Beltline (AL, $5.5B)
LaGuardia Airport makeover (NYC, $8B)

TRB’s Innovations Deserving Exploratory Analysis (IDEA) programs have spawned some game-changing innovations. Oral histories might be conducted of the innovators and early adopters employing the innovation. One possibility is the Hybrid Composite Beam (HCB) and its inventor, John Hillman. Hillman has won a number of awards for his invention and is an articulate speaker with an appreciation for both the process of invention and the long-slog toward implementation. Hillman’s initial work was done with Dennis Mertz (deceased) at the University of Delaware. One of earliest successes was the replacement of the Maine Knickerbocker Bridge.
Maine DOT chief engineer, Joyce Taylor, has an interesting tale about the process in implementation, including the many hurdles with regulations that had to be overcome. Before being used by Canadian Pacific Railroad, the HCB had extensive testing at the Transportation Technology Center (TTC) in Pueblo, CO. John Tunna, the head of TTC at that time, and later with the Federal Railroad Administration, might contribute oral history of this testing.

Rather than focusing on one innovation, another strategy might be to approach a class of innovations, such as the use of fiber reinforced polymer composites (FRP) for transportation infrastructure. A prominent leader in this topic is Hota GangaRao of West Virginia University. He was recently invited to testify before U.S. congressional committees on the use of composite materials as a cost-effective alternative to traditional building materials with the potential to build upon the country’s strength in manufacturing and enhance labor productivity. With GangaRao, Hillman and other innovators could add their histories. The result might be oral history as a companion to a more over-arching study of the FRP subject.

ARCHIVAL STRATEGY

In the literature review for this project, the locations of existing transportation oral histories were found. Most, but not all, were in in archival collections. Links to these (or other contact information) were aggregated into a table housed on the webpage of the TRB Transportation History Committee (https://transporthistory.wordpress.com/oral-histories/). If other existing oral histories are identified by other researchers they can be easily added to this table.

Oral history collections were identified by this project that have not been transcribed, archived, or are in other ways in need or rescue. These are listed in Appendix G. Some of the most compelling are:

- Interviews with Tony Kane, Joe Wilkerson, Thomas B. Deen, Bill Millar, Peter Koltnow, Jack Basso, Sarah Campbell, Frank Francois, Kevin Heanue, Don West, Taylor Bowlden, Peter Ruane, Nadine Hamilton, Mike Weiss, Becky Weber, Robert Fogel, Mort Downey, John Haifley, Ernie Huckaby, Susan Binder, and Jonathan Gifford.
- Associate Administrator for Planning E. H. "Ted" Holmes interview on 43 years of service with the U.S. Bureau of Public Roads and the U.S. Federal Highway Administration.
- University of Denver Intermodal Transportation Institute conducted 40 oral history interviews with “Intermodal Founding Fathers” (July 1999). Leaders in the field related the history of the North American intermodal freight transportation industry, discussed how revolutionary changes have impacted the movement of freight during the last 40 years, and precipitated a restructuring of North America's freight transportation system.

The costs of transcribing and archiving these are discussed in the section Financial Cost of Oral Histories below.

The next stage of the project envisions conducting new oral histories. In this case, those conducting the new histories need an archival strategy. The features of this strategy include:
• Locating a repository for the histories. In doing so, it is useful to keep in mind that U.S. copyright laws grant copyright automatically to anyone whose words are recorded, for a period lasting 50 years after that person’s death (Ritchie, p. 62). For oral histories to be accessible to all, the narrator and the interviewer must both donate their copyright for the history to the intended repository. It is easier all around if that repository already has an oral history collection, is experienced with oral history copyright practices, and has their own donor or legal release forms (Sommer & Quinlan, p. 21).

• Media used for audio and video recording should ensure that the oral history will be permanent and indestructible.

• Oral histories are most useful if transcribed. As discussed below in the Financial Cost of Oral Histories section, transcription can be expensive and time consuming, and may require editing and review by the narrator.

RECORDING EQUIPMENT

One issue to be resolved is whether the oral histories will be audio only, or audio and visual. The five interviews conducted by the Alan M. Voorhees Transportation Center were both audio and video, with transcriptions. Bob Noland, however, notes that the interviewer used his iPhone for the recording. This is not recommended in the future, as it creates syncing problems with the audio and video. The video also failed sometimes, although the audio was satisfactory. Going forward, Noland recommends audio recording only, because it is simpler and the technology more robust.

Video does add cost, equipment, and complexity to the project. Kathryn Rizzi, Assistant Director, Rutgers Oral History Archives (ROHA) notes, “At the Rutgers Oral History Archives, we conduct oral history interviews in audio… and we record oral histories very rarely in video.” (Rizzi, Katherine, 6/4/18, personal communication).

The Columbia University Center for Oral History (CCOH) offers an MA in oral history (http://oralhistory.columbia.edu/degree-requirements/). The core courses for this program are focused on audio oral history, though there is an elective addressing “Visual Storytelling, and Documentary Production.” According to Kimberly Springer, Curator for Oral History for the Oral History Archives at Columbia University’s Rare Book and Manuscript Library, “All (Columbia) OHMA students are required to have a professional quality recording kit by the start of the fall semester.” (June 1, 2019, personal communication). More information about material students need and time for interview projects can be found in Appendix B.

Columbia also undertakes major oral history projects, such as the artist Robert Rauschenberg, the Apollo Theater in Harlem, and the 9/11/2001 attack on the World Trade Center. These projects comprise audio recordings and transcription, with no video.

On the other side of this subject, Donald Ritchie notes, “…video provides an extra dimension…A smile, a wink, a frown, a look of perplexity would be missed in an audio interview and convey more than what can be reproduced in the recording” (Ritchie, p. 135).

Recent advances in video technology may overcome difficulties in using video for oral histories. Doug Boyd wrote the following in his Digital Omnium blog which discusses oral

Oral history, by definition, involves, at minimum, an interviewee and an interviewer. When we talk about best practices for recording audio interviews we have always stressed the importance of utilizing two microphones to best record the two participants in the interview engagement. The point is, the questions are just as important as the answers.

The aesthetics of video interviewing have changed over the years. We used to record video interviews television or “Oprah” style, where both interviewer and interviewee appear on camera. To do this most effectively, however, one utilizes multiple cameras, complex lighting, multiple camera operators, as well as post production to mixdown the camera angles. “Oprah” style interview video recording is expensive. Not surprising, the dominant aesthetic for video oral history interviews has long been leaning in the direction of documentary-style, single camera interviewing. While the single camera is a far more cost-effective approach to using video to record oral history, it completely ignores the interviewer (visually). This post is about finding a different solution for using 360° video to document the video interview.

Boyd recently started using a single camera that records 360-degree video. He describes this technology as a “game changer which documents the interview context more completely—not only recording all of the interview participants but documenting the room as well. The user is empowered as the ‘editor’ and ‘producer,’ empowered to decide what camera angle they want to watch, when they want to watch it.” There are a number of other 360-degree cameras which may bring less expensive, more powerful recording of audio and video oral histories.

TRANSCRIPTION

To be accessible and useful, oral histories are often transcribed from the recording made during the interview. The transcription may be first edited for accuracy by the interviewer and later checked and approved by the interviewee. The digital audio recording and transcription are archived by the designated repository and made available to the public through the internet or personal visits.

In the oral history profession, there is currently a debate about whether full transcription is essential or might be replaced by a scheme for indexing the audio recording. (A description of such a scheme, the Oral History Metadata Synthesizer, is included as Appendix D.) This debate is occasioned by oral history programs around the country that have far more oral histories than they have the capacity for full transcription. For the purposes of the Transportation Oral History Project, full transcription is recommended, if funding is available to support this.

Following is a partial quotation, which clearly lays out the process of and issues associated with transcription. This is taken from Transcribing Oral History in the Digital Age by Linda Shopes (http://ohda.matrix.msu.edu/2012/06/transcribing-oral-history-in-the-digital-age/).
Transcription is creation of a verbatim, printed text of a recorded interview. This has long been a best practice for oral history. The steps associated with transcription include:

- a word-for-word rendering in print of the words (and non-verbal utterances) spoken in the interview with minimal editorial intervention;
- review of the resulting document by the interviewer for accuracy and correction as necessary;
- review by the narrator for accuracy and correction, emendation, amplification, and occasionally, redaction or restriction of certain materials;
- revision per narrator changes;
- editing and annotation for sense, context, etc.;
- indexing; and
- cataloguing.

Transcription can claim several obvious advantages. Among those are that it:

- facilitates use;
- is easier to locate relevant material; and
- provides a fixed form for quotation and citation by multiple users.

Transcripts, however, have their limits. Transcribing is both a highly developed skill and a labor-intensive practice. If done by those unskilled with the process, it is often done poorly; if done by professionals, it is expensive.

Many oral history programs and projects have a nearly insurmountable backlog of untranscribed interviews. Arguably, many never manage to transcribe at all. Here let it be said that, at this time, no viable system exists to automatically transcribe the often nonstandard, idiomatic, and idiosyncratic speech of oral history narrators with any accuracy

An innovative approach developed by the New York Public Library (NYPL) is to use voice recognition software to transcribe the interview, and then allow a group of interested parties to correct the raw transcript. This is described below.

The Open Transcript Correction Tool, developed by NYPL through the Together We Listen Partnership with The Moth and Pop Up Archive, and supported by the Knight Prototype Fund, is an online tool to allow the public to collaboratively fill the gap between what voice recognition software hears and what our narrators are saying. In this case, the automatic transcription is by Pop Up Archive, and it’s often quite good. Still, a human touch is needed to make the leap from at times unintelligible strings of words to polished transcript. With the Open Transcript Correction Tool, anyone can go to the site and, without even logging in, be listening to audio and correcting transcript instantly. There is a tutorial and FAQs, but the program is pretty intuitive – you click on a segment to play an audio clip of up to five seconds in length and correct any errors in the accompanying transcript just by typing over what’s there. There is a succinct style guide,
available if you have questions. http://oralhistory.columbia.edu/blog-posts/People/automatic-transcription-for-oral-histories-one-step-closer-at-nypl

PREPARING FOR AN ORAL HISTORY INTERVIEW

One might assume that the bulk of work for an interviewer takes place during the interview. Not so, according to those with much oral history experience. “Research is essential for taking the project from the level of merely recording reminiscences to collecting the depth of information needed for good oral history” (Sommer and Quinlan, p. 45).

If the subject is beyond a single person, say the history of an agency or a mega-project, research will be needed to identify those to be interviewed. Such research might lead to a collection of background information, including significant dates and events, to be shared with all interviewers and interviewees. For each interview, the research should lead to an outline of interview topics and questions to use as a guide to the recorded dialogue. http://www.oralhistory.org/about/principles-and-practices/

The effort of research needed for a single interview may be scaled as ten hours for each hour of interview. This investment of effort is needed to equip the interviewer to ask knowledgeable questions about the interviewee’s life and experiences, and in so doing, build trust and rapport (Ritchie, p. 75).

Prior to conducting the interview, the interviewer should contact the prospective interviewee and explain the nature of the oral history project and the purpose of the interview. A time and location agreeable to the interviewee should be established. Having a preliminary, non-recorded, conversation to discuss the process is sometimes recommended, though it is not advisable to venture into the content of the actual interview. The Oral History Association does recommend that prior to the interview, the interviewer makes clear the following:

- Oral history’s purposes and procedures in general and of the proposed interview’s aims and anticipated uses.
- His or her rights to the interviews including editing, access restrictions, copyrights, prior use, royalties, and the expected disposition and dissemination of all forms of the record, including the potential distribution electronically or online.
- That his or her recording(s) will remain confidential until he or she has given permission via a signed legal release.

http://www.oralhistory.org/about/principles-and-practices/

FINANCIAL COST OF ORAL HISTORIES

The Oral History Subcommittee of the TRB History Committee has a keen interest in sponsoring further oral histories. Accordingly, it is important to know the financial costs of new oral histories, to create a budget and discover funding opportunities.

These cost estimates are derived primarily from information from two prominent programs: Columbia (University) Center for Oral History and Louisiana State University T.
Harry Williams Center for Oral History. Budget documents from these programs are in Appendices B and C.

Below are the budgeting assumptions:

- Each interview will be approximately 2 hours.
- Each interview will be audio only; video would incur higher costs.
- Each interview will be professionally transcribed, at a rate of $30/hour.
- The interviewer/researcher will be paid a wage of $70/hour.

**One-Time Fixed Costs**

Recording equipment, microphones, headphones, cables and other equipment: $1000

**Variable Costs**

- Transcription: 2 hours of recording = 16 hours transcription x $30 = $480
- Research: 20 hours
- Interview: 4 hours
- Audit/edit transcription: 8 hours
- Manuscript processing/finding aid: 10 hours
  
  Total: 42 hours x $70 = $2940 + $480 = $3,240

Total for one 2-hour interview $3,420 plus $1,000 for fixed one-time costs.

The Columbia Center for Oral History has an “Interview Package” with a budget of $5,100 for a two-hour interview. However, this includes university overheads on labor. Without these overheads, their package is similar to the variable cost budget estimate above.

T. Harry Williams Center for Oral History says: “Our standard fee for contract projects is $500-650 per hour of source recording.” This would be $1,300 for a two-hour interview. However, the estimated total number of person hours for this work is 60 ($1300/60 hours = $22/hour), so perhaps this program would use graduate students for much of the work. One takeaway from this information is that the T. Harry Williams Center might be an affordable option for new transportation oral histories.

The Columbia labor estimate for a two-hour interview is 60 hours. The T. Harry Williams labor estimate is 60 hours. The estimate for this project is based on 58 hours of labor, which provides some confidence in the budgeting.

Note that other possible expenses such as travel, printing, etc. have not been included, nor have labor costs for program administration, which might be accomplished on a volunteer basis.

**SOURCES OF FUNDING**

The budgeting described in the section above shows that a modest program of ten new interviews will cost $35,000. Returning to the sections under Purpose of the Project and Selecting the Interviewees, the possible sources of funding are contingent on the purpose, who is to be interviewed, and what is to be achieved. For example, a program of oral histories for awardees of the Sharon D. Banks Award, W. N. Carey, Jr. Distinguished Service Award, or Roy W. Crum Distinguished Service Award would be of interest to the transportation community. A program to
Interview chief engineers of high visibility highway construction projects might be of interest to the AASHTO Highway Subcommittee on Construction.

There are a number of foundations, universities, and agencies that fund oral history. This includes:

- National Endowment for the Humanities (https://www.neh.gov/grants)
- The Knight Foundation (https://knightfoundation.org/)
- Baylor University (https://www.baylor.edu/content/services/document.php/79844.pdf)

The Baylor site includes advice on how to put together a proposal, as does this site from Columbia University (http://oralhistory.columbia.edu/blog-posts/People/how-to-get-a-grant), which is oriented to their oral history graduate students.

The Foundation Center (https://foundationcenter.org/) advertises itself as the world's leading source of information on philanthropy, fundraising, and grant programs. There is a fee for their services, unless you visit their facilities, which are located in Washington, D.C., and New York City.

The quest for funding best begins with a sense of purpose and a clearly articulated statement of the benefits that will flow from the project to be funded.
Resources


History of the South Dakota Department of Transportation, 1956 – Present. Accessed October 17, 2017 from TRID. (This is an ambitious program to document the history of SD DOT, using oral interviews and other research methodologies; Dave Huft is one of the managers.) https://trid.trb.org/Results?txtKeywords=oral+history#/View/1229703


Appendix A
Questionnaire for Transportation Oral History

Dear Librarians or Records Keepers,

The Oral History Subcommittee of the Transportation Research Board’s History Committee is seeking to locate any collections of or individual oral histories relating to major transportation programs, projects, organizations, and methods. Our goal is to present to the larger transportation community a directory of and guide to oral histories that would make them more widely available and more frequently useful to researchers. Following is our understanding of oral history:

Oral history collects memories and personal commentaries of historical significance through recorded interviews. An oral history interview generally consists of a well-prepared interviewer questioning an interviewee and recording their exchange in audio or video format. Recordings of the interview are transcribed, (and) summarized or indexed and then placed in a library or archives.²

Your response to this brief questionnaire would be most helpful, even if you do not know of transportation oral histories in your organization. If you have any questions about this survey, please contact Jon Williams, 202-607-6279 or jliam@verizon.net

Name of respondent _________________
Organization______________
Phone____________
Email______________

1. Do you know of any transportation oral histories within your organization?

Yes

No (branch to #9)

Remarks__________________________

2. Within your organization, how many of these histories are there? __________

3. When were they collected? __________

___________

4. On what medium are they stored?
   a. Paper
   b. Audio Tape
   c. Video Tape
   d. CD
   e. DVD
   f. Computer hard drive
   g. Other ___________

   Remarks

5. How many of these oral histories have been transcribed? ________________

6. What are the topics of these oral histories? ________________

7. Are they accessible through the internet?
   No
   Yes (please provide the URL)

   Remarks

8. We would like to contact you to further discuss these oral histories, and whether they could be made more generally available to the transportation community. If you would like us to contact someone other than yourself, please provide the following:
   Name ________________
   Title ________________
   Organization ________________
   Phone ________________
   Email ________________

9. Do you know of any transportation oral histories elsewhere than your organization?
   Yes
   No (Branch to #11)

   Remarks __________________________
10. Please provide a contact for these
Name ___________________
Organization______________
Phone____________
Email______________

11. Thank you kindly for completing this survey. Please let us have any other comments.
____________________________
All OHMA students are required to have a professional quality recording kit by the start of the fall semester. We know that this is a substantial expense, but it is a requirement for your coursework, and we try to offset the cost by assigning very few required books in our seminars.

We recommend purchasing [one of several brands of] audio recorder and two lavalier microphones. For those who have the resources, we also recommend a higher quality recorder.

To make this kit work, you may also need:
- Headphones. Good earbuds are OK. Professional headphones are better.
- An AC power adapter for the recorder.
- A backup flash card.
- XLR cables for the mics.

However, we recognize that other recording technologies have developed substantially in the past few years, and we also allow the use of smartphones for audio recording, with the proper accessories. Note that the quality of these recordings will not be as high as those made with a quality digital recorder and two professional mics, and may even limit your ability to use the audio in some venues. In particular, it may be hard to capture your questions in as high a quality as your narrator’s responses.

If you are using your smartphone to record, you should have a stand, a microphone attachment, and a recording app.

If you have your own equipment, or want to purchase equipment other than what we recommend, please check with us to be sure it meets our requirements.

If you want to read more about audio equipment, by far the best resources in this area are Digital Omnium (see recent reviews of smartphones mic attachments and recording apps).

http://digitalomnium.com/ and Oral History in the Digital Age:
http://ohda.matrix.msu.edu/gettingstarted/playlists/equipment/
Transom’s “Tools” section is also excellent, if more aimed at radio folks:
http://transom.org/?cat=6
Appendix B

CCOH-A Oral history interview project - time estimates

Calculations are in hours, and standardized for a one-hour interview.

Pre-Interview Research – 4-8 hours interview – 2-4 hours for site-based, 8 hours for local travel, 16 hours for longer travel. Pre-Interview Research Actual interview can vary wildly depending on the topic and if travel is required. Pre-Interview Research Prep work can involve researching interview topics, listening to previous interviews to determine next topic.

Processing/Transcription – 15-20 hours
It takes approximately 5-10 hours to transcribe one hour of audio. This time estimate also includes the transcription edit.

Review – 3 month wait
This is a general amount of time given to narrators to review and/or making clarifying changes.

Post-review edits – 5 hours Final editing – 5 hours
Adding corrections and final editing.

Total: 30-60 hours

CCOH-A Oral history interview project - cost estimates

Interview package\(^1\) $5100
* 1 session @ 2 hours each $1200
* 3 sessions ideally - 6 hours
* transcript audit $500 each session
* Interviewer travel

Transcription
1 hour of recording = 5 hours of transcription
1 hour of transcription = $30

Other possible costs:
Video
CCOH-A costs (archival processing, curator’s time)
   Consultant (MMC role)\(^2\)
   Project Coordinator\(^3\)
   Planning (6 days/$600/day)

---

\(^1\) Interview package includes: background research, interview guide, logistics, interview, and collecting all pertinent releases.

\(^2\) From 2008 budget. $6250, fringe 30.80%

\(^3\) From 2008 budget $20,000, fringe 22.2%
Appendix C
Louisiana State University
T. Harry Williams Center for Oral History

https://www.lib.lsu.edu/sites/all/files/oralhistory/resources/Oral_History_Budget.pdf

Time and Cost Estimates

THE COSTS OF DOING ORAL HISTORY

Oral history is not a short cut or a cheap and easy way of doing research. Used to its full potential, done carefully and conscientiously, oral history methods let us collect unique information that can be of great value to researchers now and in the future. Done carelessly, without proper preparation and processing, it can result in evidence that is superficial, anecdotal, little better than hearsay and too often inaccessible. Doing oral history takes time and money. Each hour of recorded interview requires an average of 40 hours of preparation and processing. Our standard fee for contract projects is $500-650 per hour of source recording, depending upon whether interviews are transcribed or thoroughly indexed. An explanation of the steps involved in doing oral history and a budget follows.

THE INTERVIEWER

The interviewer is expected to bring some professional expertise to the project, including an understanding of best practices, experience in qualitative research, knowledge of the interviewee's career and field, the pertinent sources for further information on these subjects, and the questions that should be asked. If the interviewer is not an experienced, then he or she is expected to complete a training session. Prior to the interview, the interviewer will conduct background research in the written records and other primary resources in order to determine the topics and questions that need to be covered in the interview and to ensure that the oral history will not simply duplicate the written record but will supplement it, filling gaps and adding unique material available nowhere else. Once the interview is complete, the interviewer reviews the recording, makes a list of the major topics covered, and notes topics and questions to be covered in subsequent sessions. The interviewer may also review and correct any resulting transcription. For every hour of tape, the interviewer will spend five to ten hours preparing for and reviewing the interview.
TRANSCRIPTION, INDEXING, AND PROCESSING

It takes an experienced transcriber six to 12 hours per hour of tape to produce a verbatim transcript. Once the transcription is complete, it is checked against the tape by someone other than the transcriber to ensure accuracy. This is an essential step since even the most conscientious transcriber will make mistakes or be unable to hear or understand some portions of the tape that may be clearer to a second listener. This process, called auditing, takes two hours per hour of tape; correcting the transcript adds another two to three hours. The corrected transcript is sent to the interviewer and interviewee for their review and corrections. The interviewee is asked to make changes for accuracy and clarity only, not to edit for literary quality. Once the interviewer and interviewee have returned their copies of the transcript it receives a final editing. Punctuation and paragraphing are imposed as necessary, false starts are eliminated, and minimal editing is done to promote clarity and readability. Editing takes another five to eight hours per hour of tape and includes making the corrections suggested by the interviewer and interviewee. If funding is not available for the creation of a transcription, the interview is thoroughly indexed with time-stamped calibrations of significant topics and content. Every hour of recording takes two to three hours to thoroughly index.

A manuscript processor then creates a finding aid for the interview collection, which includes a review of the legal paperwork, the creation of a summary or an abstract of the collection that is uploaded to the Center’s website, the extrapolation of pre-catalog metadata including subject terms and biographical notes, and the maintenance of complete database records for each collection. The interviews are then catalogued and deposited in the Louisiana and Lower Mississippi Valley Collections where they are available to researchers. Eventually, all available collections are uploaded to the Louisiana Digital Library. The creation of a finding aid, or processing, usually takes anywhere from 10-12 hours per hour of recording.

Transcribing and processing the interview up to 30 hours per hour of recording. Indexing and processing can take up from 15-20 hours per hour of recording.

AUDIO ENGINEERING, PRESERVATION, & OVERHEAD

If a recording is analog (cassette or reel-to-reel), it must be converted to an uncompressed digital audio file. The Center is equipped to transfer from analog tape sources, DAT, and reel-to-reel, in real-time, fully-monitored by a trained audio technician. Semi-monitored digital transfer can be provided for large – and largely problem-free cassette, DAT and reel-to-reel – transfer projects. The audio engineer must record basic technical metadata in a spreadsheet form and furnish digital files as full-resolution 24/96, 24/48, 24/44.1, or 16/44.1.wav files.
For all digital files, both converted and born, the Center stores master copies on LSU servers, backed-up by a magnetic tape system. For access copies, we create 256 or larger kbps mp3 files, and we provide user copies, as requested by patrons or partners. All audio files, both master and user copies are preserved in perpetuity. Both converted and born-digital audio files sometimes require digital optimization, which is a cost-effective way to enhance the listening experience of scholars by applying noise-reduction and equalization processes across entire audio files. To all of this must be added overhead costs that includes equipment--hardware and software, phone, server storage costs, and general project management that includes supervision and coordination.

<table>
<thead>
<tr>
<th>TASK</th>
<th>COST PER HOUR OF SOURCE RECORDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviewer</td>
<td>$150</td>
</tr>
<tr>
<td>Transcription</td>
<td>125</td>
</tr>
<tr>
<td>Index</td>
<td>50</td>
</tr>
<tr>
<td>Auditing</td>
<td>25</td>
</tr>
<tr>
<td>Editing</td>
<td>50</td>
</tr>
<tr>
<td>Finding Aid (Manuscript Processing)</td>
<td>125</td>
</tr>
<tr>
<td>Analog-to-Digital Audio Conversion, if necessary</td>
<td>(50)</td>
</tr>
<tr>
<td>Audio Engineering &amp; Preservation</td>
<td>50</td>
</tr>
<tr>
<td>Overhead</td>
<td>125</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>500-700</strong></td>
</tr>
</tbody>
</table>
Appendix D
Oral History Metadata Synchronizer

OHMS: ENHANCING ACCESS TO ORAL HISTORY FOR FREE
Doug Boyd
The Oral History Review, Volume 40, Issue 1, 1 January 2013, Pages 95–106,
https://doi.org/10.1093/ohr/oht031

Many oral history repositories transcribe every interview that they collect; however, this creates a limitation in the quantity of interviews that a single repository can accession, as transcription is expensive. At present, the Nunn Center has over 8,500 interviews in its collection, sometimes accessioning up to seven hundred interviews in a single year. I have always known that, even with a modest endowment, the Center could never afford to transcribe all of our interviews, unless we dramatically limited our intake of interviews each year. Additionally, many interviews that had been transcribed in the past never had the final quality control audit conducted. As a result, many of the transcripts in our collection were “first draft” transcripts. Although we will provide a first draft transcript (with disclaimers) as part of our reference process, we committed ourselves to not hosting first draft transcripts online.

Generally, the cost of transcribing and auditing an interview averages between $180 and $200 per hour of oral history interview. Indeed, there are less expensive vendors we could utilize for transcribing, and the Nunn Center has experimented with utilizing students as transcribers. Regardless, it seems that, when factoring in the quality control audit, the final costs tend to remain at an average of $180 to $200 per interview hour. The original version of OHMS required a transcript, and Nunn Center policy required that, in order to be a candidate for the OHMS system, the transcript be a fully audited, final version of the transcript. As a result, only projects that had major funding were accessible in our own innovative system. There are thousands of interviews in our collection that I would like to make publicly accessible through the OHMS system. The likelihood of raising the millions of dollars necessary to transcribe and audit those collections, however, remains very small.

A potential alternative to transcription is automatic speech recognition. However, that technology is not far enough along, especially for a large-scale collection of often poorly recorded interviews containing multiple dialects. In his article for the Oral History in the Digital Age Project (http://ohda.matrix.msu.edu/), design and search expert Doug Oard clearly states, “easily readable fully automatic transcription of our most challenging content is not yet here, and not yet even on the horizon.”

Appendix E
Incomplete Oral Histories

INCOMPLETE ORAL HISTORIES

1. Interviews for an update (never completed) to America's Highways. The CDs reside in Mr. Weingroff's files.

   Tony Kane – 7-1-04
   Joe Wilkerson – 1-10/05
   Thomas B. Deen – 1-10-05
   Bill Millar – 1 -5-05 and 1-15-05
   Peter Koltnow – 11-9/04
   Jack Basso – 12-10-04
   Sarah Campbell – 3-1-05
   Frank Francois – 2-16-05
   Kevin Heanue – 8-18-04
   Don West – 6-29-04
   Taylor Bowlden – 7-12-04
   Peter Ruane – 7-12-04
   Nadine Hamilton – 7-15-04
   Mike Weiss – 7-13-04
   Becky Weber – 7-1-04
   Robert Fogel – 8-2-04
   Mort Downey – 8-1-04
   John Haifley – undated
   Ernie Huckaby - undated
   Susan Binder - undated
   Jonathan Gifford – undated


   The tapes are in Mr. Weingroff's files. Weingroff transcribed parts for an article on Thomas MacDonald and Herbert Fairbank.

3. ASCE Members

   This oral history collection consists of 17 interviews comprising 19 cassette tapes. Interviews were conducted by ASCE members based in Washington D.C., Pittsburgh, and New York, from 1964 to 1985. Transcripts do not accompany the tapes. Brief biographical summaries are included for Laboon and Duff only. Each interview is
documented with a sheet providing the date, the name and residence of the person interviewed, and the interviewer. May or may not include those who worked in transportation.

4. NYC Transit Workers (not online)

"In 1988 the New York Transit Museum, as part of the educational programming, requested that a professional folklorist be hired to conduct a series of 75 oral history interviews with Transit Workers. City Lore was awarded the contract. In addition to conducting the actual oral histories, City Lore created transcripts, three public programs and a book (I've Been Working on the Subway) of oral histories designed to teach school children about the human dimensions of transit in New York. In 1992 the New York Transit Museum applied for a New York State Council on the Arts grant to create an adult book on the history and occupational folklore of New York City transit. Robert W. Snyder was selected as the writer. The book was published in 1997 with the title Transit Talk: New York's Bus and Subway Workers Tell Their Stories.

5. Oregon DOT (100 interviews, none online)

Our agency had a fairly extensive oral history program that ran from the late 1970s into the 1990s. Most of these interviews were stored on audio cassettes, and some were transcribed. We also did a 2015 video interview with Cathy Nelson, long-time ODOT State Highway Engineer, as she retired. (They can’t locate this.)


7. Leaders in the field related the history of the North American intermodal freight transportation industry, and discussed how revolutionary changes have impacted the movement of freight during the last 40 years and precipitated a restructuring of North America's freight transportation system. Keynote presentations were given by Lester M. Passa of CSX Intermodal ("Service Equals Growth"), Jim Shattuck of Union Pacific Railroad Company ("Intermodal--The Future"), and Charles L. Schultz of Burlington Northern Santa Fe Corporation ("Intermodalism--The Past is Prologue"). Panel presentations highlighted several aspects of intermodal transportation, including: equipment, maritime, early customers, railroad operational, motor carrier, early developers, terminals and railroad commercial. The conference also provided the backdrop for more than 40 industry pioneers to be interviewed as part of an oral history program.

https://trid.trb.org/view/709516

4/2/18 From:
Kate Crowe
Curator of Special Collections and Archives
University of Denver
Unfortunately it looks like this collection didn’t get inventoried and properly “ingested” (basically, checked against our collection management system) to ensure that everything that was supposed to move into our off-site facility did actually move.

Long story short, because the physical box numbering that we have doesn’t match the numbering in our collection management system, I was unable to locate the oral histories. It may not be until this summer that we are able to respond to your research request with any detail, as that’s when the staff will have time to go through the collection in its entirety and check the physical boxes against the inventory. If you were looking for one or two specific oral histories, we might be able to locate those, but since your request is to know about all of the oral histories we have/those that are listed in the linked document in your initial email, that’s probably not possible until this summer.

8. “Interstate history research project collection, 1986-1992” George Mason University Libraries hold this collection, created and donated by the American Association of State Highway and Transportation Officials. The project beginning in the late 1980s interviewed individuals who played an important role in the planning and implementation of the construction of the Interstate Highway System in the United States. The collection consists of both bound and loose copies of interview transcripts, audiotape cassettes of the interviews, and chronological files on the interstate research project itself. While the interviews have been transcribed, they are now available in 11 physical boxes. These interviews need to be digitized and made available on the internet. The same might be done with the sound recordings.
Appendix F
Prospectus: Oral History Guidebook for Transportation Agencies

SUMMARY

This project will promote the production and archiving of oral histories in transportation. It will develop a guidebook that transportation organizations can use to contribute new oral histories; identify permanent, accessible repositories for completed oral histories; conduct pilot oral histories; and develop an outreach plan for encouraging organizations to participate by producing oral histories of their own prominent members.

BACKGROUND

Some, outside the transportation profession, have remarked on how weak we are in documenting and understanding our history. The TRB Transportation History Committee was formed to respond to that weakness. Accumulating and organizing oral histories in our profession can make a significant contribution to expanding that understanding.

As a start we need to ask: what is an oral history? The Oral History Association defines it as:

Oral history is a field of study and a method of gathering, preserving and interpreting the voices and memories of people, communities, and participants in past events.

A second question is: why transportation oral history? In America, and in many other places in the world, the period since World War II has seen dramatic changes in transportation technology and its impacts, as well as the social and economic implications of transportation in people’s lives. Examples of these changes abound and include the building of the Interstate Highway System, the shift in intercity travel from rails to air and the related relocation of mid-city passenger terminals to outlying airports, the shift from public transit to private cars along with the movement of mid-city shopping to suburban shopping centers, and the explosion of international trade enabled in part by containerization of freight. Many who participated in this revolution are reaching an age where their thoughts and perspectives, crucial to the understanding of these events, may be lost unless we record and organize their experiences so as to permit easy access by future historians.

In such cases it may not be the basic facts that describe important events that are missing because those are often available. Rather, knowing the details of how decisions were made, what worked and what didn’t, and why, and what the societal conditions were at the time, inform our understanding.

Kathryn Walbert, a prominent oral historian, has written the following to explain the unique value of oral history.
We have a wide range of primary sources upon which to draw when approaching the past. Newspapers, census data, diaries, letters, photographs, memoirs, and other documents all surely have their place, but oral history has several unique benefits that no other historical source provides.

**Oral history allows you to compensate for the digital age.** Historians of the eighteenth and nineteenth centuries can rely on extensive correspondence and regular diary entries for information about life in the past. But in today’s world, telephone, email, and web-based communication have largely replaced those valuable written records. Without oral history, much of the personal history of the late-twentieth and twenty-first centuries would be lost to future historians.

**Oral history allows you to learn different kinds of information.** Even when we do have extensive written sources about someone, we may not have the kind of information we want. Newspaper articles, speeches, and government documents may reveal significant useful information, but those kinds of sources often neglect more personal and private experiences. Through oral history, you can learn about the hopes, feelings, aspirations, disappointments, and personal experiences of the people you interview.

**Oral history provides historical actors with an opportunity to tell their own stories in their own words.** Through oral history, interviewees have a chance to participate in the creation of the historical retelling of their lives. Unlike Frederick Douglass, who is long dead and cannot complicate, extend, or argue with our understanding of his life, living historical actors can enrich our understanding of history by telling their version of events and their interpretations in their own words.³

As a foundation for this proposed work, the TRB Transportation History Committee has embarked on a volunteer-led project “Transportation Oral History: State of the Practice and a Path Forward.” For this project there were surveys and interviews conducted among libraries and other repositories thought to hold oral histories pertaining to transportation in the United States. Through this work, over one thousand individual transportation oral histories were discovered in over 40 different locations. Most have been transcribed and are available through the internet. The History Committee has organized these into a table that is accessible through the committee’s website: [https://transporthistory.wordpress.com/oral-histories/](https://transporthistory.wordpress.com/oral-histories/) These histories include individuals recently prominent in the airport, highway, and transit industries.

**PROPOSED ACTIVITY**

There are many transportation professionals, now gone, from whom our understanding of the past would have been enhanced had we the opportunity and foresight to ask about, record, and

---

³ The Value of Oral History
organize their experiences. The objective of this project is to facilitate new oral histories of those with prominent careers in the transportation profession, thus allowing all others to learn from their experiences and recollections. To this end, the project will create a guidebook for transportation agencies to conduct oral histories.

The practices set forth in this guidebook will be simple, relatively inexpensive, and easy to implement. At the same time, it is expected that the resulting oral histories will adhere to high professional standards, and will be fully accessible and immediately usable, employing media that withstand the test of time.

The *Guidebook for Transportation Oral Histories* will allow those who are relatively inexperienced in oral history to conduct and archive new oral histories. While there are a number of excellent published guides for the conduct of oral history, some cited in the references for this proposal, this guidebook is expressly geared toward the transportation profession. Following are the tasks to be followed in the project.

1. **Identify Repositories for New Transportation Oral Histories.**
   Archiving oral histories is best done by libraries and oral history centers with the appropriate experience and expertise, and the ability to make transcribed oral histories publicly available. The TRB Transportation History Committee has already done the ground work for this, and the following have tentatively agreed to be such repositories:
   a. USDOT National Transportation Library
   b. George Mason University Library
   c. Voorhees Transportation Center Library, Rutgers University
   d. Texas Transportation Institute / Texas A&M library
   e. University of California Institute of Transportation Studies Library

   The researcher will contact the head librarian at each of these, and affirm their willingness and ability to serve as repositories for new transportation oral histories. Any procedures or forms required by these libraries for submission of these oral histories will be included in the guidebook.

2. **Prepare a Guidebook for Conducting Transportation Oral Histories.**
   a. Develop standards for the conduct of transportation oral histories. The Oral History Association provides a sound basis for this.
      [http://www.oralhistory.org/about/principles-and-practices/](http://www.oralhistory.org/about/principles-and-practices/)
   b. Lay out steps for performing new transportation oral histories.
      i. Selecting the interviewee- including contacting, scheduling, briefing on the oral history process, and gathering biographical information as background for the interview.
      ii. Selecting the interviewer. Ideally this should be someone with both experience in conducting oral history interviews and knowledge of the background of the interviewer. Finding both these attributes in one interviewer is unlikely, in which case the latter is preferred, with training to be had on how to conduct an oral history interview.
iii. Recording equipment and techniques. In keeping with the principle of keeping the process simple and inexpensive, only audio recording information will be presented. While there is rapid change in variety and cost of recording equipment, the guide will include current equipment known to be reliable and inexpensive, and instruction on how to use it for oral history interviews. Recording to digital media files will be explained as well.

iv. Preparing for the interview. One might assume that the bulk of work for an interviewer takes place during the interview. Not so, according to those with much oral history experience. “Research is essential for taking the project from the level of merely recording reminiscences to collecting the depth of information needed for good oral history.” (Sommer and Quinlan, p. 45). Other preparation includes selecting an appropriate location and handling copyright forms.

v. Conducting the interview. This will include placement of the interviewee, interviewer and recording equipment; recommended length of interview and whether to have more than one; and tips for winning the confidence and trust of the interviewee.

vi. After the interview. There will be guidance on various procedures for transcription, editing and reviewing the transcribed document. The final steps will be coordination with the selected repository.

3. **Conduct Pilot Interviews.**

   Following completion of the draft guidebook, the researcher will, using the procedures laid out in the guidebook, conduct three audio oral histories approximately two hours in length, one each among professionals in the airport, highway and transit industries. These interviews will be transcribed, and archived at the one or more of the repositories identified in 1. above. This process will be documented in an appendix to the guidebook, and any needed amendments to the guidebook will be made.

4. **Develop Outreach Plan.**

   a. Identify agencies and projects to sponsor new transportation oral histories and to select those to be interviewed. Following are some possibilities-
      i. American Road and Transportation Builders Association
      ii. Institute for Transportation Engineers
      iii. American Association of State Highway and Transportation Officials
      iv. American Public Transportation Association
      v. American Association of Airport Executives
      vi. Association of American Railroads
      vii. Association of Metropolitan Planning Organization
      viii. US Department of Transportation and its modal administrations
      ix. Massachusetts DOT (The Big Dig)
      x. Virginia DOT (the recent VDOT Hotlanes in Northern Virginia)
xi. Transportation Research Board- Recipients of the following-
   • Sharon D. Banks Award
   • W. N. Carey, Jr., Distinguished Service Award
   • Roy W. Crum Distinguished Service Award
   • Thomas B. Deen Distinguished Lectureship
   • Frank Turner Medal for Lifetime Achievement
b. Develop strategy for contacting these organization, and securing their participation in the conduct of new oral histories.
c. Develop plan for widely publicizing the opportunity for conducting and archiving transportation oral histories.
d. Financial cost of oral histories. The probable costs of conducting and archiving oral histories will be documented.

**Budget**

$50,000

**Schedule**

6 Months
The National Academy of Sciences was established in 1863 by an Act of Congress, signed by President Lincoln, as a private, non-governmental institution to advise the nation on issues related to science and technology. Members are elected by their peers for outstanding contributions to research. Dr. Marcia McNutt is president.

The National Academy of Engineering was established in 1964 under the charter of the National Academy of Sciences to bring the practices of engineering to advising the nation. Members are elected by their peers for extraordinary contributions to engineering. Dr. C. D. Mote, Jr., is president.

The National Academy of Medicine (formerly the Institute of Medicine) was established in 1970 under the charter of the National Academy of Sciences to advise the nation on medical and health issues. Members are elected by their peers for distinguished contributions to medicine and health. Dr. Victor J. Dzau is president.

The three Academies work together as the National Academies of Sciences, Engineering, and Medicine to provide independent, objective analysis and advice to the nation and conduct other activities to solve complex problems and inform public policy decisions. The National Academies also encourage education and research, recognize outstanding contributions to knowledge, and increase public understanding in matters of science, engineering, and medicine.

Learn more about the National Academies of Sciences, Engineering, and Medicine at www.national-academies.org.

The Transportation Research Board is one of seven major programs of the National Academies of Sciences, Engineering, and Medicine. The mission of the Transportation Research Board is to increase the benefits that transportation contributes to society by providing leadership in transportation innovation and progress through research and information exchange, conducted within a setting that is objective, interdisciplinary, and multimodal. The Board’s varied committees, task forces, and panels annually engage about 7,000 engineers, scientists, and other transportation researchers and practitioners from the public and private sectors and academia, all of whom contribute their expertise in the public interest. The program is supported by state transportation departments, federal agencies including the component administrations of the U.S. Department of Transportation, and other organizations and individuals interested in the development of transportation.

Learn more about the Transportation Research Board at www.TRB.org.